

GLTC LAND- NO FURTHER ACTION REPORT

**Great Lakes Tech Center (GLTC) Land
Flint, Michigan
No Further Action Report**

**RACER Trust
Ypsilanti, MI**

September 2011

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Great Lakes Tech Center (GLTC) Land No Further Action Report

Flint, Michigan

Prepared for:
RACER Trust
Ypsilanti, Mi



SCOTT L. CORMIER, P.E. – VICE PRESIDENT
O'Brien & Gere Engineers, Inc.

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Affidavit of Person Submitting a No Further Action Report

Required pursuant to Section 20114d(5) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NEREPA), 1994 PA 451, as amended, to be submitted by a person submitting a No Further action (NFA) report to Michigan DNRE. All terms found in this document which are defined in Part 3, Definitions, and Part 201, Environmental Remediation, of NREPA shall have the same meaning as in the statute.

State of Michigan

County of Washtenaw

1. I, David M. Favero, am authorized to submit this affidavit on behalf of RACER Trust.
2. A No Further Action (NFA) report dated September 22, 2011 is being submitted for the facility referred to as GLTC Land and located at the northwest corner of South Saginaw Street and Atherton Road, Flint, Michigan (the "Facility.")
3. The purpose of the NFA report is to detail the completion of remedial action at the Facility, and includes a postclosure plan.
4. The remedial action at the Facility described in the NFA report was conducted in compliance with all applicable local, state, and federal laws and regulations.
5. I affirm to the best of my knowledge and belief that the NFA report prepared for this Facility, and all information, data, documents and reports relied upon for this NFA report, are true, accurate and complete.

Signature of Affiant

Sworn to before me and subscribed in my presence this 19 day of December 2011.

TRACIE L. NICHOLS
Notary Public, State of Michigan
County of Oakland
My Commission Expires 03-19-2017
Acting in the County of Washtenaw

Notary Public

Environmental Consultant Affidavit for No Further Action Report

Required pursuant to Section 20114d(5) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NEREPA), 1994 PA 451, as amended, for the Environmental Consultant who prepared a No Further Action (NFA) report that is being submitted to Michigan DEQ. All terms found in this document which are defined in Part 3, Definitions, and Part 201, Environmental Remediation, of NREPA shall have the same meaning as in the statute.

State of Michigan

County of Oakland

1. I, Scott L. Cormier, am an Environmental Consultant whose title is, Vice President, and I am employed by O'Brien & Gere Engineers, Inc..
2. I meet the professional qualifications set forth in MCL 324.20114e(2) of NREPA. A description of my qualifications, including education and work experience, is attached as Appendix A.
3. I have prepared a No Further Action (NFA) report dated September 22, 2011 for the facility referred to as GLTC Land and located at the northwest corner of South Saginaw Street and Atherton Road, Flint, Michigan (the "Facility.") The Property is located on parcel number 41-19-454-014 in the City of Flint, Genesee County, Michigan. The following legal description provided by Guaranty Title Company of Flint, Michigan:

Part of the South 1/2 of Section 19, Township 7 North, Range 7 East. Beginning at a point on Westerly line of South Saginaw Street, 97 feet North 9 degrees 21 minutes 30 seconds West from its intersection with Northerly line of Atherton Road; thence South 39 degrees 14 minutes West, 40 feet; thence South 50 degrees 17 minutes 54 seconds West, 78.91 feet; thence South 88 degrees 56 minutes West, 823.44 feet; thence North 3 degrees 08 minutes East, 736.56 feet; thence North 50 degrees 36 minutes East, 198.85 feet to Southwesterly line of C & O Railroad Right of Way; thence Southeasterly along said Southwesterly line, 1007.45 feet to Westerly line of Saginaw Street; thence Southerly along said Westerly line, 63.18 feet to place of beginning.

I am submitting this affidavit pursuant to MCL 324.20114d(5).
4. I prepared the NFA Report at the request of RACER Trust.
5. The remedial action at the Facility described in the NFA report was conducted in compliance with Part 201 of the NREPA, and all other applicable local, state, and federal laws and regulations.
6. I affirm to the best of my knowledge and belief that the NFA report prepared for this Facility, and all information, data, documents and reports relied upon for this NFA report, are true, accurate and complete.



Signature of Affiant

Sworn to before me and subscribed in my presence this 21st day of December 2011.



Notary Public

NANCY LONGO
NOTARY PUBLIC STATE OF MICHIGAN
COUNTY OF OAKLAND
My Commission Expires
August 16, 2015
Acting in the County of Oakland

EXECUTIVE SUMMARY

O'Brien & Gere has completed this No Further Action (NFA) report for the Great Lakes Tech Center (GLTC) Land (formerly known as the Die Storage Lot) facility located in Flint, Michigan (Figures 1 and 2). This NFA report presents information which supports a "Limited Nonresidential" closure with deed restrictions in accordance with the Michigan Department of Natural Resources (MDEQ) Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20101.

Phase I through IV investigations were previously performed at the GLTC Land facility. These investigations included vadose zone monitoring, subsurface soil, and groundwater sample collection and analysis. O'Brien & Gere performed additional site investigations in 2005 and 2007. These investigations included utility survey and clearance, retention basin deactivation, inspection and assessment, and further subsurface soil and groundwater sample collection and analysis.

Results of the investigations indicated Substances of Potential Concern (SOPCs) for subsurface soil. SOPCs are defined as constituents detected above the MDEQ Generic Nonresidential Drinking Water (NRDW) Protection (NRDWP) and/or nonresidential direct contact criteria. These SOPCs included benzene, 1,3 dichlorobenzene, ethylbenzene, methylene chloride, toluene, xylenes, arsenic, barium, and lead.

A quarterly groundwater monitoring program was conducted at the GLTC Land facility for ten years (1995-2004). Groundwater SOPCs, identified as constituents that were detected above the MDEQ NRDW criteria, included benzene, ethylbenzene, 4-methyl-2-pentanone, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, vinyl chloride, xylenes, barium, and lead.

An Interim Remedial Action (IRA) was conducted at the GLTC Land facility in December 2010 to remove lead impacted soils, which were outside of the facility's perimeter fence in the OBG-219 soil boring area (Figure 3) and posed a direct contact risk, and volatile organic compound (VOC) impacted soils in the OBG-228 soil boring area that exceeded the generic soil saturation (C_{sat}) concentrations. The IRA activities were conducted in accordance with the procedures described in the IRA Work Plan (O'Brien & Gere, 2010), which was approved by MDEQ on November 17, 2010. The IRA activities and findings are presented in the IRA Technical Memorandum included in Appendix B, which also documents the soil verification of remediation (SVR) monitoring that was implemented during the IRA activities.

The conclusions of the exposure pathway evaluation indicate acceptable exposure conditions will exist at the GLTC Land facility following future implementation of deed restrictions. Protection against potential migration and exposure of SOPCs will be attained through the following:

- i Maintain the present nonresidential property zoning
- i Maintain the future use of the property consistent with commercial and/or nonresidential use
- i Attainment of applicable closure criteria
- i Deed restrictions
- i Implementation of the postclosure plan.

Therefore, this NFA report demonstrates that the conditions which exist at the GLTC Land facility satisfy the requirements under Part 201 of the NREPA 1994 PA 451 for meeting a "Limited Nonresidential" closure with the implementation of deed restrictions and a postclosure plan.

1 INTRODUCTION

This document serves as the No Further Action (NFA) report for a Limited Nonresidential Closure for the Great Lakes Tech Center (GLTC) Land (formerly known as the Die Storage Lot) facility located in Flint, Michigan (Figure 1). The GLTC Land facility is located at the northwest corner of the intersection of South Saginaw Street and Atherton Road in Flint, Michigan (Figure 1). This NFA report presents information from environmental investigations and the interim remedial action (IRA) previously performed at the GLTC Land facility. The GLTC Land facility is presently owned by Revitalizing Auto Communities Environmental Response Trust (RACER), which took over responsibility of the GLTC Land facility in accordance with the provisions of the Environmental Response Trust Consent Decree and Settlement Agreement resulting from the bankruptcy process for the former General Motors Corporation (GM). The GLTC Land facility has since remained unused (*i.e.*, vacant land).

The previous investigations performed at the GLTC Land facility include the following:

- Environmental Site Assessment, Goldberg-Zoino & Associates, Inc. (GZA), report dated April 1988¹
- Environmental Site Assessment - Additional Studies, GZA, and report dated January 1989¹
- Site Investigation, O'Brien & Gere report dated May 2006
- Site Investigation - Additional SI Activities, O'Brien & Gere report dated March 2007.

The IRA was conducted at the GLTC Land facility in December 2010 to remove lead impacted soils, which were outside of the facility's perimeter fence in the OBG-219 soil boring area (Figure 2) and posed a direct contact risk, and volatile organic compound (VOC) impacted soils in the OBG-228 soil boring area that exceeded the Michigan Department of Environmental Quality (MDEQ) generic soil saturation (C_{sat}) concentrations. The IRA activities were conducted in accordance with the procedures described in the IRA Work Plan (O'Brien & Gere, 2010), which was approved by MDEQ on November 17, 2010. The IRA activities and findings are presented in the IRA Technical Memorandum included in Appendix B, which also documents the soil verification of remediation (SVR) monitoring that was implemented during the IRA activities.

This NFA report presents information which supports closure of the GLTC Land facility under the MDEQ Limited Nonresidential category. This NFA report demonstrates that the environmental conditions, which exist at the GLTC Land facility, are consistent with the criteria required for meeting a Limited Nonresidential categorical closure.

There are no official easement holders on the restricted portion of the property. However, the City of Flint does have sewers that cross the property, and notification of the Restrictive Covenant that goes with this NFA report will be sent to the City of Flint following filing of the Restrictive Covenant.

¹ This data is from privileged and confidential reports - Goldberg-Zoino & Associates, Inc. Environmental Site Assessment Report dated April 1988 and Environmental Site Assessment - Additional Studies dated January 1989. Use of this data is not intended to nor shall be construed as a waiver of the privilege for these documents.

2 SITE SPECIFICS

2.1 SITE DESCRIPTION

The GLTC Land facility is located at the northwest corner of the intersection of South Saginaw Street and Atherton Road in Flint, Michigan. The GLTC Land facility is located within Section 19 of Township 7 North, Range 7 East. A Site Location Map is included as Figure 1. A figure depicting the Site Layout is included as Figure 2. The GLTC Land facility is approximately 11.5 acres in size and currently remains vacant. The GLTC Land facility is bounded to the north by the Chesapeake and Ohio Railroad tracks, on the east by an abandoned section of the former railroad tracks and South Saginaw Street, on the west by nonresidential and undeveloped property, and on the south by Atherton Road.

2.2 BACKGROUND

According to previous reports, the GLTC Land facility was formerly used to store stamping dies from the former Fisher Body Plant (now GLTC), and was also used for employee parking. A 1923 topographic map of the GLTC Land facility indicates a ravine was formerly present on the northern and central portion of the GLTC Land facility. As a result, a portion of the GLTC Land facility was previously filled (up to approximately 16 feet) to bring this area up to present grade (Figures 3 and 4). Based on interviews with GM personnel, who previously worked at the facility, this fill may have included waste materials from the former industrial processes previously performed at the manufacturing facility. GM personnel also indicated the filling of the ravine most likely occurred prior to the 1950's.

An Environmental Site Assessment (Phase I and II) was performed at the GLTC, including the GLTC Land facility by GZA from September through November 1987. The assessment was performed in two phases. Phase I included a vadose zone monitoring program, and a deep soil boring and monitoring well installation program. Based on the results of the Phase I Assessment, additional Phase II activities consisting of additional vadose zone monitoring, and soil boring/monitoring well installations were performed. The analytical results of the Phase I and II investigations are described in section 2.2.1.4.

An additional Environmental Site Assessment (Phase III and IV) was performed by GZA at the GLTC Land facility to further assess the following conditions observed as a result of the Phase I and II assessment:

- Assess the approximate thickness of fill material
- Assess the impact of metals present in the fill material
- Assess the impact of volatile organic compounds (VOCs) in the fill material
- Gather additional groundwater data on perimeter wells.

The analytical results of the Phase III and IV investigations are described in section 2.2.1.7.

A groundwater monitoring program was performed from April 1995 through March 2004 at the GLTC Land facility. Under this program, groundwater sampling included analyses of VOCs and dissolved barium, dissolved lead, and dissolved zinc on a quarterly basis. In addition to these parameters, dissolved arsenic, dissolved cadmium, dissolved copper, dissolved chromium, dissolved mercury, dissolved selenium, and dissolved silver were analyzed on an annual basis. Historical results indicate occasional detections of VOCs and dissolved metals above MDEQ Generic Nonresidential Drinking Water (NRDW) criteria.

A site investigation (SI) was conducted by O'Brien & Gere in 2005. The site investigation was intended to:

- Delineate the horizontal and vertical extent of soil and groundwater impacts at the site including the onsite storm water retention basin, the possible pathway of onsite sewers (Figure 5), and offsite areas identified in the 1991 geophysical investigation

- Install additional monitoring wells to provide groundwater flow diagrams (*i.e.*, contour maps) showing groundwater monitoring points are downgradient of fill areas (Figures 6 and 7).

The quarterly groundwater monitoring program was discontinued when the SI began; however, groundwater and soil samples were collected and analyzed during the SI for VOCs and metals. Groundwater contour maps for May 12, 2005 and November 22, 2005 of the GLTC Land facility site were also prepared (Figures 6 and 7, respectively).

Additional SI activities were conducted by O'Brien & Gere in December 2006. The site investigation was intended to:

- Delineate the perimeter by installing borings outside the fenced area near the perimeter of the site to evaluate for potential barium and lead impacts with the fill material
- Nine soil borings (OBG-228A through OBG-228I) to depths of up to 20 fbg were also installed adjacent to boring OBG-228 (Figure 2). The OBG-228 area borings were installed to delineate the extent of benzene, ethylbenzene, toluene, o-xylenes, and p,m-xylenes (BETX) source material impacts as defined by the generic soil saturation concentration (*i.e.*, Csat). Samples were also collected beneath the impacted zones to delineate the vertical extent of impact in this area.

Delineation borings were conducted by O'Brien & Gere in July 2007. The additional delineation investigation was intended to further delineate the extent of arsenic and lead impacts at the site to evaluation the feasibility of remediating these impacts.

2.2.1 Field Investigation Data

The following sections summarize the Environmental Site Assessments performed by GZA at the GLTC Land facility.

2.2.1.1 Phase I and II Environmental Site Assessment

GM contracted GZA to perform an Environmental Site Assessment to identify potential areas of environmental concern. The following sections summarize these investigations and results.

2.2.1.2 Phase I and II Vadose Zone Sampling

Prior to implementing the Phase I soil boring and monitoring well installation program, GZA performed a vadose zone sampling program at the GLTC Land facility. As part of the program, shallow soil borings were installed at locations on a grid system with samples screened for the presence of volatile organic vapors using a photoionization detector (PID) and/or a flame ionization detector (FID). GZA used the presence of volatile vapors as a general indicator of the presence of subsurface VOCs. Approximately 10 percent of the vadose zone samples were submitted to an analytical laboratory for analysis of VOCs. Vadose zone monitoring was performed on locations (V-163 through V-172) as shown on Figure 2. Soil samples were collected to a depth of 6 feet below grade (fbg). Results of the vadose monitoring program indicated elevated levels of volatile organic vapors in eight of the ten samples screened. The vadose zone sampling points that exhibited elevated concentrations of organic vapors were V-165 through V-172, which were generally on the north side of the GLTC Land facility.

Of the vadose zone samples indicating the presence of volatile organic vapors, two soil samples exhibiting the highest screened levels were submitted for laboratory analysis (V-165/S-3 and V-169/S-2, see Table 1). The results indicated the majority of the compounds detected in sample V-165/S-3 were tentatively identified compounds (TICs) such as tri- and tetraethylbenzene isomers, which are not typically reported by laboratories. The compounds detected in V-169/S-2 were alkanes and hydrocarbon TICs.

2.2.1.3 Phase I and II Field Investigation

Based on the vadose zone screening, analytical sample results, and site history provided by GM employees, soil borings, and monitoring wells were installed by GZA in select locations at the GLTC Land facility. Soil and groundwater samples were screened for volatile vapors using the PID and FID. Subsurface soil samples where screening indicated the presence of VOCs were submitted to an analytical laboratory for VOC analysis.

A soil boring (S-26) was installed adjacent to vadose zone screening location V-165 and monitoring well MW-7 was installed adjacent to location V-169. A groundwater sample was also collected from the borehole of S-26. Additional soil borings were installed in the GLTC Land facility as part of the Phase II activities. The soil borings (S-30 through S-32) were installed within the former ravine area as shown on Figures 3 and 4. Fill materials were identified in two (S-31 and S-32) of the three soil borings installed.

In addition to the soil borings, GZA installed four perimeter wells (MW-10 through MW-13) at the GLTC Land facility. The monitoring wells were installed to assess potential VOCs and metals impact to groundwater.

2.2.1.4 Phase I and II Results

Soil analytical results from Phase I and II soil borings (S-26, S-31, S-32, V-165 and V-169, Figure 2) and monitoring well MW-7 (Figure 2) indicated elevated concentrations of VOCs in the soil samples from S-26 and MW-7 and non-detectable concentrations in the remaining borings (Table 1). The majorities of the VOCs, consisting of aromatic and chlorinated compounds, were present in the near surface soil samples and generally decreased with depth. Methylene chloride at MW-7 was the only VOCs detected above the current NRDW protection criteria. Metals analytical results from the Phase I and II investigation indicated concentrations were below the current NRDW protection criteria (Table 2), with the exception of arsenic and lead.

Although arsenic was not considered elevated in the original Phase I and II report due to changes in the MDEQ cleanup criteria for arsenic since the original report was prepared, arsenic levels in the Phase I and II soil borings are now considered above the current NRDW protection criteria. Seven of the fifteen soil samples collected for arsenic during the Phase I and II ESA were equal to or below the current Michigan state-wide background criteria. The highest concentrations of arsenic were detected in the soil samples from the boring for monitoring well MW-7. Lead was detected above the NRDW protection criteria and direct contact at S-31 (Table 2).

Groundwater analytical results from MW-7 indicated a single chlorinated hydrocarbon (trans-1,2-dichloroethene at a concentration of 0.074 mg/L) was the only VOC detected in the monitoring wells at the site (*i.e.*, MW-7 and MW-10 through MW-13) during the Phase I and II assessments (*i.e.*, in 1987). Groundwater analytical results for the sample collected during the drilling of S-26 indicated concentrations of VOCs were below analytical method detection limits. The detections of dissolved metals were below their respective (current) NRDW criteria, including arsenic (even at MW-7).

The Phase I and II investigation results indicate the soil and groundwater at the GLTC Land facility has been impacted to varying degrees. The impact appeared to be highest in the surface and near surface fill material present in the GLTC Land facility. The elevated PID levels and metals concentrations detected during the investigations correspond fairly well to the location of the former ravine. Based on the data from these investigations, the source of the VOCs and metals impact detected may be associated with the fill materials.

2.2.1.5 Phase III and IV Investigation

The Phase III and IV investigation at the GLTC Land facility was performed to assess the following conditions:

- The approximate thickness of the fill material
- The impact of metals present in the fill material
- The impact of VOCs in the fill material
- Gather additional groundwater data from the perimeter monitoring wells.

2.2.1.6 Phase III and IV Field Investigation

Twenty soil borings (SB-101 through SB-120) were installed at the GLTC Land facility as part of Phase III and IV investigations. The borings were placed at approximately 100 feet intervals in the western portion of the northern GLTC Land facility to assess the presence of subsurface fill material. The soil samples collected were collected at five feet intervals and were analyzed for VOCs and select total metals (barium, copper, lead,

selenium, and zinc). Soil samples with concentrations exceeding ten times the E.P. Toxicity (40 CFR Part 261.24) hazardous waste criteria were also submitted for E.P. Toxicity analysis.

Additional soil borings were installed to further assess the extent of VOCs and metal impacts during the Phase IV ESA. GZA also collected PCB soil samples from eight of the soil borings, and collected groundwater samples from the four perimeter monitoring wells (MW-7 and MW-10 through MW-13, Figure 2) for VOC analysis.

Results of the above-mentioned investigations are discussed in the following section.

2.2.1.7 Phase III and IV Results

Based upon the visual classification of the soil samples collected from the GLTC Land facility, it appears the depth of the fill is irregularly distributed across the area and is relatively consistent with the location of the reported former ravine. Fill depths exceed more than ten feet in some locations and average approximately six feet (Figures 3 and 4).

GZA observed a white material, which may be calcium hydroxide, a by-product of acetylene manufacturing, in several borings. Soil analytical results indicated low detection of aromatic hydrocarbons and higher concentrations of chlorinated hydrocarbons (Table 1). Elevated VOC concentrations were observed in some of the soil samples collected during the Phase III & IV, in particular in SB-108 located in the north-central portion of the site.

Metals concentrations exceeded the NRDW protection criteria for barium at one location (SB-107) and lead at four locations (SB-103, SB-107, SB-108 and SB-120) (Table 2). However, none of the samples exhibited concentrations in excess of their respective hazardous waste criteria. Lead results were also above the direct contact criterion. PCBs were not detected in the soil samples.

Groundwater analytical results from the four perimeter monitoring wells indicated the presence of dichloroethene at 33 µg/L in MW-7 and acetone at 15 µg/L in MW-7 and 24 µg/L in MW-13, which are below their respective NRDW criteria.

2.3 SITE INVESTIGATION

A site investigation was conducted in response to the MDEQ comments to the draft Remedial Action Plan (RAP) for Limited Nonresidential closure of the GLTC Land facility submitted to the MDEQ in November 2002. The following activities were conducted as part of the site investigation. The results of the site investigations are summarized in Section 2.7.

2.3.1 Utility Survey and Clearance

An underground utility survey of the GLTC Land facility was performed prior to performing the investigation to assist in placing sample locations, determine the potential discharge of the former die storage pad and locate potential migration pathways (Figure 5).

2.3.2 Retention Basin Deactivation and Assessment

The oil/water storage tank, related piping, and oil skimmer equipment, and the concrete containment was removed and recycled. Broken concrete was removed, crushed and brought back to the site for use as clean backfill to fill the tank area excavation caused by the removal of the tank and associated concrete saddle and containment system. Following removal of the oil/water storage tank and related piping/equipment, the oil/water mixture was pumped out of the retention basin and disposed of at the EQ Detroit facility. Heavier sediments, which filled in part of the oil/water separator pit within the retention basin, were removed with a backhoe and were loaded into roll-off containers and disposed of as solids at the EQ Detroit facility. The basin was then steam-cleaned using a citrus-based cleaner, which was subsequently pumped out and disposed of along with the oil/water mixture. A hand auger boring (HA-1) was conducted beneath the floor of the retention basin and soil samples were collected from 0 to 1 foot and 4 to 5 feet beneath the floor of the retention basin and were analyzed for VOCs, poly-nuclear aromatic hydrocarbons (PNAs) and metals.

The potential for a release from the retention basin was also assessed by installing four soil borings (OBG-208, OBG-214, OBG-215 and OBG-225), and four monitoring wells (OBG-MW-16, OBG-MW-17, OBG-MW-21 and OBG-MW-22, Figure 2). Details are provided in the Site Investigation Report (O'Brien & Gere, May 2006). The analytical results for soil and groundwater samples collected beneath and surrounding the retention basin indicated no exceedances of the nonresidential criteria, except for lead in OBG-MW-22, which is upgradient of the retention basin.

2.3.3 Subsurface Soil Sampling

O'Brien & Gere installed 40 soil borings (OBG-200 through OBG-231) and (OBG-228A through OBG-228I) to depths of up to 20 fbg to evaluate potential subsurface impacts near the on-site retention basin, former die storage pad and off-site fill areas. Soil borings OBG-228A through OBG-228I were installed adjacent to OBG-228 to better delineate the surrounding area. Numerous borings were previously advanced on the property as discussed in Site Investigation Report (O'Brien & Gere, May 2006). This previous data coupled with the MDEQ March 24, 2003 comments on the November 2002 RAP aided in boring placement.

Soil borings were installed in accordance with the SI work plan. Soil borings were installed using a 4.25-inch inside diameter hollow stem auger and samples were collected using 5-foot long macro-core samplers. The soil was removed from the borehole and the upper and lower ends of the sample core were discarded (+/- 3 inches). The sample core was then screened using a PID to monitor for the presence of VOCs. One soil sample from each soil boring was collected and submitted to the laboratory for chemical analysis based on the results of field screening, which included PID readings, and visual and olfactory observations. The interval located just above the water table was submitted for analysis if the field screening results did not indicate the presence of impacts. The soil was then removed from the sampler, placed directly into a clean, pre-labeled, 8-ounce sample jars for analysis. VOC sub-samples were not homogenized and were taken using syringe type coring devices and immediately transferred into pre-weighed VOCs vials containing reagent grade methanol sufficient to obtain an estimated ratio of 1:1 in accordance with MDEQ Operational Memo # 2 and U.S. EPA Method 5035. The soil samples were submitted to the analytical laboratory for VOCs, lead and barium analysis using appropriate chain of custody and QA/QC procedures.

2.3.4 Groundwater Monitoring Well Installation and Development

O'Brien & Gere installed nine groundwater monitoring wells (OBG-MW-14 through OBG-MW-22) to a maximum depth of 20.5 fbg to assess potential impact to groundwater and evaluate site-specific groundwater conditions (Figure 2). Soil samples were collected and analyzed in accordance with the above mentioned subsurface soil sampling procedures. These overburden monitoring wells were installed in accordance with the work plan. Each monitoring well was constructed of flush-threaded PVC well material with a ten foot long #10 slot well screen with a threaded cap on the bottom. Ten-foot long well screens were utilized to help screen the water table at the site. The filter pack was placed in increments to minimize bridging. The filter pack extended a minimum of two feet above the top of the screen. A bentonite pellet/chip seal was placed over the filter pack to a minimum thickness of two feet. A Portland cement annular space seal was installed from the top of the bentonite seal to the ground surface. The wells were completed with stick-up well protectors with the exception of OBG-MW-22, which was finished with a flush-mounted protector, because it was installed in a potentially high traffic area. Analytical results are presented in the Site Investigation Report and summarized in Section 2.7.

Newly installed monitoring wells and two existing SVE wells (SVE-1 and SVE-2, SVE-3 was dry) intersecting the groundwater table were developed to remove fine-grained materials and enhance the connection with the aquifer. Details are presented in the Site Investigation Report.

Soil boring logs for monitoring wells MWs 10 and 11 were constructed from geologic cross sections and monitoring well details provided by GZA (Appendix C). Soil boring logs for monitoring wells MWs 12 and 13, and well abandonment information for MWs 10, 11 and 13, are not available. Therefore, as part of the additional SI activities monitoring well MW-13, which appeared to have been previously abandoned by filling with bentonite, was overdrilled and abandoned with hydrated coarse granular bentonite and capped with cement as reported in a letter report to the MDEQ dated March 13, 2007 (O'Brien & Gere, 2007). In addition, a 20 foot by 30 foot excavation was conducted in the area where MW-11 was located, but the well was not located. It is

presumed that MW-10 and MW-11 were abandoned by filling with bentonite based on the observations at MW-13.

2.3.5 Groundwater Sampling – Low Flow Purging

Groundwater samples were collected using the low flow/low stress sampling technique. A peristaltic pump was utilized to purge the monitoring well using low flow/low stress techniques at 100 to a maximum of 500 milliliters per minute (mL/min). Groundwater samples were analyzed for VOCs, dissolved lead and dissolved barium. Analytical results are presented in the Site Investigation Report and summarized in Section 2.7.

2.3.6 Investigation – Derived Wastes

Investigation-derived waste (IDW) consisted of soil cuttings from soil boring and monitoring well installation; groundwater from well development, purging, and sampling activities; personal protective equipment (*i.e.*, spent gloves; PPE); decontamination water/fluids, and disposable sampling equipment. Soil cuttings, groundwater and decontamination water were containerized, characterized, and disposed of by EQ at the Detroit facility. PPE and disposable sampling equipment was disposed as municipal trash.

2.4 DELINEATION BORINGS

O'Brien & Gere installed 36 soil borings to depths of up to 20 fbg to further evaluate potential subsurface impacts near eight impacted sample locations identified during previous investigations, including: MW-7, S-26, S-31, S-32, SB-103, SB-110, SB-120 and OBG-219A. To delineate the eight boring locations, borings were placed twenty feet northeast, northwest, southeast, and southwest of the original boring locations. During the delineation investigation, the samples collected were named according to the previous investigation sample name followed by the direction from the original sample and depth at which it was collected for locations with a single sample (*i.e.*, depth) interval (example: S-31 NW-10 is the delineation sample approximately 20 ft northwest and 10 fbg of the original sample location S-31). At four locations (MW-7, S-31, S-32 and SB-103) the vertical impacts needed to be evaluated at the original sample point. The samples pertaining to these four locations were distinguished with the letter A, and the depth following the name (example: S-31 A-5) for locations with a single sample interval. The depth of the delineation borings at each location was based on the depth of impacts at the original location.

- MW-7: Soil boring samples were collected at depths of 3 to 5 ft, 8 to 10 ft, 13 to 15 ft, and 17 to 18 ft near the original location
- S-26: Soil boring samples were collected at a depth of 5 to 7 ft
- S-31: Soil boring samples were collected at a depth of 1 to 2 ft
- S-32: Soil boring samples were collected at a depth of 8 to 10 ft and 10 to 12 ft at the original sample location
- SB-103: Soil boring samples were collected at a depth of 8 to 10 ft and 10 to 12 ft at the original sample location
- SB-110: Soil boring samples were collected at a depth of 3 to 5 ft
- SB-120: Soil boring samples were collected at a depth of 1 to 3 ft
- OBG-219: Soil boring samples were collected at a depth of 1 to 2 ft.

Soil borings were installed in accordance with the Work Plan procedures, as discussed previously. Field data was recorded in a field book and soil boring logs during soil boring installation. Appendix C contains the soil boring logs for the delineation investigation borings. The soil borings were installed utilizing Geoprobe® drilling techniques. Soil borings were installed using 5-foot long Geoprobe® macro-core samplers.

Macro-core samplers were cleaned, attached to the drill rods, and lowered into the borehole. After the sampler was lowered to the bottom of the borehole, it was advanced utilizing direct push techniques using the hydraulic hammer as necessary to the terminus of the sample interval. The sampler was removed from the borehole, detached from the drill rods, and opened. The sample length was measured and recorded and the upper and lower ends of the sample core were discarded.

The soil was then removed from the sampler, placed directly into a clean, pre-labeled, 8-ounce sample jar for analysis. Samples were placed in a cooler with ice after collection and hand delivered to the laboratory via the laboratory's courier service.

The soil samples were submitted to the analytical laboratory for either arsenic or fine and coarse fractions of lead analysis using appropriate chain of custody and standard QA/QC procedures. A standard analytical data package was prepared by the laboratory for the soil samples analyzed. Appendix D contains the laboratory analytical reports for the delineation boring investigation.

2.5 NATURE AND EXTENT OF WASTE FILL MATERIAL

The area of fill material has been assessed within the GLTC Land facility, based on the subsurface soil investigations. The fill material depth seems to be distributed irregularly across the GLTC Land facility and is relatively consistent with the reported former location of a ravine (Figures 3 and 4). Fill material depths exceed more than 10 feet in some locations primarily along the northern boundary and average approximately six feet across the GLTC Land facility (Figure 3). Based on the fill material depths observed during the Phase I through IV investigations, GZA approximated the volume of fill material at the GLTC Land facility to be 50,000 cubic yards (Figure 3).

O'Brien & Gere assessed the nature and extent of fill material on the GLTC Land facility site based on aerial photographs, topographic maps, GZA reports including the geophysical survey and previous site information. The fill material at the site, when present, is generally characterized by an asphalt, concrete, or gravel pavement layer, underlain by a sandy fill layer. The asphalt layer typically is about 2 to 3 inches thick, where as the concrete layer is about 8 to 10 inches thick and the gravel layer can be up to about two feet thick. The fill materials that underlie the surface pavement material generally consisted of fill sand and a layer of black cinders or slag like material. The fill layer varied from about one foot thick to up to six feet thick at OBG-225 in the recent soil borings (when observed), but was purported to be up to about 16 feet thick within the site area (Figure 3). Fill material appears to extend to the western property line in the areas of OBG-14 through OBG-17 and OBG-219 through OBG-221; however, the fill material is less than three feet thick in these areas. Furthermore, OBG-203 had about two feet of slag like fill material, which indicates the fill observed at SB-117 and SB-118 may extend toward OBG-203 from the northeast. Therefore, most of the site is covered with some thickness of fill material. The location of the deepest fill is in the north-central portion of the site as illustrated in Figure 3. Based on the current subsurface information, an updated fill material thickness map is illustrated in Figure 3. Figure 4 provides the approximate base of fill contour map and also illustrates the approximate topography illustrated in the 1922 and 1969 USGS topographic maps, which generally agrees with the more recent topographic maps.

2.6 GEOLOGY AND HYDROGEOLOGY

The site geology is generally characterized by an asphalt, concrete or gravel pavement surface, underlain by interbedded silt and clay with sand seams or fill materials. A glacial till was observed to underlie the lacustrine silt and clay layers at 13 of 25 locations during the SI. The asphalt layer typically is approximately three inches thick, where as the concrete layer is approximately eight to ten inches thick and the gravel layer can be up to approximately two feet thick. The fill materials that underlie the surface pavement material generally consisted of fill sand and a layer of black cinders or slag-like material. The fill layer varied from approximately one foot thick to up to six feet thick at OBG-225 in the SI soil borings (when observed), but was purported to be up to about sixteen feet thick within the site area (Figure 3).

The groundwater contour maps (Figures 6 and 7) indicate that groundwater is generally flowing from the edges of the site toward the center of the site in the area where thicker fill material and a ravine once existed running south to north. The funneling of the groundwater toward the ravine seems to indicate the topographic/geologic structure may partially be controlling the groundwater flow pattern at the site; however, groundwater flow may also be partially following the utility (*i.e.*, sewer) corridor observed in the central portion of the site (Figure 5).

2.7 IDENTIFICATION OF SUBSTANCES OF POTENTIAL CONCERN (SOPCS)

The SOPCs in soil are defined as substances for which the detected concentrations exceed the MDEQ Generic NRDW Protection criteria (NRDWP) in Operational Memorandum #1, (March 25, 2011). The SOPCs in groundwater are defined as those substances, which consistently exceed the MDEQ NRDW criteria as listed in the above referenced MDEQ Operational Memorandum. Although MDEQ criteria were used as the basis for identifying the nature and extent of detected substances, it must be recognized that exceedance of this criteria does not necessarily represent a threat to human health or the environment.

The following sections describe SOPCs identified in soil and groundwater.

2.7.1 SOPCs in Subsurface

SOPCs identified in the soil and fill material at the GLTC Land facility include benzene, 1,3 dichlorobenzene, ethylbenzene, methylene chloride, toluene, xylenes, arsenic, barium, and lead (Tables 1, 2, 5, 5a and 5b). These SOPCs were detected in the following locations with the maximum concentrations noted:

Table 2-1. SOPCs in Subsurface Material

SOPCs	Location	Concentration	NRDWP
Benzene	OBG-226	360 µg/kg	100 µg/kg
	OBG-227	280 µg/kg	100 µg/kg
	OBG-228	3,000 µg/kg	100 µg/kg
	OBG-228D	3,800 µg/kg	100 µg/kg
	OBG-228G	500 µg/kg	100 µg/kg
	OBG-229	600 µg/kg	100 µg/kg
1,3-dichlorobenzene	SB-108	1,200 µg/kg	480 µg/kg
ethylbenzene	OBG-226	4,970 µg/kg	1,500 µg/kg
	OBG-227	1,910 µg/kg	1,500 µg/kg
	OBG-228	113,000 µg/kg	1,500 µg/kg
	OBG-228D	56,300 µg/kg	1,500 µg/kg
	OBG-228G	1,700 µg/kg	1,500 µg/kg
methylene chloride	MW-7	220 µg/kg	100 µg/kg
toluene	OBG-228	3,020,000 µg/kg	16,000 µg/kg
	OBG-228D	1,900,000 µg/kg	16,000 µg/kg
o-xylenes	OBG-228	125,000 µg/kg	5,600 µg/kg
	OBG-228D	69,500 µg/kg	5,600 µg/kg
p,m-xylenes	OBG-226	19,500 µg/kg	5,600 µg/kg
	OBG-227	10,900 µg/kg	5,600 µg/kg
	OBG-228	366,000 µg/kg	5,600 µg/kg
	OBG-228D	193,000 µg/kg	5,600 µg/kg
	OBG-228G	100,000 µg/kg	5,600 µg/kg
	OBG-229	46,900 µg/kg	5,600 µg/kg

Table 2-1. SOPCs in Subsurface Material

arsenic	MW-7	18 mg/kg	4.6 mg/kg
	MW-7NE	7.3 mg/kg	4.6 mg/kg
	S-26	18 mg/kg	4.6 mg/kg
	S-30	8.9 mg/kg	4.6 mg/kg
	S-31	6.5 mg/kg	4.6 mg/Kg
	S-32	5.5 mg/kg	4.6 mg/kg
barium	SB-107	2,800 mg/kg	1,300 mg/kg
lead	S-31	95,800 mg/kg	700 mg/kg
	S-31NE	10,600 mg/kg	700 mg/kg
	S-31NW	10,200 mg/kg	700 mg/kg
	S-31SW	1,770 mg/kg	700 mg/kg
	S-32A	1,840 mg/kg	700 mg/kg
	S-32NE	25,100 mg/kg	700 mg/kg
	S-32NW	6,220 mg/kg	700 mg/kg
	S-32SE (Dup)	5,180 mg/kg	700 mg/kg
	S-32SW	3,510 mg/kg	700 mg/kg
	OBG-227	2,120 mg/kg	700 mg/kg
	SB-103	12,500 mg/kg	700 mg/kg
	SB-103A	839 mg/kg	700 mg/kg
	SB-103SW(Dup)	5,270 mg/kg	700 mg/kg
	SB-107	4,990 mg/kg	700 mg/kg
	SB-108	1,220 mg/kg	700 mg/kg
	SB-110NE	132,000 mg/kg	700 mg/kg
	SB-110NW	10,300 mg/kg	700 mg/kg
	SB-110SE	29,400 mg/kg	700 mg/kg
	SB-110SW	74,800 mg/kg	700 mg/kg
	SB-120	2,050 mg/kg	700 mg/kg
	SB-120NE	8,250 mg/kg	700 mg/kg
	SB-120SE	4,390 mg/kg	700 mg/kg

§ NRDWP denotes MDEQ Generic Nonresidential Drinking Water Protection criteria.

Naphthalene and 1,2,4-trimethylbenzene were also detected in the soil sample from OBG-209 from 5 to 7 fbg; however, no VOCs outside the fenced property exceeded their respective MDEQ criterion.

Barium and lead were detected in the SI soil samples at concentrations below their respective MDEQ nonresidential cleanup criteria with the exception of barium and lead (fine-grained faction) in OBG-227 (Table 5). However, lead was detected above the generic nonresidential direct contact cleanup criteria in OBG-219, which is located outside of the security fence for the site; therefore, this area was further investigated during the delineation boring investigation and was defined to an area of about 20 feet by 20 feet to a depth of about 2 fbg.

Seventeen of 31 of the delineation boring soil samples analyzed for lead detected lead at concentrations above the MDEQ nonresidential direct contact cleanup criteria within the security fence portion of the site. The area west of SB-120, which is outside of the security fence, was determined to be below the nonresidential cleanup criteria.

Arsenic was detected above the MDEQ NRDWP criteria in the samples collected during the Phase I and II investigations. Arsenic was not previously considered elevated in the original Phase I and II report based on MDEQ the criterion at that time. However, the MDEQ criterion has become more stringent for arsenic. Seven of the fifteen soil samples collected for arsenic during the Phase I and II ESA were equal to or below the current Michigan state-wide background criteria. The highest concentrations of arsenic were detected in the soil samples from the soil boring for monitoring well MW-7; however, arsenic was not detected above the NRDW criteria in MW-7 in the annual samples (Table 3a). Therefore, historical arsenic results in soil have shown over time not to leach into groundwater at concentrations above the NRDW criteria and are not considered a concern at the site. The Site Investigation Report contains additional details regarding this issue. Furthermore, the delineation boring investigation conducted in the MW-7 and S-26 areas indicated that arsenic was detected at concentrations below the MDEQ cleanup criteria.

2.7.2 SOPCs in Groundwater

SOPCs were not initially identified in the groundwater sampled from the wells at the GLTC Land facility; however, a groundwater monitoring program was performed from April 1995 through March 2004 (Table 3). Under this program groundwater sampling included analyses of VOCs and dissolved barium, dissolved lead, and dissolved zinc on a quarterly basis and in addition to these parameters dissolved arsenic, dissolved cadmium, dissolved copper, dissolved chromium, dissolved mercury, dissolved selenium, and dissolved silver on an annual basis. VOCs and dissolved metals have been detected above the MDEQ NRDW criteria since monitoring was implemented; however, VOCs have not been detected above these criteria consistently. VOCs have not been detected above their respective NRDW criteria since at least 2000 for monitoring well MW-12. Trimethylbenzenes and vinyl chloride were the only VOCs detected above their respective NRDW criteria in MW-7 and have been detected sporadically. A summary of the quarterly and annual groundwater analytical results compared to NRDW criteria is included in (Tables 3, 3a and 4). Arsenic, which was monitored annually, has never been detected above its NRDW criteria, not even in MW-7, which exhibited the highest arsenic results in soil samples.

Thirteen groundwater samples were collected during the site investigation to characterize the groundwater at the GLTC Land facility. Three of the thirteen monitoring wells (MW-7, SVE-1 and SVE-2) sampled contained VOCs in groundwater above the NRDW. The remaining wells either contained no detectable concentrations of VOCs or very low concentrations that were below the NRDW criteria. MW-7 contained 1,2,4-trimethylbenzene at a concentration of 160 µg/L, which exceeds the NRDW criterion of 63 µg/L. Several other VOCs were detected in MW-7 but they were below the NRDW criteria.

SVE-1 contained five VOCs in groundwater that exceeded their respective criteria including benzene, ethylbenzene, toluene, xylenes, and 4-methyl-2-pentanone (MIBK) as illustrated in (Table 6). SVE-2 contained three VOCs in groundwater that exceeded their respective criteria, including benzene, 1,2,4 trimethylbenze and xylenes (Table 6).

Barium was detected in the groundwater samples (Table 6) at concentrations ranging from 0.024 mg/L at OBG-MW-14 to 3.14 mg/L at SVE-2 with a mean concentration of 0.58mg/L. Barium exceeded its MDEQ NRDW criterion of 2 mg/L at monitoring well SVE-2. None of the remaining groundwater wells contained barium above the NRDW criterion.

Lead was only detected in groundwater at three sampling locations (SVE-1, SVE-2, and OBG-MW-22) at concentrations of 0.003 mg/L for SVE-1 and SVE-2, which is below the NRDW criterion of 0.004 mg/L, and 0.059 mg/L for OBG-MW-22, which is slightly above the NRDW criterion. Based on the groundwater analytical results, lead does not appear to be leaching significantly into groundwater at the site

SOPCs identified in the groundwater at the GLTC Land facility include benzene, ethylbenzene, 4-methyl-2-pentanone, toluene, 1,2,4-trimethylbenzene, xylenes, barium and lead. These SOPCs were detected in the following locations with the maximum concentrations noted:

Table 2-2. SOPCs in Groundwater (2005 data)			
SOPCs	Location	Concentration	NRDW
benzene	MW-7	40 µg/L	5 µg/L
	MW-12	16 µg/L	5 µg/L
	SVE-1	1,000 µg/L	5 µg/L
	SVE-2	267 µg/L	5 µg/L
ethylbenzene	SVE-1	2,000 µg/L	74 µg/L
4-methyl-2-pentanone	SVE-1	300,000 µg/L	5,200 µg/L
toluene	SVE-1	134,000 µg/L	790 µg/L
1,2,4-trimethylbenzene	MW-7	160 µg/L	63 µg/L
	SVE-2	120 µg/L	63 µg/L
o-xylenes	SVE-1	3,000 µg/L	280 µg/L
p,m-xylenes	SVE-1	6,000 µg/L	280 µg/L
	SVE-2	1,090 µg/L	280 µg/L
barium	MW-12	2,230 µg/L	2,000 µg/L
	SVE-2	3.14 mg/L	2.0 mg/L
lead	MW-7	95 µg/L	4.0 µg/L
lead	MW-12	75 µg/L	4.0 µg/L
	OBG-MW-22	0.059 mg/L	0.004 mg/L

The groundwater results indicate the presence of a source area for VOCs near SVE-1 and SVE-2 in the north central portion of the site. Because of the unique groundwater flow pattern at the site, it appears impacted groundwater is unlikely to leave the site except possibly within a very narrow window at the northern end of the site that also acts as the pathway along which the utility lines extends from the GLTC Land facility. Monitoring results from OBG-MW-22 located in this area, and OBG-MW-16 located downgradient and next to the utility lines, indicates VOCs are not leaving the site in this area.

Furthermore, none of the monitoring wells along the perimeter of the GLTC Land facility contained constituents above their respective NRDW criteria indicating that groundwater impacts are contained within the GLTC Land facility property boundary and pose a minimal risk under a commercial or nonresidential closure scenario.

The site is a “facility” per Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20101, based on the above mentioned SOPCs identified for the site.

2.7.3 Statistical Analysis

Statistical methods were not used in identifying SOPCs for the site. SOPC concentrations were compared directly to the appropriate MDEQ Part 201 generic cleanup criteria without the aid of statistical analysis.

2.8. INTERIM REMEDIAL ACTION

O'Brien & Gere performed an Interim Remedial Action (IRA) at the GLTC Land facility in December 2010 to remove lead impacted soils, which were outside of the facility's perimeter fence in the OBG-219 soil boring area (Figure 2) and posed a direct contact risk, and volatile organic compound (VOC) impacted soils in the OBG-228 soil boring area that exceeded the generic Csat concentrations. The IRA activities were conducted in accordance with the procedures described in the IRA Work Plan (O'Brien & Gere, 2010). The IRA scope of work (SOW) included the saw cutting, removal and breaking up of existing concrete pavement in the OBG-228 area, excavation of impacted and unimpacted soils, staging of unimpacted (*e.g.*, below Csat criteria soils in the OBG-228 area), haul truck loading, transportation and disposal activities; and subsequent backfilling of the excavations created by the IRA activities. The IRA activities and findings are presented in the IRA Technical Memorandum included in Appendix B, which also documents the soil SVR monitoring that was implemented during the IRA activities.

3 EXPOSURE PATHWAY EVALUATION

The SOPCs identified in soil and groundwater are benzene, 1,3-Dichlorobenzene, ethylbenzene, methylene chloride, and 1,2,4-trimethylbenzene, 4-methyl-2-pentanone, toluene, xylenes, arsenic, barium, and lead. These SOPCs were evaluated with regard to potential migration and exposure pathways. The following paragraphs discuss how protection against migration and exposure of SOPCs is attained for the GLTC Land facility.

3.1 GROUNDWATER RISK EVALUATION

Three of the thirteen monitoring wells (MW-7, SVE-1 and SVE-2) sampled contained VOCs in groundwater above the NRDW criteria (Table 3). The remaining wells either contained no detectable concentrations of VOCs or concentrations that were below the NRDW criteria. MW-7 contained 1,2,4-trimethylbenzene at a concentration of 160 µg/L, which exceeds the NRDW criterion of 63 µg/L. Several other VOCs were detected in MW-7; however, concentrations were below the NRDW criteria. Impact at monitoring well MW-7 is not likely migrating offsite based on groundwater flow and no detections or below criteria detections of VOCs at the other monitoring well at the site.

SVE-1 contained five VOCs in groundwater that exceeded their respective criteria including benzene, ethylbenzene, toluene, xylenes, and 4-methyl-2-pentanone. SVE-2 contained three VOCs in groundwater that exceeded their respective criteria including benzene, 1,2,4-trimethylbenzene and xylenes. However, these wells are located interior to the site, and were located within or downgradient of the former source area near boring location OBG-228, which was remediated in December 2010.

Barium was detected in the groundwater samples at concentrations ranging from 0.024 mg/L at OBG-MW-14 to 3.14 mg/L at SVE-2 with a mean concentration of 0.58mg/L. Barium exceeded its MDEQ NRDW criterion of 2 mg/L at monitoring well SVE-2. None of the remaining groundwater wells contained barium above the NRDW criterion.

Lead was only detected in groundwater at three sampling locations (SVE-1, SVE-2, and OBG-MW-22) at concentrations of 0.003 mg/L for SVE-1 and SVE-2, which is below the NRDW criterion of 0.004 mg/L, and 0.059 mg/L for OBG-MW-22, which is above the NRDW criterion. However, OBG-MW-16 located northwest of OBG-MW-22 along the utility corridor that could be acting as a migration pathway (see Figure 5) did not detect lead.

The spread of SOPCs from the impacted wells is restricted by the groundwater flow pattern that converges at the GLTC Land facility except for a limited area to the north-northwest part of the site where the groundwater flow leaves the GLTC Land facility; however, monitoring wells OBG-MW-16 and OBG-MW-22 located downgradient of the VOC source area identified in the SVE-1 and SVE-2 area did not detect migrating VOCs.

3.1.1 Groundwater Contamination Risks to Drinking Water Uses

There are no wellhead production zones in the vicinity of the site. Therefore, the prohibition of any extraction or usage of groundwater beneath the GLTC Land facility via resource use restrictions, and absence of a wellhead protection zone in the vicinity of the GLTC Land facility eliminates risks due to hazardous substances in groundwater that may result from the use of the groundwater for drinking.

3.1.2 Groundwater Contamination Risks from Dermal (utility work) Exposures

The prohibition of any extraction or usage of groundwater beneath the GLTC Land facility and the resource use restrictions on the central and northern portion of the GLTC Land facility limits the risk from dermal exposures to contaminated groundwater. The City of Flint owns sewer lines at the Property but maintenance of the utility lines does not pose a risk to the workers because the groundwater analytical results were below the MDEQ Part 201 generic nonresidential groundwater contact criteria. However, proper health and safety procedures are to be taken during excavation activities, and the soils must be managed in accordance with the requirements of Section 20120c of NREPA and other applicable state and federal laws.

3.1.3 Groundwater Contamination Risks for Indoor Air Hazards

There are no buildings at the GLTC Land facility. Furthermore, the groundwater analytical results were below the MDEQ Part 201 generic nonresidential groundwater volatilization to indoor air inhalation criteria should buildings be erected on the site in the future.

3.1.4 Groundwater Contamination Risks of Hazard to Surface Water Resources

Surface water does not exist on or adjacent to the GLTC Land facility and the nearest surface body of water is Thread Lake, which is approximately 1,500 feet cross gradient to the northeast of the GLTC Land facility (Figure 1). Furthermore, the storm sewer that traverses the site (Figure 5) is buried at depths above the groundwater table based on site information; therefore, the potential for groundwater migration to surface water does not exist at the GLTC Land facility.

3.2 SOIL AND SUBSURFACE MATERIALS RISK EVALUATION

SOPCs identified in the soil and fill material at the GLTC Land facility include: benzene, 1,3 Dichlorobenzene, ethylbenzene, methylene chloride, toluene, xylenes, arsenic, barium, and lead.

3.2.1 Soil Contamination Risks from Direct Contact Exposures

The restriction of use of the property within the security fenced portion of the site, and future imposed deed (*i.e.* resource use) restrictions, requiring maintenance of the fence at the site, eliminate the current and future potential for ingestion and direct dermal contact with the impacted soil thereby eliminating this exposure pathway. Furthermore, concrete, gravel and/or asphalt cover a majority of the site and provide additional protection for exposure to impacted soil. In addition, except for four locations (S-31, SB-107, SB-120 and OBG-227 [Figure 2] or areas around these locations) that exhibit shallow (< 3 feet deep) impacted soils above the direct contact criteria (and are covered with either concrete or asphalt), the remaining samples containing impacted soils above the direct contact criteria were located at depths of greater than 3 feet; further reducing the risk to exposure.

3.2.2 Soil Contamination Risks from Ambient Air Inhalation Exposures

The soil analytical results were below the MDEQ Part 201 criteria for nonresidential ambient air inhalation. The presence of concrete paving and/or clean gravel across the former source area of the GLTC Land facility (which was remediated during the IRA) limits the potential for the contaminants to become airborne and thus minimizing the air exposure pathway of the soil SOPCs in the subsurface volatilizing to ambient air. In addition, although the soil samples from two of the delineation borings near boring SB-110 exhibited lead concentrations greater than the ambient air particulate soil inhalation criteria, these samples were obtained from depths of greater than 3 feet, and do not pose a risk for inhalation.

3.2.3 Soil Contamination Risks from Indoor Air Inhalation Exposures

Volatilization to indoor air was only a concern for soil in the OBG-228 area in the northern and central portion of the site, which was remediated during the IRA implemented in December 2010 (Appendix B). Therefore, the entire site is suitable for construction of nonresidential/commercial buildings as long as proper health and safety procedures are taken during excavation activities, and the soils are managed in accordance with the requirements of Section 20120c of NREPA and other applicable state and federal laws.

3.2.4 Soil Contamination Risks of Injury to Drinking Water Uses of Groundwater

The leaching of SOPCs from soil to groundwater causing injury to drinking water uses is restricted by the groundwater flow pattern that converge at the GLTC Land facility, except for a narrow (<50 ft wide) window to the north-northwest part of the site where groundwater leaves the GLTC Land facility; however, monitoring wells OBG-MW-16 and OBG-MW-22 located downgradient of the VOC source area identified in the SVE-1 and SVE-2 area, as well as adjacent to and between the utility lines, respectively, did not detect migrating VOCs. Furthermore, OBG-MW-16 located northwest of OBG-MW-22 along the utility corridor that could be acting as a migration pathway (see Figure 5) did not detect lead.

3.2.5 Soil Contamination Risks for Groundwater to Pose Dermal Contact Hazard

Restriction of use of the property within the security fenced portion of the site, and future imposed resource use restrictions eliminate the current and future potential for ingestion and direct dermal contact with the impacted soil thereby eliminating this exposure pathway. Furthermore, concrete, gravel and/or asphalt cover a majority of the site and provide additional protection for exposure to impacted soil.

3.2.6 Soil Contamination Risks for Groundwater to Pose Hazard to Surface Water

Monitoring well OBG-MW-22 is located down gradient of the VOC source area identified in the SVE-1 and SVE-2 area and did not detect migrating VOCs. In addition, OBG-MW-16 located northwest of OBG-MW-22 along the utility corridor that could be acting as a migration pathway (see Figure 5) did not detect lead. Furthermore, fill materials (reworked soil and potential industrial wastes from plant activities) have existed in the subsurface before the 1950s under shallow water table conditions. No substances have been consistently detected in the groundwater at concentrations exceeding the Generic NRDW criteria along the perimeter of the site indicating that groundwater impacts are contained within the GLTC Land facility site. In addition, the storm sewer that traverses the site (Figure 5) is buried at depths above the groundwater table based on site information; therefore, the potential for soil to impact groundwater and then migrate to surface water does not exist at the GLTC Land facility. Therefore, there are no soil contamination risks for groundwater to pose hazard to surface water.

3.2.7 Risks of Contaminated Soils Runoff to Surface Waters

The presence of concrete, gravel and/or asphalt cover across the GLTC Land facility limits erosion and potential for the contaminated subsurface soil runoff to surface water. Furthermore, surface water does not exist on or adjacent to the GLTC Land facility and the nearest surface body of water is Thread Lake which is approximately 1,500 feet cross gradient to the northeast of the GLTC Land facility (Figure 1). Therefore, the potential for contaminated soils migration to surface water does not exist at the GLTC Land facility.

3.3 MIGRATION OF SUBSTANCES TO THE GREAT LAKES

The analytical results from quarterly groundwater monitoring performed from 1995 through 2004, and the 2005 samples collected outside the source area, indicate no exceedance of the MDEQ NRDW criteria in the samples. This implies the impacts are contained within the GLTC Land facility and are reasonably not likely to affect the Great Lakes. Therefore, there is no risk due to hazardous substances venting to surface water and migrating to the Great Lakes.

3.4 EXPOSURE PATHWAY SUMMARY

As the SOPCs may remain in the subsurface material at the GLTC Land facility, the potential for exposure to these SOPCs has been evaluated in the above sections. The presence of SOPCs above the MDEQ criteria itself is not indicative of a threat to human health or the environment.

The potential exposure pathways evaluated in the above sections concluded that acceptable conditions exist with restricting the use of the property within the security fenced portion of the site following implementation of resource use restrictions. Furthermore, concrete, gravel and/or asphalt cover a majority of the site and provide additional protection for exposure to impacted soil.

3.5 GROUNDWATER WAIVER

O'Brien & Gere installed nine additional groundwater monitoring wells to a maximum depth of 20.5 fbg to assess potential impact to groundwater and evaluate site-specific groundwater conditions. The groundwater contour maps indicate that the groundwater monitoring wells OBG-MW-22 and OBG-MW-16 are downgradient of the source areas. The remainder of the wells are upgradient or cross-gradient of the source areas due to the unique groundwater flow pattern at the site, which is unlikely to leave the site except possibly within a narrow (< 50 ft wide) window at the northern end of the site that is monitored by OBG-MW-16 and OBG-MW-22. Refer to Figure 6 groundwater contour map (May 12, 2005) and Figure 7 groundwater contour map (November 22, 2005) for an illustration of the unique groundwater flow pattern at the site.

The NFA report/postclosure plan to be implemented at the GLTC Land facility uses the criteria allowed for under section 20120a(1)(b) to (d) that relies on zoning/deed restriction of the entire facility; however, there are groundwater monitoring wells installed at the site and quarterly groundwater monitoring was conducted from 1995 to 2004 and additional groundwater monitoring was conducted in 2005. The groundwater results indicate no exceedance of the MDEQ Part 201 Criteria outside the GLTC Land facility. Therefore, a groundwater waiver is not required for this site.

4 NO FURTHER ACTION

The SOPCs identified in Section 2.7 of this NFA report were evaluated with regard to potential migration and exposure pathways at the GLTC Land facility. The following paragraphs discuss how protection against migration and exposure of SOPCs is attained at the GLTC Land facility.

4.1 SOIL REMEDIATION

The results from site investigations indicated that the source area (*i.e.*, Csat impacted area) surrounding boring OBG-228 was isolated to an area of approximately 60 ft by 70 ft in the peat material at depths of approximately 6 to 8 fbg. The source area surrounding OBG-228 was remediated in December 2010 during the implementation of the IRA at the site. An area of approximately 110 ft by 70 ft was remediated with approximately the first 6 ft of non-impacted soils (*i.e.*, those below the Csat concentrations) being removed, stockpiled and reused as fill following the excavation/removal of the Csat impacted soil from about 6 ft to up to 18 ft, which was sent to a Type II landfill for disposal. The area remediated expanded greater than anticipated to the southwest between the areas where previous samples were collected. The lead impacts observed at OBG-219A were also remediated in December 2010 to address the potential nonresidential direct contact exposure risks at this location. The soils were excavated to a depth of approximately 2 ft to 3 ft in an area 40 ft by 40 ft around OBG-219A. Further details concerning the IRA activities and findings are presented in the IRA Technical Memorandum included in Appendix B, which also documents the SVR monitoring that was implemented during the IRA activities.

4.2 PROPERTY ZONING

The GLTC Land facility property is zoned for heavy manufacturing. In accordance with Section 20120a(6) of Part 201, PA 451, a property for which a remedial action is proposed must have zoning that is consistent with the proposed categorical criteria. Appendix E provides documentation of the zoning of the GLTC Land facility Property and a zoning map for the area.

There will be no structure demolitions at the facility before or as part of the NFA because there are no buildings at the site. The security fence at the site will stay, and will be maintained.

4.3 FUTURE USE

The intended future use of the GLTC Land facility will remain non-residential. The GLTC Land facility is surrounded by a chain-link fence, with access from Atherton Road via a locked gate. The perimeter fence will be maintained to restrict access to the site.

4.4 ATTAINMENT OF CLOSURE CRITERIA

The Phase I through IV assessments by GZA, the quarterly groundwater monitoring performed from 1995 through 2004, and the analytical results of soil samples collected outside the source area indicate no consistent exceedance of the MDEQ nonresidential criteria in the samples. Additional groundwater sampling results from monitoring wells during the site investigation in 2005 indicate no exceedance of the MDEQ nonresidential criteria for groundwater outside the GLTC Land facility.

In accordance with Part 201, PA 451, to obtain closure of a site the SOPCs remaining in the soil must be protective considering migration and exposure pathways pertinent to the site. The potential migration and exposure pathways include: leaching of substances from soil to groundwater, migration of substances from soil to surface water, inhalation of substances, direct contact with substances, and ingestion of substances.

Based on the analysis of these migration and exposure pathways discussed in Section 3 of this report, the closure criteria for a limited nonresidential categorical closure are achieved at the GLTC Land facility. Additionally, the implementation of resource use restrictions on the GLTC Land facility supplemented with inspection and maintenance of the site security fence, which restricts public access to the site and provides added protection against exposures to the impacted media remaining in the subsurface. The resource use

restrictions (*i.e.*, restrictive covenant) for the property will have specific provisions for any future excavation activities, and will provide for reparation of the site fence.

4.5 DEED RESTRICTIONS

Land use restrictions will be implemented for the GLTC Land facility. In accordance with NREPA Section 20114c, the land use restrictions will be detailed in a restrictive covenant recorded by RACER and approved by the MDEQ that will include:

- i A requirement to inspect and maintain the perimeter security fence, as needed, unless capping of the areas outside of any buildings constructed at the facility is completed (in lieu of the existing perimeter fence) and is consistent with preventing direct contact with any remaining impacted soils
- i A requirement to provide notice to the MDEQ of the intent to convey property
- i Descriptions of applicable land use or resource criteria use restrictions, including:
 - » The prohibition of uncontrolled excavation or other activities which may potentially expose the subsurface soil
 - » The notification of the MDEQ prior to performing sampling and analysis of impacted materials in the event transportation and/or disposal is performed
 - » The prohibition of any extraction or usage of groundwater beneath the GLTC Land facility
 - » Restriction of usage of the property to nonresidential use

The deed restrictions will be implemented indefinitely. A draft of the deed restrictions will be submitted to the MDEQ for approval prior to recording with Genesee County register of deeds. A copy of a draft Notice of MDEQ-approved Environmental Remediation and Declaration of Restrictive Covenant form with required property boundary survey information is included in Appendix F for MDEQ review.

4.6 MONITORING

Monitoring activities are not necessary to maintain the integrity of the perimeter security fence as the deed restriction will control future site activities, and leaching to groundwater is not a significant concern. The groundwater results indicate the presence of a VOC source area near SVE-1 and SVE-2; however, this area has been remediated to remove the source materials, and due to the unique groundwater flow pattern at the site, it appears impacted groundwater is unlikely to leave the site except possibly within a very narrow (<50 ft wide) window at the northern end of the site and monitoring results from OBG-MW-22 and OBG-MW-16, which are located in this window, indicate that VOCs are not leaving the site in this area. Furthermore, OBG-MW-16 located northwest of OBG-MW-22 along the utility corridor that could be acting as a migration pathway did not detect lead.

4.6.1 Statistical Analysis

Statistical methods were not used. There is no long-term monitoring that requires statistical analysis.

4.6.2 Monitoring Well Abandonment Plan

Following the filing of the land use restriction (*i.e.*, restrictive covenant), the monitoring wells at the site will be abandoned in accordance with MDEQ requirements set forth in Ground Water Quality Control Act (Part 127 of Pubic Act 368 of 1978). Monitoring wells will be abandoned utilizing the following procedures:

- » The date
 - » The site name and location
 - » Names of person(s) conducting the abandonment activities
 - » Name of the company conducting the abandonment activities
 - » The well name/ID
 - » The original construction information
 - » The total depth of the well
 - » The type of plugging material used
 - » The volume of material used
 - » The method of placing the plugging material into the well
- i A completed well abandonment report shall be submitted to the MDEQ within 60 days of completion of the abandonment activities
- i The well casing shall be cut off approximately 24 inches below grade, except for wells completed in competent pavement (asphalt and/or concrete), where upon completion of well abandonment the well casing shall be cut to the pavement level (if not already below grade), and shall be filled with no less than 12 inches of cement to terminate the well plugging, and any flush mount casings shall be filled with concrete to flush with the ground surface/pavement
- i Monitoring wells shall be plugged in accordance with the R325.1663, Rule 163, Abandoned wells and dry holes; plugging method and R325.1664, abandonment of wells; plugging materials
- i Coarse grade bentonite, defined as crushed high swelling sodium bentonite with a minimum particle size of 1/4 inch in diameter as defined in R325.1601a(4), Rule 101a(4), definitions; B, shall be utilized to abandon (i.e., plug) the monitoring wells
- i The coarse grade bentonite shall be poured slowly into the top of the well to avoid bridging of material in the well casing. The coarse bentonite shall be placed into the well by pouring at an even rate not to exceed five (5) minutes per fifty (50) pounds of materials. Fine bentonite particles that accumulate in the bottom of the shipping container shall not be used. A water level or weighted drop string shall be placed in the well and the height of accumulated plugging material shall be measured after each 50 pounds of bentonite is placed in the well. If measurement indicates that bridging of plugging material has occurred, a work pipe, drill rods, or other weighted device shall be run into the casing to break the bridge. The plugging operation shall continue until the bentonite appears at the surface, or no more than 12 inches below grade for locations within pavement. Water shall then be placed into the casing to promote expansion of the bentonite above the static water level
- i For wells not located in competent pavement, the former monitoring well area shall be restored by backfilling with soil to within four inches of grade, followed by topsoil placement to grade. Grass seed will be placed on the topsoil surface and scarified into the surface of the topsoil to allow the area to become vegetated
- i Following the completion of the abandonment activities, waste materials, left over abandonment materials, debris, tools, and machinery shall be removed from the site and/or properly disposed

4.7 POSTCLOSURE PLAN

This Postclosure Plan will be implemented upon filing of the Declaration of Restrictive Covenant for the GLTC Land site/property, as discussed in Section 4.5, and will include the placement of a permanent marker at the site in accordance with NREPA Section 20114c(b), as discussed in Section 4.10.

The post closure activities for the GLTC Land facility will include annual inspections performed by a RACER Trust designee of the perimeter fence and repairs to the fence as necessary within 30 days of determination of the need for maintenance.

In addition, RACER will notify the MDEQ, the City of Flint zoning authority, and City of Flint sewer and water department (an unofficial easement holder across the property) of the resource use restrictions for the GLTC Land facility within 30 days after recording the resource use restrictions with the register of deeds in accordance with NREPA Section 20114c(5).

Furthermore, RACER will notify the MDEQ of their intent to convey any interest in the facility 14 days prior to consummating the conveyance. A conveyance of title, an easement, or other interest in the property shall not be consummated by the property owner without adequate and complete provision for compliance with the terms and conditions of the postclosure plan.

RACER will grant the MDEQ the right to enter the property at reasonable times for the purpose of determining and monitoring compliance with the postclosure plan, including the right to take samples, inspect the operation of the post closure care measures, and inspect records, which will be kept off site because no buildings or activities are currently conducted at the site.

4.8 CONTINGENCY PLAN

A contingency plan is not necessary because no long term monitoring will be implemented.

4.9 FINANCIAL ASSURANCE

As part of the settlement agreement provisions, which established the RACER Trust, funding was set aside for the GLTC Land facility to fund the post closure care of the facility, which was subject to MDEQ approval. Paragraph 96 of the settlement agreement states:

- i The relevant States and Debtors shall take all necessary steps to cancel or release the financial assurance instruments listed in Attachment D to this Settlement Agreement at the time the Environmental Response Trust is funded. Upon the Effective Date and Debtors' transfer of the Properties and full funding of the Environmental Response Trust Accounts as set forth in Paragraphs 30 through 32 of this Settlement Agreement, and the funding of the Expendable Trust for the Framingham Landfill Site in Massachusetts and the 807 Trust Fund for the Danville Landfill Property in Illinois as required by Paragraphs 79 and 80 of this Settlement Agreement, the Governments agree not to seek and covenant not to sue 57 or assert any administrative or other civil claims or causes of action against Debtors, the Environmental Response Trust or the Administrative Trustee, solely in his official capacity, with respect to any financial assurance required under environmental law relating to the Properties.

Therefore, the RACER Trust is its own source of financial assurance for the site. In addition, the yearly expenditure to maintain the integrity of the perimeter fence is less than the \$2,500 threshold established by the MDEQ's ERD; therefore, maintenance costs are considered to be de minimus by the MDEQ, and no additional financial assurance is required for this NFA report or the postclosure plan.

4.10 PERMANENT MARKERS

This subparagraph applies if the hazardous substances that are addressed by the barrier exceed a cleanup criterion based on acute toxic effects, reactivity, corrosivity, ignitability, explosivity, or flammability, or if any hazardous substance addressed by the exposure control is present at a concentration of more than 10 times an applicable soil direct contact cleanup criterion. The lead results at the site indicate that concentrations of more

than 10 times an applicable soil direct contact cleanup criterion will remain at the site; therefore, a permanent marker will be installed at the site.

RACER Trust will install one permanent marker at the GLTC Land facility in the primary location of entrance to the GLTC Land facility within 60 days of RACER's receipt of the recorded Restrictive Covenant from the Genesee County Register of Deeds. The permanent marker will be subject to the approval of the MDEQ. The permanent marker will consist of a brass plaque affixed to a stone monolith. The plaque will include a brief description of the general location and necessity of the exposure barrier, the MDEQ's Part 201 Site ID number and the liber and page of the restrictive covenant, and a drawing delineating the extent of the exposure barrier, including an icon that shows where the marker is located relative to the boundaries of the restricted area and the approximate scale of the restricted area. A figure illustrating the format of the permanent marker is included in the draft restrictive covenant in Appendix F.

4.11 EASEMENT HOLDERS

No official easement holders are present at the site. The sewers that cross the GLTC Land facility are owned by the City of Flint, and the City of Flint will be notified as part of the restrictive covenant submittal process.

4.12 SUMMARY OF REMEDIAL ACTION

SOPCs were identified in subsurface soil and groundwater at the GLTC Land facility. In accordance with NREPA, 1994 PA 541, as amended with the implementation of deed restrictions a "Limited Nonresidential" closure has been achieved for the GLTC Land facility. Evaluation of the potential migration and exposure pathways pertinent to the GLTC Land facility indicate the closure criteria for soils, ambient air, groundwater and surface water have been achieved with the implementation of deed restrictions and maintenance of the perimeter fence at the GLTC Land facility.

5 REFERENCES

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TABLES

Table 1
GLTC Land
Summary of Historical Soil VOC Results

MDEQ Part 201 Generic Nonresidential Cleanup Criteria	Parameter		Acetone	Benzene	Chlorobenzene	1,3 DCB	1,4 DCB	DCE	ETB	MCL	MEK	TCA	TCE	Toluene	Xylenes
	Drinking Water Protection Criteria		42,000	100	2000	480	1,700	1400	980	100	7.6E+05	4000	100	16,000	5,600
	GSI Protection Criteria		34,000	4000 (X)	500	680	360	12,000	ID	30,000 (X)	44,000	1,800	4,000(X)	5,400	820
	Direct Contact Criteria		7.3.E+07	4.0E+5(C)	2.6E+5(C)	1.7E+5(C)	1.9E+06	6.4E+5(C)	ID	2.3E+6(C)	2.7E+7(C,DD)	4.6E+5(C)	5.0E+5(C,DD)	2.5E+5(C)	1.5E+5(C)
	Volatilization Criteria		1.1E+8(C)	8,400	2.2E+05	48,000	1.0E+05	41,000.0	6.5E+5(C)	2.4 E+5	2.7E+7(C)	4.6E+05	37,000	2.5E+5(C)	1.5E+5(C)
Boring Location	Sample #	Depth Ranges (ft)													
MW-7	S-1	3.0-5.0	--	--	ND	--	--	ND	84	220	534	230	ND	ND	--
	S-2	8.0-10.0	--	--	ND	--	--	ND	ND	ND	--	ND	ND	ND	ND
	S-3	13.0-15.0	--	--	ND	--	--	ND	ND	0.01	10	ND	ND	ND	ND
S-26	S-1	7	290	ND	--	ND	ND	ND	ND	ND	ND	11	--	ND	ND
	S-2	10	ND	ND	--	ND	ND	ND	6	ND	ND	ND	--	ND	ND
	S-3	15	ND	ND	--	ND	ND	ND	10	ND	ND	ND	--	ND	ND
S-31	S-1	2	--	ND	--	ND	ND	ND	ND	ND	--	ND	--	ND	ND
	S-3	10	--	ND	--	ND	ND	ND	ND	ND	--	ND	--	ND	ND
	S-4	14.5	--	ND	--	ND	ND	ND	ND	ND	--	ND	--	ND	ND
S-32	S-3	10	--	ND	--	ND	ND	ND	ND	ND	--	ND	--	ND	ND
	S-4	15	--	ND	--	ND	ND	ND	ND	ND	--	ND	--	ND	ND
V-165	S-3	unknown	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	--	ND	ND
V-169	S-2	unknown	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	--	ND	ND
SB-108	S-1	3.5-5.0	ND	--	530	1,200	1,500	--	120	--	--	--	ND	4.6	350
	S-2	8.5-10.0	ND	--	140	490	380	--	32	--	--	--	ND	ND	87
SB-108-10	S-1	5.0-6.5	1.5	--	ND	--	--	ND	2.3	1.3	--	ND	ND	ND	14
SB-109-2	S-2	5.0-6.5	ND	--	ND	--	--	ND	ND	ND	--	ND	ND	ND	ND
SB-111	S-2	5.0-6.5	ND	--	ND	--	--	ND	ND	ND	--	ND	ND	ND	ND
SB-112	S-3	8.0-9.5	ND	--	11	--	--	ND	ND	ND	--	ND	ND	72	ND
SB-112-14	S-1	1.5-3.0	ND	--	ND	--	--	2.2	ND	ND	--	ND	1.7	ND	ND
SB-113	S-2	5.0-6.5	ND	--	ND	--	--	ND	ND	0.94	--	ND	ND	ND	ND
SB-116	S-3	8.0-9.5	ND	--	ND	--	--	ND	ND	ND	--	ND	ND	ND	ND
SB-120	S-1	3	ND	--	ND	--	--	ND	<0.8	ND	--	ND	ND	ND	ND
	S-2	6.5	ND	--	ND	--	--	ND	<0.8	ND	--	ND	ND	ND	ND
	S-3	10	ND	--	ND	--	--	ND	<0.95	ND	--	ND	ND	<0.7	ND

Note:

Exceeds MDEQ Part 201 GSI criteria only.

Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.

-- = Not analyzed.
ND = Non Detect.
VOCs analytical results in ppb.
1,3 DCB = 1,3 Dichlorobenzene.
1,4 DCB = 1,4 Dichlorobenzene.
DCE = cis 1,2-Dichloroethylene.
ETB = Ethyl-tert-butyl ether.
MCL = Methylene chloride.
MEK = Methyl Ethyl Ketone.
TCA = 1,1,1-Trichloroethane.
TCE = Trichloroethylene.
ID = Means insufficient data to develop criterion.
C = Criteria is a screening level based on the chemical-specific generic soil saturation concentrations (C_{sat}).
DD = hazardous substances causes developmental effects. Nonresidential direct contact criteria are protective for pregnant adult receptor.
X = The GSI criterion shown in the generic cleanup criteria table is not protective for surface water that is used as a drinking water source.
Methods used = 8020 for boring SB-108 samples S-1 and S-2; 8240 for all other samples.

Table 2
GLTC Land
Summary of Historical Soil Inorganic Parameter Results

MDEQ Part 201 Generic Nonresidential Cleanup Criteria	Parameter		Ag	As	Ba	Ca	Cd	Cr	Cu	Hg	Mg	Na	Pb	Se	Zn	Cyanide	Chloride	Carbonate	Flouride	Nitrate	Sulfate	pH
	Drinking Water Protection Criteria		13	4.6	1,300	NA	6	1.0E+6(D)	5,800	1.7	22,000	7,000	700	4	5,000	4	5,000	NA	40	200(N)	5,000	NA
	GSI Protection Criteria		0.100(M);0.027	4.6	1,300	NA	3.6	1.0E+6(X)	75	0.050(M);0.0012	NA	NA	2,800	0.4	170	0.1	1,000	NA	ID	ID	NA	NA
	Direct Contact Criteria		9,000	37	1.3E+05	NA	2,100	1.0E+6(D)	73,000	580	1.0E+6(D)	1.0E+6(D)	900 (DD)	9,600	6.3E+05	250	500 (F)	NA	67,000 (DD)	ID	ID	NA
MI Background Lev.		1	5.8	75	NA	1.2	18	32	0.13	NA	NA	NA	21	0.41	47	0.39	NA	NA	NA	NA	NA	NA
Boring Location	Sample #	Depth ranges (ft.)																				
MW-7	S-1	3.0-5.0	ND	18	25	--	ND	10	5.3	ND	--	--	ND	2.8	36	--	--	--	--	--	--	--
	S-2	8.0-10.0	2.3	12	34	--	1.8	18	10	ND	--	--	ND	3	36	--	--	--	--	--	--	--
	S-3	13.0-15.0	3.2	15	24	--	2.1	23	9	ND	--	--	ND	ND	27	--	--	--	--	--	--	--
S-26	S-1	7	3.2	18	54	--	3	32	18	ND	--	--	9.9	ND	49	--	--	--	--	--	--	--
	S-2	10	4	5.8	47	--	3.3	34	16	ND	--	--	ND	ND	58	--	--	--	--	--	--	--
S-30	S-3	15	4.1	6.6	77	--	3.1	48	22	ND	--	--	8.2	ND	57	--	--	--	--	--	--	--
	S-1	2	<0.5	5.4	5.7	--	<0.5	6	7	<0.1	--	--	4.8	<0.5	22	--	--	--	--	--	--	--
	S-2	4	<0.5	8.9	20	--	<0.5	16	13	<0.1	--	--	13	<0.5	25	--	--	--	--	--	--	--
S-31	S-3	14	<0.5	5.3	18	--	<0.5	7	7.2	<0.1	--	--	12	<0.5	25	--	--	--	--	--	--	--
	S-4	20	<0.5	7.1	28	--	<0.5	12	12	<0.1	--	--	13	<0.5	30	--	--	--	--	--	--	--
	S-1	0.5 - 2	--	5.6	--	--	--	--	370	--	--	--	95,800	2.8	3,300	--	--	--	--	--	--	--
S-32	S-3	10	--	5.3	--	--	--	--	13	--	--	--	17	0.6	110	--	--	--	--	--	--	--
	S-4	14.5	--	6.5	--	--	--	--	10	--	--	--	6	0.4	46	--	--	--	--	--	--	--
	S-3	10	--	4.7	--	--	--	--	38	--	--	--	460	0.3	290	--	--	--	--	--	--	--
SB-101	S-4	15	--	5.5	--	--	--	--	14	--	--	--	17	0.4	42	--	--	--	--	--	--	--
	S-1	3.5-5.0	--	--	120	41,000	--	--	13	--	--	--	10	<0.5	20	<0.5	220	147,000	9.9	4	220	8.41
SB-102	1A	5	--	--	<3	230,000	--	--	3	--	--	--	24	<0.5	26	0.97	1,150	--	--	--	--	12.15
	S-2	8.5	--	--	48	490,000	--	--	8.4	--	--	--	4.3	<0.5	29	<0.5	250	--	--	--	--	7.65
	S-1	3.5-5.0	--	--	42	--	--	--	7.2	--	--	--	19	<0.5	39	--	--	--	--	--	--	--
SB-103	S-2	8.5-10.0	--	--	55	--	--	--	8.9	--	--	--	13	<0.5	49	--	--	--	--	--	--	--
	S-1	3.5-5.0	--	--	60	--	--	--	26	--	--	--	66	<0.5	170	--	--	--	--	--	--	--
SB-104A	S-2	8.5-10.0	--	--	120	--	--	--	31	--	--	--	12,500	<0.5	4,410	--	--	--	--	--	--	--
	S-2	5.0-6.5	--	--	300	--	--	--	79	--	--	--	260	--	220	--	--	--	--	--	--	--
	S-3	8.0-9.5	--	--	77	--	--	--	17	--	--	--	30	--	48	--	--	--	--	--	--	--
SB-105	S-1	3.5-5.0	--	--	44	--	--	--	15	--	--	--	17	<0.5	36	--	--	--	--	--	--	--
	S-2	8.5-10.0	--	--	29	--	--	--	9.1	--	--	--	7.4	<0.5	31	--	--	--	--	--	--	--
SB-106	S-2	5.0-6.5	--	--	5.1	--	--	--	4.2	--	--	--	5.1	--	20	--	--	--	--	--	--	--
	S-3	8.0-9.5	--	--	45	--	--	--	11	--	--	--	16	--	33	--	--	--	--	--	--	--
SB-107	S-1	1.5-3.0	--	--	2,800	--	--	--	1,120	--	--	--	4,990	<0.5	1,950	--	--	--	--	--	--	--
	S-3	8.5-10.0	--	--	69	--	--	--	14	--	--	--	8	<0.5	42	--	--	--	--	--	--	--
SB-108	S-1	3.5-5.0	--	--	1,260	--	--	--	1,260	--	--	--	1,220	<0.5	4,360	--	--	--	--	--	--	--
	S-2	8.5-10.0	--	--	26	--	--	--	10	--	--	--	4.3	<0.5	37	--	--	--	--	--	--	--
SB-109	S-1	3.5-5.0	--	--	440	--	--	--	74	--	--	--	320	<0.5	340	--	--	--	--	--	--	--
	S-2	8.5-10.0	--	--	2.6	--	--	--	6.2	--	--	--	9.7	<0.5	23	--	--	--	--	--	--	--
SB-110	S-1	3.5-5.0	--	--	190	47,000	--	--	1,760	--	280	<400	700	<0.5	280	1.1	730	330,000	3.9	1.7	47	12.08
SB-111	S-2	8.5-10.0	--	--	94	19,000	--	--	30	--	3,320	1,020	33	<0.5	70	<0.5	500	42,800	7.7	<1.0	100	11.82
	S-1	2.0-3.5	--	--	82	--	--	--	15	--	--	--	56	--	56	--	--	--	--	--	--	--
	S-2	5.0-6.5	--	--	48	--	--	--	6.1	--	--	--	28	--	43	--	--	--	--	--	--	--
SB-112	S-1	2.0-3.5	--	--	91	--	--	--	15	--	--	--	19	--	48	--	--	--	--	--	--	--
	S-3	8.0-9.5	--	--	58	--	--	--	7.2	--	--	--	7.6	--	52	--	--	--	--	--	--	--
SB-113	S-1	1.5-3.0	--	--	360	--	--	--	110	--	--	--	460	--	220	--	--	--	--	--	--	--
	S-2	5.0-6.5	--	--	79	--	--	--	16	--	--	--	47	--	75	--	--	--	--	--	--	--
SB-114	S-1	3.5-5.0	--	--	68	--	--	--	13	--	--	--	15	<0.5	61	--	--	--	--	--	--	--
	S-2	8.5-10.0	--	--	40	--	--	--	8.6	--	--	--	11	<0.5	40	--	--	--	--	--	--	--
SB-115	S-1	2.0-3.5	--	--	45	--	--	--	17	--	--	--	12	--	53	--	--	--	--	--	--	--
	S-2	5.0-6.5	--	--	56	--	--	--	15	--	--	--	13	--	59	--	--	--	--	--	--	--
SB-116	S-1	2.0-3.5	--	--	40	--	--	--	11	--	--	--	8.6	--	38	--	--	--	--	--	--	--
	S-3	8.0-9.5	--	--	90	--	--	--	7.6	--	--	--	8.1	--	66	--	--	--	--	--	--	--
SB-117	S-4A	10.0-11.5	--	--	54	--	--	--	17	--	--	--	7	--	47	--	--	--	--	--	--	--
	S-2	3.5-5.0	--	--	190	--	--	--	19	--	--	--	92	--	150	--	--	--	--	--	--	--
	S-3	8.0-9.5	--	--	90	--	--	--	7.6	--	--	--	8.1	--	66	--	--	--	--	--	--	--
SB-118	S-1	2.0-3.5	--	--	38	--	--	--	5.5	--	--	--	7.2	--	37	--	--	--	--	--	--	--
	S-2	5.0-6.5	--	--	59	--	--	--	11	--	--	--	<3	--	43	--	--	--	--	--	--	--
SB-119	S-1	3	--	--	<3	200,000	--	--	3.1	--	170	<450	16	--	11	1.4	66	584,000	1.8	10	320	12.29
	S-2	6.5	--	--	36	46,300	--	--	6.6	--	7,990	<450	6.7	--	29	<0.5	49	49,700	2.8	2.3	230	10.83
SB-120	S-3	8	--	--	76	35,100	--	--	5.6	--	7,200	450	7.2	--	54	<0.5	48	4,940	5	2.8	220	8.66
	S-1	3	--	--	550	--	--	--	490	--	--	--	2,050	--	2,510	--	--	--	--	--	--	--
	S-2	6.5	--	--	23	--	--	--	19	--	--	--	68	--	170	--	--	--	--	--	--	--
	S-3	10	--	--	52	--	--	--	15	--	--	--	11	--	41	--	--	--	--	--	--	--

Notes:

	Exceeds MDEQ Part 201 GSI criteria only.
	Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.
	Exceeds MDEQ Part 201 Nonresidential direct contact criteria.

-- = Not analyzed.

D = calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+6 parts per million (ppm).

DD = hazardous substances causes developmental effects. Nonresidential direct contact criteria are protective for pregnant adult receptor.

F = Criterion is based on adverse impacts to plant life and phytotoxicity.

ID = Means insufficient data to develop criterion.

M = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

N = Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen shall not, when added together, exceed the nitrate drinking water protection criterion of 200 mg/kg.

NA = Not available

X = The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

Metal analytical results in ppm.

All metal analysis were completed using U.S. E.P.A 7000 series Methods

Table 3
GLTC Land
Summary of Ground Water Analytical Results Since 1995
BTEX, Total (Non-BTEX) VOCs, Dissolved Barium, Lead and Zinc (ug/L)

Well ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total Non-BTEX VOCs	Barium	Lead	Zinc
MW-7	3/10/2004	ND	ND	31	3	364	210	ND	46
MW-7	12/15/2003	ND	ND	4	ND	51	220	ND	40
MW-7	9/29/2003	ND	ND	ND	ND	43	145	ND	17
MW-7	6/19/2003	ND	ND	2	ND	37	150	ND	37
MW-7	3/20/2003	ND	ND	ND	ND	ND	800	ND	49
MW-7	12/30/2002	ND	ND	ND	ND	ND	1200	ND	90
MW-7	9/12/2002	ND	ND	1	2	38	170	ND	17
MW-7	6/27/2002	ND	ND	12	2	199	330	ND	20
MW-7	4/4/2002	ND	ND	27	5	366	29	ND	ND
MW-7	12/27/2001	ND	ND	ND	ND	ND	40	ND	160
MW-7	10/1/2001	ND	ND	ND	ND	66	170	ND	20
MW-7	7/2/2001	ND	ND	ND	ND	24	100	ND	10
MW-7	3/28/2001	ND	ND	2	ND	35	120	ND	ND
MW-7	10/30/2000	ND	ND	6	ND	100	160	ND	10
MW-7	7/27/2000	ND	ND	ND	ND	36	110	ND	30
MW-7	4/13/2000	ND	ND	ND	ND	42	120	ND	20
MW-7	2/29/2000	ND	ND	ND	ND	40	110	ND	20
MW-7	12/13/1999	ND	ND	ND	ND	15	120	ND	10
MW-7	8/2/1999	ND	ND	ND	ND	21	100	ND	ND
MW-7	5/3/1999	ND	ND	ND	ND	36	100	ND	10
MW-7	2/5/1999	ND	ND	ND	ND	15	100	ND	20
MW-7	11/4/1998	ND	ND	ND	ND	15	100	ND	20
MW-7	8/6/1998	ND	ND	ND	ND	46	30	ND	ND
MW-7	5/7/1998	ND	ND	2	ND	37	80	ND	10
MW-7	2/5/1998	ND	ND	ND	ND	ND	120	ND	30
MW-7	11/4/1997	ND	ND	ND	ND	1	110	ND	10
MW-7	5/8/1997	ND	ND	ND	ND	ND	120	ND	20
MW-7	1/9/1997	ND	ND	ND	ND	1**	ND	ND	ND
MW-7	11/20/1996	ND	ND	ND	ND	ND	ND	ND	20
MW-7	7/23/1996	ND	ND	ND	ND	ND	220	ND	ND
MW-7	5/6-13/96	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	1/23/1996	ND	ND	ND	ND	ND	373	95	2047
MW-7	10/28/1995	ND	ND	ND	ND	ND	195	9	220
MW-7	7/24/1995	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	4/24/1995	40	4	20	27	ND	130	37	1300
NRDW Cleanup Criteria		5.0 (A)	790 (E)	74 (E)	280 (E)		2,000 (A)	4.0 (L)	5,000 (E)
GSI Cleanup Criteria		200 (X)	270	18	41		670	16	170

Notes: Exceeds GSI MDEQ Part 201 criteria only.

Exceeds MDEQ Part 201 nonresidential drinking water (NRDW) criteria or both GSI and drinking water criteria

*- higher detection limits due to matrix interference, **- laboratory artifact

ND- Not detected

(A) denotes criterion is State of Michigan Drinking Water Standard

(E) denotes criterion is the aesthetic drinking water value, as required by Sec. 20120a(5)

(L) Criteria for lead are derived using a biologically based model, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.

Methods used - 8260 for VOCs; 245.1 for mercury and 200.8 for all other metals.

Table 3
GLTC Land
Summary of Ground Water Analytical Results Since 1995
BTEX, Total (Non-BTEX) VOCs, Dissolved Barium, Lead and Zinc (ug/L)

Well ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total Non-BTEX VOCs	Barium	Lead	Zinc
MW-12	3/10/2004	ND	ND	ND	ND	ND	610	ND	107
MW-12	12/16/2003	ND	ND	ND	ND	ND	210	ND	170
MW-12	9/29/2003	ND	ND	ND	ND	ND	209	ND	73
MW-12	6/19/2003	ND	ND	ND	ND	ND	800	ND	114
MW-12	3/20/2003	ND	ND	ND	ND	ND	1470	ND	59
MW-12	12/31/2002	ND	ND	ND	ND	ND	1420	ND	137
MW-12	9/12/2002	ND	ND	ND	ND	ND	730	ND	396
MW-12	6/27/2002	ND	ND	ND	ND	ND	470	ND	120
MW-12	4/4/2002	ND	ND	ND	ND	ND	1260	ND	50
MW-12	12/27/2001	ND	ND	ND	ND	ND	600	ND	250
MW-12	10/1/2001	ND	ND	ND	ND	ND	1500	ND	20
MW-12	7/2/2001	ND	ND	ND	ND	ND	1310	ND	150
MW-12	3/28/2001	2	ND	ND	ND	ND	1100	ND	520
MW-12	10/30/2000	ND	ND	ND	ND	ND	1450	ND	60
MW-12	7/27/2000	1	ND	ND	ND	ND	380	ND	40
MW-12	4/13/2000	ND	ND	ND	ND	3	1750	ND	70
MW-12	2/22/2000	ND	ND	ND	ND	ND	2230	ND	60
MW-12	12/13/1999	ND	ND	ND	ND	ND	2090	ND	20
MW-12	8/2/1999	<20*	<20*	<20*	<20*	<20*	550	ND	110
MW-12	5/3/1999	1	ND	ND	ND	3	470	ND	30
MW-12	2/5/1999	ND	ND	ND	ND	8	580	ND	ND
MW-12	11/10/1998	2	ND	ND	ND	ND	730	ND	180
MW-12	8/6/1998	16	ND	ND	ND	ND	330	ND	20
MW-12	5/7/1998	ND	ND	ND	2	ND	80	ND	10
MW-12	2/5/1998	3	2	ND	ND	ND	400	ND	50
MW-12	11/4/1997	NS	NS	NS	NS	NS	NS	NS	40
MW-12	5/8/1997	ND	ND	ND	ND	ND	1080	ND	50
MW-12	1/9/1997	ND	ND	ND	ND	ND	1100	ND	ND
MW-12	11/20/1996	ND	ND	ND	ND	ND	890	ND	20
MW-12	7/23/1996	ND	ND	ND	ND	ND	660	2	60
MW-12	5/6-13/96	ND	ND	ND	ND	2	537	3	ND
MW-12	1/23/1996	ND	ND	ND	ND	ND	768	75	360
MW-12	10/28/1995	ND	ND	ND	ND	ND	335	27	230
MW-12	7/24/1995	ND	ND	ND	ND	ND	330	ND	ND
MW-12	4/24/1995	ND	ND	ND	ND	ND	390	39	160
NRDW Cleanup Criteria		5.0 (A)	790 (E)	74 (E)	280 (E)		2,000 (A)	4.0 (L)	5,000 (E)
GSI Cleanup Criteria		200 (X)	270	18	41		670	16	170

Notes: Exceeds GSI MDEQ Part 201 criteria only.

Exceeds MDEQ Part 201 nonresidential drinking water criteria or both GSI and drinking water criteria

*- higher detection limits due to matrix interference, **- laboratory artifact

ND- Not detected

(A) denotes criterion is State of Michigan Drinking Water Standard

(E) denotes criterion is the aesthetic drinking water value, as required by Sec. 20120a(5)

(L) Criteria for lead are derived using a biologically based model, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.

Methods used - 8260 for VOCs; 245.1 for mercury and 200.8 for all other metals.

Table 3a
GLTC Land
Annual Ground Water Analytical Results
Michigan 10 Metals

Location	Sample Date	Dissolved Metals (ug/L)									
		Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc
NRDW Criteria		10 (A)	2,000 (A)	5.0 (A)	100 (A)	1,000 (E)	4.0 (L)	2.0 (A)	50 (A)	98	5,000 (E)
GSI Criteria		10	670 (G)	3 (G,X)	100 (G,X)	13 (G)	16 (G,X)	0.0013	5.0	0.2 (M); 0.06	170 (G)
MW-7	12/27/01	<5	40	<0.5	<10	<10	<3	<0.2	<5	<0.5	160
MW-7	12/30/02	<1	1200	0.3	9	6	<1	<0.05	<5	<0.5	90
MW-7	12/15/03	<2	220	<0.5	<5	<10	<3	<0.2	<5	<0.5	40
MW-7	12/21/04	4	399	<0.5	5	<5	<3	<0.2	<5	<0.5	53
MW-12	12/27/01	<5	600	<0.5	<10	<10	<3	<0.2	<5	<0.5	250
MW-12	12/31/02	<1	1420	0.5	8	9	<1	<0.05	<5	<0.5	137
MW-12	12/15/03	<2	210	<0.5	<5	<10	<3	<0.2	<5	<0.5	170
MW-12	12/21/04	<2	415	0.9	11	<5	<3	<0.2	<5	<0.5	115

Notes:

Exceeds GSI MDEQ Part 201 criteria only.

Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.

NRDW Criteria - MDEQ Generic Nonresidential Drinking Water Cleanup Criteria.

GSI criteria - MDEQ Generic Groundwater Surface Water Interface Cleanup Criteria.

<- indicates not detected at the indicated detection limit

(A) denotes criterion is State of Michigan Drinking Water Standard.

(E) denotes criterion is the aesthetic drinking water value, as required by Sec. 20120a(5).

(G) Ground water surface water interface criterion depends on the pH or water hardness, or both of the receiving water.

(M) Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

(L) denotes criteria for lead are derived using a biologically based model, as allowed under 20120a(10).

(X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

Methods: 245.1 for mercury and 200.8 for all other metals.

Table 4
GLTC Land
Summary of Ground Water Analytical Results Since 1995
Volatile Organic Compounds (ug/L)

Well ID	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MDEQ Part 201 Generic Cleanup Criteria	
Sample Date	4/24/1995	7/24/1995	10/28/1995	1/23/1996	5/8/1997	11/4/1997	5/7/1998	8/6/1998	11/4/1998	2/5/1999	5/3/1999	8/2/1999	12/13/1999	2/29/2000	4/13/2000	NRDW	GSI	
Acetone	NA	NA	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,100	1,700	
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID	
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	29	35	
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	10	10	
2-Butanone	NA	NA	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	38,000	2,200	
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID	
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID	
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID	
Carbon Disulfide	NA	NA	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,300	ID	
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	45 (X)	
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	25	
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,700	1,100 (X)	
2-Chloroethyl vinyl ether	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	ID	NA	
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	80 (A,W)	350	
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,100	ID	
Dibromochloromethane	<1	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID	
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	600 (A)	13	
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	19	28	
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	75 (A)	17	
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.0 (A)	130	
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	360 (X)	
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2,500	740	
cis-1,2-Dichloroethene	<1	NA	<1	<1	NA	NA	37	46	15	19	35	16	13	39	41	70 (A)	620	
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	100 (A)	1,500 (X)	
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	230 (X)	
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)	
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)	
2-Hexanone	NA	NA	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,900	ID	
Isopropyl benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	2,300	28	
p-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	NA	NA	NA	NC	NC	
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	5,200	ID	
Methylene Chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	1,500 (X)	
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	1	<1	<1	<1	1	1,500	11	
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID	
Styrene	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	80 (X)	
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	320	ID	
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	60 (X)	
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	200 (A)	89	
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	330 (X)	
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	200 (X)	
Trichlorofluoromethane	NA	<1	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	7,300	NA	
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	2	<1	<1	<1	<1	63 (E)	17	
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	2	<1	<1	<1	<1	72 (E)	45	
Vinyl Chloride	<1	<1	<1	<1	<1	1	<1	<1	<1	13	<1	5	2	<1	<1	2.0 (A)	13 (X)	

Notes:

Exceeds MDEQ Part 201 GSI criteria only.
Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.

< - Not detected above laboratory limits

NA - Not analyzed. NS - Not Sampled.

NC - No MDEQ criteria established

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(A) denotes criterion is State of Michigan Drinking Water Standard

(E) denotes criterion is the aesthetic drinking water value, as required by Sec. 20120a(5)

(X) = The GSI criterion shown in the generic cleanup criteria table is not protective for surface water that is used as a drinking water source.

(W) concentrations of trihalomethanes must be added together to determine compliance with the State of Michigan Drinking Water Standard of 80 ug/L.

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Method - 8260

Table 4
GLTC Land
Summary of Ground Water Analytical Results Since 1995
Volatile Organic Compounds (ug/L)

Well ID	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MDEQ Part 201 Generic Cleanup Criteria	
Sample Date	7/27/2000	10/30/2000	3/28/2001	7/2/2001	10/1/2001	12/27/2001	4/4/2002	6/27/2002	9/12/2002	12/30/2002	3/20/2003	6/19/2003	9/29/2003	12/16/2003	3/10/2004	NRDW	GSI
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<30	<30	2,100	1,700
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	29	35
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5	<5	<5	<5	<1	<1	10	10
2-Butanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<30	<30	38,000	2,200
n-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	8	230	ID
sec-Butylbenzene	<1	<1	1	<1	<1	<1	7	5	<1	<1	<1	<1	<1	<1	5	230	ID
tert-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	230	ID
Carbon Disulfide	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<5	<5	2,300	ID
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	45 (X)
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	25
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,700	1,100 (X)
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	---	---	---	---	---	---	ID	NA
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	350
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,100	ID
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	600 (A)	13
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	19	28
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	75 (A)	17
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.0 (A)	130
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	360 (X)
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2,500	740
cis-1,2-Dichloroethene	36	38	19	24	61	<1	10	34	33	<1	<1	26	39	7	11	70 (A)	620
trans-1,2-Dichloroethene	<1	<1	<1	<1	3	<1	<1	2	1	1	1	1	1	<1	<1	100 (A)	1,500 (X)
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	230 (X)
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,900	ID
Isopropyl benzene	<1	3	3	<1	<1	<1	24	13	<1	<1	<1	1	<1	3	25	2,300	28
p-Isopropyltoluene	NA	5	NA	NA	NA	NA	14	5	<1	<1	<1	<1	<1	2	8	NC	NC
4-Methyl-2-pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	5,200	ID
Methylene Chloride	<1	<1	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5.0 (A)	1,500 (X)
Naphthalene	1	1	<1	<1	<1	<1	51	35	<1	---	---	3	<10	<5	56	1,500	11
n-Propylbenzene	<1	<1	2	<1	<1	<1	22	12	<1	<1	<1	3	<1	6	25	230	ID
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	100 (A)	80 (X)
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	320	ID
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	60 (X)
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	200 (A)	89
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	330 (X)
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	200 (X)
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	7,300	NA
1,2,4-Trimethylbenzene	<1	<1	7	<1	<1	<1	158	58	<1	<1	<1	4	<1	16	156	63 (E)	17
1,3,5-Trimethylbenzene	<1	<1	3	<1	<1	<1	80	26	<1	<1	<1	1	<1	12	70	72 (E)	45
Vinyl Chloride	<1	<1	<1	<1	2	<1	<1	4	4	<1	<1	2	3	<1	<1	2.0 (A)	13 (X)

Notes:

Exceeds MDEQ Part 201 GSI criteria only.

Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.

< - Not detected above laboratory limits

NA - Not analyzed. NS - Not Sampled.

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(A) denotes criterion is State of Michigan Drinking Water Standard

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(X) = The GSI criterion shown in the generic cleanup criteria table is not protective for surface water that is used as a drinking water source.

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Method - 8260

Table 4
GLTC Land
Summary of Ground Water Analytical Results Since 1995
Volatile Organic Compounds (ug/L)

Well ID	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MDEQ Part 201 Generic Cleanup Criteria	
Sample Date	4/24/1995	7/24/1995	10/28/1995	1/23/1996	5/8/1997	11/4/1997	5/7/1998	8/6/1998	11/10/1998	2/9/1999	5/3/1999	8/2/1999	12/13/1999	2/22/2000	4/13/2000	NRDW	GSi
Acetone	NA	NA	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,100	1,700
Bromodichloromethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID
Bromoform	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	29	35
Bromomethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	10	10
2-Butanone	NA	NA	NA	NA	NA	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	38,000	2,200
n-Butylbenzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID
sec-Butylbenzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID
tert-Butylbenzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID
Carbon Disulfide	NA	NA	NA	NA	NA	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,300	ID
Carbon tetrachloride	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	45 (X)
Chlorobenzene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	25
Chloroethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,700	1,100 (X)
2-Chloroethyl vinyl ether	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	NA	NA	NA	ID	NA
Chloroform	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	1	<1	<1	<1	<1	80 (A,W)	350
Chloromethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,100	ID
Dibromochloromethane	<1	NA	NA	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	600 (A)	13
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	19	28
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	75 (A)	17
1,1-Dichloroethene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.0 (A)	130
1,2-Dichloroethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	360 (X)
1,1-Dichloroethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	2,500	740
cis-1,2-Dichloroethene	<1	NA	<1	<1	NA	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	70 (A)	620
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	1,500 (X)
1,2-Dichloropropane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	230 (X)
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)
2-Hexanone	NA	NA	NA	NA	NA	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,900	ID
Isopropyl benzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	2,300	28
p-Isopropyltoluene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	NA	NA	NA	NC	NC
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	5,200	ID
Methylene Chloride	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	1,500 (X)
Naphthalene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	3	1,500	11
n-Propylbenzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	230	ID
Styrene	NA	NA	NA	NA	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	80 (X)
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	320	ID
Tetrachloroethene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	60 (X)
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	200 (A)	89
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	330 (X)
Trichloroethene	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	200 (X)
Trichlorofluoromethane	NA	<1	NA	NA	<1	NS	<1	<1	<1	<1	<1	<1	NA	NA	NA	7,300	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	63 (E)	17
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NS	NA	NA	NA	<1	<1	<1	<1	<1	<1	72 (E)	45
Vinyl Chloride	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.0 (A)	13 (X)

Notes:

Exceeds MDEQ Part 201 GSI criteria only.
Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.

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Method - 8260

Table 4
GLTC Land
Summary of Ground Water Analytical Results Since 1995
Volatile Organic Compounds (ug/L)

Well ID	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MDEQ Part 201 Generic Cleanup Criteria	
Sample Date	7/27/2000	10/30/2000	3/28/2001	7/2/2001	10/1/2001	12/27/2001	4/4/2002	6/27/2002	9/12/2002	12/31/2002	3/20/2003	6/19/2003	9/29/2003	12/16/2003	3/10/2004	NRDW	GSI
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<30	<30	2,100	1,700
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID
Bromoform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	29	35
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5	<5	<5	<5	<1	<1	10	10
2-Butanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<30	<30	38,000	2,200
n-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	230	ID
sec-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	230	ID
tert-Butylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	230	ID
Carbon Disulfide	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<5	<5	2,300	ID
Carbon tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	45 (X)
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	25
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,700	1,100 (X)
2-Chloroethyl vinyl ether	<1	<1	<1	NA	NA	NA	NA	NA	NA	---	---	---	---	---	---	ID	NA
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	350
Chloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1,100	ID
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	80 (A,W)	ID
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	600 (A)	13
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	19	28
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	75 (A)	17
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.0 (A)	130
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	360 (X)
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2,500	740
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	70 (A)	620
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	1,500 (X)
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	230 (X)
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)
trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	9.0 (X)
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	2,900	ID
Isopropyl benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2,300	28
p-Isopropyltoluene	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	NC	NC
4-Methyl-2-pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	5,200	ID
Methylene Chloride	<1	<1	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5.0 (A)	1,500 (X)
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	---	---	<10	<10	<5	<5	1,500	11
n-Propylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	230	ID
Styrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	100 (A)	80 (X)
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	320	ID
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	60 (X)
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	200 (A)	89
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	330 (X)
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.0 (A)	200 (X)
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1	<1	7,300	NA
1,2,4-Trimethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	63 (E)	17
1,3,5-Trimethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	72 (E)	45
Vinyl Chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.0 (A)	13 (X)

Notes:

Exceeds MDEQ Part 201 GSI criteria only.

Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.

< - Not detected above laboratory limits

NA - Not analyzed. NS - Not Sampled.

NC - No MDEQ criteria established

ID - insufficient data to develop criterion

(A) denotes criterion is State of Michigan Drinking Water Standard

(E) denotes criterion is the aesthetic drinking water value, as required by Sec. 20120a(5)

(X) = The GSI criterion shown in the generic cleanup criteria table is not protective for surface water that is used as a drinking water source.

(W) concentrations of trihalomethanes must be added together to determine compliance with the State of Michigan Drinking Water Standard of 80 ug/L.

* - higher detection limits due to matrix interference. ** - laboratory artifact.

Method - 8260

Table 5
GLTC Land
Site Investigation Soil Analytical Results

Boring ID/ Depth	Sample	MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	MDEQ Part 201 Generic Nonresidential Soil Volatilization to Indoor Air Cleanup Criteria	Maximum Concentration Detected	OBG-200 8-10'	OBG-201 3-5'	OBG-202 2-4'	OBG-203 2-4'	OBG-204 5-7'	OBG-205 7-9'	OBG-206 8-10'	OBG-207 8-10'	OBG-208 5-7'	OBG-208A 3-4'	OBG-209 5-7'	OBG-209A 3-4'	OBG-210 4-6'	OBG-210A 2-3'	OBG-211 4-6'	OBG-211A 3-4'	OBG-212 4- 6'	OBG-212A 2-3'	OBG-213 4-6'	OBG-214 4-6'
Sample Date	Units							4/12/2005	4/12/2005	4/12/2005	4/12/2005	4/12/2005	4/12/2005	4/13/2005	4/13/2005	4/13/2005	1/17/2007	4/13/2005	1/17/2007	4/13/2005	1/17/2007	4/13/2005	1/17/2007	4/13/2005	1/17/2007	4/13/2005	4/14/2005
Benzene	ug/kg	NC	100	4,000 (X)	400,000 (C)	8,400	3,000	<50	<60	<50	<70	<60	<60	<50	<60	<60	NA	<50	NA	<50	NA	<60	NA	<60	NA	<50	<50
Cyclohexane	ug/kg	NC	NC	NC	NC	NC	130	--	--	--	--	--	--	--	--	--	NA	--	NA	--	NA	--	NA	--	NA	--	--
Methyl cyclohexan	ug/kg	NC	NC	NC	NC	NC	900	--	--	--	--	--	--	--	--	--	NA	--	NA	--	NA	--	NA	--	NA	--	--
Methyl acetate	ug/kg	NC	NC	NC	NC	NC	500	--	--	--	--	--	--	--	--	--	NA	--	NA	--	NA	--	NA	--	NA	--	--
Ethylbenzene	ug/kg	NC	1,500	360	140,000 (C)	140,000 (C)	113,000	<50	<60	<50	10	<60	<60	<50	<60	<60	NA	<50	NA	<50	NA	<60	NA	<60	NA	<50	<50
Isopropylbenzene	ug/kg	NC	260,000	3,200	390,000 (C)	390,000 (C)	19,000	<50	<60	<50	<70	<60	<60	<50	<60	<60	NA	<50	NA	<50	NA	<60	NA	<60	NA	<50	<50
4-Methyl-2-pentanone (MIBK)	ug/kg	NC	100,000	ID	2,700,000 (C)	2,700,000 (C)	2,000	<3,000	<3,000	<3,000	<3,000	<3,000	<3,000	<3,000	<3,000	<3,000	NA	<3,000	NA	<3,000	NA	<3,000	NA	<3,000	NA	<3,000	<3,000
Toluene	ug/kg	NC	16,000	5,400	250,000 (C)	250,000 (C)	3,020,000	<50	<60	<50	90	<60	<70	<50	<60	<60	290	NA	<50	NA	<50	NA	<60	NA	<60	NA	200
1,2,4-Trimethylbenzene	ug/kg	NC	4,200	5,900 (X)	1,100,000 (C, DD)	1,100,000 (C)	40	<100	<100	<100	<100	<100	<100	<100	<100	<100	NA	40	NA	<100	NA	<100	NA	<100	NA	<100	<100
Naphthalene	ug/kg	NC	100,000	730	52,000,000	470,000	70	<300	<400	<400	<400	<400	<400	<300	<400	<400	NA	70	NA	<300	NA	<400	NA	<400	NA	<300	<300
o-xylenes	ug/kg	NC	5,600	820	150,000 (C)	150,000 (C)	125,000	<50	<60	<50	30	<60	<60	<50	<60	<60	NA	40	NA	<50	NA	<60	NA	<60	NA	<50	<50
p,m-xylenes	ug/kg	NC	5,600	820	150,000 (C)	150,000 (C)	366,000	<50	<60	<50	60	<60	<60	<50	<60	40	NA	60	NA	<50	NA	<60	NA	<60	NA	<50	<50
Barium	mg/kg	75	1,300	440 (G)	130,000	NLV	292	22.0	75.8	41.5	101.0	41.4	39.5	29.4	61.0	20.9	17.2	27.8	16.8	75.7	29.7	76.1	21.0	53.5	67.9	8.7	35.3
Lead - fine	mg/kg	21	700	2,800 (G, X)	900 (DD)	NLV	2,120	20.3	26.0	20.5	208.0	35.5	44.2	21.4	16.7	10.3	26.9	11.1	29.2	17.4	33.5	27.6	63.2	30.9	161.0	11.1	11.4
Lead - coarse	mg/kg	21	700	2,800 (G, X)	900 (DD)	NLV	149	4.5	10.0	5.3	102.0	5.1	26.7	5.9	5.3	4.1	8.0	5.5	7.3	7.2	18.1	9.7	21.3	6.7	94.1	2.9	5.7
Boring ID/ Depth	Sample	MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	MDEQ Part 201 Generic Nonresidential Soil Volatilization to Indoor Air Cleanup Criteria	Maximum Concentration Detected	OBG-214A 1-2'	OBG-215 4-6'	OBG-215A 2-3'	OBG-216 8-10'	OBG-216A 1-2'	OBG-217 6-8'	OBG-217A 1-2'	OBG-218 3-5'	OBG-219 3-5'	OBG-219A 1-2'	OBG-220 5-7'	OBG-220A 2-3'	OBG-221 5-7'	OBG-221A 1-2'	OBG-222 3-5'	OBG-223 6-8'	OBG-224 6- 8'	OBG-225 8- 10'	OBG-226 8-10'	OBG-226 18-20'
Sample Date	Units							1/17/2007	4/14/2005	1/17/2007	4/14/2005	1/17/2007	4/14/2005	1/17/2007	4/14/2005	4/14/2005	1/17/2007	4/14/2005	1/17/2007	4/14/2005	1/17/2007	4/15/2005	4/15/2005	4/15/2005	4/15/2005	9/19/2005	9/19/2005
Benzene	ug/kg	NC	100	4,000 (X)	400,000 (C)	8,400	3,000	NA	<50	NA	<60	NA	<60	NA	<60	<60	NA	<60	NA	<70	NA	<50	<60	<60	<60	200	360
Cyclohexane	ug/kg	NC	NC	NC	NC	NC	130	NA	--	NA	--	NA	--	NA	--	--	NA	--	NA	--	NA	--	--	--	--	60	<50
Methyl cyclohexan	ug/kg	NC	NC	NC	NC	NC	900	NA	--	NA	--	NA	--	NA	--	--	NA	--	NA	--	NA	--	--	--	--	340	<50
Methyl acetate	ug/kg	NC	NC	NC	NC	NC	500	NA	--	NA	--	NA	--	NA	--	--	NA	--	NA	--	NA	--	--	--	--	<3000	<3000
Ethylbenzene	ug/kg	NC	1,500	360	140,000 (C)	140,000 (C)	113,000	NA	<50	NA	<60	NA	<60	NA	<60	<60	NA	<60	NA	<70	NA	<50	<60	<60	<60	4,970	<50
Isopropylbenzene	ug/kg	NC	260,000	3,200	390,000 (C)	390,000 (C)	19,000	NA	<50	NA	<60	NA	<60	NA	<60	<60	NA	<60	NA	<70	NA	<50	<60	<60	<60	1,300	<50
4-Methyl-2-pentanone (MIBK)	ug/kg	NC	100,000	ID	2,700,000 (C)	2,700,000 (C)	2,000	NA	<3,000	NA	<3,000	NA	<3,000	NA	<3,000	<3,000	NA	<3,000	NA	<3,000	NA	<3,000	<3,000	<3,000	<3,000	2,000	900
Toluene	ug/kg	NC	16,000	5,400	250,000 (C)	250,000 (C)	3,020,000	NA	10	NA	<60	NA	50	NA	<60	80	NA	20	NA	<70	NA	<50	<60	<60	520	4,130	760
1,2,4-Trimethylbenzene	ug/kg	NC	4,200	5,900 (X)	1,100,000 (C, DD)	1,100,000 (C)	40	NA	<100	NA	<100	NA	<100	NA	<100	<100	NA	<100	NA	<100	NA	<100	<100	<100	<100	--	--
Naphthalene	ug/kg	NC	100,000	730	52,000,000	470,000	70	NA	<400	NA	<400	NA	<400	NA	<400	<400	NA	<400	NA	<400	NA	<300	<400	<400	<400	--	--
o-xylenes	ug/kg	NC	5,600	820	150,000 (C)	150,000 (C)	125,000	NA	<50	NA	<60	NA	<60	NA	<60	<60	NA	<60	NA	<70	NA	<50	<60	<60	<60	2,200	20
p,m-xylenes	ug/kg	NC	5,600	820	150,000 (C)	150,000 (C)	366,000	NA	<50	NA	<60	NA	<60	NA	<60	<60	NA	<60	NA	<70	NA	<50	<60	<60	<60	70	19,500
Barium	mg/kg	75	1,300	440 (G)	130,000	NLV	292	84.3	44.0	25.3	48.9	48.0	47.5	10.4	48.0	40.0	73.8	55.5	60.6	96.3	27.3	46.1	60.9	79.3	10.5	76.5	33.4
Lead - fine	mg/kg	21	700	2,800 (G, X)	900 (DD)	NLV	2,120	296.0	17.1	37.6	27.1	45.6	34.9	97.3	29.8	27.5	483.0	23.9	53.2	62.2	56.4	22.2	27.2	30.4	19.7	23.7	12.8
Lead - coarse	mg/kg	21	700	2,800 (G, X)	900 (DD)	NLV	149	192.0	4.8	13.3	5.4	8.1	6.8	11.4	8.5	5.6	262.0	5.7	23.0	13.2	26.8	6.8	6.0	16.9	3.7	14.3	4.8
Boring ID/ Depth	Sample	MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	MDEQ Part 201 Generic Nonresidential Soil Volatilization to Indoor Air Cleanup Criteria	Maximum Concentration Detected	OBG-227 2-4'	OBG-227 8-10'	OBG-228 8-10'	OBG-228 18-20'	OBG-228B 7-8'	OBG-228D 7-8'	OBG-228D 19-20'	OBG-228G 6-7'	OBG-228G 16-17'	OBG-228I 7-8'	OBG-229 6-8'	OBG-229 10-12'	OBG-230 6-8'	OBG-230 10-12'	OBG-231 3-5'	OBG-231 6-8'	HA-1 0-1'	HA-1 4-5'		
Sample Date	Units							9/19/2005	9/19/2005	9/19/2005	9/19/2005	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	9/19/2005	9/19/2005	9/20/2005	9/20/2005	9/20/2005	9/20/2005	10/27/2005	10/27/2005		
Benzene	ug/kg	NC	100	4,000 (X)	400,000 (C)	8,400	3,000	60	280	3,000	220	<60	3,800	<50	500	<50	<60	600	200	<60	<60	<60	<60	<60	<60		
Cyclohexane	ug/kg	NC	NC	NC	NC	NC	130	<60	130	<6000	<50	NA	NA	NA	NA	NA	NA	<600	<600	<60	<60	<60	<60	<60	<60		
Methyl cyclohexan	ug/kg	NC	NC	NC	NC	NC	900	100	370	4,000	<50	NA	NA	NA	NA	NA	NA	900	300	20	20	<60	<50	<60	<60		
Methyl acetate	ug/kg	NC	NC	NC	NC	NC	500	<3000	<3000	<3000	<3000	NA	NA	NA	NA	NA	NA	<3000	<3000	300	<3000	<3000	500	400	<3,000		
Ethylbenzene	ug/kg	NC	1,500	360	140,000 (C)	140,000 (C)	113,000	1,910	40	113,000	100	<60	56,300	<50	1,700	<50	30	220	600	<60	<60	<60	7	7	<60		
Isopropylbenzene	ug/kg	NC	260,000	3,200	390,000 (C)	390,000 (C)	19,000	570	730	19,000	20	NA	NA	NA	NA	NA	NA	16,200	2,000	20	60	<60	<50	<60	<60		
4-Methyl-2-pentanone (MIBK)	ug/kg	NC	100,000	ID	2,700,000 (C)	2,700,000 (C)	2,000	100	90	<1,000,000	400	NA	NA	NA	NA	NA	NA	<3,000	<30,000	<3,000	<3,000	<3,000	<3,000	<3,000	<3,000		
Toluene	ug/kg	NC	16,000	5,400	250,000 (C)	250,000 (C)	3,020,000	290	<50	3,020,000	2,000	<60	1,900,000	70	300	<50	60	300	600	<60	<60	<60	<50	10	<60		
1,2,4-Trimethylbenzene	ug/kg	NC	4,200	5,900 (X)	1,100,000 (C, DD)	1,100,000 (C)	40	--	--	--	--	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--		
Naphthalene	ug/kg	NC	100,000	730	52,000,000	470,000	70	--	--	--	--	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	<300	<300		
o-xylenes	ug/kg	NC	5,600	820	150,000 (C)	150,000 (C)																					

Table 5a
GLTC Land
Site Investigation Soil PNA Analytical Results

Boring ID/ Sample Depth		MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	MDEQ Part 201 Generic Nonresidential Soil Volatilization to Indoor Air Cleanup Criteria	Maximum Concentration Detected	HA-1 0-1'	HA-1 0-1' Collocated	HA-1 4-5'	HA-1 4-5' Dup
Sample Date	Units							10/27/2005	10/27/2005	10/27/2005	10/27/2005
Acenaphthylene	ug/kg	NC	17,000	ID	5,200,000	3,000,000	30	<300	<300	<300	30
Anthracene	ug/kg	NC	41,000	ID	730,000,000	1,000,000,000 (D)	100	20	100	<300	90
Benzo(a)anthracene (Q)	ug/kg	NC	NLL	NLL	80,000	NLV	600	100	600	<300	600
Benzo(a)pyrene (Q)	ug/kg	NC	NLL	NLL	8,000	NLV	1,000	200	900	<300	1,000
Benzo(b)fluoranthene (Q)	ug/kg	NC	NLL	NLL	80,000	ID	1,400	300	1,100	<300	1,400
Benzo(k)fluoranthene (Q)	ug/kg	NC	NLL	NLL	800,000	NLV	1,200	200	900	<300	1,200
Benzo(g,h,i)perylene	ug/kg	NC	NLL	NLL	7,000,000	NLV	900	200	800	<300	900
Chrysene (Q)	ug/kg	NC	NLL	NLL	8,000,000	ID	1,200	300	1,000	<300	1,200
Dibenz(a,h)anthracene (Q)	ug/kg	NC	NLL	NLL	8,000	NLV	300	<300	200	<300	300
Fluoranthene	ug/kg	NC	730,000	5,500	130,000,000	1,000,000,000 (D)	2,300	600	2,100	40	2,300
Indeno(1,2,3-cd)pyrene (Q)	ug/kg	NC	NLL	NLL	80,000	NLV	800	200	700	<300	800
Phenanthrene	ug/kg	NC	160,000	2,100	5,200,000	5,100,000	600	200	600	<300	500
Pyrene	ug/kg	NC	480,000	ID	84,000,000	1,000,000,000 (D)	1,800	400	1,500	30	1,800

Notes:

Only detected analytes shown.

(D) = Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).

(Q) = Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.

ID Means insufficient data to develop criterion.

NLL Means hazardous substance is not likely to leach under most soil conditions.

NLV Means hazardous substance is not likely to volatilize under most conditions.

NC No criteria listed.

Method = 8270C

Table 5b
GLTC Land
Delineation Boring Soil Analytical Results

Boring ID/ Sample Depth		MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	Maximum Concentration Detected	MW-7 3-5'	MW-7 8-10'	MW-7 13-15'	MW-7A 5'	MW-7A 10'	MW-7A 15'	MW-7A 18'	MW-7NE 5'	MW-7NE 10'	MW-7NE 15'	MW-7NW 5'	MW-7NW 10'	MW-7NW 10' (Dup)	MW-7NW 15'	MW-7SE 5'	MW-7SE 10'	MW-7SE 15'	MW-7SW 5'
Sample Date	Units						1986	1986	1986	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007
Arsenic	mg/kg	5.8	4.6	4.6	37	18	18	12	15	1.36	1.14	2.47	2.62	7.3	1.37	4.24	0.83	1.13	1.19	2.8	0.7	0.81	3.34	0.85
Lead - fine	mg/kg	21	700	2,800 (G, X)	900 (DD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead - coarse	mg/kg	21	700	2,800 (G, X)	900 (DD)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead - total	mg/kg	21	700	2,800 (G, X)	900 (DD)	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Boring ID/ Sample Depth		MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	Maximum Concentration Detected	MW-7SW 10'	MW-7SW 15'	OBG-219A 1-2'	OBG- 219NE 2'	OBG- 219NW 2'	OBG- 219SE 2' (Dup)	OBG- 219SW 2'	S-26 7'	S-26 10'	S-26 15'	S-26NE 7'	S-26NW 7'	S-26NW 7' (Dup)	S-26SE 7'	S-26SW 7'	S-31 0.5-2'	S-31 10'	
Sample Date	Units						7/26/2007	7/26/2007	1/17/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	7/26/2007	1986	1986	1986	7/25/2007	7/25/2007	7/25/2007
Arsenic	mg/kg	5.8	4.6	4.6	37	18	1	2.66	--	--	--	--	--	--	18	5.8	6.6	0.77	0.53	0.39	1.11	0.97	5.6	5.3
Lead - fine	mg/kg	21	700	2,800 (G, X)	900 (DD)	483	--	--	483	35.7	109	29.1	27.7	47.8	--	--	--	--	--	--	--	--	--	--
Lead - coarse	mg/kg	21	700	2,800 (G, X)	900 (DD)	262	--	--	262	12.5	34.2	21	15.1	10.8	--	--	--	--	--	--	--	--	--	--
Lead - total	mg/kg	21	700	2,800 (G, X)	900 (DD)	95800	--	--	--	18.1	39.2	22.9	17.2	16.9	9.9	ND	8.2	--	--	--	--	--	95,800	17
Boring ID/ Sample Depth		MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	Maximum Concentration Detected	S-31 14.5'	S-31A 5'	S-31NE 2'	S-31NW 2'	S-31SE 2'	S-31SW 2'	S-32 10'	S-32 15'	S-32A 12'	S-32NE 10'	S-32NW 10'	S-32SE 10'	S-32SE 10' (Dup)	S-32SW 10'	SB-103 3.5-5'	SB-103 8.5-10'	SB-103A 12'	SB-103NE 10'
Sample Date	Units						1986	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007	1986	1986	7/25/2007	7/25/2007	7/25/2007	7/25/2007	7/25/2007
Arsenic	mg/kg	5.8	4.6	4.6	37	6.5	6.5	--	--	--	--	--	4.7	5.5	--	--	--	--	--	--	--	--	--	--
Lead - fine	mg/kg	21	700	2,800 (G, X)	900 (DD)	25100	--	99.3	10,600	10,200	679	1,770	--	--	1,840	25,100	6,220	4,430	5,180	3,400	--	--	839	133
Lead - coarse	mg/kg	21	700	2,800 (G, X)	900 (DD)	6530	--	10.7	4,570	6,530	512	297	--	--	184	4,700	5,820	4,930	3,330	3,510	--	--	10.3	6.1
Lead - total	mg/kg	21	700	2,800 (G, X)	900 (DD)	12500	6	16.3	6,060	7,500	521	404	460	17	256	11,900	5,890	4,810	3,700	3,460	66	12,500	234	34
Boring ID/ Sample Depth		MDEQ Part 201 Statewide Default Background Levels	MDEQ Part 201 Generic Nonresidential Drinking Water Protection Cleanup Criteria	MDEQ Part 201 Generic GSI Protection Criteria	MDEQ Part 201 Generic Nonresidential Soil Direct Contact Cleanup Criteria	Maximum Concentration Detected	SB- 103NW 10'	SB-103SE 10'	SB-103SW 10'	SB-103SW 10' (Dup)	SB-110 3.5-5'	SB-110 8.5-10'	SB-110NE 5'	SB- 110NW 5'	SB-110SE 5'	SB-110SW 5'	SB-120 3'	SB-120 6.5'	SB-120 10'	SB-120NE 3'	SB- 120NW 3'	SB-120SE 3'	SB-120SW 3'	
Sample Date	Units						7/25/2007	7/25/2007	7/25/2007	7/25/2007	1986	1986	7/25/2007	7/25/2007	7/25/2007	7/25/2007	1986	1986	7/25/2007	7/25/2007	7/25/2007	7/25/2007	1986	1986
Arsenic	mg/kg	5.8	4.6	4.6	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Lead - fine	mg/kg	21	700	2,800 (G, X)	900 (DD)	89800	26.8	439	1,520	5,270	--	--	89,800	10,300	11,800	74,800	--	--	--	8,250	67.5	4,390	54.6	
Lead - coarse	mg/kg	21	700	2,800 (G, X)	900 (DD)	132000	5.5	14.4	222	1,850	--	--	132,000	9,940	29,400	43,200	--	--	--	2,760	10.4	2,710	36.3	
Lead - total	mg/kg	21	700	2,800 (G, X)	900 (DD)	120000	6.69	92.9	372	2,150	700	33	120,000	10,000	24,700	55,500	2,050	68	11	4,640	17.3	3,100	43.8	

Notes:

	Exceeds GSI protection criteria only.
	Exceeds Nonresidential drinking water protection criteria or both the GSI protection and drinking water protection criteria.
	Exceeds MDEQ Nonresidential direct contact criteria.
	Only detected analytes shown.
(DD)	Hazardous substance causes developmental effects. Industrial direct contact criteria are protective for pregnant adult receptor.
(G)	Ground water surface water interface protection criterion depends on the pH or water hardness, or both of the receiving water.
(X)	The GSI protection criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.
ND	Not detected.
--	Not analyzed.

Table 6
GLTC Land
Ground Water Analytical Results

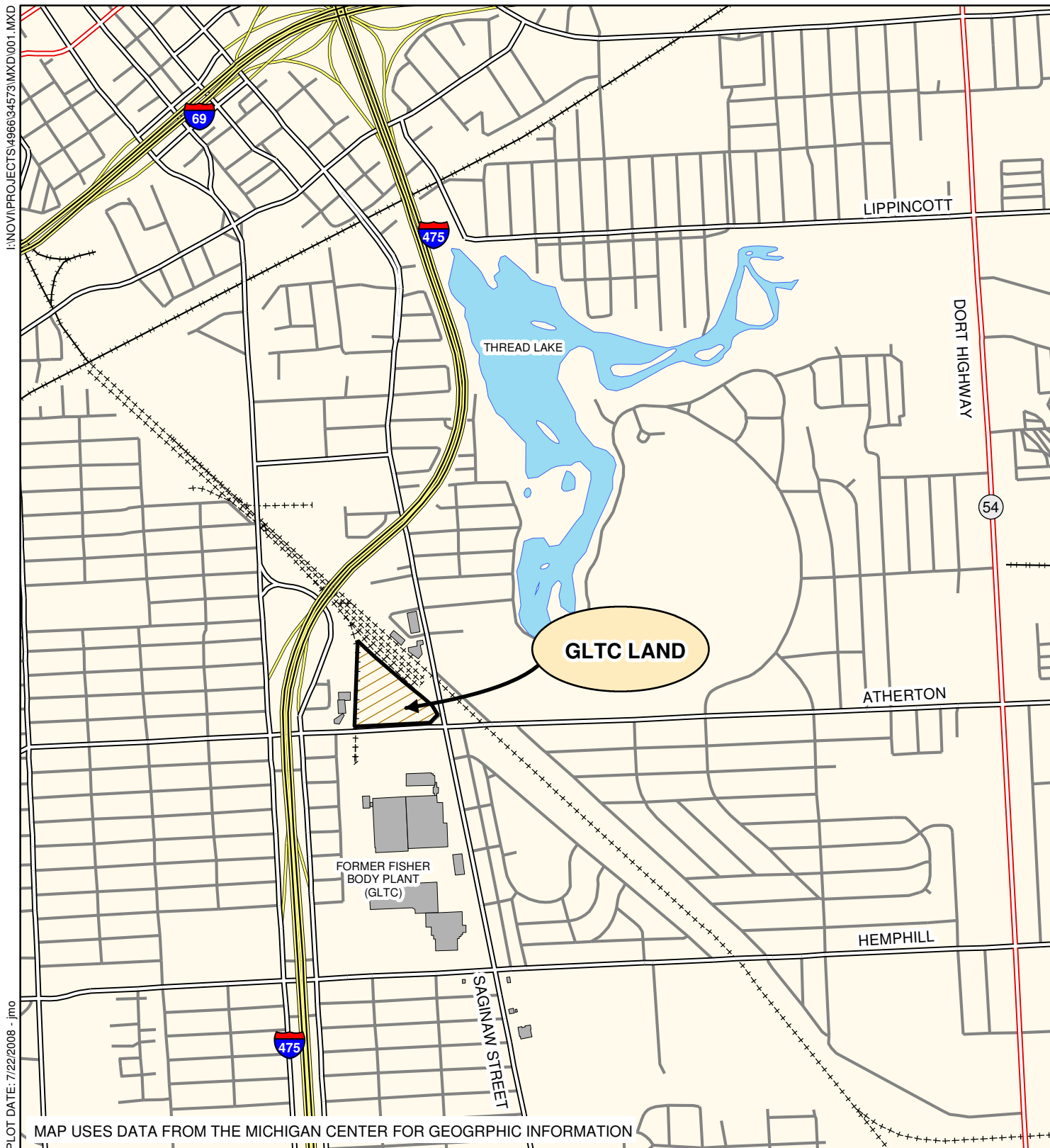
Well ID		MDEQ Part 201 Generic Nonresidential Drinking Water Cleanup Criteria	MDEQ Part 201 Generic GSI Cleanup Criteria	MDEQ Part 201 Generic Groundwater Contact Cleanup Criteria	MDEQ Part 201 Generic Nonresidential Volatilization to Indoor Air Cleanup Criteria	Maximum Concentratio n Detected	MW-7	MW-12	SVE-1	SVE-2	OBG- MW 14	OBG- MW 15	OBG- MW-16	OBG- MW 17	OBG- MW 18	OBG- MW 19	OBG- MW 20	OBG- MW 21	OBG- MW-22
Sample Date	Units						5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	5/12/2005	10/11/2005
Acetone	ug/L	2,100	1,700	31,000,000	1,000,000,000 (D,S)	4	<30	<30	<60,000	<100	<30	<30	<30	<30	<30	<30	<30	<30	4
Benzene	ug/L	5 (A)	200 (X)	11,000	35,000	1,000	0.6	<1	1,000	267	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	ug/L	38,000	2,200	240,000,000 (S)	240,000,000 (S)	9,000	<30	<30	9,000	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
n-Butylbenzene	ug/L	230	ID	5,900	ID	6	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
sec-Butylbenzene	ug/L	230	ID	4,400	ID	4	4	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	--
tert-Butylbenzene	ug/L	230	ID	8,900	ID	0.9	0.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
Chloromethane	ug/L	1,100	ID	490,000	8,600	1	<5	<5	<10,000	<30	1	<5	<5	1	<5	<5	<5	<5	<5
Cyclohexane	ug/L	NC	NC	NC	NC	0.6	--	--	--	--	--	--	--	--	--	--	--	--	0.6
Chlorobenzene	ug/L	100 (A)	25	86,000	470,000 (S)	0.7	<1	<1	<3000	<5	<1	<1	<1	<1	<1	<1	<1	<1	0.7
1,1-Dichloroethane	ug/L	2,500	740	2,400,000	2,300,000	0.5	<1	<1	<3000	<5	<1	<1	<1	<1	<1	<1	<1	<1	0.5
cis-1,2-Dichloroethene	ug/L	70 (A)	620	200,000	210,000	30	30	<1	<1	<1	<1	0.5	<1	<1	<1	<1	<1	<1	2
trans-1,2-Dichloroethene	ug/L	100 (A)	1,500 (X)	220,000	200,00	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.3
Ethylbenzene	ug/L	74 (E)	18	170,000 (S)	170,000 (S)	2,000	26	<1	2,000	9	<1	<1	<1	<1	<1	<1	<1	<1	0.1
Isopropyl benzene	ug/L	2,300	28	56,000 (S)	56,000 (S)	66	27	<1	<1	66	<1	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	ug/L	NC	NC	NC	NC	4	3	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	--
2-Methylnaphthalene	ug/L	750	19	25,000 (S)	25,000 (S)	3	3	<5	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	--
4-Methyl-2-pentanone	ug/L	5,200	ID	13,000,000	20,000,000 (S)	300,000	<50	<50	300,000	20	<50	<50	<50	<50	<50	<50	<50	<50	<1
Methylene Chloride	ug/L	5.0 (A)	1,500 (X)	220,000	1,400,000	1	<5	<5	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Cyclohexane	ug/L	NC	NC	NC	NC	0.6	--	--	--	--	--	--	--	--	--	--	--	--	0.6
Naphthalene	ug/L	1,500	11	31,000 (S)	31,000 (S)	48	48	<5	<1	20	<5	1	<5	<5	<5	<5	<5	<5	--
n-Propylbenzene	ug/L	230	ID	15,000	ID	27	27	<1	<1	24	<1	<1	<1	<1	<1	<1	<1	<1	--
Toluene	ug/L	790 (E)	270	530,000 (S)	530,000 (S)	134,000	<1	<1	134,000	149	<1	0.4	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	ug/L	63 (E)	17	56,000 (S)	56,000 (S)	160	160	<1	<1	120	<1	<1	<1	<1	<1	<1	<1	<1	--
1,3,5-Trimethylbenzene	ug/L	72 (E)	45	61,000 (S)	61,000 (S)	39	33	<1	<1	39	<1	<1	<1	<1	<1	<1	<1	<1	--
Vinyl Chloride	ug/L	2.0 (A)	13 (X)	1,000	13,000	2	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2
o-xylenes	ug/L	280 (E)	41	190,000 (S)	190,000 (S)	3,000	<1	<1	3,000	5	<1	<1	<1	<1	<1	<1	<1	<1	<1
p,m-xylenes	ug/L	280 (E)	41	190,000 (S)	190,000 (S)	6,000	3	<2	6,000	1,090	<2	<2	<2	<2	<2	<2	<2	<2	<1
Barium	mg/L	2.0 (A)	0.670 (G,X)	14,000	NLV	3.14	0.42	1.00	1.84	3.14	0.024	0.092	0.166	0.057	0.021	0.087	0.095	0.144	0.4
Lead	mg/L	0.004 (L)	0.016 (G,X)	ID	NLV	0.059	<0.003	<0.003	0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.059

Notes:

	Exceeds GSI MDEQ Part 201criteria only.
	Exceeds MDEQ Part 201 Nonresidential drinking water criteria or both GSI and drinking water criteria.
	Only detected analytes shown.
(A)	Criteria is the state of Michigan drinking water standard.
(E)	Criteria is the aesthetic drinking water value.
(G)	Ground water surface water interface criterion depends on the pH or water hardness, or both of the receiving water.
(L)	Criteria for lead are derived using a biologically based model, and are not calculated using the algorithms and assumptions specified in pathway-specific rules.
(S)	Criterion defaults to the hazardous substance-specific water solubility limit.
(X)	The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.
ID	Means insufficient data to develop criterion.
NLV	Means hazardous substance is not likely to volatilize under most conditions.
NC	No criteria listed.
--	Not analyzed
Methods	8260 for VOCs; 6020 for Barium and Lead.

FIGURES

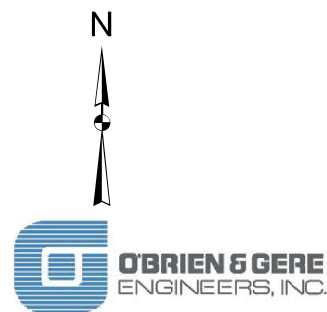
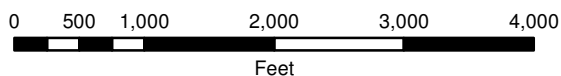
FIGURE 1

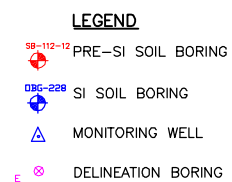


RACER TRUST
GLTC LAND
FLINT, MICHIGAN

SITE LOCATION MAP

DATE: 7/22/08
FILE: 4966/34573/001.MXD





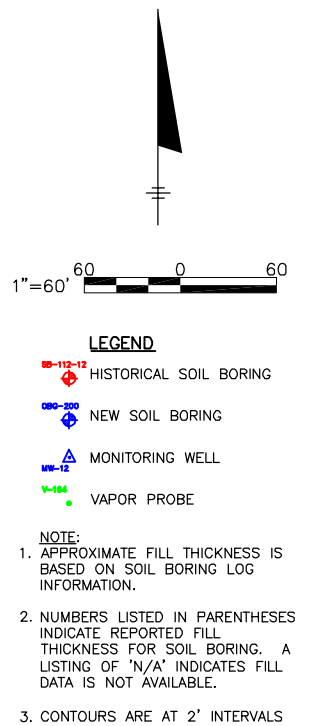
SOIL BORING LOCATIONS

RACER TRUST
GLTC LAND
FLINT, MICHIGAN

FIGURE 2



FILE NO. 15388.47853-002
SEPTEMBER 2011

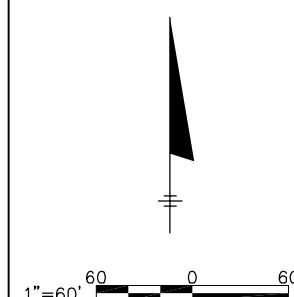


APPROXIMATE
FILL THICKNESS
MAP

RACER TRUST
GLTC LAND
FLINT, MICHIGAN

FIGURE 3

15388-47853.003
SEPTEMBER 2011



LEGEND

-  HISTORICAL SOIL BORING
-  NEW SOIL BORING
-  MONITORING WELL
-  VAPOR PROBE

NOTE:

1. APPROXIMATE FILL THICKNESS IS BASED ON SOIL BORING LOG INFORMATION.
2. NUMBERS LISTED IN PARENTHESES INDICATE REPORTED FILL THICKNESS FOR SOIL BORING. LISTING OF 'N/A' INDICATES FILL DATA IS NOT AVAILABLE.
3. CONTOURS ARE AT 2' INTERVALS

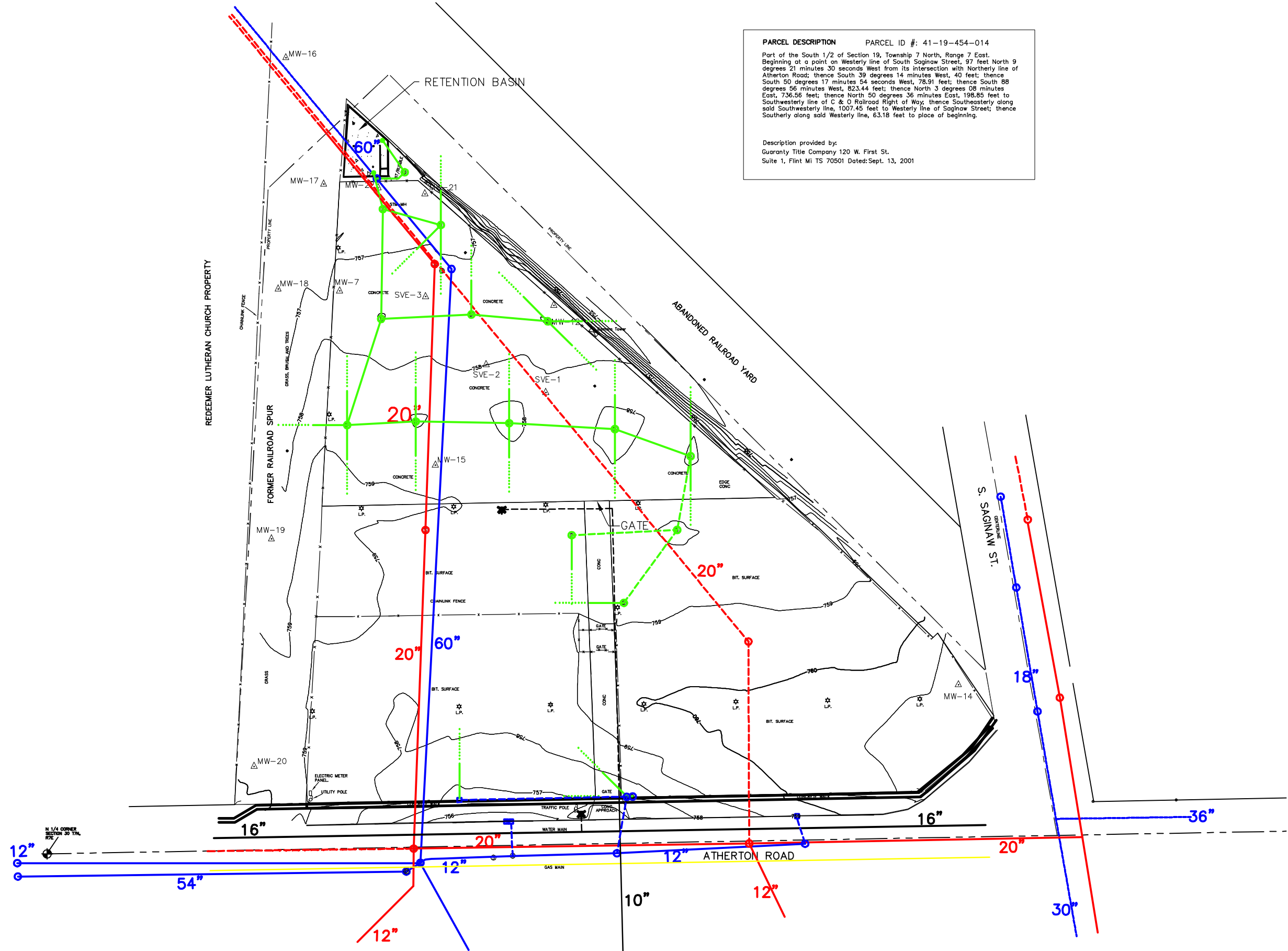
APPROXIMATE BASE
OF FILL CONTOUR
MAP

RACER TRUST
GLTC LAND
FLINT, MICHIGAN

FIGURE 4

15388-47853.004
SEPTEMBER 2011





REDEEMER LUTHERAN
CHURCH PROPERTY

SALT STORAGE
BUILDING

OBG-MW16
(743.57)

RETENTION BASIN

FORMER RAILROAD YARD

CSX
RAILROAD
PROPERTY

S. SAGINAW ST.

OBG-MW17
(747.13)

OBG-MW21
(745.97)

OBG-MW18
(753.44)

OBG-MW7
(750.87)

SVE-3

MW-12
(747.69)

SVE-2

SVE-1

OBG-MW15
(743.54)

GATE

OBG-MW19
(754.26)

750

754

OBG-MW14
(757.27)

OBG-MW20
(755.33)

FIGURE 6

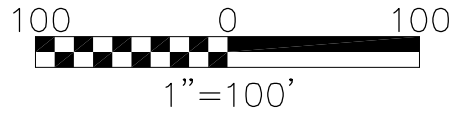


LEGEND

-  MONITORING WELL LOCATION
-  (744.00) GROUND WATER ELEVATIONS
(FEET ABOVE MEAN SEA LEVEL)

RACER TRUST
GLTC LAND
FLINT, MICHIGAN

GROUND WATER
CONTOUR MAP
(MAY 12, 2005)



FILE NO. 15388-47853.006
SEPTEMBER 2011



REDEEMER LUTHERAN
CHURCH PROPERTY

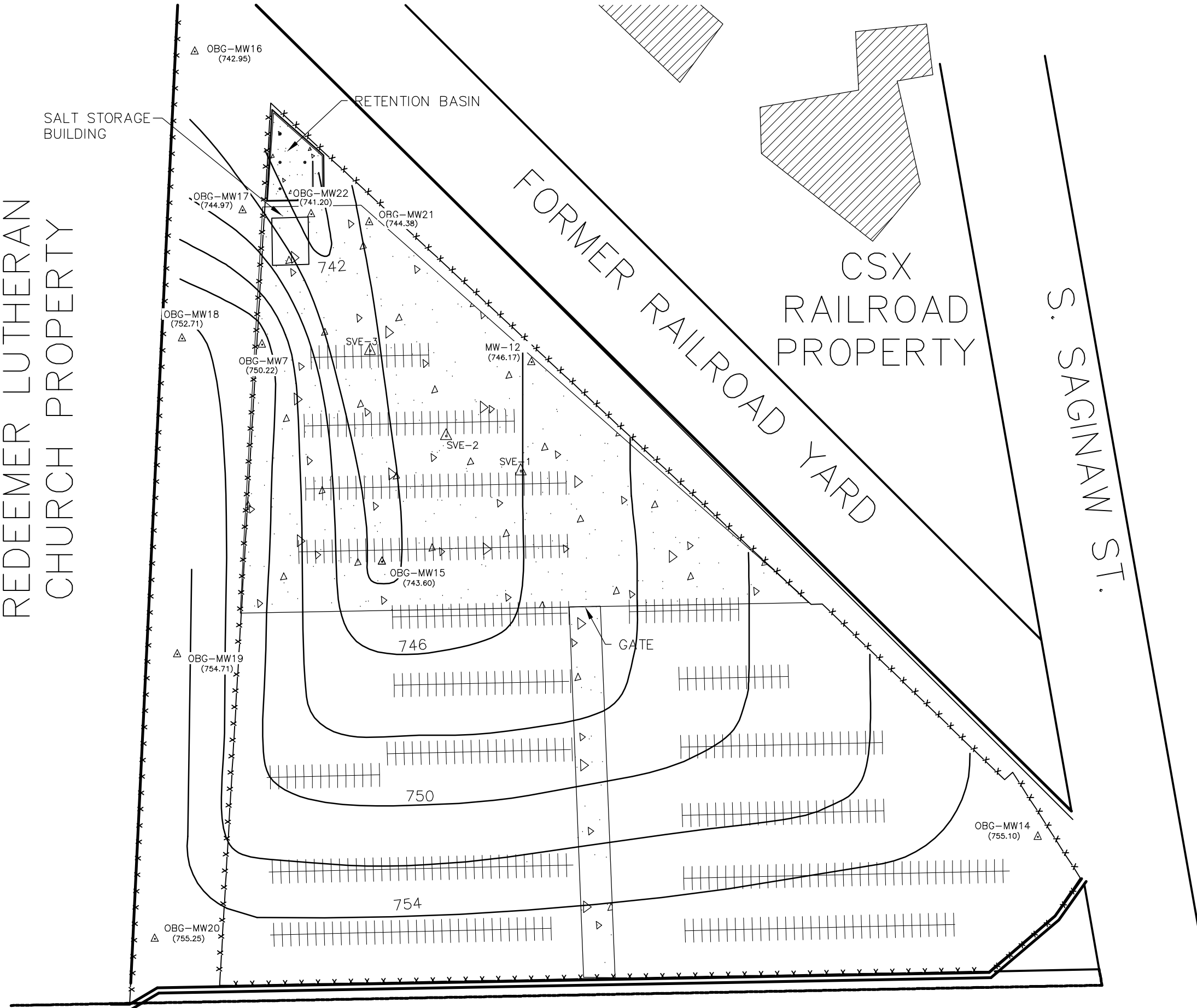


FIGURE 7

LEGEND

△ MONITORING WELL LOCATION

(744.00) GROUND WATER ELEVATIONS
(FEET ABOVE MEAN SEA LEVEL)

RACER TRUST
GLTC LAND
FLINT, MICHIGAN

GROUND WATER
CONTOUR MAP
(NOVEMBER 22, 2005)

100 0 100
1"=100'

FILE NO. 15388.47853.007
SEPTEMBER 2011

O BRIEN & GERE
ENGINEERS INC.

Appendices

Appendix A
Scott L. Cormier Resume

Scott L. Cormier, PE

Vice President

TECHNICAL EXPERTISE

Process design

Hydraulics

Stormwater management

Phase I site assessments and compliance audits

Hazardous programs (RCRA, CERCLA, state)

Asbestos abatement inspection and design

Aboveground and underground storage facilities testing, design and management

Demolition/deactivation

PROJECT ASSIGNMENT

YEARS OF EXPERIENCE

With O'Brien & Gere: 24

With Other Firms: 0

EDUCATION

BS/1986/Civil Engineering; Worcester
Polytechnic Institute

PROFESSIONAL REGISTRATION

Professional Engineer: IL, IN, KY, MI, OH, OK

Certified Underground Storage Tank Professional

PROFESSIONAL AFFILIATION

American Society of Civil Engineers, Michigan
Southeast Section

National Society of Professional Engineers

Mr. Cormier has more than 24 years of professional engineering and construction management experience. As Vice President with O'Brien & Gere, and a member of the Environmental Solutions Business Unit, he is responsible for the operation of the firm's Michigan office and for the strategic expansion of environmental services in the Midwest. Mr. Cormier is the practice leader for facility deactivation and demolition programs, and is a leader of the RCRA marketing task force, which was instrumental in selection for several industrial remediation projects.

REPRESENTATIVE PROJECTS

Asbestos Evaluation and Remediation

Asbestos Inspection, Farmington, MI, Project Engineer –

Performed an asbestos inspection and underground storage vault sampling prior to demolition of a cooling tower building. Project included bulk sampling of thermal insulation, vault sampling and analysis, and recommendations for removal and closure.

Harvard Medical School, Asbestos Program, Boston, MA, Project Engineer –

Developed drawings and specifications for asbestos abatement project within mechanical rooms and a tunnel system. The design included glove bagging removal, work zone removal and encapsulating techniques. Follow through with air monitoring and construction inspection are included throughout the project.

Asbestos Abatement, Canton/Wrentham, MA, Project Engineer –

Designed asbestos abatement projects at a hospital school (16 buildings) and a state school (16 buildings). Both projects included coordination of utility shut downs, work zone locations, HEPA filtering and disposal in accordance with all federal, state and local regulations.

Manufacturing Facility, Columbia, MD – Coordinated an asbestos survey of process equipment in a 1,200,000 ft² as part of a closure plan. Provided design and bid assistance services prior to removal of asbestos. Performed construction inspection and provided contract administration, utilizing an outside air monitoring firm throughout asbestos removal.

Manufacturing Facility, Merrimack, NH – Performed asbestos consulting services. Work included regulatory coordination, recommendations for asbestos remedial techniques, and regulation interpretation.

Essex Agricultural and Technical Institute, Danvers, MA – Prepared a specification and assisted in preparation of an AHERA management plan for twelve buildings on campus. Project included bulk sampling, asbestos materials damage assessment, removal and maintenance recommendations and awareness training for the school maintenance staff.

VA Medical Center, Northampton, MA – Performed bulk sampling of building materials associated with renovation of a gas distribution system.

Naval/Marine Corps Recruitment Center (NMCRC), New Haven, CT – Coordinated an asbestos inspection. Project included bulk sampling and analysis of suspect asbestos containing fire wall, pipe insulation and boiler insulation materials. Prepared an asbestos survey report.

Manufacturing Facility, Pawtucket, RI – Performed asbestos survey, design and construction inspection services for a 100,000 square foot facility. Project included bulk sampling, assessment of condition of all suspected asbestos-containing-material, preparing technical specifications and design drawings. Provided air monitoring and analysis and construction inspection during remediation.

Corporate Facility, Fall River, MA – Performed an asbestos inspection and design services. Project included securing bulk samples, producing drawings, setting up work zones, preparing technical specifications and recommendations for abatement. Air sampling during analysis was conducted for the projects involving asbestos removal and disposal.

Avon Public School System, Avon, MA – Performed asbestos inspection, in accordance with AHERA (40 CFR Part 763) for three schools. Project included bulk sampling, recommendations for abatement actions, cost estimating and developing an operations and maintenance program as part of the Management Plans for each school.

Millbury Public School System, Millbury, MA – Performed AHERA asbestos inspections for four schools. Project included preparation of four Management Plans incorporating bulk sampling, abatement recommendations, cost estimates and development of operations and maintenance plans.

Lynnfield Public School System, Lynnfield, MA – Performed asbestos inspections in accordance with AHERA. Project included preparation of a Management Plan for each school building, including

securing bulk samples of suspect material, recommending abatement action, cost estimating and developing operations and maintenance plans.

Steel Manufacturing Facility, Worcester, MA – Prepared design drawings and technical specifications for three buildings. Project included additional bulk and air sampling and contract administration design services.

Massachusetts Department of Environmental Management (DEM), Lynn, MA – Performed air monitoring and inspection services associated with an asbestos removal project. Environmental and clearance air samples were collected for the duration of construction.

Water/Stormwater Management

Eastman Gelatin Company, Water Treatment System, Peabody, MA, Lead Design Engineer – Completed design, construction inspection, and O&M Manual for a high purity water treatment system which included piping modifications to the existing system and a hydraulic analysis of a looped distribution piping network to obtain consistent demand flows. Process equipment included ion exchange units, acid and caustic regeneration units, multi-media and cartridge filters, degasifier, and ultraviolet sterilizers. Developed an operation and maintenance manual for the entire design system. Completed design of a new low iron water supply system using fiberglass, lined, and stainless steel piping. This included supplying more flow to the existing distribution system, providing maximum storage space between two storage tanks, designing an overflow weir transfer and discharge scheme, and developing a new looped distribution system with the ability to use the existing operating scheme. Produced an operation and maintenance manual for operating the existing system in conjunction with the new.

Metropolitan St. Louis Sewer District, Stormwater, St. Louis, MO – Assisted with design of a stormwater collection and distribution system.

Stormwater Permitting Program, Cambridge, MA – Directed an individual stormwater permitting program for a corporate office. Project includes inventory, mapping and sampling for facilities located in Cambridge, MA; Westminster, MA; Roseville, MI; Mountainside, NJ and Union, SC.

Major Chemical Manufacturer, Everett, MA – Managed an individual stormwater permit program.

Project includes inventory site walkthroughs, mapping, surface runoff estimating and stormwater/non-stormwater sampling and analysis.

Industrial Facility, Raynham, MA – Performing a stormwater permit applicability program. Project includes EPA/DEP coordination, site walkthroughs and regulatory interpretation.

Major Electronics Industry, Brighton, MA – Directed an individual stormwater permit program.

Industrial Manufacturing Facilities, Warren, Titusville, Williamsport, PA – Directed the preparation of individual stormwater permit applications. Projects included stormwater sampling, permitting and regulatory coordination.

Manufacturing Facility, Humacao, Puerto Rico – Directed the preparation of an individual stormwater permit application and exemption notification.

Electronics Manufacturing Facility, Gurabo, Puerto Rico – Directed the preparation of a general permit application. Project included preparation of a stormwater pollution prevention plan.

Automobile Manufacturing Facility, Flint, MI – Assisted with an individual permit program. Project included an assessment of materials storage, inventory, utility mapping, sampling and analysis and permit application preparation.

Wastewater Management

Automotive Manufacturer, Storm Sewer Bar Screen System, Flint, MI, Lead Design Engineer – Designed an in-line underground vault/mechanical bar screen system for storm sewer, prior to waste oil removal. Installation was completed by UAW trades under the direction of the manufacturer.

South Essex Sewer District, Salem, MA, Design Engineer – Assisted in an evaluation of operation and maintenance of the South Essex Sewage treatment plant. Project included an assessment of influent and effluent pumping facilities, grease and grit chambers, sludge and scum handling, thickening and dewatering facilities, disinfection facilities, and odor control problems.

Deer Island Sewerage Treatment Plant, Boston, MA, Design Engineer – Assisted in evaluation of digester system operation. Work included calculating sludge and scum loads, assessing hydraulics of process equipment, process design and

recommending alternative operation and maintenance techniques.

Boston Water and Sewer Commission, Boston, MA – Performed an assessment of alternatives for BWSC to comply with proposed NPDES permitting of combined sewer overflow outfall. Project included research of available technologies for flow measurement and sewerage water quality monitoring, coordination of compliance techniques for over 50 outfalls and preparation of alternative cost estimates.

Performed inspections of the facilities tidegate structures. Project included documenting existing conditions, evaluating design alternatives and assistance throughout design for replacing the tidegates.

Department of the Navy, Naval Facilities Engineering Command, Philadelphia, PA; NSGA, Winter Harbor, ME – Evaluated the RBC sewage treatment plant for compliance with the State of Maine NPDES effluent limits. The project included influent/effluent continuous sampling and analysis, flow monitoring, hydraulic sizing and future population increases to identify deficiencies and recommend process and operational changes.

Department of the Navy, Naval Facilities Engineering Command, Philadelphia, PA; NAS, South Weymouth, MA – Assisted with preliminary and final design of a sewage lift station. Project included asbestos removal, demolition of existing facilities, installation of a new comminutor, increased wet well capacity and two new submersible pumping systems.

Water Resources

Phase I dam inspections, Eastern Massachusetts – Inspections include: assessing the need for remedial action; identifying extent and nature of problems; assessing extent of repairs; and recommending actions to be implemented.

Private Homeowner, West Stockbridge, MA – Performed an emergency dam inspection. Some recommendations included immediate drawn down, inflow and outflow control capability and increased slope stability, etc.

Hazardous Waste Management

Automotive Manufacturer, Leachate Force Main and Hazardous Waste Storage Facility, Flint, MI, Project Manager – Directed design, bidding, and

construction management of a landfill leachate force main and hazardous waste storage facility, including piping reroutes, pumping automation, leak detection systems, storage building and tank, and continuous pH monitoring.

Solutia, Inc., Design of a RCRA Landfill Cap, Trenton, MI, Project Manager – Established a basis of design to complete construction of a synthetic cap for a 17-acre area at the manufacturing facility in accordance with the Resource, Conservation, and Recovery Act (RCRA) Corrective Action Program. The purpose of the cap was to minimize stormwater penetration, direct stormwater to two NPDES permitted discharge points and away from an on-site pond, and to support redirection of groundwater flow into the adjacent Detroit River. Completion of the cap was conducted as part of a RCRA Voluntary Corrective Action measure, under a Consent Order negotiated with the Michigan Department of Environmental Quality (MDEQ). Also provided limited construction inspection for Phase I, consisting of construction work related to the perimeter access road and a buffer zone of trees for leachate/drainage control. Coordinated contractor bidding including pre-bid meetings, addenda preparation, bid review, and recommendation for award. On-site design support was provided during the initial planning stages for piping relocation and site preparation activities.

BASF Corporation, RCRA Corrective Action Program, Detroit, MI, Project Manager – Directed a design-build closure project for an inactive RCRA hazardous waste storage pad as part of the facility's RCRA Corrective Action program. Activities included pre-assessment sampling and analysis, equipment decontamination, dismantling and disposal, pad decontamination, verification sampling/analysis and reporting, and negotiations with State regulators (Michigan Department of Environmental Quality).

Stanley Tools, Georgetown, OH – In preparation for plant shutdown due to consolidation, directed the overall site management activities for the environmental reporting, compliance evaluations, and deactivation issues. Services included Air emissions reporting, permitting, and SARA 312 filing, wastewater sampling and reporting for compliance with Ohio and local discharges, annual hazardous waste reporting, evaluating land disposal issues, and waste characterization.

Tier 1 Automotive Supplier, Archbold, OH – Directed soil and groundwater sampling following

excavation for pit installations to evaluate the potential for impacts from former operations. The results of the sampling were incorporated into a site wide subsurface evaluation for compliance with Ohio standards. The Ohio EPA Voluntary Action Program (VAP) criteria were used as the basis for evaluating potential impacts, determining the need for additional investigations and recommendations for remedial options.

Tier 1 Automotive Supplier, New Lexington, OH – Directed a site wide subsurface investigation of the manufacturing facility as part of an overall corporate auditing program. The project included preparation of a sampling and analysis plan, implementation of soil and groundwater sampling, and evaluation of analytical results in accordance with the Ohio EPA Voluntary Action Program (VAP). The VAP evaluation incorporated discussion with Ohio EPA officials, recommendations regarding notifications and waste disposal, and determining areas of concern due to analytical results. Recommendations for additional investigation and evaluating interim remedial options were also included.

Tier 1 Automotive Supplier, Springfield, OH – Directed a hydrogeological investigation to assess groundwater quality in an area at the manufacturing facility suspected to be the source of impact. The project included installation of groundwater monitoring wells, analytical evaluation compared to the Ohio EPA Voluntary Action Program (VAP) and recommendations for future remedial efforts/monitoring.

Ford Motor Company, Landfill Closure, Canton, OH, Project Director – Directed design-build removal, disposal, site restoration, and closure reporting of approximately 100,000 cubic yards of industrial wastes formerly disposed in an offsite landfill. The project included construction management, contracting, waste characterization, coordination and negotiations with waste transporters and disposal facilities, air monitoring during construction, local and Ohio EPA negotiations for closure criteria in accordance with the Ohio EPA Voluntary Action Program (VAP). Closure sampling and reporting included a statistically representative random sampling program, as approved by the Ohio EPA, following removal of the wastes.

Ford Motor Company, Subsurface Investigation, Canton, OH, Project Director – Performed a subsurface investigation was completed following

waste removal to evaluate the potential for offsite impacts, obtain local hydrogeologic characteristics to focus the investigative efforts, nested wells to evaluate two separate local aquifers and comparison to Ohio EPA VAP requirements to substantiate closure.

Automotive Dealership, Fairborn, OH – Directed an investigation at the property to evaluate potential sources of petroleum compounds in soil and groundwater. Soil and groundwater samples were collected and analyzed using an on-site mobile laboratory to determine the extent of impact. The results were compared to Ohio EPA cleanup criteria guidance and remedial options were evaluated/recommended. Based on the recommendations, the likely sources of impacts to the subsurface (lift hoists, waste oil USTs, and sumps) were either removed or upgraded. Impacted soils were also excavated and disposed to limit future source releases. A Closure Report, including the investigation results was submitted to Ohio EPA.

Commercial Retail Facility, UST Program, Toledo, OH, Project Director – Directed turnkey design-build services for abandoning two underground storage tanks and installing a new fuel oil aboveground storage and dispenser system. The UST abandonment phase was performed in accordance with Ohio EPA BUSTR requirements and the aboveground storage system was designed as approved by the local and state fire marshal ordinance, including high level alarms, seasonal insulation, heating availability and secondary containment.

Directed three RI/FS investigations for an industrial and municipal landfill in a residential neighborhood in Flint, Michigan and developed three Remedial Action Plans (RAP) in accordance with MDEQ guidelines and CERCLA requirements. The RI/FS phases and the RAPs incorporated delineation of fill materials, lead, arsenic, BTEX and PNAs in the surface soil and subsurface along with human health risk assessments for providing defensible data for litigation purposes. The programs also included remedial design and implementation of three Interim Remedial Measures (IRMs) associated with drum removal, installation of a soil cover over the site, and removal/covering of lead impacted surface and subsurface soil on residential properties. Excavation activities incorporated on-site X-Ray Fluorescence (XRF) analysis for clean closure.

Automotive Manufacturer, RCRA Closure, Flint, MI, Manager – Managed a RCRA closure for several regulated lagoons and solid waste management units under a Michigan Consent Order associated with electroplating sludges. The program included sampling and analysis to support delisting of the material as a non-hazardous waste, remedial design, bidding assistance, oversight of construction activities during material removal and disposal of 65,000 tons of material, negotiations with the State for health based cleanup standards in lieu of background, statistical analysis to establish clean up levels, and final grading design for on-site closure.

Automotive Industry, Closure Program, Sterling Heights, MI, Project Manager – Managed a site-wide investigation associated with 30 acres of abandoned lagoons. Project included soil boring and monitoring well investigations, surface water sampling, evaluation of remedial options and closure to MDEQ industrial generic criteria associated with petroleum, metals, and solvent related compounds.

Automotive Parts Manufacturer, Leonard, Tawas, East Tawas and Oscoda, MI and New Lexington, OH – Directed five sitewide preliminary environmental site assessments and investigations. Programs included historical background reviews, database reviews and evaluation of potential areas of concern associated with on-site and off-site issues.

Confidential Client, Treatment Systems and Lagoon Closure, Elsie, MI, Project Director – Directed a design-build treatment system and lagoon closure associated with a quarter acre discharge lagoon and an industrial pretreatment system for a site in Elsie, Michigan. The program included a hydrogeological investigation, state approved closure work plan, construction contract documents for bidding and construction oversight and closure sampling during decommissioning and demolition of the treatment system and sludge removal in the lagoons.

Managed a site investigation for a landfill closure in Canton, Ohio associated with a five acre industrial landfill. The program included installation of double cased wells, free product measurement, evaluation of hydrogeologic characteristics, sampling and analysis to support landfill closure and preparation of the closure report for submittal to the OEPA.

Directed a site specific risk assessment associated with petroleum impacted surface and subsurface soil

at an industrial site in Jackson, Michigan. The program included a site wide remedial investigation, bedrock production well sampling with vertical interval determination using packers and a site wide remedial action plan for on-site closure.

Directed a RCRA investigation in several operable units for a site under an Administrative Order for Region VII, USEPA in Des Moines, Iowa associated with pesticides, herbicides and dioxin contamination to surface and subsurface soil. The investigation supported on-site closure by an impermeable cover.

Automotive Manufacturer, PCB Program, Pontiac, MI, Project Director – Directed a design-build polychlorinated biphenyl (PCB) clean up in accordance with USEPA, Region V TSCA spill cleanup policy and Michigan DEQ generic industrial clean up criteria. The project included work plan submittal and approval by both agencies, construction oversight, sampling and analysis for closure, and submittal of a certified closure report.

Industrial Manufacturer, Toledo, OH – Directed a soil remediation program. Closure consisted of excavation and disposal of approximately 10,000 cubic yards of fuel oil impacted soil and closure sampling/regulatory reporting.

Soil Vapor Extraction Remediation Program, Rochester, Hills, MI – Directed a soil vapor extraction remediation program for a gasoline contamination project.

Automotive Manufacturer, Soil Remediation Project, Traverse City, MI, Project Director – Directed a design-build soil remediation project which consisted of excavation and disposal, building demolition and rebuild and soil vapor extraction remediation associated with waste oil and solvent contamination.

Automobile Dealership, Phase I and II Investigation Program, North Jackson, OH – Directed soil/groundwater sampling and delineation for subsequent underground storage tank removals and soil remediation.

Coatings Manufacturer, Hamtramack, MI – Directed a hydrogeological investigation and soil treatment remedial design and corrective action plan (CAP). Project included test pits, soil borings and monitoring wells associated with the release of various solvents from underground storage tanks. Additionally, a site specific risk assessment was

performed to establish thermal treatment performance objectives and site specific clean up criteria. Oversight during construction and on-site thermal treatment pilot testing and remedial activities was performed along with closure report submittal and negotiations with state officials.

Molding Company, Hydrogeological Investigation, Warren, MI – Directed a hydrogeological investigation, including excavation, borings and monitoring wells. Project included feasibility study and permitting for treatment of solvent contaminated soils by a Hammermill shredder.

Automobile Parts Manufacturer, Lagoon and Underground Storage Tank Closures, Sterling Heights, MI – Managed project that included sludge sampling and characterization, preparation of closure contract documents, on-site inspections, closure sampling and analysis, contract administration and regulatory report preparation.

Automobile Manufacturer, Underground Storage Tank Farm Removal/Replacement, Chelsea, MI – Directed a hydrogeological investigation associated with removal and replacement of an underground storage tank farm.

Chemical Manufacturer, Ferndale, MI – Directed a hydrogeological investigation and remediation program. Project includes pilot tests, bench scale treatability studies, design and permitting for multiple remediation techniques associated with soil and groundwater contamination and removal of dense non-aqueous phase liquids (DNAPL).

Directed a soil boring and sampling program and prepared a corrective action plan for soil remediation contaminated with lead in Hamtramack, Michigan.

Major Gasoline Distributor, Southeast Michigan – Directed hydrogeological investigations, corrective action plans, pilot tests, and remediation design, installation and operation for approximately twenty (20) stations. Projects involved soil and groundwater contaminated with gasoline, fuel oil and wash oil constituents.

Automotive Manufacturer, Groundwater Recovery System, Ypsilanti, MI, Manager – Directed a design-build groundwater recovery and storage system at the Dynamometer area within the Willow Run plant. Construction services were coordinated with UAW trades.

Automobile Parts Supplier, Hydrogeological Investigation, Ypsilanti, MI – Installed soil borings and monitoring wells associated with gasoline contamination, groundwater pump tests, and remedial design of a recovery system. A feasibility study and design for vadose zone remediation along with operation and maintenance of the system was also included.

Automobile Dealership, Property Evaluation Report, Rochester, MI – Prepared a hydrogeological investigation report associated with a property evaluation. Project included coordination with legal counsel, installation of soil borings and monitoring wells and recommended remedial approaches.

Food Manufacturer, Naperville, IL – Directed a subsurface investigation program consisting of soil boring and monitoring well installations.

Major Steel Manufacturer, Zug Island, MI – Directed a soil investigation program associated with health and safety issues.

Managed an ongoing groundwater and drinking water investigation and monitoring program in South Kingston, Rhode Island.

Managed a Phase I and II subsurface investigation program for a solvent material release in Waterbury, Connecticut.

Naval Facility, Brunswick, ME – Prepared a Plan of Action and subsurface investigation associated with an aboveground and underground storage tank farm.

Performed subsurface investigations and DEP coordination for an underground fuel oil storage tank removal project located in Natick, Massachusetts.

Taunton, MA – Performed soil removal inspections and wetlands cleanup associated with a fuel oil spill in Taunton, Massachusetts. Project included coordination with adjacent property owners.

Phase II Subsurface Investigation Program, Wrentham, MA – Managed a Phase II subsurface investigation program for a gasoline contaminated site located in Wrentham, Massachusetts. Project includes a groundwater monitoring program, soil gas survey and coordination with nearby homeowners.

Major Electronics Company, Venago County, PA – Managed a Phase I and II subsurface investigation project. Project included monitoring well installations (overburden and bedrock), soil gas survey, seismic

refraction survey and coordination with adjacent property owners.

Phase I Investigation, Medford, MA – Evaluated a Phase I investigation and prepared detailed cost estimates for remedial options associated with soil and groundwater contamination with polynuclear aromatics.

Manufacturing Facility, Site Assessment, Pawtucket, RI – Performed subsurface investigations and analysis associated with EP toxic contaminated soil in underground cisterns and free phase fuel oil on the groundwater. A hydrogeological study was performed to assess the impact to groundwater.

Steel Processing Facility, Pawtucket, RI – Inspected removal of lead, arsenic, sulfuric acid and PCB contaminated soil from the basement of facility. Project included personal and environmental air monitoring to evaluate airborne contaminant concentrations.

Industrial Facility, Fall River, MA – Prepared Phase I, II and III reports associated with TCE contamination in the groundwater. Project included test pits, overburden and bedrock monitoring well installations, hydrogeological analyses, risk characterization report and a remedial option evaluation associated with the Massachusetts Contingency Plan.

Devised and coordinated a test pit and soil borings program for a 200+ acre initial site assessment for a proposed development in Rhode Island. The assessment included analytical coordination for soil and groundwater and report preparation with recommendations and discussion of hydrogeologic conditions.

Leominster, MA – Coordinated test pit excavations, monitoring well installations, sampling program, and analytical program for proposed land purchase in Leominster, Massachusetts. Recommendations for cleanup were included in the site assessment report.

Directed a final design of a groundwater pumping and recovery system, involving a pump test associated with removal of free product and dissolved constituents. Project includes treatment system installation, operation and maintenance for a two-year duration and final design of a vadose zone remediation system.

Chevrolet Dealership, Dearborn, MI – Directing a consultant oversight program which includes a bioremediation treatment system for polynuclear aromatic compounds in groundwater and soil.

Automobile Manufacturer, Romulus, MI – Directed a Phase II hydrogeological investigation associated with a waste oil and lube oil release.

Belleville, MI – Directed a hydrogeological investigation and an evaluation of a surface pond for potential impact associated with a waste oil storage system release in Belleville, MI.

Argonaut Property, White Lake, MI – Directed an investigation and excavation program at an Argonaut owned property in White Lake, MI. Project is to include facility demolition and rebuild as part of the remediation system.

Automobile Dealership, Fairborn, OH – Directed a Phase I and Phase II investigation, along with remediation and closure of a hydraulic oil release inside an automobile dealership.

Automobile Dealership, Taylor, MI – Directed a Phase II subsurface investigation for a property transaction.

Automobile Dealership, Mt. Morris, MI – Directed a Phase II subsurface investigation and underground storage tank removal program.

Automobile Dealership, Dearborn, MI – Directed a subsurface investigation and asbestos survey associated with a property transaction.

Georgetown, MA – Assisted with a Phase I, II, III and IV investigation/remediation program for a foreclosed facility in Georgetown, Massachusetts associated with fuel oil and solvent impact to soil and groundwater.

Automobile Dealership, Harrisburg, PA – Assisted with a Phase I and II assessment associated with a solvent release.

Detroit, MI – Directed a remediation program including underground storage tank removals associated with a property transaction in Detroit, MI.

Fort Leavenworth, KS – Managed a soil sampling program phase associated with a remedial investigation at the Fort Leavenworth, Kansas facility.

Assisted with regulatory review associated with an underground storage tank removal program and an industrial facilities design project.

Environmental Site Assessments and Compliance Audits

Manufacturing and Distribution Facility, Silao, MX – Managed an environmental site assessment and an environmental compliance audit. A Phase I hydrogeologic investigation was also performed to evaluate potential source areas identified in the site assessment.

Breweries, Minnesota, Pennsylvania, North Carolina, Florida and Texas – Directed a corporate site divestiture environmental site assessment program. The site assessments included the ASTM guidelines for environmental assessments, compliance related issues and an evaluation of the regulatory status of disposal facilities historically used by the breweries. Potential cost estimates were also developed for each potential area of concern associated with the items identified in the assessments.

Automotive Manufacturer, Multiple Locations – Directed an environmental site assessment program involving 30 dealerships in thirteen states along the east coast of America. The assessments included compliance reviews and recommendations for investigatory and remedial activities.

Automotive Parts Supplier, Milwaukee, WI and Crystal Lake, IL – Performed environmental site assessments and deactivation assessments. The programs included costs estimates associated with potential areas of concern identified in the site assessments and estimated costs for site decommissioning.

Industrial Agricultural Manufacturing Facility, Blissfield, MI – Directed a Phase I environmental liability assessment.

Automobile Service/Maintenance Facility, Flint, MI – Directed a Phase I environmental audit.

Revere, MA – Performed an environmental audit including groundwater sampling and analysis associated with a prior landfill and a 1,200,000 square foot facility located in Revere, Massachusetts.

Chemical Manufacturing Facility, Wickliffe, OH – Performed an environmental audit. The audit report consisted of a summary of the plant processes and

personnel activities; descriptions of activities which may have been in contravention of statutory, regulatory or permit limits; identification of actions necessary for compliance; and cost estimates.

Automobile Manufacturing Facility, Belvedere, IL – Performed an environmental audit. Project included descriptions of process and personnel activities, potential activities in contravention of SARA Title III regulations and identification of actions required for compliance.

Automobile Dealership, Providence, RI – Performed an environmental audit. Project included regulatory coordination, site inspections and report preparation with recommendations associated with potential environmental liabilities.

Manufacturing Facility, Fall River, MA – Assisted in an environmental audit. Project included SARA Title III reporting requirements and compliance with the Massachusetts Contingency Plan (MCP).

Chemical Manufacturing Facility, Arab, AL – Performed an environmental liability assessment. Project included review of previous environmental work and recommendations for further compliance work.

Automobile Manufacturing Facilities, Huntsville, AL – Performed SARA Title III audits for four facilities. Projects included review of previous Form R submittals and development of updated forms to bring facilities into compliance.

Hotel Facility, Hyannis, MA – Performed an environmental liability assessment. Project included asbestos sampling and recommendations for environmental investigatory services.

Environmental Liability Assessment, Andover, MA – Performed an environmental liability assessment for a subdivision in Andover, MA. Project included interviews with various agencies, file reviews, site walk-through and report preparation.

Environmental Liability Assessments, Newburyport, MA – Performed separate environmental liability assessments for three facilities located in Newburyport, MA. Projects included reviews of properties and files for a prospective buyer.

Silver Manufacturing Facilities, Newburyport and North Dighton, MA – Performed environmental liability assessments. Projects included review of

processes and past environmental practices with recommendations for additional work.

Commercial Facility, Dearborn, MI – Performed an environmental site assessment. Project included review of environmental studies, visual inspection, asbestos survey and a Phase I drilling and sampling program.

Automobile Dealership, Traverse City, MI – Directed a Phase I assessment. Project included review of previous environmental investigations and additional subsurface investigation for site closure.

Electronics Manufacturer, Titusville, PA – Directed a Phase I liability assessment. Project included review of site records, regulatory files, etc. associated with facility closure.

Underground/Aboveground Tank Management, Testing and Design

Spill Prevention Control and Countermeasure (SPCC) Plan, Bedford, MA – Prepared a Spill Prevention Control and Countermeasure (SPCC) Plan, in accordance with 40 CFR Part 112 for a government contracting firm in Bedford, MA. The plan included identification of all petroleum storage tanks on the property, remedial recommendations for regulatory compliance, inventory report forms, and emergency response procedures.

Episode Plan Update, Waltham, MA – Assisted in an Episode Plan update for a facility in Waltham, Massachusetts. The update included SARA Title III and SPCC requirements and coordinating additional facilities built after the original plan.

Industrial Client, Fall River, MA – Prepared a technical specification for removal and disposal of a 10,000 gal underground storage tank and associated contaminated soil for an industrial client in Fall River, MA. Project includes field inspection during construction.

Conducted system tests (tank and pipelines) for a 1,500 gallon acetone tank and a 10,000 gallon solvent tank using the Petro-Tite method of tank testing. The test accounted for variables such as vapor pockets, thermal expansion of the product, product stratification, groundwater levels and tank end deflection. The testing system can detect if a tank is losing product at a rate of 0.01 gallon per hour NFPA Standard 329 considers a tank to be leaking if the leak is 0.05 gallon per hour or less.

Performed Petro-Tite testing on a 10,000 gallon Jet A aviation fuel tank. Tank was disconnected from all pipelines and the overburden soil was removed for accessibility to all tank fittings. Pneumatically tested the suction pipeline in accordance with NFPA Standard 30.

Department of the Navy at the NETC and NUSC facilities in Newport, RI – Prepared a Plan of Action for 56 underground storage tank systems. The plan identified actions necessary to comply with new federal and state regulations and also recommended additional work tasks to reduce costs and liabilities.

Performed Petro-Tite testing on two 15,000 gallon #4 fuel oil storage tanks simultaneously. Tank and pipelines were tested simultaneously with all appropriate connections exposed.

Naval Construction Battalion Center, Davisville, RI – Prepared an underground storage tank management plan for 71 storage tank systems located. The report identified actions necessary to comply with federal and state regulations.

Automobile Dealership, Newton, MA – Performed a survey of an underground storage tank system as part of a nationwide program. Survey included identifying and locating the underground tanks and identifying the material stored.

Naval Air Station, Brunswick, ME – Performed an evaluation of underground leak detection systems for four, 567,000 gallon, JP-5 jet fuel underground storage tanks. The report recommended subsurface investigations and a reliable, cost effective leak detection system to comply with federal and state regulations.

Industrial Client, Fort Worth, TX – Designed an underground hazardous waste storage system. Project included a sheeting system to alleviate potential settlement problems, dual-walled piping with leak detection capabilities and an inventory monitoring system meeting the requirements of 40 CFR Part 264, Subpart J.

Final design of a secondary storage tank containment facility for a 6,000 gallon fiberglass storage tank. The containment system is a liner system with leak detection, inventory monitoring, and double wall piping.

Aboveground Fuel Oil Storage and Distribution Facility, Salem, MA – Prepared design drawings and

contract specifications for an. Project includes a storage capacity of 20,000 gallon, double wall piping with leak detection, hydraulic analysis, secondary containment and construction inspection.

Demolition/Deactivation

BASF Corporation, Design-Build Remediation Programs, Hamtramck, MI, Project Director –

Directed numerous design-bid-build programs, including construction management for remediation (on-site thermal treatment), deactivation, and demolition of the entire industrial complex (20 manufacturing buildings over approximately nine acres).

Tank Farm, Ferndale, MI – Prepared contract drawings and specifications for demolition of an aboveground storage tank farm. Project included bidding procedures for decommissioning and demolition and asbestos removal/disposal.

Decommissioning Program, Des Moines, IA –

Directed a decommissioning program in Des Moines, Iowa associated with dioxin contamination of a distribution facility and process materials. The project included negative air containment of the building, specific wash methods for structural components and materials, indoor and outdoor air sampling and analysis, wipe closure sampling, and negotiations with USEPA, Region VII and the ATSDR for using site specific developed risk based clean up criteria for air samples.

Automotive Manufacturer, Decommissioning and Demolition Project, Flint, MI, Project Director –

Directed a decommissioning and demolition project for a hazardous waste treatment plant in Flint, Michigan. The project included sampling and analysis of wastes (hazardous and non-hazardous), structures, tanks, vaults, and pipes to support preparation of contract documents for bidding purposes. Construction oversight and clean closure sampling and analysis was included.

Prepared contract drawings and specifications for demolition of a four acre parcel with manufacturing facilities. Project included asbestos removal/disposal, bidding procedures and recommendation for contract award.

Directed an environmental assessment of a 500,000-square foot foundry.

Manufacturing Facility, Columbia, MD – Assisted with deactivation. Project consisted of asbestos

removal and inspection/air monitoring, RCRA investigations and closures, decontamination of various plating operations and subsurface investigations/remediation associated with resale of the facilities and property.

Plating and Coating Facility, Fall River, MA – Prepared technical specifications and performed construction inspection associated with deactivation and decontamination. Project included equipment decontamination, laboratory lab packing, and controlled deactivation of a combustible powder coatings line.

Assembly Plant, Van Nuys, CA – Directed a deactivation assessment. Project included inventory of all environmental related issues, confirmatory sampling and preparation of decontamination specifications associated with either demolition or sale of the property.

Foundry Operation, Tonawanda, NY – Directed an assessment for decontamination and demolition. Project includes sampling and analysis of suspected contaminated equipment or facilities, asbestos sampling and survey and technical specifications for decontamination and remediation as necessary.

SPECIAL TRAINING

Cleanup Criteria Workshop, Michigan Department of Environmental Quality, June 2007

O'Brien & Gere Project Management Boot Camp, 2001

State of Michigan, Department of Public Health, Accredited Asbestos Inspector, #16474, Management Planner #16492, and Project Designer #16507

Certified Petro-TiteR tank tester

OSHA 40-Hour Hazardous Waste Site Operations Safety Training Course

OSHA Supervisors Training Course for Hazardous Waste Operations

Massachusetts certified asbestos inspector, management planner, designer and abatement project monitor.

Rhode Island certified asbestos abatement planning and hazard assessment

Vermont certified Type III asbestos consultant.

Connecticut certified asbestos inspector, management planner and project designer

PRESENTATIONS

Scott L. Cormier, P.E. and Scott J. Adamowski, P.E. **"Facility Deactivation and Demolition,"** to be presented at the Federal Environmental Restoration III and Waste Minimization Conference in New Orleans, LA.

Scott L. Cormier, P.E., **"Facility Deactivation,"** presented at the Borden Environmental Exposition, Buffalo, NY.

John M. Judge, CHMM and Scott L. Cormier, P.E., **"Project Transition to Risk Based Corrective Action,"** presented at the Superfund XVII Conference, Washington, DC.

M. Ghani Baig and Scott L. Cormier, P.E. **"Soil Remediation Using Low Temperature Thermal Treatment,"** for presentation at the Hazardous Materials Control Resources Institute.

Honorarium Speaker for courses in Asbestos Abatement for Inspectors and Management Planners, Institute of Environmental Education in Woburn, MA. Lecture topics included Evaluation and Selection of Response Actions and Development of an O&M Program.

Speaker for courses in Asbestos Abatement for Inspectors and Management Planners, O'Brien & Gere, Syracuse, NY. Lecture topics included: Review of Inspection Reports; Hazard Assessment; Selecting Response Actions; and Developing an Operations and Maintenance Program.

Stormwater Management - Individual Permit Requirements: presented at the Rhode Island Stormwater Seminar hosted by O'Brien & Gere and Pare Associates, Inc.

Individual Stormwater Permitting - "How To": presented at the semi-annual meeting of the Environmental Matters Committee of the New England Gas Association.

Appendix B
O'Brien & Gere's Certificate
of Insurance



CERTIFICATE OF LIABILITY INSURANCE

Page 1 of 1

DATE (MM/DD/YYYY)
07/27/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

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		INSURER(S) AFFORDING COVERAGE	
		INSURER A: Zurich American Insurance Company	NAIC #: 16535-020
		INSURER B: Steadfast Insurance Company	26387-003
		INSURER C: Zurich American Insurance Company	16535-005
		INSURER D: Zurich American Insurance Company	16535-006
		INSURER E:	
		INSURER F:	

COVERAGES**CERTIFICATE NUMBER: 16316680****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADD'L INSRD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY ☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☐ LOC	Y		GL0386739003	1/1/2011	1/1/2012	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 3,000,000 PRODUCTS - COMP/OP AGG \$ 3,000,000
A	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ ALL OWNED AUTOS ☒ HIRED AUTOS ☐ SCHEDULED AUTOS ☒ NON-OWNED AUTOS	Y		BAP386738703	1/1/2011	1/1/2012	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	☒ UMBRELLA LIAB ☒ EXCESS LIAB ☐ CLAIMS-MADE DED RETENTION \$	Y		AUC594587402	1/1/2011	1/1/2012	EACH OCCURRENCE \$ 15,000,000 AGGREGATE \$ 15,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	WC386738903	1/1/2011	1/1/2012	☒ WC STATUTORY LIMITS E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	Professional & Pollution Liability			PEC968347304	1/1/2011	1/1/2012	\$ 10,000,000 Each Claim \$ 10,000,000 Aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach Acord 101, Additional Remarks Schedule, if more space is required)

Services performed in connection with Master Services Agreement between Motors Liquidating Company (assigned to RACER Trust) and O'Brien & Gere, dated May 1, 2010.

It is agreed that RACER Trust and RACER Properties, LLC are included as Additional Insureds as respects to General Liability, Auto Liability, Umbrella Liability and Pollution Liability, where required by written contract.

CERTIFICATE HOLDER**CANCELLATION**

RACER Trust and RACER Properties, LLC Attn: Grant Trigger 401 S. Old Woodward Avenue Suite 370 Birmingham, MI 48009	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

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Appendix C
Interim Remedial Action
Technical Memorandum

TECHNICAL MEMORANDUM

**Interim Remedial Action
Great Lakes Technology Center Land
Flint, Michigan**

Motors Liquidation Company

March 2011

14774 | 46375

Interim Remedial Action Great Lakes Technology Center Land Flint, Michigan

Prepared for:

**Motors Liquidation Company
Birmingham, Michigan**



SCOTT L. CORMIER, P.E.
VICE PRESIDENT
O'BRIEN & GERE

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-

1. GENERAL

1.1 INTRODUCTION

This Interim Remedial Action (IRA) Technical Memorandum (IRA Tech Memo) describes the procedures followed during the excavation, transportation and disposal of soils from two impacted areas, and subsequent backfilling of the excavations at the Great Lakes Technology Center (GLTC) Land (formerly known as the Die Storage Lot) facility located in Flint, Michigan (Figures 1 and 2). These activities were conducted to remove lead impacted soils, which were outside of the facility's perimeter fence in the OBG-219 soil boring area (Figure 3) and posed a direct contact risk, and volatile organic compound (VOC) impacted soils in the OBG-228 soil boring area that exceeded the generic soil saturation (C_{sat}) concentrations. This IRA Tech Memo also documents the soil verification of remediation (SVR) monitoring that was implemented during the IRA activities. A description of the site, the site investigation (SI) activities and findings were provided in the IRA Work Plan (O'Brien & Gere, 2010) and will not be provided herein, except as necessary to explain the IRA activities or findings.

2. REMEDIAL ACTION ACTIVITIES AND FINDINGS

The following IRA activities were implemented to remediate the lead impacted soils in the OBG-219 area (*a.k.a.*, Area 1, see Figure 4) and to remove the benzene, ethylbenzene, toluene and xylenes (BETX, *i.e.*, VOC) source in the OBG-228 area (*a.k.a.*, Area 2, see Figures 5 and 6). The IRA scope of work (SOW) included the saw cutting, removal and breaking up of existing concrete pavement (in Area 2), excavation of impacted and unimpacted soils, staging of unimpacted (*e.g.*, below Csat criteria soils in the OBG-228 area), haul truck loading, transportation and disposal activities; and subsequent backfilling of the excavations created by the IRA activities. The following sections describe the activities conducted during each component of the IRA project.

2.1 WASTE CHARACTERIZATION

Waste characterization samples were collected on November 24, 2010 from the OBG-219 and OBG-228 areas at the request of the licensed disposal facility. Samples were collected at 10 ft intervals, north, south, east and west from OBG-219 and immediately adjacent to OBG-219 from six inches to a foot below grade (fbg), and were composited into one sample for lead analysis using the total toxicity leaching procedure (TCLP) method. The sample contained lead at a concentration of 1.65 milligrams per liter (mg/L), which is below the hazardous waste limit of 5.0 mg/L (*i.e.*, the sample was non-hazardous for lead). Appendix A contains the analytical report for the waste characterization samples.

Similarly, samples were collected from Geoprobe™ borings placed about 15 to 20 ft north, south, east and west of OBG-228 and adjacent to OBG-228 from the peat layer (*i.e.*, worse case sample interval) shown in Figure 6. The samples were composited into a single sample for benzene analysis using the TCLP method. The sample contained benzene at a concentration of 60 micrograms per liter (ug/L), which is below the hazardous waste limit of 500 ug/L (*i.e.*, the sample was non-hazardous for benzene).

The soils from both areas were classified as non-hazardous base on the historical and waste characterization sample results, and similarly were profiled and manifested as non-hazardous soils for disposal purposes.

2.2 MOBILIZATION

A task specific Job Safety Analysis (JSA) was prepared prior to mobilization to the site, and the existing site-specific Health and Safety Plan (HASP) for the site was updated and a copy was distributed to the selected contractor for the project, CTI and Associates, Inc. (CTI). A HASP and JSA training session was held at the site with the entire work crew before breaking ground on December 14, 2010.

CTI mobilized to the work site a Caterpillar (CAT) 321D zero turning radius trackhoe, a CAT 966 rubber tire loader, a CAT 289 skid steer with a 600 lb. breaker, and the manpower necessary to complete the project on Tuesday December 14, 2010. On Thursday December 16, 2010, CTI mobilized to the work site a 3,000 lb breaker for the CAT 321D. The expansion and increase in the volume of impacted soils needing remediation in the OBG-228 area, and the Christmas Holiday delayed the project execution by a few days.

2.3 CONSTRUCTION

The following sections summarize the general IRA activities conducted at the site.

2.3.1 Concrete Saw Cutting, Removal and Reuse

The concrete pad in the working area adjacent to OBG-228, also known as remediation Area 2, was saw cut to allow removal to gain access to the area to be remediated. The concrete was saw cut in an 80 ft by 80 ft area to allow the concrete to be removed from a larger area than required remediation to allow for sloping of the excavation walls for safety reasons, as needed. Figure 5 provides an outline of the initial saw cut area. Additional concrete required removal because the area needing remediation was larger than the original area saw cut and anticipated to have been impacted, and was broken in place and removed with the excavator. The removal of concrete was minimized to some extent because of the difficulties breaking and removing the concrete due to the amount of rebar within the concrete. Protruding rebar was cut off utilizing a chop saw in

areas where the concrete was not saw cut to reduce the impaling hazard on the final edge of the concrete prior to final backfilling.

The removed concrete was broken up sufficiently to allow its utilization for backfill below the sand and gravel layers that capped the excavation (see Section 2.3.3).

2.3.2 IRA Excavation

The lead impacts observed at OBG-219A were remediated to address the potential residential direct contact exposure risks at this location. The IRA excavation in the OBG-219 area began near monitoring well MW-19 (boring OBG-219) and work outward until the impacted soils were removed to form a 40 ft by 40 ft area surrounding the well. Appendix B contains a photographic log of the IRA activities and Photos 01 through 06 show the OBG-219 area. Although it was anticipated that soils would be removed by CTI to a depth of about 1 foot, additional soils were removed to remove the cinder and slag material observed in this area to depths of up to three feet with an average removal depth of about 1.8 feet. Approximately 142 tons of soils (or approximately 105 CY at an average weight of 2,700 pounds per CY for the moist sandy soils) were stockpiled on the asphalt pavement just inside the security fence adjacent to OBG-219 for loading into haul trucks when they became available. In order not to destroy MW-19, about a half cubic yard (CY) of material was left in place around MW-19, which will be removed and relocated within the fenced area of the site during the abandonment activities for MW-19 to complete the remediation of the OBG-219 area. O'Brien & Gere collected confirmatory samples for lead (fine and coarse fraction) to verify the remediation efforts. Five floor and four wall samples were collected to verify the remediation of the OBG-219 area (see Figure 4 for the locations of the samples) per the Michigan Department of Environmental Quality (MDEQ) *Sampling Strategies and Statistics Training Materials (S³TM) for Part 201 Cleanup Criteria* (MDEQ, 2002) guidance document for excavations. The analytical results are summarized in the following table:

Sample ID	Lead Concentration		Sample ID	Lead Concentration	
	Fine Fraction	Coarse Fraction		Fine Fraction	Coarse Fraction
OBG-219 F1	14.8	7.39	OBG-219 S1	15.7	6.72
OBG-219 F2	13.4	7.58	OBG-219 S2	140	37.4
OBG-219 F3	7.07	3.28	OBG-219 S3	167	60.0
OBG-219 F4	15.9	5.41	OBG-219 S4	120	31.1
OBG-219 F5	14.6	5.17			

Notes: Concentrations are in mg/kg.

The confirmatory sample analytical reports are contained in Appendix C. The confirmatory samples indicate that the OBG-219 area, with the exception of the soils right at MW-19 that will be relocated during the abandonment of this well, has been remediated to below the direct contact criterion of 400 mg/kg.

The data gathered during the SI indicate that the soils exceeding the Csat criteria were limited to the peat layer and soils directly in contact with this layer (see Figure 6). Therefore, the IRA Work Plan originally anticipated that overburden soils would be stripped to a depth of about 5 fbg, approximately 2 ft above the peat layer; however, while collecting the waste characterization samples in the OBG-228 area (see Section 2.1), it was observed that the soils to a depth of at least 6 fbg appeared to be impacted at less than the Csat concentrations based on olfactory and photoionization detector (PID) readings. Furthermore, it appeared that the Csat impacted soils might extend deeper than originally anticipated; therefore, it was decided to strip overburden soils to a depth of about 6 fbg instead of 5 fbg.

The IRA excavation in the OBG-228 area began by removing and stockpiling the overburden or “unimpacted” soils (*i.e.*, those below the Csat concentrations) to a depth of about six (6) fbg from the area anticipated to be

impacted based on the previous sampling results. The overburden soils were stockpiled adjacent to the excavation but at a safe distance from the edge of the excavation.

Once the overburden soils were removed from the initial area to be remediated, then the excavation and stockpiling of impacted soils began near former boring OBG-228F and worked westward toward OBG-228G, then northward, and then eastward making a horse shoe pattern around the outside of the area anticipated to be impacted. The center or middle of the area anticipated to be impacted was then excavation and continued southward and southeastward until olfactory and PID readings indicated that the Csat soils may have been removed. Headspace PID readings of greater than about 100 parts per million (ppm) were utilized to evaluate whether additional soils need to be excavated, based on previous PID readings during drilling and corresponding analytical results. Strong odors or visual indications of impacts were also used to guide the excavation activities. The southeastern corner of the excavation was completed up to the area where the concrete was saw cut, and confirmatory samples were collected even though fairly high PID readings were still observed. Impacted soils were stockpile because of timing issues and the necessity to work the weekend to keep the project on schedule. Appendix B contains a photographic log of the IRA activities and Photos 07 through 20 show the OBG-228 area.

Confirmatory samples for BETX analysis were collected from the floor and the sidewalls of the excavation as the excavation activities proceeded. It was anticipated that seven floor (OBG-228-F1 through 7) and eight sidewall samples (OBG-228-S1 through S8) would be collected to verify the remediation of the OBG-228 area per the MDNRE S³TM for Part 201 Cleanup Criteria (MDNRE, 2002) guidance document for excavations. Confirmatory sample locations are illustrated in Figure 5. However, in the end a total of 10 floor and 14 sidewall samples were collected for BETX analysis (Figure 5). The location of the initial OBG-228 confirmatory samples were initially selected based on systematic random sampling matrix, but were adjusted slightly due to the size and shape of the initial excavation. Table 1 summarizes the confirmatory sample analytical results. Additional removal activities were needed because floor confirmatory samples OBG-228-F1, F3 and F6 and side wall confirmatory samples OBG-228-S3, S4, S9 and S10 exceeded the Csat criteria for either toluene or xylenes. The confirmatory sample analytical reports are contained in Appendix C.

A ramp to allow deepening of the excavation in the OBG-228-F1, F3 and F6 areas was constructed by backfilling from the northeast corner into the excavation. This effectively created the necessary sloping to allow safe entry into the excavation to continue the digging activities. The depth of F1 was originally about 12 fbg, but the area was deepened to about 14 fbg to allow the removal of impacted soils and the collection of F-10. Likewise, the F3 and F6 areas were originally about 12 fbg, but were deepened to about 16 and 18 fbg, respectively. The excavation in the F3 and F6 areas was deepened to remove a silty sand seam within the otherwise clayey soils that was impacted in this area (see Figure 6). However, the entire seam did not appear to be impacted above Csat based on PID screening and historical data.

The excavation was widened in the southwestern portion of the OBG-228 area to remove additional impacted materials observed in OBG-228-S3, S4, S9 and S10. In these areas the concrete was broken out using the hydraulic breaker, but the edge was not saw cut as discussed in Section 2.3.1. Confirmatory samples OBG-228-S3, S4, S9 and S10 were collected even though the field screening PID readings indicated that they might not be below Csat to help guide the excavation activities and because additional excavation could not be conducted prior to needing to get the samples to the laboratory for the evening analysis. A Geoprobe™ drill rig was utilized to identify the edge of impacts and to collect confirmatory samples along the southwestern and western edges of the excavation. Confirmatory samples OBG-228-S11 through S14 defined the edge of the excavation in the southwestern corner and western portion of the excavation (Table 1).

Impacted soils were loaded onto haul trucks and transported to the Citizens Disposal Inc. landfill located in Grand Blanc, Michigan, a properly permitted treatment/disposal facility (i.e., Type II Landfill), in accordance with all applicable regulations.

Fortunately, the excavation work was primarily conducted in clayey soils and although the deepening of the excavation in the OBG-228-F1, F3 and F6 areas was likely below the static groundwater level, because the excavation was backfilled once these activities were completed in the expectation that the confirmatory sample

results would meet the Csat criteria, groundwater was not an issue during the IRA activities. Two pockets of perched water were encountered within the overburden soils in the northeast and east portions of the excavation; however, this water was handled within the excavation (*i.e.*, segregated from the working area and allowed to infiltrate naturally) during the execution of the IRA activities.

2.3.3 Unimpacted Soil and Clean Fill Placement and Compaction

The unimpacted soils removed during the excavation activities in the OBG-228 area (Area2) were utilized to backfill the excavation and work area once the remediation activities were completed and verified (*i.e.*, following receipt of confirmatory sampling results). O'Brien & Gere collected confirmatory samples as the excavation activities progressed and expedited (*i.e.*, 24-hour turnaround times) the confirmatory samples to avoid delaying the backfill of the excavation once remediation was completed in an area of the excavation. Stockpiled soils and the broken concrete were placed in lifts above the floor of the excavation. Areas with confirmatory sample results below the Csat criteria were filled as time allowed while excavation activities continued in other areas of the excavation to expedite the backfilling of the excavation and IRA activities. Figure 6 illustrates the approximate portions of the excavation that were backfilled with the unimpacted soil and broken concrete.

The remainder of the excavation in the OBG-228 area (Area 2) and the excavation in the OBG-219 area (Area 1) were backfilled with clean fill. The OBG-219 area was backfilled with approximately 132 CY of topsoil (*i.e.*, loose in truck volume). The OBG-228 area was backfilled with sand above the unimpacted soils and broken concrete to within about 1.2 ft of the pre-existing grade. The remainder of the excavation was backfilled with crushed limestone gravel to approximately the pre-existing grade (*i.e.*, mounded a little, see Figure 6, which illustrates the portions of the excavation backfilled with the different types of fill materials). A total of 1,656.2 tons (or approximately 1,227 CY at an average weight of 2,700 pounds per CY for the moist sandy fill soils) of sand were utilized in the backfilling operations. Similarly, a total of 544.3 tons (or approximately 384 CY at an average weight of 2,835 pounds per CY for the fairly dry, somewhat self compacting gravel fill) of gravel were utilized in the backfilling operations.

The backfill material (whether unimpacted soil or clean fill) was placed in sequential lifts from the lowest elevation to the highest elevation, and were compacted with the bucket of the excavator.

2.3.4 Decontamination of Equipment

CTI decontaminate all equipment that came in contact with impacted environmental media prior to completing the final restoration of the surface materials in the OBG-228 area. The subcontractor decontaminated the equipment within the OBG-228 area before the final lifts of the clean fill were placed.

2.3.5 Restoration of Surfaces

CTI restored the surface materials that were disturbed during the performance of the IRA activities following completion of final lift of clean fill placement and compaction. Surface restoration included either placement of topsoil, or placement of gravel to restore the formerly concrete paved area in the OBG-228 area to allow travel over the excavated area.

2.3.6 Revegetation of Disturbed Areas

The entire OBG-219 area excavation was backfilled with topsoil following completion of the remediation activities, and will be seeded in the spring following the snow melt. The area wasn't seeded during the IRA activities because of the weather conditions at that time (*i.e.*, winter conditions).

2.4 DEMOBILIZATION

On Thursday December 16, 2010, CTI demobilized the CAT 289 skid steer and 600 lb. breaker. The remaining equipment was demobilized on Tuesday December 28, 2010.

3. REFERENCES

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- O'Brien & Gere Engineers, Inc. 2010. Interim Remedial Action Work Plan – GLTC Land (*a.k.a.*, Die Storage Lot), Flint, Michigan. October 26.
- WW Engineering & Science. 1991. Geophysical Investigation of the North Atherton Area and Burton Parcel. January.
-

TABLES

Table 1
GLTC Land
Confirmatory Sample Analytical Results

Sample ID	Field PID Readings	Benzene	Toluene	Ethylbenzene	p,m Xylenes	o-Xylene	
OBG-228-F1	130	5	28	ND	245	ND	
OBG-228-F2	44	2.3	ND	ND	33	ND	
OBG-228-F3	121	10	822	23	80	30	
OBG-228-F4	22	4	ND	3.4	71	ND	
OBG-228-F5	25	ND	ND	ND	85	ND	
OBG-228-F6	150	ND	423	17	70	24	
OBG-228-F7	18	ND	0.32	ND	0.2	ND	
OBG-228-F8	86.5	ND	0.97	ND	0.1	ND	= OBG-228-F6
OBG-228-F9	22.1	ND	42	ND	2	ND	= OBG-228-F3
OBG-228-F10	21.9	0.38	0.53	0.19	0.6	0.12	= OBG-228-F1
OBG-228-S1	76	0.9	3.1	ND	62	ND	
OBG-228-S2	93	ND	ND	ND	63	ND	
OBG-228-S3	160	ND	461	32	120	42	
OBG-228-S4	180	ND	560	16	63	24	
OBG-228-S5	26	0.39	0.47	0.34	1.8	0.15	
OBG-228-S6	14	ND	0.36	ND	0.4	0.08	
OBG-228-S7	113	0.3	0.1	6.3	22.8	ND	
OBG-228-S8	78	0.09	ND	0.15	ND	ND	
OBG-228-S9	4000	ND	1,150	60	250	90	
OBG-228-S10	4000	ND	1,210	50	200	70	
OBG-228-S11	0.6	ND	ND	ND	ND	ND	
OBG-228-S12	15	0.48	0.12	0.11	2.8	ND	
OBG-228-S13	233	0.5	0.12	0.54	1.2	0.32	
OBG-228-S14	115	ND	ND	ND	2	ND	
Csat Criteria		400	250	140	150	150	

Notes:

All concentrations in ppm (mg/kg for soil samples or ppmv for PID readings).

Xylene Csat criteria is based on total xylenes.

Bold Results exceed Csat Criterion

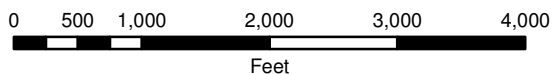
FIGURES

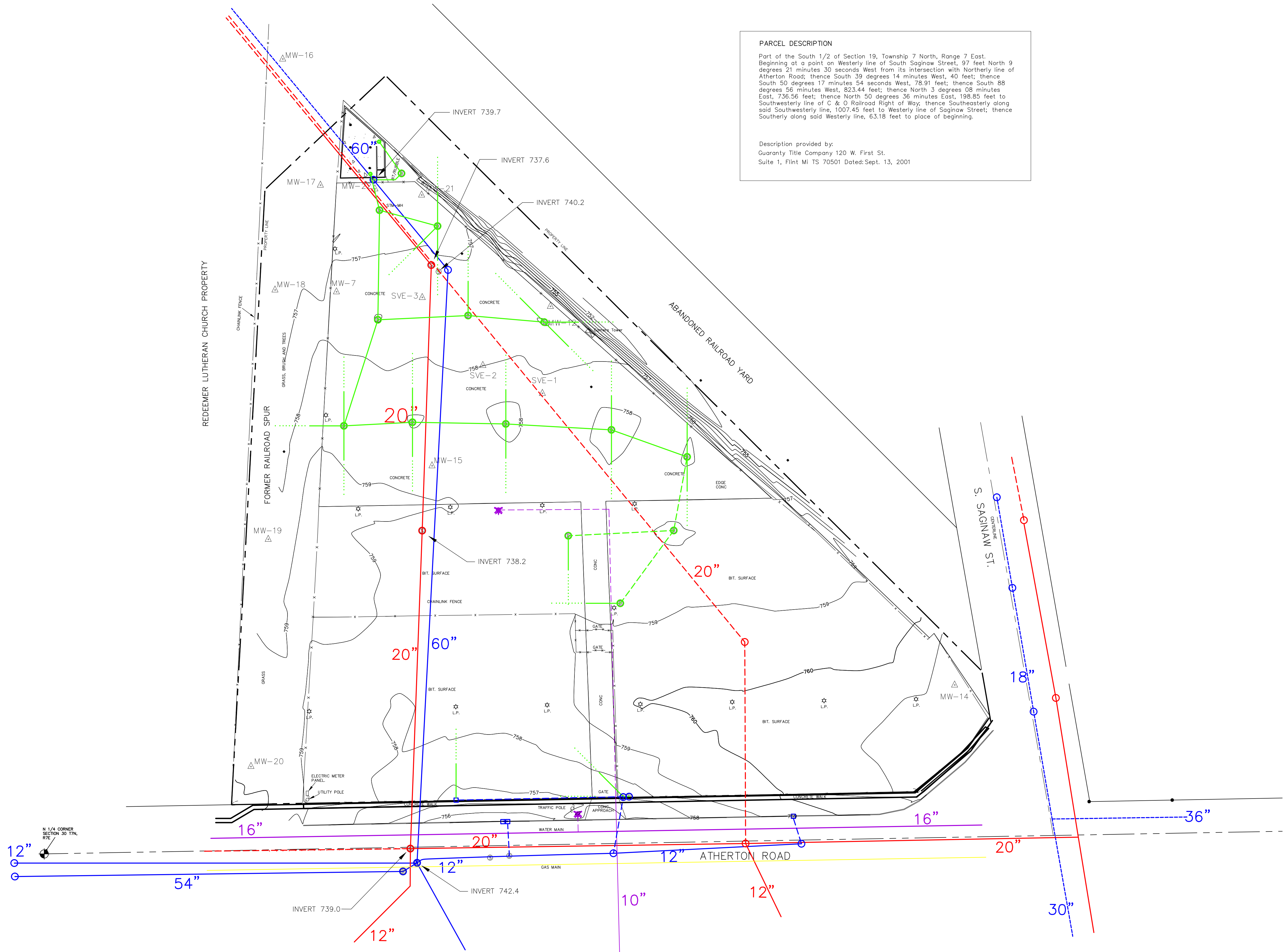
FIGURE 1



MLC
GLTC LAND
FLINT, MICHIGAN

SITE LOCATION MAP





- LEGEND**
- CLEAN OUT
 - ELEC. RISER
 - FIRE HYDRANT
 - ELEC. TRANSFORMER
 - GUY ANCHOR
 - VENT
 - LIGHT POLE
 - WATER STOP BOX
 - WATER VALVE
 - SPEAKER BOX
 - POWER POLE
 - ROUND CATCH BASIN
 - SIGN
 - SQUARE CATCH BASIN
 - TELEPHONE RISER
 - SET IRON
 - FOUND IRON
 - ELECTRIC
 - GAS
 - FENCE
 - MONITORING WELL
 - SURVEYED STM. MANHOLE
 - SURVEYED SAN. MANHOLE
 - PRIVATE DRAINAGE MANHOLE
 - STORM SEWER MANHOLE
 - SANITARY SEWER MANHOLE
 - PRIVATE DRAINAGE LINE
 - STORM SEWER
 - SANITARY SEWER
 - WATER LINE
 - APPROXIMATE PROPERTY LINE

NOTE:
1. DASHED UTILITY INDICATES INFERRED OR APPROXIMATE LOCATION.

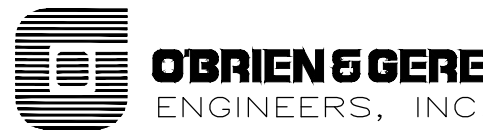
MLC
GLTC LAND
FLINT, MICHIGAN

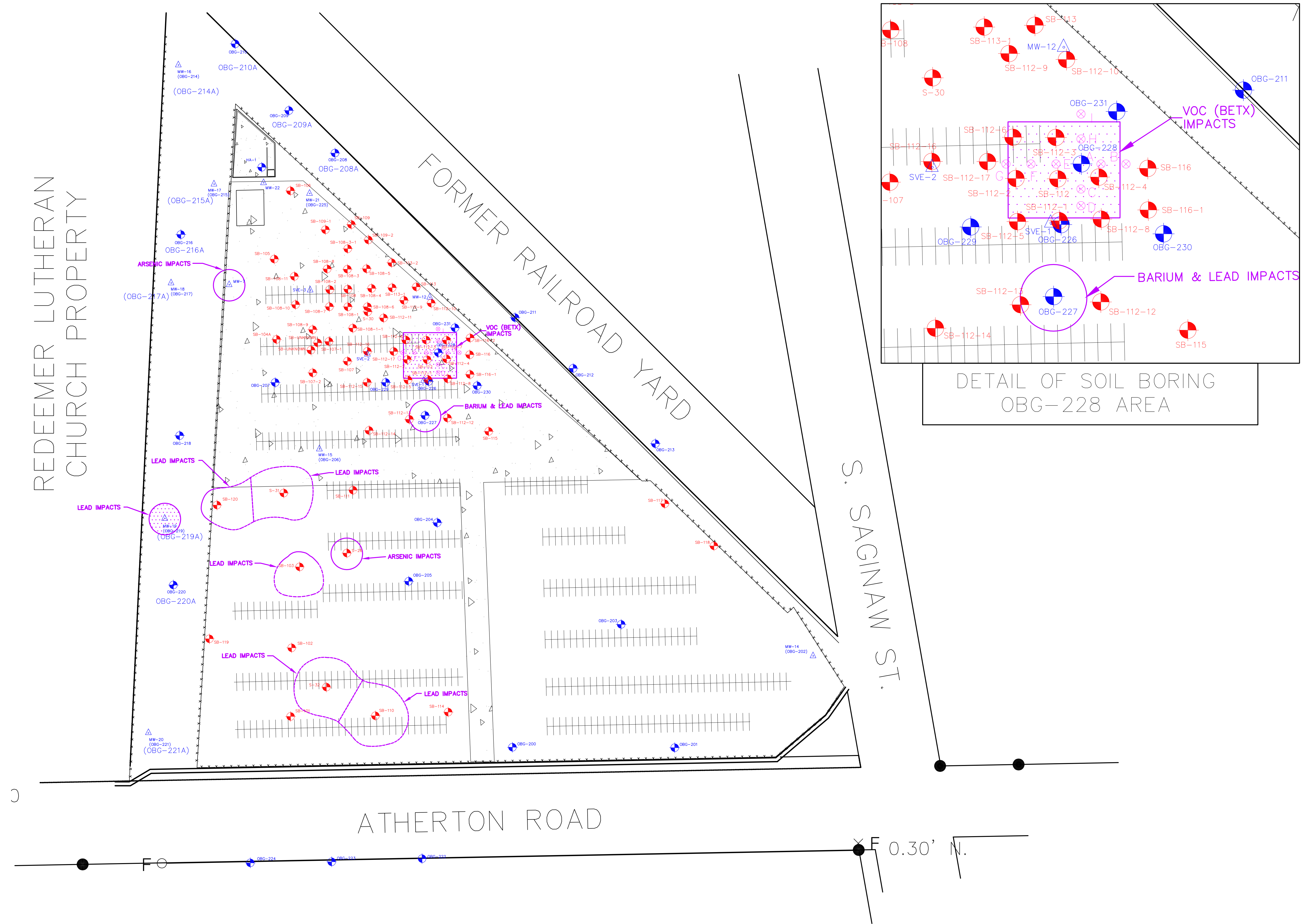
SITE FEATURES/
UTILITY MAP

FIGURE 2



FILE NO. 14774.43375.008
SEPTEMBER 2010





- LEGEND
- SB-112-12 PRE-SI SOIL BORING
 - OBG-228 SI SOIL BORING
 - MW-12 MONITORING WELL
 - DELINERATION BORING
 - APPROXIMATE EXTENT OF IMPACTS (DASHED WHERE INFERRED)
 - AREA TO BE REMEDIATED

SOIL BORING LOCATIONS

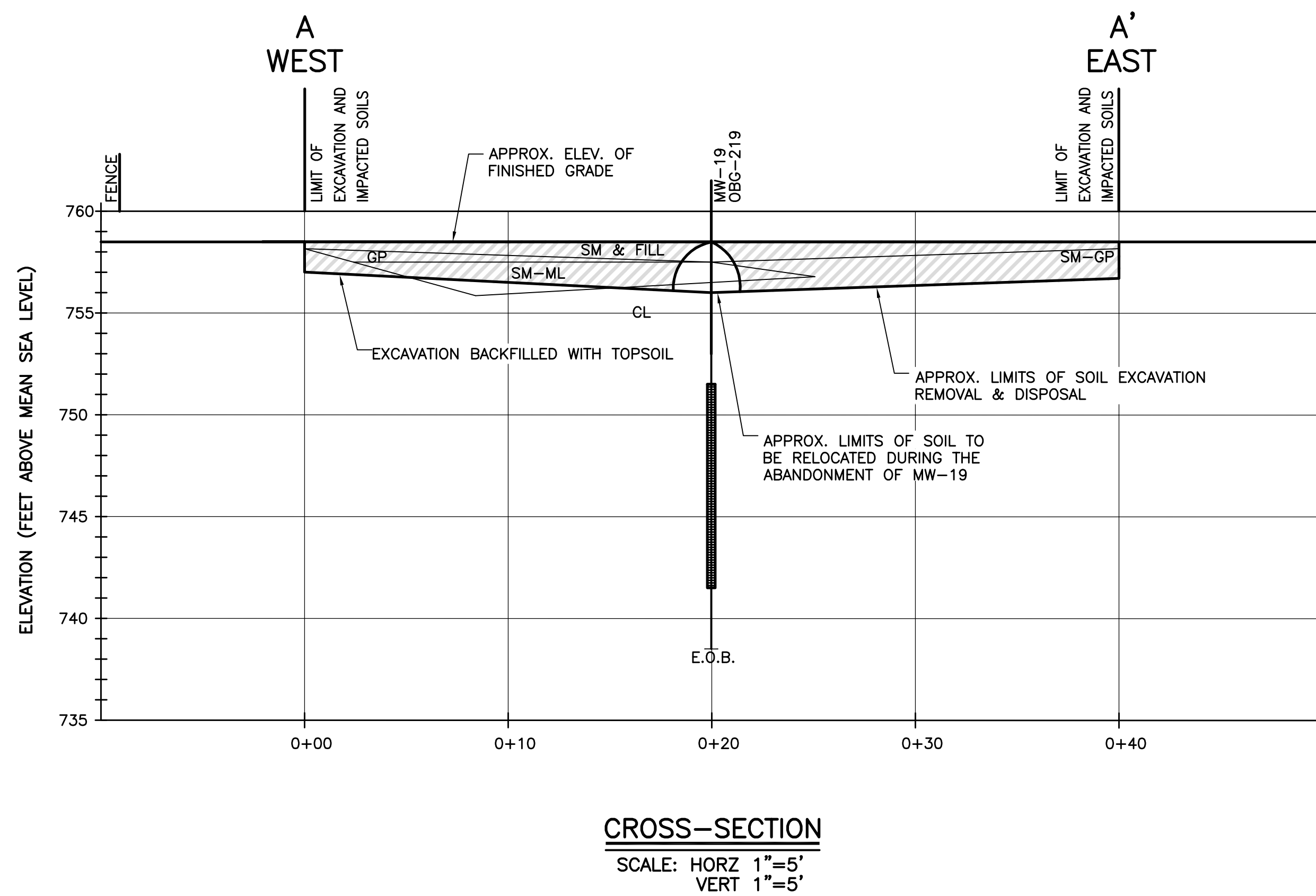
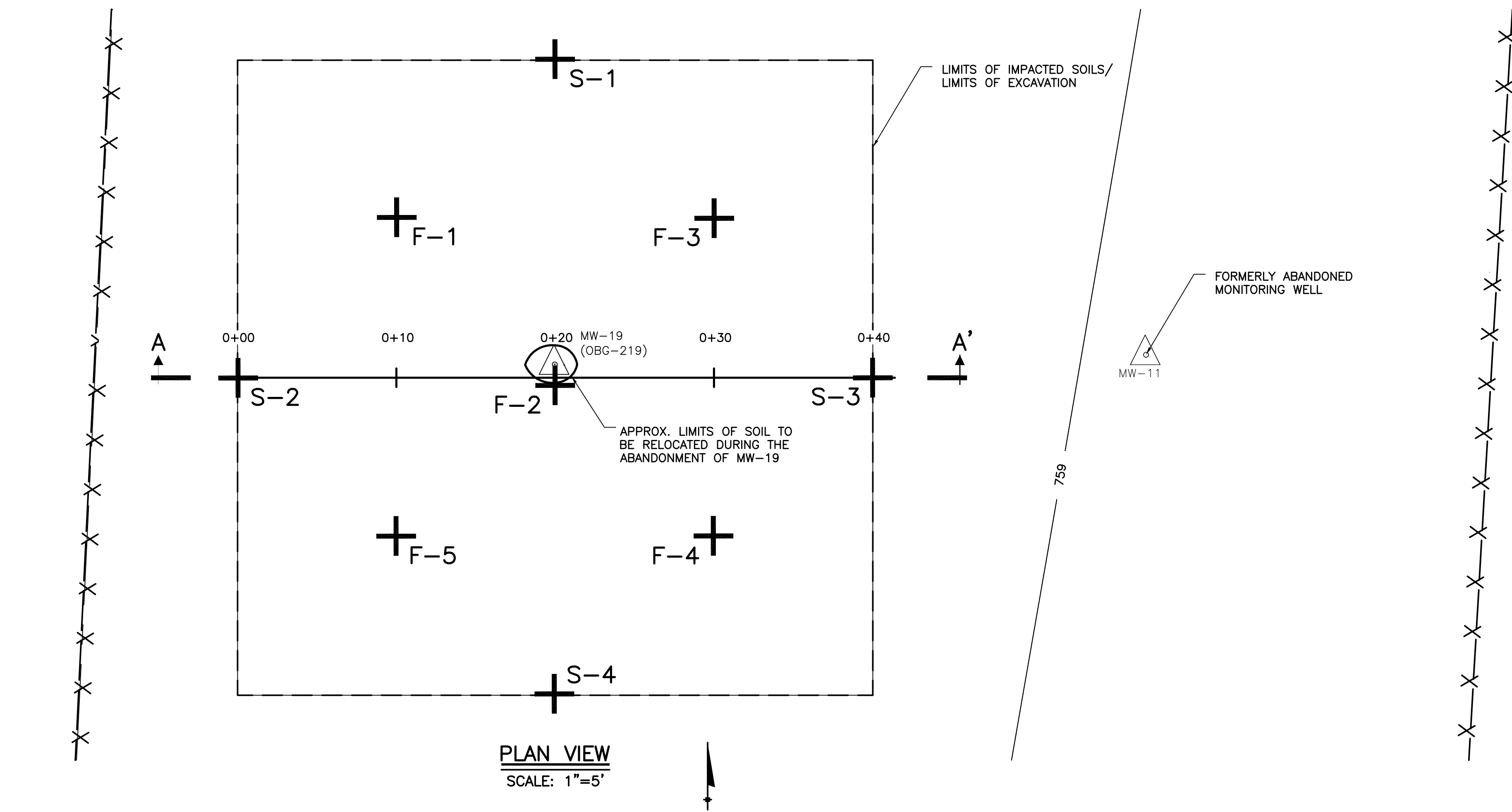
MLC
GLTC LAND
FLINT, MICHIGAN

FIGURE 3



FILE NO. 14774.46375-002
SEPTEMBER 2010





LEGEND

BACKFILLED WITH TOPSOIL

CONFIRMATORY SAMPLE LOCATION AND NUMBER
S-2

**OBG-219 AREA
PLAN VIEW AND
CROSS-SECTION**

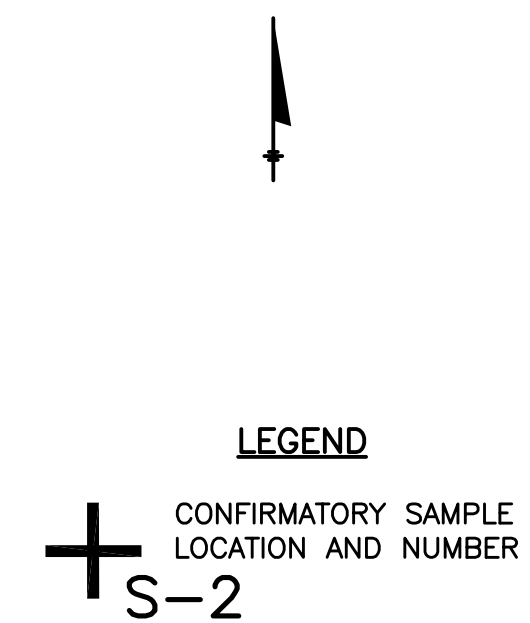
MLC
GLTC LAND
FLINT, MICHIGAN

FIGURE 4

1"=5' 5
SCALE: HORZ 1"=5'
VERT 1"=5'

FILE NO. 14774.46375-FIGURE 4
MARCH 2011



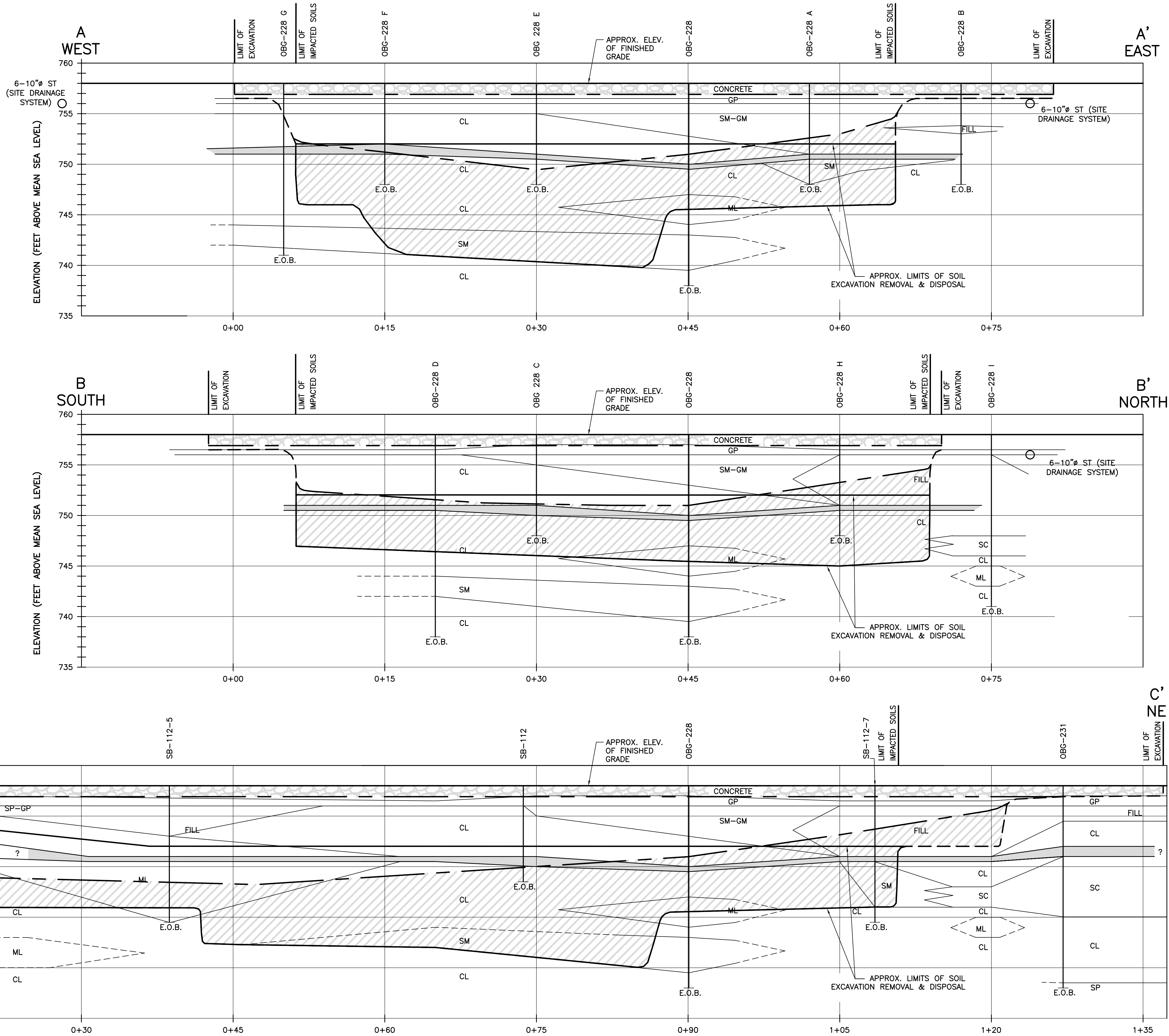


MLC
GLTC LAND
FLINT, MICHIGAN

FIGURE 5



FILE NO. 14774.46375—FIGURE 5
MARCH 2011



OBG-228 AREA CROSS-SECTIONS

MLC
GLTC LAND
FLINT, MICHIGAN

FIGURE 6

1"=5'
SCALE: HORZ 1"=5'
VERT 1"=5'

FILE NO. 14774.46375-FIGURE 6
MARCH 2011



APPENDIX A
Waste Characterization
Sample Results



Analytical Laboratory Report

Report ID: S46862.01(01)
Generated on 12/02/2010

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI 48335

Phone: 248-477-5701 FAX:
Email: YantzCS@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S46862.01-S46862.02
Project: 46375/ GLTC Land
Collected Date: 11/24/2010
Submitted Date/Time: 11/29/2010 08:35
Sampled by: Kevin Schneider
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S46862.01	OBG-228-COMP	Soil	11/24/2010 14:40
S46862.02	OBG-219-COMP	Soil	11/24/2010 14:45



Analytical Laboratory Report

Lab Sample ID: S46862.01
Sample Tag: OBG-228-COMP
Collected Date/Time: 11/24/2010 14:40
Matrix: Soil
COC Reference: 042300

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
----------	---------	-------	----	--------	---------------	---------	--------	-------

Extraction / Prep.

TCLP Zero Headspace Ext.	Completed			1311	11/30/10 17:00	WAR		
--------------------------	-----------	--	--	------	----------------	-----	--	--

Organics - Volatiles

Benzene	60	ug/L	50	8260B	12/01/10 16:35	JGH	500	X
---------	----	------	----	-------	----------------	-----	-----	---

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Lab Sample ID: S46862.02
Sample Tag: OBG-219-COMP
Collected Date/Time: 11/24/2010 14:45
Matrix: Soil
COC Reference: 042300

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.4	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	Limits	Flags
----------	---------	-------	----	--------	---------------	---------	--------	-------

Extraction / Prep.

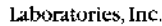
Metal Digestion	Completed			3015A	12/02/10 09:00	SLS		
-----------------	-----------	--	--	-------	----------------	-----	--	--

TCLP Extraction

Initial Sample pH	N/A			1311	11/29/10 17:00	WAR		
pH after 3.5 ml HCl	N/A			1311	11/29/10 17:00	WAR		
% Solids	100			1311	11/29/10 17:00	WAR		
Sample Used g	40			1311	11/29/10 17:00	WAR		
Final Volume mL	800			1311	11/29/10 17:00	WAR		
TCLP Extraction Fluid	2			1311	11/29/10 17:00	WAR		
Final Extract pH	4.86			1311	11/29/10 17:00	WAR		

Metals

Lead, TCLP	1.65	mg/L	0.03	6020	12/02/10 14:40	SLS	5.0	
------------	------	------	------	------	----------------	-----	-----	--

**INVOICE TO****INVOICE TO**ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)SPECIAL INSTRUCTIONS/NOTESDATE 11/11/2011 TIME 11:00

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

APPENDIX B
Photographic Log

Client: MLC Project Number: 46375

Site Name: GLTC Land Location: Flint, Michigan

Photo Number:
01: IMG_2272.jpg

Photographer:
Kevin Schneider

Date:
12/16/2010

Orientation:
View looking
Northeast.

Description:
OBG-219 area
with snow
removed and
after collection
of confirmatory
samples.



Photo Number:
02: IMG_2277.jpg

Photographer:
Kevin Schneider

Date:
12/16/2010

Orientation:
View looking
south-southeast.

Description:
Southern portion
and wall of OBG-
219 excavation
area.



Client: MLC Project Number: 46375

Site Name: GLTC Land Location: Flint, Michigan

Photo Number:
03: IMG_2278.jpg

Photographer:
Kevin Schneider

Date:
12/16/2010

Orientation:
View looking
north.

Description:
Northern
portion and wall
of OBG-219
excavation area..



Photo Number:
04: IMG_2279.jpg

Photographer:
Kevin Schneider

Date:
12/16/2010

Orientation:
View looking
west.

Description:
OBG-219
excavation area
with west wall in
distance.





O'BRIEN & GERE

PHOTOGRAPHIC LOG

Client: MLC

Project Number: 46375

Site Name: GLTC Land

Location: Flint, Michigan

Photo Number:
05: IMG_2282.jpg

Photographer:
Kevin Schneider

Date:
12/16/2010

Orientation:
View looking
east.

Description:
OBG-219
excavation area
with east wall in
distance.



Photo Number:
06: IMG_2371.jpg

Photographer:
Kevin Schneider

Date:
12/23/2010

Orientation:
View looking
northwest.

Description:
OBG-219 area
backfilled (prior
to grading).





O'BRIEN & GERE

PHOTOGRAPHIC LOG

Client: MLC

Project Number: 46375

Site Name: GLTC Land

Location: Flint, Michigan

Photo Number:
07: IMG_2338.jpg

Photographer:
Kevin Schneider

Date:
12/20/2010

Orientation:
View looking
northeast.

Description:
South and east
walls of initial
excavation
partially filled in
(to the north) to
form ramp to
allow deepening
of excavation in
area of floor
confirmatory
samples OBG-F1,
F3 and F6.



Photo Number:
08: IMG_2335.jpg

Photographer:
Kevin Schneider

Date:
12/20/2010

Orientation:
View looking
north.

Description:
Central portion
of initial
excavation
partially filled in
to form ramp to
allow deepening
of excavation in
area of floor
confirmatory
samples OBG-F1,
F3 and F6.



Client: MLC

Project Number: 46375

Site Name: GLTC Land

Location: Flint, Michigan

Photo Number:
09: IMG_2336.jpg

Photographer:
Kevin Schneider

Date:
12/20/2010

Orientation:
View looking
north.

Description:
Western wall
and portion of
initial
excavation
partially filled in
to form ramp to
allow deepening
of excavation in
area of floor
confirmatory
samples OBG-F1,
F3 and F6.



Photo Number:
10: IMG_2345.jpg

Photographer:
Kevin Schneider

Date:
12/20/2010

Orientation:
View looking
south.

Description:
Deepening of
excavation to dig
out impacted
soils in area of
floor
confirmatory
samples OBG-F1,
F3 and F6.



Client: MLC

Project Number: 46375

Site Name: GLTC Land

Location: Flint, Michigan

Photo Number:
11: IMG_2347.jpg

Photographer:
Kevin Schneider

Date:
12/20/2010

Orientation:
View looking
north.

Description:
Deepening of
excavation to dig
out impacted
soils in area of
floor
confirmatory
samples OBG-F1,
F3 and F6.



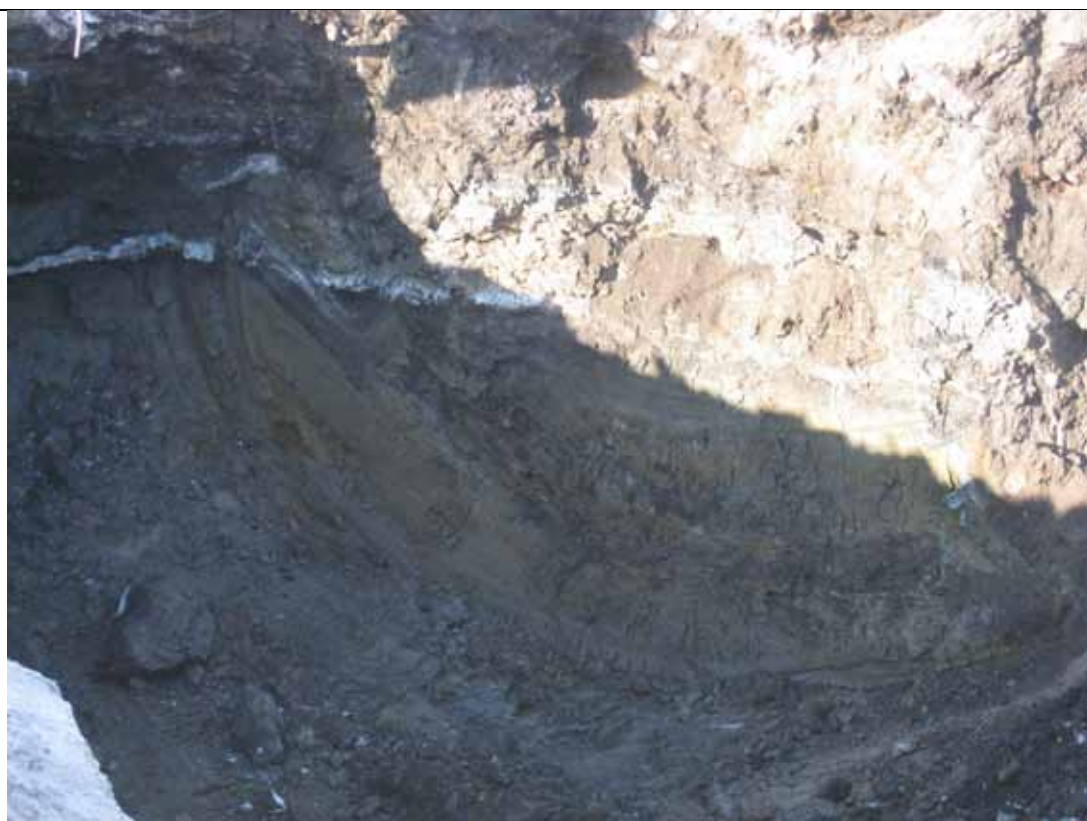
Photo Number:
12: IMG_2349.jpg

Photographer:
Kevin Schneider

Date:
12/20/2010

Orientation:
View looking
northwest.

Description:
Western side of
excavation.
North wall of
western
expansion of
excavation.





PHOTOGRAPHIC LOG

Client: MLC

Project Number: 46375

Site Name: GLTC Land

Location: Flint, Michigan

Photo Number:
13: IMG_2357.jpg

Photographer:
Kevin Schneider

Date:
12/22/2010

Orientation:
View looking
northwest.

Description:
Western side of
excavation. West
and north walls
of western
expansion of
excavation.



Photo Number:
14: IMG_2362.jpg

Photographer:
Kevin Schneider

Date:
12/22/2010

Orientation:
View looking
southwest.

Description:
Southwestern
portion of south
and western
expansion of
excavation.



Client: MLC Project Number: 46375

Site Name: GLTC Land Location: Flint, Michigan

Photo Number:
15: IMG_2366.jpg

Photographer:
Kevin Schneider

Date:
12/22/2010

Orientation:
View looking
south.

Description:
Southern portion
of excavation.
Overburden soils
are piled in
central portion
of photo.



Photo Number:
16: IMG_2365.jpg

Photographer:
Kevin Schneider

Date:
12/22/2010

Orientation:
View looking
northeast.

Description:
Backfilling
excavation with
overburden soils
and concrete.



Client: MLC Project Number: 46375

Site Name: GLTC Land Location: Flint, Michigan

Photo Number:
17: IMG_2369.jpg

Photographer:
Kevin Schneider

Date:
12/23/2010

Orientation:
View looking
northeast.

Description:
Backfilling
excavation with
sand.



Photo Number:
18: IMG_2370.jpg

Photographer:
Kevin Schneider

Date:
12/23/2010

Orientation:
View looking
northwest.

Description:
Backfilling
excavation with
gravel. The
clumps are
frozen chunks of
gravel.



Client: MLC Project Number: 46375

Site Name: GLTC Land Location: Flint, Michigan

Photo Number:
19: IMG_2373.jpg

Photographer:
Kevin Schneider

Date:
12/28/2010

Orientation:
View looking
southwest.

Description:
OBG-228 area
backfilled and
final graded.



Photo Number:
20: IMG_2374.jpg

Photographer:
Kevin Schneider

Date:
12/28/2010

Orientation:
View looking
southeast.

Description:
OBG-228 area
backfilled and
final graded.



APPENDIX C
Analytical Reports



Analytical Laboratory Report

Report ID: S47148.01(01)
Generated on 12/16/2010

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI 48335

Phone: 248-477-5701 FAX:
Email: YantzCS@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S47148.01-S47148.09
Project: GLTC Land
Collected Date: 12/15/2010
Submitted Date/Time: 12/15/2010 14:38
Sampled by: Kevin Schneider
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S47148.01	OBG-219 S1	Soil	12/15/2010 12:04
S47148.02	OBG-219 S2	Soil	12/15/2010 12:06
S47148.03	OBG-219 S3	Soil	12/15/2010 12:08
S47148.04	OBG-219 S4	Soil	12/15/2010 12:10
S47148.05	OBG-219 F1	Soil	12/15/2010 12:22
S47148.06	OBG-219 F2	Soil	12/15/2010 12:24
S47148.07	OBG-219 F3	Soil	12/15/2010 12:26
S47148.08	OBG-219 F4	Soil	12/15/2010 12:28
S47148.09	OBG-219 F5	Soil	12/15/2010 12:30



Analytical Laboratory Report

Lab Sample ID: S47148.01
Sample Tag: OBG-219 S1
Collected Date/Time: 12/15/2010 12:04
Matrix: Soil
COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		
Inorganics								
Total Solids	94	%	1	Std M 2540 B	12/16/10 14:30	JRT		
Metals								
% Coarse by Weight	80.0	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	20.0	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	6.72	mg/kg	0.30	6020	12/16/10 17:14	SLS	7439-92-1	
Lead, Fine	15.7	mg/kg	0.30	6020	12/16/10 16:53	SLS		
Lead, Total Calculated	8.51	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.02
Sample Tag: OBG-219 S2
Collected Date/Time: 12/15/2010 12:06
Matrix: Soil
COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		
Inorganics								
Total Solids	79	%	1	Std M 2540 B	12/16/10 14:30	JRT		
Metals								
% Coarse by Weight	97.3	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	2.7	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	37.4	mg/kg	0.30	6020	12/16/10 17:16	SLS	7439-92-1	
Lead, Fine	140	mg/kg	0.30	6020	12/16/10 16:55	SLS		
Lead, Total Calculated	40.1	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.03
Sample Tag: OBG-219 S3
Collected Date/Time: 12/15/2010 12:08
Matrix: Soil
COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		
Inorganics								
Total Solids	88	%	1	Std M 2540 B	12/16/10 14:30	JRT		
Metals								
% Coarse by Weight	83.9	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	16.1	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	60.0	mg/kg	0.30	6020	12/16/10 17:18	SLS	7439-92-1	
Lead, Fine	167	mg/kg	0.30	6020	12/16/10 16:57	SLS		
Lead, Total Calculated	77.2	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.04

Sample Tag: OBG-219 S4

Collected Date/Time: 12/15/2010 12:10

Matrix: Soil

COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		

Inorganics

Total Solids	87	%	1	Std M 2540 B	12/16/10 14:30	JRT		
--------------	----	---	---	--------------	----------------	-----	--	--

Metals

% Coarse by Weight	91.3	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	8.7	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	31.1	mg/kg	0.30	6020	12/16/10 17:20	SLS	7439-92-1	
Lead, Fine	120	mg/kg	0.30	6020	12/16/10 16:59	SLS		
Lead, Total Calculated	38.8	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.05

Sample Tag: OBG-219 F1

Collected Date/Time: 12/15/2010 12:22

Matrix: Soil

COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		

Inorganics

Total Solids	86	%	1	Std M 2540 B	12/16/10 14:30	JRT		
--------------	----	---	---	--------------	----------------	-----	--	--

Metals

% Coarse by Weight	73.5	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	26.5	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	7.39	mg/kg	0.30	6020	12/16/10 17:22	SLS	7439-92-1	
Lead, Fine	14.8	mg/kg	0.30	6020	12/16/10 17:01	SLS		
Lead, Total Calculated	9.35	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.06

Sample Tag: OBG-219 F2

Collected Date/Time: 12/15/2010 12:24

Matrix: Soil

COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		

Inorganics

Total Solids	89	%	1	Std M 2540 B	12/16/10 14:30	JRT		
--------------	----	---	---	--------------	----------------	-----	--	--

Metals

% Coarse by Weight	57.9	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	42.1	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	7.58	mg/kg	0.30	6020	12/16/10 17:24	SLS	7439-92-1	
Lead, Fine	13.4	mg/kg	0.30	6020	12/16/10 17:03	SLS		
Lead, Total Calculated	10.0	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.07

Sample Tag: OBG-219 F3

Collected Date/Time: 12/15/2010 12:26

Matrix: Soil

COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		

Inorganics

Total Solids	87	%	1	Std M 2540 B	12/16/10 14:30	JRT		
--------------	----	---	---	--------------	----------------	-----	--	--

Metals

% Coarse by Weight	70.3	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	29.7	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	3.28	mg/kg	0.30	6020	12/16/10 17:26	SLS	7439-92-1	
Lead, Fine	7.07	mg/kg	0.30	6020	12/16/10 17:05	SLS		
Lead, Total Calculated	4.40	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.08

Sample Tag: OBG-219 F4

Collected Date/Time: 12/15/2010 12:28

Matrix: Soil

COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		

Inorganics

Total Solids	86	%	1	Std M 2540 B	12/16/10 14:30	JRT		
--------------	----	---	---	--------------	----------------	-----	--	--

Metals

% Coarse by Weight	86.4	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	13.6	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	5.41	mg/kg	0.30	6020	12/16/10 17:28	SLS	7439-92-1	
Lead, Fine	15.9	mg/kg	0.30	6020	12/16/10 17:06	SLS		
Lead, Total Calculated	6.83	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S47148.09

Sample Tag: OBG-219 F5

Collected Date/Time: 12/15/2010 12:30

Matrix: Soil

COC Reference: 57846

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	12/16/10 01:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	12/16/10 14:30	JRT		
Lead, Fine Digestion	Completed			3050B	12/16/10 01:00	SLS		

Inorganics

Total Solids	88	%	1	Std M 2540 B	12/16/10 14:30	JRT		
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Metals

% Coarse by Weight	70.8	%		6020	12/16/10 14:30	JRT		
% Fine by Weight	29.2	%		6020	12/16/10 14:30	JRT		
Lead, Coarse	5.17	mg/kg	0.30	6020	12/16/10 17:30	SLS	7439-92-1	
Lead, Fine	14.6	mg/kg	0.30	6020	12/16/10 17:08	SLS		
Lead, Total Calculated	7.92	mg/kg		6020	12/16/10 01:00	SLS	7439-92-1C	



2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-6333
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

57846

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME Cliff Yantz	
COMPANY O'Brien & Gere	
ADDRESS 37000 Grand River Ave Ste 260	
CITY Farmington Hills	STATE MI
PHONE NO. 248-477-5701	ZIP CODE 48335
FAX NO.	P.O. NO.
E-MAIL ADDRESS clifford.yantz@obg.com	QUOTE NO.

CONTACT NAME		☒ SAME	
COMPANY			
ADDRESS			
CITY	STATE	ZIP CODE	
PHONE NO.	FAX NO.	P.O. NO.	

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME GLTC Land		SAMPLER(S) - PLEASE PRINT/SIGN NAME Kenn Sander SK		SPECIAL INSTRUCTIONS/NOTES																	
TURNAROUND TIME REQUIRED ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ STANDARD ☐ OTHER																					
DELIVERABLES REQUIRED ☒ STANDARD ☐ LEVEL II ☐ LEVEL III ☐ OTHER				Fine / coarse LEAD																	
MATRIX CODE: GW=GROUNDWATER SL=SLUDGE WW=WASTEWATER O=OIL S=SOIL A=AIR L=LIQUID W=WASTE SD=SOLID M=MISC																					
MERIT LAB NO.		YEAR DATE TIME		SAMPLE TAG IDENTIFICATION-DESCRIPTION		MATRIX # OF BOTTLES		# Containers & Preservatives													
47148.01		12/15/10 1204		OBG-219 S1		S 1		NONE		X											
.02		1206		OBG-219 S2		S 1		HCL		X											
.03		1208		OBG-219 S3		S 1		HNO3		X											
.04		1210		OBG-219 S4		S 1		H2SO4		X											
.05		1222		OBG-219 F1		S 1		NaOH		X											
.06		1224		OBG-219 F2		S 1		MeOH		X											
.07		1226		OBG-219 F3		S 1		OTHER		X											
.08		1228		OBG-219 F4		S 1				X											
.09		1230		OBG-219 F5		S 1				X											

RELINQUISHED BY: SIGNATURE/ORGANIZATION K Sander O'Brien & Gere	DATE 12/15/10	TIME 1438	RELINQUISHED BY: SIGNATURE/ORGANIZATION Bartue Rube	DATE 12/15/10	TIME 1438
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE



Analytical Laboratory Report

Report ID: S47195.01(01)
Generated on 12/20/2010

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI 48335

Phone: 248-477-5701 FAX:
Email: YantzCS@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S47195.01-S47195.15
Project: 46375/ GLTC Land
Collected Date: 12/18/2010
Submitted Date/Time: 12/18/2010 16:30
Sampled by: Clifford Yantz
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (15 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S47195.01	OBG-228-F1	Soil	12/18/2010 09:00
S47195.02	OBG-228-F2	Soil	12/18/2010 09:12
S47195.03	OBG-228-F3	Soil	12/18/2010 09:35
S47195.04	OBG-228-F4	Soil	12/18/2010 10:20
S47195.05	OBG-228-F5	Soil	12/18/2010 10:25
S47195.06	OBG-228-F6	Soil	12/18/2010 12:00
S47195.07	OBG-228-F7	Soil	12/18/2010 13:00
S47195.08	OBG-228-S1	Soil	12/18/2010 09:10
S47195.09	OBG-228-S2	Soil	12/18/2010 09:15
S47195.10	OBG-228-S3	Soil	12/18/2010 15:00
S47195.11	OBG-228-S4	Soil	12/18/2010 15:10
S47195.12	OBG-228-S5	Soil	12/18/2010 10:30
S47195.13	OBG-228-S6	Soil	12/18/2010 10:35
S47195.14	OBG-228-S7	Soil	12/18/2010 13:40
S47195.15	OBG-228-S8	Soil	12/18/2010 13:10



Analytical Laboratory Report

Lab Sample ID: S47195.01

Sample Tag: OBG-228-F1

Collected Date/Time: 12/18/2010 09:00

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	84	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	5,000	ug/kg	3,000	5035/8260B	12/19/10 05:14	WAT	71-43-2	Y
Toluene	28,000	ug/kg	3,000	5035/8260B	12/19/10 05:14	WAT	108-88-3	Y
Ethylbenzene	Not detected	ug/kg	3,000	5035/8260B	12/19/10 05:14	WAT	100-41-4	Y
p,m-Xylene	245,000	ug/kg	6,000	5035/8260B	12/19/10 05:14	WAT		Y
o-Xylene	Not detected	ug/kg	3,000	5035/8260B	12/19/10 05:14	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.02

Sample Tag: OBG-228-F2

Collected Date/Time: 12/18/2010 09:12

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Inorganics

Total Solids	84	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	2,300	ug/kg	600	5035/8260B	12/19/10 01:41	WAT	71-43-2	Y
Toluene	Not detected	ug/kg	600	5035/8260B	12/19/10 01:41	WAT	108-88-3	Y
Ethylbenzene	Not detected	ug/kg	600	5035/8260B	12/19/10 01:41	WAT	100-41-4	Y
p,m-Xylene	33,000	ug/kg	1,000	5035/8260B	12/19/10 01:41	WAT		Y
o-Xylene	Not detected	ug/kg	600	5035/8260B	12/19/10 01:41	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.03

Sample Tag: OBG-228-F3

Collected Date/Time: 12/18/2010 09:35

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	85	%	1	Std M 2540 B	12/18/10 19:00	WAT		
Organics - Volatiles								
BTEX 5035								
Benzene	10,000	ug/kg	7,000	5035/8260B	12/19/10 15:12	WAT	71-43-2	Y
Toluene	822,000	ug/kg	7,000	5035/8260B	12/19/10 15:12	WAT	108-88-3	Y
Ethylbenzene	23,000	ug/kg	7,000	5035/8260B	12/19/10 15:12	WAT	100-41-4	Y
p,m-Xylene	80,000	ug/kg	10,000	5035/8260B	12/19/10 15:12	WAT		Y
o-Xylene	30,000	ug/kg	7,000	5035/8260B	12/19/10 15:12	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.04

Sample Tag: OBG-228-F4

Collected Date/Time: 12/18/2010 10:20

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	85	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	4,000	ug/kg	700	5035/8260B	12/18/10 21:07	WAT	71-43-2	Y
Toluene	Not detected	ug/kg	700	5035/8260B	12/18/10 21:07	WAT	108-88-3	Y
Ethylbenzene	3,400	ug/kg	700	5035/8260B	12/18/10 21:07	WAT	100-41-4	Y
p,m-Xylene	71,000	ug/kg	1,000	5035/8260B	12/18/10 21:07	WAT		Y
o-Xylene	Not detected	ug/kg	700	5035/8260B	12/18/10 21:07	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.05

Sample Tag: OBG-228-F5

Collected Date/Time: 12/18/2010 10:25

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	87	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	600	5035/8260B	12/18/10 21:27	WAT	71-43-2	Y
Toluene	Not detected	ug/kg	600	5035/8260B	12/18/10 21:27	WAT	108-88-3	Y
Ethylbenzene	Not detected	ug/kg	600	5035/8260B	12/18/10 21:27	WAT	100-41-4	Y
p,m-Xylene	85,000	ug/kg	1,000	5035/8260B	12/18/10 21:27	WAT		Y
o-Xylene	Not detected	ug/kg	600	5035/8260B	12/18/10 21:27	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.06

Sample Tag: OBG-228-F6

Collected Date/Time: 12/18/2010 12:00

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	90	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	6,000	5035/8260B	12/19/10 15:32	WAT	71-43-2	Y
Toluene	423,000	ug/kg	6,000	5035/8260B	12/19/10 15:32	WAT	108-88-3	Y
Ethylbenzene	17,000	ug/kg	6,000	5035/8260B	12/19/10 15:32	WAT	100-41-4	Y
p,m-Xylene	70,000	ug/kg	10,000	5035/8260B	12/19/10 15:32	WAT		Y
o-Xylene	24,000	ug/kg	6,000	5035/8260B	12/19/10 15:32	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.07

Sample Tag: OBG-228-F7

Collected Date/Time: 12/18/2010 13:00

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	87	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	60	5035/8260B	12/18/10 20:07	WAT	71-43-2	
Toluene	320	ug/kg	60	5035/8260B	12/18/10 20:07	WAT	108-88-3	
Ethylbenzene	Not detected	ug/kg	60	5035/8260B	12/18/10 20:07	WAT	100-41-4	
p,m-Xylene	200	ug/kg	100	5035/8260B	12/18/10 20:07	WAT		
o-Xylene	Not detected	ug/kg	60	5035/8260B	12/18/10 20:07	WAT	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47195.08

Sample Tag: OBG-228-S1

Collected Date/Time: 12/18/2010 09:10

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	84	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	900	ug/kg	700	5035/8260B	12/19/10 14:53	WAT	71-43-2	Y
Toluene	3,100	ug/kg	700	5035/8260B	12/19/10 14:53	WAT	108-88-3	Y
Ethylbenzene	Not detected	ug/kg	700	5035/8260B	12/19/10 14:53	WAT	100-41-4	Y
p,m-Xylene	62,000	ug/kg	1,000	5035/8260B	12/19/10 14:53	WAT		Y
o-Xylene	Not detected	ug/kg	700	5035/8260B	12/19/10 14:53	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.09

Sample Tag: OBG-228-S2

Collected Date/Time: 12/18/2010 09:15

Matrix: Soil

COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	81	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	700	5035/8260B	12/19/10 02:01	WAT	71-43-2	Y
Toluene	Not detected	ug/kg	700	5035/8260B	12/19/10 02:01	WAT	108-88-3	Y
Ethylbenzene	Not detected	ug/kg	700	5035/8260B	12/19/10 02:01	WAT	100-41-4	Y
p,m-Xylene	63,000	ug/kg	1,000	5035/8260B	12/19/10 02:01	WAT		Y
o-Xylene	Not detected	ug/kg	700	5035/8260B	12/19/10 02:01	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.10
Sample Tag: OBG-228-S3
Collected Date/Time: 12/18/2010 15:00
Matrix: Soil
COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	87	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	3,000	5035/8260B	12/19/10 03:18	WAT	71-43-2	Y
Toluene	461,000	ug/kg	3,000	5035/8260B	12/19/10 03:18	WAT	108-88-3	Y
Ethylbenzene	32,000	ug/kg	3,000	5035/8260B	12/19/10 03:18	WAT	100-41-4	Y
p,m-Xylene	120,000	ug/kg	6,000	5035/8260B	12/19/10 03:18	WAT		Y
o-Xylene	42,000	ug/kg	3,000	5035/8260B	12/19/10 03:18	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.11
Sample Tag: OBG-228-S4
Collected Date/Time: 12/18/2010 15:10
Matrix: Soil
COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	90	%	1	Std M 2540 B	12/18/10 19:00	WAT		
Organics - Volatiles								
BTEX 5035								
Benzene	Not detected	ug/kg	3,000	5035/8260B	12/19/10 04:36	WAT	71-43-2	Y
Toluene	560,000	ug/kg	3,000	5035/8260B	12/19/10 04:36	WAT	108-88-3	Y
Ethylbenzene	16,000	ug/kg	3,000	5035/8260B	12/19/10 04:36	WAT	100-41-4	Y
p,m-Xylene	63,000	ug/kg	6,000	5035/8260B	12/19/10 04:36	WAT		Y
o-Xylene	24,000	ug/kg	3,000	5035/8260B	12/19/10 04:36	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.12
Sample Tag: OBG-228-S5
Collected Date/Time: 12/18/2010 10:30
Matrix: Soil
COC Reference: 57851

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	84	%	1	Std M 2540 B	12/18/10 19:00	WAT		
Organics - Volatiles								
BTEX 5035								
Benzene	390	ug/kg	60	5035/8260B	12/19/10 14:13	WAT	71-43-2	
Toluene	470	ug/kg	60	5035/8260B	12/19/10 14:13	WAT	108-88-3	
Ethylbenzene	340	ug/kg	60	5035/8260B	12/19/10 14:13	WAT	100-41-4	
p,m-Xylene	1,800	ug/kg	100	5035/8260B	12/19/10 14:13	WAT		
o-Xylene	150	ug/kg	60	5035/8260B	12/19/10 14:13	WAT	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47195.13

Sample Tag: OBG-228-S6

Collected Date/Time: 12/18/2010 10:35

Matrix: Soil

COC Reference: 57852

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	79	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	80	5035/8260B	12/19/10 14:33	WAT	71-43-2	
Toluene	360	ug/kg	80	5035/8260B	12/19/10 14:33	WAT	108-88-3	
Ethylbenzene	Not detected	ug/kg	80	5035/8260B	12/19/10 14:33	WAT	100-41-4	
p,m-Xylene	400	ug/kg	200	5035/8260B	12/19/10 14:33	WAT		
o-Xylene	80	ug/kg	80	5035/8260B	12/19/10 14:33	WAT	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47195.14

Sample Tag: OBG-228-S7

Collected Date/Time: 12/18/2010 13:40

Matrix: Soil

COC Reference: 57852

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	86	%	1	Std M 2540 B	12/18/10 19:00	WAT		
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Organics - Volatiles

BTEX 5035

Benzene	300	ug/kg	100	5035/8260B	12/19/10 04:55	WAT	71-43-2	Y
Toluene	100	ug/kg	100	5035/8260B	12/19/10 04:55	WAT	108-88-3	Y
Ethylbenzene	6,300	ug/kg	100	5035/8260B	12/19/10 04:55	WAT	100-41-4	Y
p,m-Xylene	22,800	ug/kg	300	5035/8260B	12/19/10 04:55	WAT		Y
o-Xylene	Not detected	ug/kg	100	5035/8260B	12/19/10 04:55	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47195.15

Sample Tag: OBG-228-S8

Collected Date/Time: 12/18/2010 13:10

Matrix: Soil

COC Reference: 57852

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	85	%	1	Std M 2540 B	12/18/10 19:00	WAT		
Organics - Volatiles								
BTEX 5035								
Benzene	90	ug/kg	60	5035/8260B	12/19/10 03:57	WAT	71-43-2	
Toluene	Not detected	ug/kg	60	5035/8260B	12/19/10 03:57	WAT	108-88-3	
Ethylbenzene	150	ug/kg	60	5035/8260B	12/19/10 03:57	WAT	100-41-4	
p,m-Xylene	Not detected	ug/kg	100	5035/8260B	12/19/10 03:57	WAT		
o-Xylene	Not detected	ug/kg	60	5035/8260B	12/19/10 03:57	WAT	95-47-6	

Merit

Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-6333
www.meritlabs.com

G.O.C. PAGE # 1 OF 2

57851

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME <i>Clifford S. Yantz</i>		
COMPANY <i>O'Brien & Gere</i>		
ADDRESS <i>37000 Grand River Ave., Suite 260</i>		
CITY <i>Farmington Hills</i>	STATE <i>MI</i>	ZIP CODE <i>48335</i>
PHONE NO. <i>313 333 0211</i>	FAX NO. <i>248 477 5762</i>	P.O. NO.
E-MAIL ADDRESS <i>clifford.yantz@obg.com</i>		QUOTE NO.

CONTACT NAME <i>SAME</i>		
COMPANY		
ADDRESS		
CITY	STATE	ZIP CODE
PHONE NO.	FAX NO.	P.O. NO.

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME <i>46375 / 66TC Land</i>			SAMPLER(S) - PLEASE PRINT/SIGN NAME <i>Clifford Yantz / O'Brien & Gere</i>										SPECIAL INSTRUCTIONS/NOTES			
TURNAROUND TIME REQUIRED ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ STANDARD ☐ OTHER																
DELIVERABLES REQUIRED ☒ STANDARD ☐ LEVEL II ☐ LEVEL III ☐ OTHER																
MATRIX CODE		GW=GROUNDWATER SL=SLUDGE		WW=WASTEWATER O=OIL		S=SOIL A=AIR		L=LIQUID W=WASTE		SD=SOLID M=MISC		# Containers & Preservatives				
MERIT LAB NO.	YEAR DATE TIME		SAMPLE TAG IDENTIFICATION-DESCRIPTION				MATRIX	# OF BOTTLES	NONE	HCL	HNO3	H2SO4	NaOH	MeOH	OTHER	
1	4719501	12/18/10 9:00	OBG-228-F1				S	2	1							X
2	.02	9:12	OBG-228-F2				S	2	1							X
3	.03	9:35	OBG-228-F3				S	2	1							X
4	.04	10:20	OBG-228-F4				S	2	1							X
5	.05	10:25	OBG-228-F5				S	2	1							X
6	.06	12:00	OBG-228-F6				S	2	1							X
7	.07	13:00	OBG-228-F7				S	2	1							X
8	.08	9:10	OBG-228-S1				S	2	1							X
9	.09	9:15	OBG-228-S2				S	2	1							X
10	.10	15:00	OBG-228-S3				S	2	1							X
11	.11	15:10	OBG-228-S4				S	2	1							X
12	.12	10:30	OBG-228-S5				S	2	1							X

RELINQUISHED BY: SIGNATURE/ORGANIZATION <i>Clifford Yantz / O'Brien & Gere</i>	DATE <i>12/18/10</i>	TIME <i>16:30</i>
RECEIVED BY: SIGNATURE/ORGANIZATION <i>G. Yantz / O'Brien & Gere</i>	DATE <i>12/18/10</i>	TIME <i>16:30</i>
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION <i>[Signature]</i>	DATE <i>12-18-10</i>	TIME <i>16:30</i>
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
NOTES:		TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE



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C.O.C. PAGE # 2 OF 2

57852

INVOICE TO

CONTACT NAME Clifford S. Vantz		CONTACT NAME SAME	
COMPANY O'Brien & Gere		COMPANY	
ADDRESS 37000 Grand River Ave, Suite 260		ADDRESS	
CITY Farmington Hills	STATE MI	ZIP CODE 48335	
PHONE NO. 313 333 0211	FAX NO. 248 477-5962	P.O. NO.	
E-MAIL ADDRESS C.Vantz@O'Brien-Gere.com		QUOTE NO.	
ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)			

PROJECT NO./NAME			SAMPLER(S) - PLEASE PRINT/SIGN NAME		SPECIAL INSTRUCTIONS/NOTES	
TURNAROUND TIME REQUIRED			DELIVERABLES REQUIRED			
MATRIX CODE						
MERIT LAB NO.			YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	
4795	13	12/18/10	10:35	OBG-228-56	5	2
14	12/18/10	13:40	OBG-228-57	5	2	
15	12/18/10	13:10	OBG-228-58	5	2	

RELINQUISHED BY: SIGNATURE/ORGANIZATION	<i>Officer Brent Young / O'Brien's Garage</i>	DATE 12/18/10	TIME 1630	RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 12/18/10	TIME 1630
RECEIVED BY: SIGNATURE/ORGANIZATION	<i>Eugene Beresovsky</i>	DATE 12/18/10	TIME 1630	RECEIVED BY: SIGNATURE/ORGANIZATION	<i>Paul...</i>	DATE 12-18-10	TIME 1630
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME	SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL _____
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME	SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE



Analytical Laboratory Report

Report ID: S47213.01(01)
Generated on 12/21/2010

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI 48335

Phone: 248-477-5701 FAX:
Email: YantzCS@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S47213.01-S47213.05
Project: GLTC Land
Collected Date: 12/20/2010
Submitted Date/Time: 12/20/2010 16:45
Sampled by: Kevin Schneider
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S47213.01	OBG-228-F8	Soil	12/20/2010 11:10
S47213.02	OBG-228-F9	Soil	12/20/2010 11:20
S47213.03	OBG-228-F10	Soil	12/20/2010 12:30
S47213.04	OBG-228-S9	Soil	12/20/2010 16:00
S47213.05	OBG-228-S10	Soil	12/20/2010 16:00



Analytical Laboratory Report

Lab Sample ID: S47213.01
Sample Tag: OBG-228-F8
Collected Date/Time: 12/20/2010 11:10
Matrix: Soil
COC Reference: 57848

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	90	%	1	Std M 2540 B	12/20/10 17:35	WAR		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	60	5035/8260B	12/20/10 17:50	WAT	71-43-2	
Toluene	970	ug/kg	60	5035/8260B	12/20/10 17:50	WAT	108-88-3	
Ethylbenzene	Not detected	ug/kg	60	5035/8260B	12/20/10 17:50	WAT	100-41-4	
p,m-Xylene	100	ug/kg	100	5035/8260B	12/20/10 17:50	WAT		
o-Xylene	Not detected	ug/kg	60	5035/8260B	12/20/10 17:50	WAT	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47213.02

Sample Tag: OBG-228-F9

Collected Date/Time: 12/20/2010 11:20

Matrix: Soil

COC Reference: 57848

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	93	%	1	Std M 2540 B	12/20/10 17:35	WAR		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	1,000	5035/8260B	12/20/10 18:13	WAT	71-43-2	Y
Toluene	42,000	ug/kg	1,000	5035/8260B	12/20/10 18:13	WAT	108-88-3	Y
Ethylbenzene	Not detected	ug/kg	1,000	5035/8260B	12/20/10 18:13	WAT	100-41-4	Y
p,m-Xylene	2,000	ug/kg	2,000	5035/8260B	12/20/10 18:13	WAT		Y
o-Xylene	Not detected	ug/kg	1,000	5035/8260B	12/20/10 18:13	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47213.03
Sample Tag: OBG-228-F10
Collected Date/Time: 12/20/2010 12:30
Matrix: Soil
COC Reference: 57848

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	94	%	1	Std M 2540 B	12/20/10 17:35	WAR		
Organics - Volatiles								
BTEX 5035								
Benzene	380	ug/kg	60	5035/8260B	12/20/10 18:33	WAT	71-43-2	
Toluene	530	ug/kg	60	5035/8260B	12/20/10 18:33	WAT	108-88-3	
Ethylbenzene	190	ug/kg	60	5035/8260B	12/20/10 18:33	WAT	100-41-4	
p,m-Xylene	600	ug/kg	100	5035/8260B	12/20/10 18:33	WAT		
o-Xylene	120	ug/kg	60	5035/8260B	12/20/10 18:33	WAT	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47213.04
Sample Tag: OBG-228-S9
Collected Date/Time: 12/20/2010 16:00
Matrix: Soil
COC Reference: 57848

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	85	%	1	Std M 2540 B	12/20/10 17:35	WAR		
Organics - Volatiles								
BTEX 5035								
Benzene	Not detected	ug/kg	10,000	5035/8260B	12/20/10 18:52	WAT	71-43-2	Y
Toluene	1,150,000	ug/kg	10,000	5035/8260B	12/20/10 18:52	WAT	108-88-3	Y
Ethylbenzene	60,000	ug/kg	10,000	5035/8260B	12/20/10 18:52	WAT	100-41-4	Y
p,m-Xylene	250,000	ug/kg	30,000	5035/8260B	12/20/10 18:52	WAT		Y
o-Xylene	90,000	ug/kg	10,000	5035/8260B	12/20/10 18:52	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S47213.05
Sample Tag: OBG-228-S10
Collected Date/Time: 12/20/2010 16:00
Matrix: Soil
COC Reference: 57848

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.5	IR
1	40ml Glass	MeOH	Yes	4.5	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	81	%	1	Std M 2540 B	12/20/10 17:35	WAR		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	10,000	5035/8260B	12/20/10 19:15	WAT	71-43-2	Y
Toluene	1,210,000	ug/kg	10,000	5035/8260B	12/20/10 19:15	WAT	108-88-3	Y
Ethylbenzene	50,000	ug/kg	10,000	5035/8260B	12/20/10 19:15	WAT	100-41-4	Y
p,m-Xylene	200,000	ug/kg	30,000	5035/8260B	12/20/10 19:15	WAT		Y
o-Xylene	70,000	ug/kg	10,000	5035/8260B	12/20/10 19:15	WAT	95-47-6	Y

Y-Elevated reporting limit due to high target concentration

**INVOICE TO**

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE



Analytical Laboratory Report

Report ID: S47228.01(01)
Generated on 12/21/2010

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI 48335

Phone: 248-477-5701 FAX:
Email: YantzCS@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S47228.01-S47228.05
Project: GLTC Land
Collected Date: 12/21/2010
Submitted Date/Time: 12/21/2010 14:45
Sampled by: Unknown
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
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Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S47228.01	OBG-228-S11	Soil	12/21/2010 09:00
S47228.02	OBG-228-S12	Soil	12/21/2010 10:10
S47228.03	OBG-228-S13	Soil	12/21/2010 12:03
S47228.04	OBG-228-S14	Soil	12/21/2010 13:00
S47228.05	OBG-228-S15	Soil	12/21/2010 13:40



Analytical Laboratory Report

Lab Sample ID: S47228.01

Sample Tag: OBG-228-S11

Collected Date/Time: 12/21/2010 09:00

Matrix: Soil

COC Reference: 57847

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.6	IR
1	40ml Glass	MeOH	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Inorganics

Total Solids	88	%	1	Std M 2540 B	12/21/10 14:45	DJS		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	60	5035/8260B	12/21/10 16:02	JGH	71-43-2	
Toluene	Not detected	ug/kg	60	5035/8260B	12/21/10 16:02	JGH	108-88-3	
Ethylbenzene	Not detected	ug/kg	60	5035/8260B	12/21/10 16:02	JGH	100-41-4	
p,m-Xylene	Not detected	ug/kg	100	5035/8260B	12/21/10 16:02	JGH		
o-Xylene	Not detected	ug/kg	60	5035/8260B	12/21/10 16:02	JGH	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47228.02
Sample Tag: OBG-228-S12
Collected Date/Time: 12/21/2010 10:10
Matrix: Soil
COC Reference: 57847

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.6	IR
1	40ml Glass	MeOH	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	84	%	1	Std M 2540 B	12/21/10 14:45	DJS		
Organics - Volatiles								
BTEX 5035								
Benzene	480	ug/kg	70	5035/8260B	12/21/10 16:20	JGH	71-43-2	
Toluene	120	ug/kg	70	5035/8260B	12/21/10 16:20	JGH	108-88-3	
Ethylbenzene	110	ug/kg	70	5035/8260B	12/21/10 16:20	JGH	100-41-4	
p,m-Xylene	2,800	ug/kg	100	5035/8260B	12/21/10 16:20	JGH		
o-Xylene	Not detected	ug/kg	70	5035/8260B	12/21/10 16:20	JGH	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47228.03
Sample Tag: OBG-228-S13
Collected Date/Time: 12/21/2010 12:03
Matrix: Soil
COC Reference: 57847

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.6	IR
1	40ml Glass	MeOH	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Inorganics								
Total Solids	85	%	1	Std M 2540 B	12/21/10 14:45	DJS		
Organics - Volatiles								
BTEX 5035								
Benzene	500	ug/kg	70	5035/8260B	12/21/10 16:38	JGH	71-43-2	
Toluene	120	ug/kg	70	5035/8260B	12/21/10 16:38	JGH	108-88-3	
Ethylbenzene	540	ug/kg	70	5035/8260B	12/21/10 16:38	JGH	100-41-4	
p,m-Xylene	1,200	ug/kg	100	5035/8260B	12/21/10 16:38	JGH		
o-Xylene	320	ug/kg	70	5035/8260B	12/21/10 16:38	JGH	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47228.04
Sample Tag: OBG-228-S14
Collected Date/Time: 12/21/2010 13:00
Matrix: Soil
COC Reference: 57847

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.6	IR
1	40ml Glass	MeOH	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Inorganics

Total Solids	79	%	1	Std M 2540 B	12/21/10 14:45	DJS		
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Organics - Volatiles

BTEX 5035

Benzene	Not detected	ug/kg	70	5035/8260B	12/21/10 15:44	JGH	71-43-2	
Toluene	Not detected	ug/kg	70	5035/8260B	12/21/10 15:44	JGH	108-88-3	
Ethylbenzene	Not detected	ug/kg	70	5035/8260B	12/21/10 15:44	JGH	100-41-4	
p,m-Xylene	2,000	ug/kg	100	5035/8260B	12/21/10 15:44	JGH		
o-Xylene	Not detected	ug/kg	70	5035/8260B	12/21/10 15:44	JGH	95-47-6	



Analytical Laboratory Report

Lab Sample ID: S47228.05
Sample Tag: OBG-228-S15
Collected Date/Time: 12/21/2010 13:40
Matrix: Soil
COC Reference: 57847

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	4.6	IR
1	40ml Glass	MeOH	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Other / Misc.								
Hold until notified	Completed				12/21/10 16:40	PCS		



2680 East Lansing Dr., East Lansing, MI 48823
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C.O.C. PAGE # 1 OF 1

57847

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME <i>Cliff Yantz</i>	
COMPANY <i>O'Brien & Gere</i>	
ADDRESS <i>37000 Grand River</i>	
CITY <i>Farmington Hills</i>	STATE <i>MI</i>
PHONE NO. <i>513-333-0211</i>	ZIP CODE <i>48335</i>
FAX NO.	P.O. NO.
E-MAIL ADDRESS <i>Clifford.Yantz@obg.com</i>	
QUOTE NO.	

CONTACT NAME <i>[Blank]</i>		☒ SAME	
COMPANY			
ADDRESS			
CITY		STATE	ZIP CODE
PHONE NO.		FAX NO.	P.O. NO.

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME <i>GLTC Land</i>			SAMPLER(S) - PLEASE PRINT/SIGN NAME										SPECIAL INSTRUCTIONS/NOTES <i>Please Run obg-228-513 first</i>																												
TURNAROUND TIME REQUIRED ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ STANDARD ☐ OTHER																																									
DELIVERABLES REQUIRED ☒ STANDARD ☐ LEVEL II ☐ LEVEL III ☐ OTHER																																									
MATRIX CODE:		GW=GROUNDWATER SL=SLUDGE		WW=WASTEWATER O=OIL		S=SOIL A=AIR		L=LIQUID W=WASTE		SD=SOLID M=MISC		# Containers & Preservatives																													
MERIT LAB NO.		YEAR		DATE		TIME		SAMPLE TAG IDENTIFICATION-DESCRIPTION				MATRIX		# OF BOTTLES		NONE		HCL		HNO3		H2SO4		NaOH		MeOH		OTHER		<i>BETA</i>											
47228.01		12/21/10		900		OBG-228-S11				S		2		1										1		X															
.02		1		1010		OBG-228-S12				S		2		1										1		X															
.03		1		1203		OBG-228-S13				S		2		1										1		X															
.04		1		1300		OBG-228-S14				S		2		1										1		X															
.05		1		1340		OBG-228-S15				S		2		1										1		X															
																														<i>Hold sample</i>											

RELINQUISHED BY: SIGNATURE/ORGANIZATION <i>[Signature]</i> <i>O'Brien & Gere</i>	DATE <i>12/21/10</i>	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION <i>[Signature]</i>	DATE <i>12/21/10</i>	TIME <i>14:45</i>
RECEIVED BY: SIGNATURE/ORGANIZATION <i>[Signature]</i>	DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS
NOTES:		TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

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Appendix D
Soil Boring Logs

				SOIL BORING LOG		BORING I.D.: MW-11			
				Boring Location: Outside parking lot at northern portion of DSL Between OBG-MW-17 and OBG-MW-20		PAGE 1 OF 1			
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.:				Drilling equipment: N/A Sampling equipment: N/A Borehole Diameter: 4 inches Total Depth: 15 feet below grade		Surface Elevation (ft MSL): 758.84 Top of Casing Elevation (ft MSL): 756.5158 Northing: Easting: Depth to ground water:			
BORING COMPANY: J & H Drilling Inc, FOREMAN: N/A GEOLOGIST: N/A				Start date: 11/11/1987 Completion date: 11/11/1987		LEGEND: / Cement/grout === Screen #0 Sand Pack Riser Bentonite			
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION		STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing	
								PID Headspace	
0	0-1	full		Fill	1.5'	/	/		
1						/	/		
						/	/		
2						/	/		
						/	/		
3						/	/		
						/	/		
4						/	/		
						/	/		
5	5 - 10	full				/	/		
						/	/		
6						/	/		
						/	/		
7						/	/		
						/	/		
8				/	/				
				/	/				
9				/	/				
				/	/				
10	10 - 15	full		/	/				
				/	/				
11				/	/				
				/	/				
12				/	/				
				/	/				
13				/	/				
				/	/				
14				/	/				
				/	/				
15				Silt/Clay	End of Boring at 15 fbg				
16									
17									
18									
19									
20									
21									
22									
23									

Notes:

Soil boring log was constructed from geologic cross section and monitoring well details provided by GZA.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: OBG-MW22	
				Boring Location: In parking lot at northern portion of DSL Between OBG-MW17 and OBG-MW21		PAGE 1 OF 1 Surface Elevation (ft MSL): 756.7430 Top of Casing Elevation (ft MSL): 756.5158 Northing: 159251.0825 Easting: 4050255.6470 Depth to ground water:	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573		Drilling equipment: CME 85, 4.25-inch I.D. hollow-stem auger Sampling equipment: Stainless steel macro-core sampler, 5 ft by 2" dia. Borehole Diameter: 8 inches Total Depth: 20 feet below grade		Start date: 9/19/2005 Completion date: 9/19/2005		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRPT	Equipment Installed	Field Testing
0	0-1	full		concrete	6"	/	/
				aggregate GRAVEL	1'	/	/
1				moderate yellowish brown 10 YR 5/4, dry, silty SAND, little gravel		/	/
						/	/
2				no recovery; pushed rock	2'	/	/
						/	/
3						/	/
						/	/
4						/	/
						/	/
5	5 - 10	full		moderate yellowish brown 10 YR 5/4, damp, silty SAND, little gravel	5'		0.0
				metal pieces in auger cuttings			
6							
7							
8				as above	8'		0.0
9							
10	10 - 15	full		as above, sandy SILT	10'		
11							
12							
13							
14				dark brown 5 YR 2/2, moist, sandy SILT (peat)	14'		0.0
15	15 - 20	full		grayish olive 10Y 4/2, moist, sandy CLAY	15'		
16				grayish olive 10Y 4/2, wet, very fine SAND, little silt	16'		
17							
18				light olive gray 5Y 5/2, damp, hard silty CLAY, little gravel (crumbly)	18'		
19							
20							
21				End of Boring at 20 fbg			
22							
23							

Notes:
 1. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 2. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.
 3. Subsequent to soil sampling activities a monitoring well was installed using 2- inch PVC riser flush threaded to a 10 ft. length of 0.010 inch slit PVC well screen; flush mount.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: MW-7 A															
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: West of parking lot at north end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:															
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 15 feet below grade		LEGEND: <table border="1"> <tr> <td>☐</td> <td>Cement/grout</td> <td>☐</td> <td>Screen</td> </tr> <tr> <td>☐</td> <td>#0 Sand Pack</td> <td>☐</td> <td>Riser</td> </tr> <tr> <td>☐</td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>				☐	Cement/grout	☐	Screen	☐	#0 Sand Pack	☐	Riser	☐	Bentonite		
☐	Cement/grout	☐	Screen																		
☐	#0 Sand Pack	☐	Riser																		
☐	Bentonite																				
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing														
							PID	Headspace													
0	0 - 5	5		top soil																	
				moderate yellowish brown, dry sandy CLAY, trace gravel	4"																
1																					
2				moderate yellowish brown, damp SAND, little silt	2.2'		0.0														
3			*	moderate yellowish brown, damp silty CLAY	2.8'																
4							0.0														
5	5 - 10	4.5																			
6				brownish orangish pink, damp CLAY, soft	6'		0.0														
7																					
8			*				0.0														
				moderate yellowish brown, damp CLAY, little silt, trace gravel	8.8'																
9																					
10	10 - 15	4.5		pale yellowish brown, moist CLAY	10'		0.0														
11				medium light gray, wet SAND, some gravel	11'																
							0.0														
12																					
13			*																		
14							0.0														
15	15 - 20	4.5		medium light gray, wet sandy SILT	15'																
							0.0														
16																					
17				medium light gray, damp clayey SILT, little gravel	17'																
18			*				0.0														
19																					
20				End of Boring at 20 fbg	20'																
21																					
22																					
23																					

Notes:

- Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
- 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
- * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: MW-7 NE													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: In parking lot at north end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 15 feet below grade		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td>#0</td> <td>Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen	#0	Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
#0	Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing												
0	0 - 5	3.5		concrete	6"														
				grayish black, damp silty SAND, little clay. trace gravel, pieces of wood, slight fuel odor															
1																			
2				olive gray, damp clayey SILT, little sand	2'		0.0												
3			*																
4																			
5	5 - 10	3.3		light olive gray, damp CLAY, gray mottling	5'		0.0												
6																			
7																			
8			*				0.0												
9																			
10	10 - 15	4																	
11				medium light gray, damp CLAY	11'		0.0												
12																			
13			*																
14				medium light gray, moist to wet sandy SILT, trace gravel	13.5'														
15																			
16																			
17					End of Boring at 15 fbg														
18																			
19																			
20																			
21																			
22																			
23																			

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: MW-7 SE													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: In parking lot at north end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 15 feet below grade Start date: 7/26/2007 Completion date: 7/26/2007		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td>#0</td> <td>Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen	#0	Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
#0	Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing												
							PID Headspace												
0	0 - 5	3		concrete															
				grayish brown, damp silty SAND, little clay, little gravel	6"														
1																			
				medium light gray, SAND and gravel	1.7'														
2				dark gray, damp clayey SILT, slight fuel odor	2'		0.0												
3			*																
4							0.0												
5	5 - 10	3.5		light olive gray, damp, CLAY	5'														
6							0.0												
7																			
8			*				0.0												
9				light olive gray damp silty CLAY	9.5'		0.0												
10	10 - 15	3																	
11				medium light gray, moist silty CLAY	11.5'		0.0												
12																			
13			*																
				medium light gray, moist to wet sandy SILT, trace gravel	13.5'														
14																			
15				End of Boring at 15 fbg															
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: MW-7 NW	
				Boring Location: West of parking lot at north end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 15 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/26/2007 Completion date: 7/26/2007		LEGEND: Cement/grout #0 Sand Pack Screen Riser Bentonite	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing PID Headspace
0	0 - 5	5		top soil			
				moderate yellowish brown, dry sandy CLAY, trace gravel	4"		
1							
				moderate yellowish brown, damp SILT and sand	1.7'		
2							0.0
3			*				
4							0.0
				moderate yellowish brown, damp CLAY, some silt	4.7'		
5	5 - 10	5					
6				brownish orange pink, moist CLAY, soft	6'		0.0
7							
8			*				0.0
				moderate yellowish brown, damp CLAY, some silt	8.5'		
9							
				pale yellowish brown, damp CLAY, some silt	9.5'		
10	10 - 15	5					
11				medium light gray, wet SAND, some gravel, little silt	11'		
12							
13			*				
14							
				medium light gray, moist SILT, little sand	14.5'		
15				End of Boring at 15 fbg	15'		
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: MW-7 SW	
				Boring Location: West of parking lot at north end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 15 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/26/2007 Completion date: 7/26/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	5		top soil	4"		
				moderate yellowish brown, dry sandy CLAY, trace gravel			
1							
2				moderate yellowish, damp SAND, little silt	2'		0.0
3			*				
4							
				moderate yellowish, damp silty CLAY	4.5'		0.0
5	5 - 10	5					
6							
7							0.0
8			*				
9				moderate yellowish brown, damp CLAY, some silt			
10	10 - 15	5			8.8'		0.0
11				medium light gray, damp CLAY			
12					11'		0.0
13			*	medium light gray, wet SAND			
14					13'		
				medium light gray, moist to wet sandy SILT			
15				End of Boring at 15 fbg			
16					15'		
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-26 SW-7	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout Screen #0 Sand Pack Riser Bentonite	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	3		asphalt			
				light olive gray, damp CLAY	3"		
1				black slag	1'		
				light olive gray, moist clayey SILT	1.3'		
2							0.0
3							
4							0.0
5	5 - 10	3	*	light olive gray, moist clayey SILT, metal wire	5'		
				light olive gray, moist clayey SILT, gray mottling	5.6'		
6							0.0
7							
8							0.0
9							
10				End of Boring at 10 fbg	10'		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

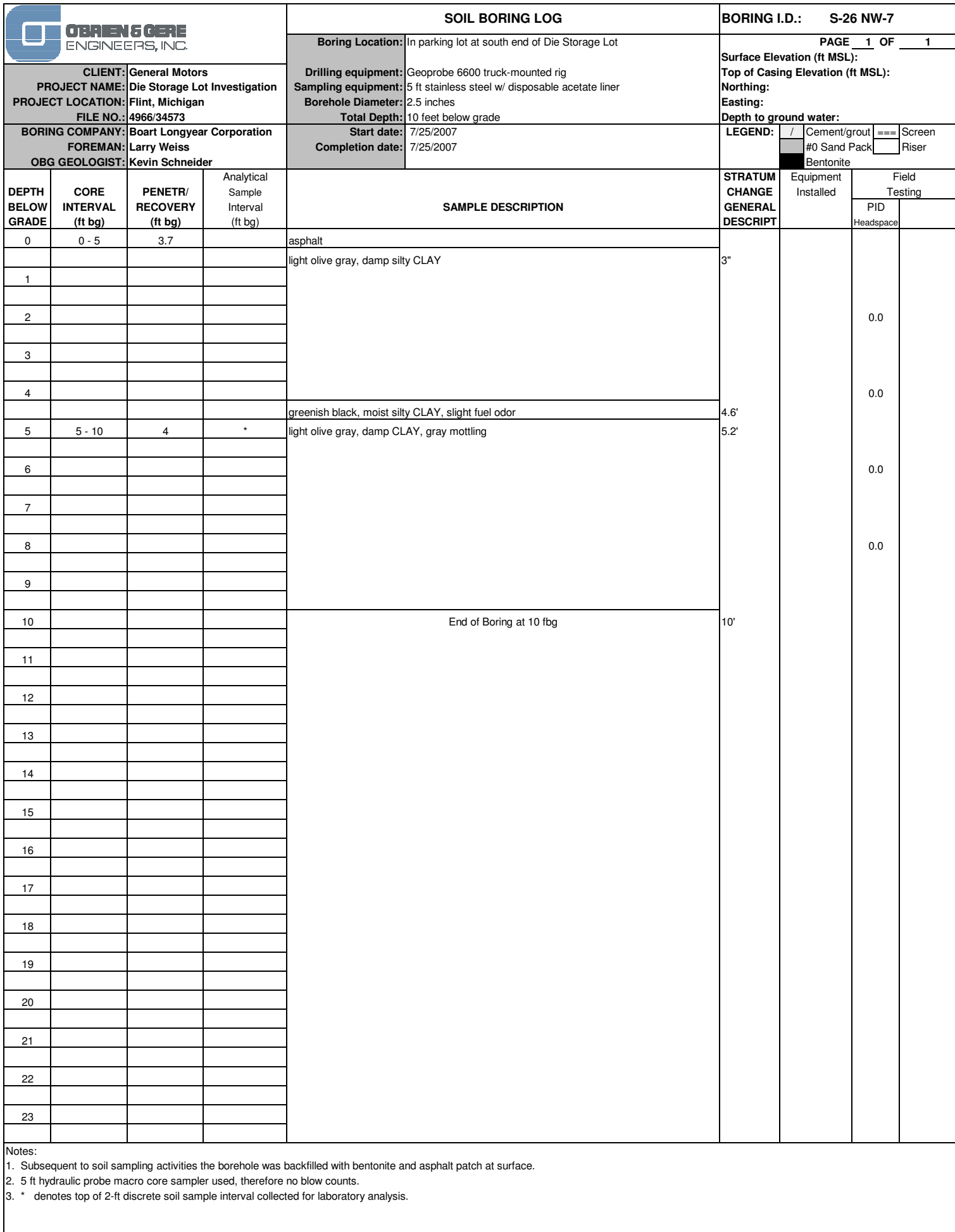
Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-26 SE-7	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout Screen #0 Sand Pack Riser Bentonite	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	3.5		asphalt	3"		
				orangish brown, damp SAND and gravel, pieces of slag			
1							
2					4'		0.0
3							
4				light olive gray, damp clayey SILT			
5	5 - 10	4	*		6'		0.0
6				light olive gray, moist silty CLAY			
7				light olive gray, moist silty CLAY, little gravel and sand, slag pieces			
8					6.5'		0.0
9				light olive gray, moist silty CLAY, trace gravel			
10				End of Boring at 10 fbg			
11					10'		
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-26 NE-7													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td>#0</td> <td>Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen	#0	Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
#0	Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing												
0	0 - 5	3.7		asphalt															
				black slag	3"														
1				light olive gray, damp silty CLAY	6"														
2							0.0												
3				olive black, damp silty CLAY, rubber band	3'														
4				light olive gray, damp silty CLAY	3.5'		0.0												
5	5 - 10	4	*	light olive gray, wet silty CLAY, gray mottling	4.5'														
6							0.0												
7				light olive gray, moist silty CLAY, gray mottling	6.5'														
8							0.0												
9																			
10				End of Boring at 10 fbg	10'														
11																			
12																			
13																			
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16																			
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19																			
20																			
21																			
22																			
23																			

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.



 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-31 A-5	
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE 1 OF 1	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: ☐ Cement/grout ☐ #0 Sand Pack ☐ Bentonite ☐ Screen ☐ Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	3		asphalt			
				orangish borwn, damp sandy CLAY, pieces of glass and metal	3"		
1				orangish borwn, damp sandy CLAY	1'		
2							0.0
3			*	concrete	3.5'		
				light brown, damp CLAY, trace gravel	3.7'		0.0
4							
5				End of boring at 5 fbg	5'		
6							
7							
8							
9							
10							
11							
12							
13							
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16							
17							
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19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-31 SW-2	
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE 1 OF 1	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	3		asphalt	3"		
				orangish borwn, damp silty CLAY			
1			*				
2				pale yellowish and gray, moist silty CLAY, trace gravel	2'		0.0
3							
4							
5				End of boring at 5 fbg	5'		0.0
6							
7							
8							
9							
10							
11							
12							
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14							
15							
16							
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18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-31 SE-2				
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE 1 OF 1				
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:				
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser				
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing			
0	0 - 5	3		asphalt	3"					
				moderate yellowish borwn, damp CLAY, little sand, little slag						
1			*							
2					2.5'		0.0			
				moderate yellowish brown, damp silty CLAY gray mottling						
3										
4					4.5'		0.0			
				moderate yellowish brown, damp silty CLAY, little gravel						
5				End of boring at 5 fbg						
6					5'					
7										
8										
9										
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20										
21										
22										
23										

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-31 NE-2		
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE 1 OF 1		
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:		
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing	
							PID Headspace	
0	0 - 5	3		asphalt				
				orangeish brown, damp SAND, little slag	3"			
1			*	pale yellowish brown, damp CLAY, trace gravel, dark yellowish orange sand mottling	1'			
2								0.0
3								
4				pale yellowish brown, damp silty SAND	4'			0.0
				pale yellowish brown, damp CLAY, dark yellowish orange sand mottling	4.5'			
5				End of boring at 5 fbg	5'			
6								
7								
8								
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Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-31 NW-2		
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE 1 OF 1		
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:		
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite Screen Riser		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing	
							PID Headspace	
0	0 - 5	2		asphalt	3" 1'			
				grayish orange, damp SAND and gravel				
1			*	pale yellowish brown, damp CLAY				
2								0.0
3								
4								0.0
5								
6								
7								
8								
9								
10								
11								
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13								
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16								
17								
18								
19								
20								
21								
22								
23								
Notes: 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface. 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts. 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.								

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-32 A-12	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 12 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2		asphalt			
				light brown, damp SAND and large gravel	3"		
1				black slag	8"		
				moderate reddish brown, damp CLAY, little slag	1.5'		0.0
2							
3							
4							0.0
				bricks, glass and gravel	4.5'		
5	5 - 10	3		dusky yellowish brown, moist sandy CLAY, little gravel, slag	5'		0.0
6							
7							
8							0.0
9							
				medium gray, moist CLAY	9.5'		
10	10 - 15	3.5	*	dark yellowish brown, wet silty SAND, little gravel	10'		
11							
12				End of Boring at 12 fbg	12'		
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-32 SW-10	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite === Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2		asphalt			
				medium gray, dry SAND and gravel	3"		
1				black slag	7"		
				pale brownish orange, damp silty CLAY	1.5'		
2				dusky yellowish brown, damp SAND, slag	2.5'		0.0
3				orange and black, damp CLAY and silt	3.5'		
4							0.0
5	5 - 10	3		dark gray, wet SILT, slight odor	5'		
6							0.0
7							
8			*				0.0
9				medium gray, wet CLAY	9'		
10				End of Boring at 10 fbg	10'		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-32 SE-10													
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 10px; background-color: #cccccc;"></td> <td>Cement/grout</td> <td style="width: 20px; height: 10px; border: 1px solid black;"></td> <td>Screen</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: #808080;"></td> <td>#0 Sand Pack</td> <td style="width: 20px; height: 10px; border: 1px solid black;"></td> <td>Riser</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: #333333;"></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>			Cement/grout		Screen		#0 Sand Pack		Riser		Bentonite		
	Cement/grout		Screen																
	#0 Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing												
0	0 - 5	2		asphalt															
				medium gray, dry SAND and large gravel	3"														
1																			
				orange, damp sandy CLAY, slag, glass	1.5'		0.0												
2																			
3																			
4				brownish orange, damp CLAY	4'		0.0												
5	5 - 10	4		moderate yellowish brown, wet SAND and gravel	5'														
6							0.0												
7				black slag	7'														
			*	medium dark gray, moist silty, CLAY	7.5'														
8							0.0												
9				medium gray, wet CLAY	9'														
10				End of Boring at 10 fbg	10'														
11																			
12																			
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22																			
23																			

Notes:
1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-32 NE-10	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite === Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRPT	Equipment Installed	Field Testing
0	0 - 5	2		asphalt			
				medium gray, dry SAND and gravel	3"		
1				medium gray, damp CLAY, trace gravel	6"		
2				dark yellowish orange, damp SAND, some gravel	2'		0.0
3							
4				medium dark gray, damp SAND, little clay and slag	3.5'		0.0
5	5 - 10	3.5		moderate yellowish brown, wet coarse SAND and gravel, some glass	5'		
6							0.0
7				olive black, moist, silty CLAY, slag pieces	6.5'		
8			*	pale olive, moist CLAY, trace gravel	7.5'		0.0
9							
10				End of Boring at 10 fbg	10'		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: S-32 NW-10	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite === Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	3		asphalt	3"		
				light gray, dry coarse SAND and GRAVEL, little moderate reddish brown CLAY			
1							
2							
3							
4					5.5'		0.0
5	5 - 10	3.5					
6				olive black, wet silty CLAY, and slag pieces			
7							
8							
9				* olive gray, moist to wet, silty CLAY	7.5'		0.0
10							
11							
12							
13							
14				End of Boring at 10 fbg	10'		
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-103 A-12	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 15 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2.5		asphalt			
				moderate yellowish brown, moist silty CLAY, little gravel	3"		
1							
2							0.0
3				moderate yellowish brown, wet silty CLAY	3'		
4							0.0
5	5 - 10	3					
6							0.0
7							
				moderate yellowish brown, wet silty GRAVEL	7.5'		0.0
8							
				cinders	8.2'		
9				light olive gray, damp silty CLAY	8.6'		
10	10 - 15	4	*				0.0
11							
12				light olive gray, moist SILT	12'		0.0
13							
14							
15				End of Boring 15 fbg	15'		
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-103 NW-10	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2		asphalt			
				moderate yellowish brown, moist silty CLAY, little gravel	3"		
1							
2							0.0
3							
4							0.0
5	5 - 10	3					
				moderate yellowish brown, damp clayey SILT	5.6'		0.0
6							
7							
8			*				0.0
				moderate yellowish brown, damp silty CLAY	8.8'		
9				dusky yellowish brown, damp clayey SILT, rust colored mottling	9'		
10				End of Boring at 10 fbg	10'		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
Notes: 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface. 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts. 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.							

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-103 SW-10													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td>#0</td> <td>Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen	#0	Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
#0	Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRPT	Equipment Installed	Field Testing												
0	0 - 5	3.5		asphalt	3"														
				moderate yellowish brown, damp silty CLAY															
1																			
2																			
3					4.6'		0.0												
4																			
5	5 - 10	3		black slag and cinders															
6																			
7				dark reddish brown, damp SILT, little gravel	7.3'		0.0												
				black slag and cinders	7.8'														
8			*																
				moderate yellowish brown, damp SILT, little clay	8.5'														
9					10'														
10				End of Boring at 10 fbg															
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-103 SE-10													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td>#0</td> <td>Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen	#0	Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
#0	Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRPT	Equipment Installed	Field Testing												
							PID Headspace												
0	0 - 5	4		asphalt															
				moderate yellowish brown, damp clayey SILT	3"														
1																			
2							0.0												
3																			
				slag pieces	3.5'														
4				moderate yellowish brown, damp, silty CLAY	3.8'		0.0												
5	5 - 10	5																	
6				moderate yellowish brown, damp silty SAND	6'		0.0												
7				moderate yellowish brown, damp sandy SILT	7'														
				moderate yellowish brown, damp SILT, little sand and clay	7.5'														
8			*				0.0												
9																			
10				End of Boring at 10 fbg	10'														
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-103 NE-10	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 10 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: ☐ Cement/grout ☐ #0 Sand Pack ☐ Bentonite ☐ Screen ☐ Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	5		asphalt			
				moderate yellowish brown, damp silty CLAY	3"		
1							
2							0.0
3				same as above	3'		
4							0.0
				slag pieces	4.4'		
5	5 - 10	5			5.5'		
				brick	5.7'		
6				moderate yellowish brown, damp clayey SILT			0.0
7							
8			*	moderate yellowish brown, damp silty CLAY	8'		0.0
9							
10				End of Boring at 10 fbg	10'		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-110 SE-5	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade			
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite === Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2.5		asphalt			
				orangish dusky yellowish borwn, damp clayey SAND, little gravel	3"		
1							
				moderate reddish brown, damp CLAY	1.5'		
2							0.0
				orangish grayish brown, damp SAND and GRAVEL, little clay and slag	2.5'		
3			*				
4							0.0
5				End of Boring at 5 fbg	5'		
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-110 NE-5			
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>			
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:			
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser			
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION		STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing	
								PID Headspace	
0	0 - 5	1.5		asphalt		3"			
				orangish, dusky yellowish borwn, moist SAND, little clay and slag					
1									
2									
3			*			5'			0.0
4									
5	5 - 10			pale olive, moist silty CLAY					
6									
7									0.0
8				End of Boring at 8 fbg					
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-110 NW-5			
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>			
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:			
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Screen Riser Bentonite			
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION		STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing	
								PID Headspace	
0	0 - 5	2.5		asphalt					
				grayish orange, damp coarse SAND and GRAVEL		3"			
1				olive black little orange, moist SAND and slag		1'			
2				olive gray SILT and slag		2'		0.0	
3			*						
				moderate reddish brown, damp CLAY, little sand and gravel, slag		3.5'		0.0	
4									
5				End of Boring at 5 fbg		5'			
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-110 SW-5	
				Boring Location: In parking lot at south end of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: Cement/grout #0 Sand Pack Bentonite Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2		asphalt			
				medium gray, damp SAND and GRAVEL, little clay and slag	3"		
1							
				orange, damp CLAY, black slag	1.5'		
2							0.0
				moderate reddish brown, damp CLAY, slag	2.5'		
3			*				
				medium gray, damp SILT, organish CLAY	3.5'		0.0
4							
5				End of Boring at 5 fbg	5'		
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-120 SE-3	
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/25/2007 Completion date: 7/25/2007		LEGEND: / Cement/grout #0 Sand Pack Bentonite === Screen Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	3		asphalt			
				orangeish rust, damp sandy SILT and gravel	3"		
1			*	White gypsum-like material	1.2'		
				dark grayish brown, moist SAND and slag	1.5'		
2				large gravel			0.0
3				moderate yellowish brown, moist to wet CLAY	3'		
4							0.0
5				End of Boring at 5 fbg	5'		
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-120 NE-3	
				Boring Location: In parking lot at central portion of Die Storage Lot		PAGE 1 OF 1	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/26/2007 Completion date: 7/26/2007		LEGEND: ☐ Cement/grout ☐ #0 Sand Pack ☐ Bentonite ☐ Screen ☐ Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	2.5		asphalt			
				orangish rust, damp sandy SILT and gravel	3"		
1			*	greenish clear, glass	8"		
				moderate yellowish, damp GRAVEL and SAND, some silt, slag	9"		
2							0.0
3							
4				White gypsum-like material	4'		0.0
5				End of Boring at 5ft	5'		
6							
7							
8							
9							
10							
11							
12							
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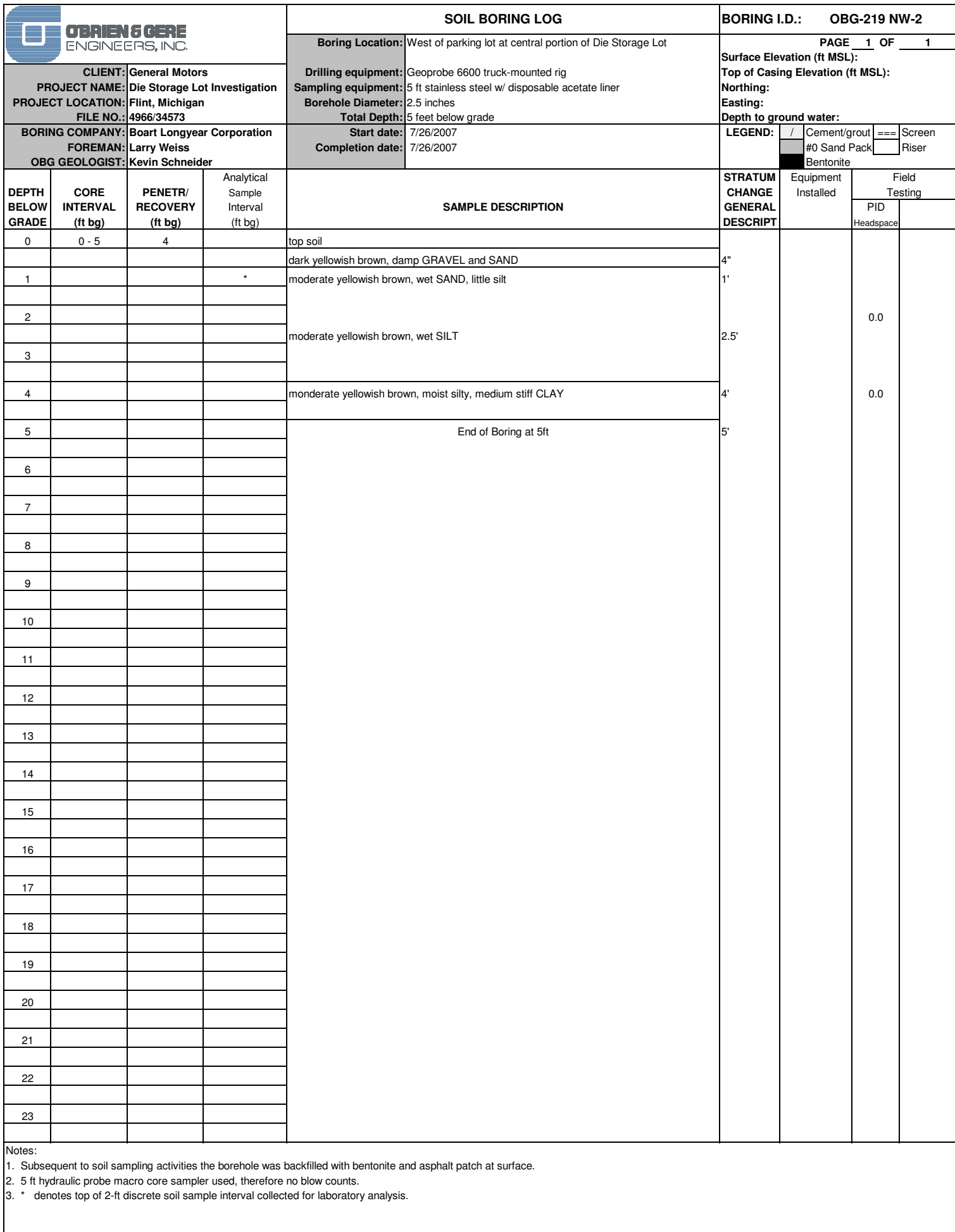
Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-120 SW-3													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: West of parking lot at central portion of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td>#0</td> <td>Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen	#0	Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
#0	Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing												
0	0 - 5	4.5		top soil															
				moderate yellowish brown, dry SILT and SAND	4"														
1			*	moderate yellowish brown, damp sandy CLAY	1'														
2				dark yellowish brown, damp GRAVEL and SAND, slag pieces	2'		0.0												
				White gypsum-like material	2.4'														
3				dark yellowish brown, wet silty CLAY	2.6'														
4							0.0												
5				End of Boring at 5ft	5'														
6																			
7																			
8																			
9																			
10																			
11																			
12																			
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Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: SB-120 NW-3	
				Boring Location: West of parking lot at central portion of Die Storage Lot		PAGE <u>1</u> OF <u>1</u>	
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:	
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/26/2007 Completion date: 7/26/2007		LEGEND: ☐ Cement/grout ☐ #0 Sand Pack ☐ Bentonite ☐ Screen ☐ Riser	
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/ RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION	STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed	Field Testing
0	0 - 5	4.5		top soil			
				gravel and concrete	6"		
1			*	moderate yellowish brown, dry coarse to fine SAND, little gravel	1'		
				dusky yellowish brown, dry silt and SAND, little gravel	1.2'		
2				moderate yellowish brown, damp, stiff CLAY, little sand, little gravel	1.8'		0.0
3							
4							0.0
				White gypsum-like material	4.7'		
5				End of Boring at 5ft	5'		
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.



 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: OBG-219 SW-2													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Boring Location: West of parking lot at central portion of Die Storage Lot		PAGE 1 OF 1 Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade		LEGEND: <table border="1"> <tr> <td>/</td> <td>Cement/grout</td> <td>===</td> <td>Screen</td> </tr> <tr> <td></td> <td>#0 Sand Pack</td> <td></td> <td>Riser</td> </tr> <tr> <td></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>		/	Cement/grout	===	Screen		#0 Sand Pack		Riser		Bentonite		
/	Cement/grout	===	Screen																
	#0 Sand Pack		Riser																
	Bentonite																		
Start date: 7/26/2007 Completion date: 7/26/2007																			
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION		STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed Field Testing PID Headspace												
0	0 - 5	2		top soil		4"													
				dusky yellowish brown, damp gravel and SAND, slag pieces															
1			*	moderate yellowish brown, moist, sandy CLAY, medium stiff		1'													
2				same as above			0.0												
3																			
4							0.0												
5																			
				End of Boring at 5ft		5'													
6																			
7																			
8																			
9																			
10																			
11																			
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17																			
18																			
19																			
20																			
21																			
22																			
23																			

Notes:

- Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
- 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
- * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

 O'BRIEN & GERE ENGINEERS, INC.				SOIL BORING LOG		BORING I.D.: OBG-219 SE-2													
				Boring Location: West of parking lot at central portion of Die Storage Lot		PAGE <u>1</u> OF <u>1</u> Surface Elevation (ft MSL): Top of Casing Elevation (ft MSL): Northing: Easting: Depth to ground water:													
CLIENT: General Motors PROJECT NAME: Die Storage Lot Investigation PROJECT LOCATION: Flint, Michigan FILE NO.: 4966/34573				Drilling equipment: Geoprobe 6600 truck-mounted rig Sampling equipment: 5 ft stainless steel w/ disposable acetate liner Borehole Diameter: 2.5 inches Total Depth: 5 feet below grade															
BORING COMPANY: Boart Longyear Corporation FOREMAN: Larry Weiss OBG GEOLOGIST: Kevin Schneider				Start date: 7/26/2007 Completion date: 7/26/2007		LEGEND: <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 10px; background-color: #cccccc;"></td> <td style="width: 50px;">Cement/grout</td> <td style="width: 20px; height: 10px; border: 1px solid black;"></td> <td style="width: 50px;">Screen</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: #808080;"></td> <td>#0 Sand Pack</td> <td style="width: 20px; height: 10px; border: 1px solid black;"></td> <td>Riser</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: #000000;"></td> <td>Bentonite</td> <td></td> <td></td> </tr> </table>			Cement/grout		Screen		#0 Sand Pack		Riser		Bentonite		
	Cement/grout		Screen																
	#0 Sand Pack		Riser																
	Bentonite																		
DEPTH BELOW GRADE	CORE INTERVAL (ft bg)	PENETR/RECOVERY (ft bg)	Analytical Sample Interval (ft bg)	SAMPLE DESCRIPTION		STRATUM CHANGE GENERAL DESCRIPT	Equipment Installed Field Testing PID Headspace												
0	0 - 5	3.5		top soil															
				dusky yellowish brown, damp GRAVEL and SAND, slag pieces		4"													
1			*	moderate yellowish brown, moist sandy CLAY		1'													
2																			
3				moderate yellowish brown, moist GRAVEL and SAND, slag pieces		3.5'													
				moderate yellowish brown, wet SILT and CLAY		4'													
4																			
5				End of Boring at 5ft		5'													
6																			
7																			
8																			
9																			
10																			
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18																			
19																			
20																			
21																			
22																			
23																			

Notes:
 1. Subsequent to soil sampling activities the borehole was backfilled with bentonite and asphalt patch at surface.
 2. 5 ft hydraulic probe macro core sampler used, therefore no blow counts.
 3. * denotes top of 2-ft discrete soil sample interval collected for laboratory analysis.

Appendix E
Delineation Boring
Analytical Reports



Analytical Laboratory Report

Report ID: S32974.01(01)
Generated on 08/02/2007

Report to

Attention: Cliff Yantz
O'Brien & Gere Engineers
33469 West 14 Mile Road, Suite 150
Farmington Hills, MI 48331

Phone: 248-661-3745 FAX: 248-661-4057

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S32974.01-S32974.26
Project: Flint Body Assembly - DSL RAP SSOW# R040012
Collected Date: 07/25/2007
Submitted Date/Time: 07/26/2007 14:40
Sampled by: Kevin Schneider
P.O. #: 4005430

Report Notes

Results relate only to items tested as received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

"Not detected" indicates that parameter was not found at a level equal to or greater than the RDL.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (26 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S32974.01	SB-110 SE-5	Soil	07/25/2007 09:00
S32974.02	SB-110 NE-5	Soil	07/25/2007 09:15
S32974.03	SB-110 NW-5	Soil	07/25/2007 09:30
S32974.04	SB-110 SW-5	Soil	07/25/2007 09:40
S32974.05	S-32 A-12	Soil	07/25/2007 10:10
S32974.06	S-32 SW-10	Soil	07/25/2007 10:25
S32974.07	S-32 SE-10	Soil	07/25/2007 10:45
S32974.08	S-32 NE-10	Soil	07/25/2007 11:10
S32974.09	S-32 NW-10	Soil	07/25/2007 11:25
S32974.10	S-31 A-5	Soil	07/25/2007 13:50
S32974.11	S-31 SW-2	Soil	07/25/2007 14:00
S32974.12	S-31 SE-2	Soil	07/25/2007 14:10
S32974.13	S-31 NE-2	Soil	07/25/2007 14:20
S32974.14	S-31 NW-2	Soil	07/25/2007 14:25
S32974.15	S-26 SW-7	Soil	07/25/2007 14:50
S32974.16	S-26 SE-7	Soil	07/25/2007 15:05
S32974.17	S-26 NE-7	Soil	07/25/2007 15:25
S32974.18	S-26 NW-7	Soil	07/25/2007 15:35
S32974.19	DUP-02	Soil	07/25/2007
S32974.20	SB-103 A-12	Soil	07/25/2007 16:30
S32974.21	SB-103 NW-10	Soil	07/25/2007 16:45
S32974.22	SB-103 SW-10	Soil	07/25/2007 17:15
S32974.23	DUP-03	Soil	07/25/2007
S32974.24	SB-103 SE-10	Soil	07/25/2007 17:30
S32974.25	SB-103 NE-10	Soil	07/25/2007 17:45
S32974.26	DUP-01	Soil	07/25/2007



Analytical Laboratory Report

Lab Sample ID: S32974.01
Sample Tag: SB-110 SE-5
Collected Date/Time: 07/25/2007 09:00
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	SDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	77	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	73.4	%			07/31/07 11:00	JRT		
% Fine by Weight	26.6	%			07/31/07 11:00	JRT		
Lead, Coarse	29,400	mg/kg	1.0	6020	08/02/07 12:51	PER	7439-92-1	
Lead, Fine	11,800	mg/kg	1.0	6020	08/02/07 12:09	PER		
Lead, Total Calculated	24,700	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.02
Sample Tag: SB-110 NE-5
Collected Date/Time: 07/25/2007 09:15
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	85	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	73.4	%			07/31/07 11:00	JRT		
% Fine by Weight	26.6	%			07/31/07 11:00	JRT		
Lead, Coarse	132,000	mg/kg	1.0	6020	08/02/07 12:53	PER	7439-92-1	
Lead, Fine	89,800	mg/kg	1.0	6020	08/02/07 12:10	PER		
Lead, Total Calculated	120,000	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.03
Sample Tag: SB-110 NW-5
Collected Date/Time: 07/25/2007 09:30
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	80	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	62.4	%			07/31/07 11:00	JRT		
% Fine by Weight	37.5	%			07/31/07 11:00	JRT		
Lead, Coarse	9,940	mg/kg	1.0	6020	08/02/07 12:54	PER	7439-92-1	
Lead, Fine	10,300	mg/kg	1.0	6020	08/02/07 12:11	PER		
Lead, Total Calculated	10,000	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.04
Sample Tag: SB-110 SW-5
Collected Date/Time: 07/25/2007 09:40
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	70	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	60.8	%			07/31/07 11:00	JRT		
% Fine by Weight	39.2	%			07/31/07 11:00	JRT		
Lead, Coarse	43,200	mg/kg	1.0	6020	08/02/07 12:55	PER	7439-92-1	
Lead, Fine	74,800	mg/kg	1.0	6020	08/02/07 12:12	PER		
Lead, Total Calculated	55,500	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.05
Sample Tag: S-32 A-12
Collected Date/Time: 07/25/2007 10:10
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	80	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	95.6	%			07/31/07 11:00	JRT		
% Fine by Weight	4.4	%			07/31/07 11:00	JRT		
Lead, Coarse	184	mg/kg	1.0	6020	08/02/07 12:56	PER	7439-92-1	
Lead, Fine	1,840	mg/kg	1.0	6020	08/02/07 12:14	PER		
Lead, Total Calculated	256	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.06
Sample Tag: S-32 SW-10
Collected Date/Time: 07/25/2007 10:25
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	71	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	56.0	%			07/31/07 11:00	JRT		
% Fine by Weight	44.0	%			07/31/07 11:00	JRT		
Lead, Coarse	3,510	mg/kg	1.0	6020	08/02/07 12:57	PER	7439-92-1	
Lead, Fine	3,400	mg/kg	1.0	6020	08/02/07 12:16	PER		
Lead, Total Calculated	3,460	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.07
Sample Tag: S-32 SE-10
Collected Date/Time: 07/25/2007 10:45
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	59	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	77.3	%			07/31/07 11:00	JRT		
% Fine by Weight	22.7	%			07/31/07 11:00	JRT		
Lead, Coarse	4,930	mg/kg	1.0	6020	08/02/07 12:58	PER	7439-92-1	
Lead, Fine	4,430	mg/kg	1.0	6020	08/02/07 12:17	PER		
Lead, Total Calculated	4,810	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.08
Sample Tag: S-32 NE-10
Collected Date/Time: 07/25/2007 11:10
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	51	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	64.5	%			07/31/07 11:00	JRT		
% Fine by Weight	35.5	%			07/31/07 11:00	JRT		
Lead, Coarse	4,700	mg/kg	1.0	6020	08/02/07 12:59	PER	7439-92-1	
Lead, Fine	25,100	mg/kg	1.0	6020	08/02/07 12:18	PER		
Lead, Total Calculated	11,900	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.09
Sample Tag: S-32 NW-10
Collected Date/Time: 07/25/2007 11:25
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	62	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	81.5	%			07/31/07 11:00	JRT		
% Fine by Weight	18.5	%			07/31/07 11:00	JRT		
Lead, Coarse	5,820	mg/kg	1.0	6020	08/02/07 13:00	PER	7439-92-1	
Lead, Fine	6,220	mg/kg	1.0	6020	08/02/07 12:19	PER		
Lead, Total Calculated	5,890	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.10
Sample Tag: S-31 A-5
Collected Date/Time: 07/25/2007 13:50
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	90	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	93.6	%			07/31/07 11:00	JRT		
% Fine by Weight	6.4	%			07/31/07 11:00	JRT		
Lead, Coarse	10.7	mg/kg	1.0	6020	08/02/07 13:01	PER	7439-92-1	
Lead, Fine	99.3	mg/kg	1.0	6020	08/02/07 12:20	PER		
Lead, Total Calculated	16.3	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.11
Sample Tag: S-31 SW-2
Collected Date/Time: 07/25/2007 14:00
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	81	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	92.7	%			07/31/07 11:00	JRT		
% Fine by Weight	7.3	%			07/31/07 11:00	JRT		
Lead, Coarse	297	mg/kg	1.0	6020	08/02/07 13:07	PER	7439-92-1	
Lead, Fine	1,770	mg/kg	1.0	6020	08/02/07 12:32	PER		
Lead, Total Calculated	404	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.12
Sample Tag: S-31 SE-2
Collected Date/Time: 07/25/2007 14:10
Matrix: Soil
COC Reference: 041710

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	85	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	94.3	%			07/31/07 11:00	JRT		
% Fine by Weight	5.7	%			07/31/07 11:00	JRT		
Lead, Coarse	512	mg/kg	1.0	6020	08/02/07 13:08	PER	7439-92-1	
Lead, Fine	679	mg/kg	1.0	6020	08/02/07 12:33	PER		
Lead, Total Calculated	521	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.13
Sample Tag: S-31 NE-2
Collected Date/Time: 07/25/2007 14:20
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	82	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	75.2	%			07/31/07 11:00	JRT		
% Fine by Weight	24.8	%			07/31/07 11:00	JRT		
Lead, Coarse	4,570	mg/kg	1.0	6020	08/02/07 13:09	PER	7439-92-1	
Lead, Fine	10,600	mg/kg	1.0	6020	08/02/07 12:34	PER		
Lead, Total Calculated	6,060	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.14
Sample Tag: S-31 NW-2
Collected Date/Time: 07/25/2007 14:25
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	85	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	73.3	%			07/31/07 11:00	JRT		
% Fine by Weight	26.7	%			07/31/07 11:00	JRT		
Lead, Coarse	6,530	mg/kg	1.0	6020	08/02/07 13:10	PER	7439-92-1	
Lead, Fine	10,200	mg/kg	1.0	6020	08/02/07 12:35	PER		
Lead, Total Calculated	7,500	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.15
Sample Tag: S-26 SW-7
Collected Date/Time: 07/25/2007 14:50
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	86	%	1	160.3	07/26/07 19:49	LBR		
Metals								
Arsenic	0.97	mg/kg	0.10	6020	07/31/07 11:00	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32974.16
Sample Tag: S-26 SE-7
Collected Date/Time: 07/25/2007 15:05
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	87	%	1	160.3	07/26/07 19:49	LBR		
Metals								
Arsenic	1.11	mg/kg	0.10	6020	07/31/07 11:02	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32974.17
Sample Tag: S-26 NE-7
Collected Date/Time: 07/25/2007 15:25
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	84	%	1	160.3	07/26/07 19:49	LBR		
Metals								
Arsenic	0.77	mg/kg	0.10	6020	07/31/07 11:03	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32974.18
Sample Tag: S-26 NW-7
Collected Date/Time: 07/25/2007 15:35
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	84	%	1	160.3	07/26/07 19:49	LBR		
Metals								
Arsenic	0.53	mg/kg	0.10	6020	07/31/07 11:04	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32974.19

Sample Tag: DUP-02

Collected Date/Time: 07/25/2007 :

Matrix: Soil

COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	84	%	1	160.3	07/26/07 19:49	LBR		
Metals								
Arsenic	0.39	mg/kg	0.10	6020	07/31/07 11:05	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32974.20
Sample Tag: SB-103 A-12
Collected Date/Time: 07/25/2007 16:30
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	88	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	72.9	%			07/31/07 11:00	JRT		
% Fine by Weight	27.1	%			07/31/07 11:00	JRT		
Lead, Coarse	10.3	mg/kg	1.0	6020	08/02/07 13:29	PER	7439-92-1	
Lead, Fine	839	mg/kg	1.0	6020	08/02/07 12:37	PER		
Lead, Total Calculated	234	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.21
Sample Tag: SB-103 NW-10
Collected Date/Time: 07/25/2007 16:45
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	80	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	94.4	%			07/31/07 11:00	JRT		
% Fine by Weight	5.6	%			07/31/07 11:00	JRT		
Lead, Coarse	5.5	mg/kg	1.0	6020	08/02/07 13:30	PER	7439-92-1	
Lead, Fine	26.8	mg/kg	1.0	6020	08/02/07 12:43	PER		
Lead, Total Calculated	6.69	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.22
Sample Tag: SB-103 SW-10
Collected Date/Time: 07/25/2007 17:15
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	83	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	88.4	%			07/31/07 11:00	JRT		
% Fine by Weight	11.6	%			07/31/07 11:00	JRT		
Lead, Coarse	222	mg/kg	1.0	6020	08/02/07 13:31	PER	7439-92-1	
Lead, Fine	1,520	mg/kg	1.0	6020	08/02/07 12:39	PER		
Lead, Total Calculated	372	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.23
Sample Tag: DUP-03
Collected Date/Time: 07/25/2007 :
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	84	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	91.2	%			07/31/07 11:00	JRT		
% Fine by Weight	8.8	%			07/31/07 11:00	JRT		
Lead, Coarse	1,850	mg/kg	1.0	6020	08/02/07 13:35	PER	7439-92-1	
Lead, Fine	5,270	mg/kg	1.0	6020	08/02/07 12:40	PER		
Lead, Total Calculated	2,150	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.24
Sample Tag: SB-103 SE-10
Collected Date/Time: 07/25/2007 17:30
Matrix: Soil
COC Reference: 041716

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	87	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	81.5	%			07/31/07 11:00	JRT		
% Fine by Weight	18.5	%			07/31/07 11:00	JRT		
Lead, Coarse	14.4	mg/kg	1.0	6020	08/02/07 13:36	PER	7439-92-1	
Lead, Fine	439	mg/kg	1.0	6020	08/02/07 12:44	PER		
Lead, Total Calculated	92.9	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.25
Sample Tag: SB-103 NE-10
Collected Date/Time: 07/25/2007 17:45
Matrix: Soil
COC Reference: 041718

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		

Inorganics

Total Solids	90	%	1	160.3	07/31/07 11:00	JRT		
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Metals

% Coarse by Weight	78.0	%			07/31/07 11:00	JRT		
% Fine by Weight	22.0	%			07/31/07 11:00	JRT		
Lead, Coarse	6.1	mg/kg	1.0	6020	08/02/07 13:37	PER	7439-92-1	
Lead, Fine	133	mg/kg	1.0	6020	08/02/07 12:45	PER		
Lead, Total Calculated	34.0	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32974.26
Sample Tag: DUP-01
Collected Date/Time: 07/25/2007 :
Matrix: Soil
COC Reference: 041718

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.6	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	67	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	79.5	%			07/31/07 11:00	JRT		
% Fine by Weight	20.5	%			07/31/07 11:00	JRT		
Lead, Coarse	3,330	mg/kg	1.0	6020	08/02/07 14:15	PER	7439-92-1	
Lead, Fine	5,180	mg/kg	1.0	6020	08/02/07 13:52	PER		
Lead, Total Calculated	3,700	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



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C.O.C. PAGE #

2 OF 3

041716

CHAIN OF CUSTODY RECORD

INVOICE TO

REPORT TO

CONTACT NAME	CLIFF Yantz	CUSTOMER NAME	
CONTACT	O'Brien & Gere	ADDRESS	
ADDRESS	37000 Grand River Ave	CITY	
CITY	Farmington Hills	STATE	
PHONE NO.	248-477-5701	ZIP CODE	
FAX NO.		PO BOX	
E-MAIL ADDRESS			

PROJECT NO.	7-501	ANALYSIS ATTACH LIST IF MORE SPACE REQUIRED:	
SAVING NO.	7-501		

TURNAROUND TIME REQUIRED	124 HR	48 HR	72 HR	OTHER	
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DELIVERABLES REQUIRED	X STANDARD	LEVEL II	LEVEL III	OTHER	
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MATRIX CODE	GW GROUNDWATER	WW WASTEWATER	SL-SLUDGE	SL-SOLID	MANIC	# Containers & Preservatives
DATE	7/25	7/25	7/25	7/25	7/25	

IDENTIFICATION-DESCRIPTION	S-31 NE-2	S-31 NW-2	S-26 SW-7	S-26 SE-7	S-26 NE-7	S-26 NW-7	DUP-02	S-103 A-10	S-103 NW-10	S-103 SW-10	DUP-03	S-103 SE-10
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YEAR	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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TIME	2:30	2:35	2:50	3:05	3:25	3:35		4:30	4:45	5:15		5:30
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DATE	7/25	7/25	7/25	7/25	7/25	7/25		7/25	7/25	7/25		7/25
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SPECIAL INSTRUCTIONS/NOTES
Lead for fine and coarse fractions
550W, R040012

Lead
Asbestos

+

+

+

+

+

+

+

+

+

DATE 7/26/07 14:40
TIME 14:40

SIGNATURE OF ANALYST
Barbara D. Dwyer

SIGNATURE OF ORGANIZATION
Merit Laboratories, Inc.

DATE 7/26/07 12:00
TIME 12:00

SIGNATURE OF ANALYST
Cliff Yantz

SIGNATURE OF ORGANIZATION
Merit Laboratories, Inc.

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE



Analytical Laboratory Report

Report ID: S32988.01(01)

Generated on 08/02/2007

Report to

Attention: Cliff Yantz

O'Brien & Gere Engineers

33469 West 14 Mile Road, Suite 150

Farmington Hills, MI 48331

Phone: 248-661-3745 FAX: 248-661-4057

Report produced by

Merit Laboratories

2680 East Lansing Drive

East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S32988.01-S32988.26

Project: Flint Body Assembly - DSL RAP SSOW# R040012

Collected Date: 07/26/2007

Submitted Date/Time: 07/26/2007 17:00

Sampled by: Kevin Schneider

P.O. #: 4005430

Report Notes

Results relate only to items tested as received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

"Not detected" indicates that parameter was not found at a level equal to or greater than the RDL.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

A handwritten signature in cursive script that reads "Violetta F. Murshak".

Violetta F. Murshak

Laboratory Director



Analytical Laboratory Report

Sample Summary (26 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S32988.01	SB-120 SE-3	Soil	07/26/2007 09:00
S32988.02	SB-120 NE-3	Soil	07/26/2007 09:10
S32988.03	MW-7 NE-5	Soil	07/26/2007 10:15
S32988.04	MW-7 NE-10	Soil	07/26/2007 10:20
S32988.05	MW-7 NE-15	Soil	07/26/2007 10:25
S32988.06	MW-7 SE-5	Soil	07/26/2007 10:45
S32988.07	MW-7 SE-10	Soil	07/26/2007 10:50
S32988.08	MW-7 SE-15	Soil	07/26/2007 10:55
S32988.09	MW-7 A-5	Soil	07/26/2007 11:40
S32988.10	MW-7 A-10	Soil	07/26/2007 11:45
S32988.11	MW-7 A-15	Soil	07/26/2007 11:50
S32988.12	MW-7 A-18	Soil	07/26/2007 11:55
S32988.13	MW-7 NW-5	Soil	07/26/2007 12:15
S32988.14	MW-7 NW-10	Soil	07/26/2007 12:20
S32988.15	MW-7 NW-15	Soil	07/26/2007 12:25
S32988.16	DUP-04	Soil	07/26/2007
S32988.17	MW-7 SW-5	Soil	07/26/2007 12:40
S32988.18	MW-7 SW-10	Soil	07/26/2007 12:45
S32988.19	MW-7 SW-15	Soil	07/26/2007 12:50
S32988.20	SB-120 SW-3	Soil	07/26/2007 13:55
S32988.21	SB-120 NW-3	Soil	07/26/2007 14:00
S32988.22	OBG-219 NE-2	Soil	07/26/2007 14:25
S32988.23	OBG-219 NW-2	Soil	07/26/2007 14:30
S32988.24	OBG-219 SW-2	Soil	07/26/2007 14:40
S32988.25	OBG-219 SE-2	Soil	07/26/2007 14:50
S32988.26	DUP-05	Soil	07/26/2007



Analytical Laboratory Report

Lab Sample ID: S32988.01
Sample Tag: SB-120 SE-3
Collected Date/Time: 07/26/2007 09:00
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	75	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	76.5	%			07/31/07 11:00	JRT		
% Fine by Weight	23.5	%			07/31/07 11:00	JRT		
Lead, Coarse	2,710	mg/kg	1.0	6020	08/02/07 14:26	PER	7439-92-1	
Lead, Fine	4,390	mg/kg	1.0	6020	08/02/07 13:46	PER		
Lead, Total Calculated	3,100	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.02
Sample Tag: SB-120 NE-3
Collected Date/Time: 07/26/2007 09:10
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	68	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	65.6	%			07/31/07 11:00	JRT		
% Fine by Weight	34.4	%			07/31/07 11:00	JRT		
Lead, Coarse	2,760	mg/kg	1.0	6020	08/02/07 14:26	PER	7439-92-1	
Lead, Fine	8,250	mg/kg	1.0	6020	08/02/07 13:55	PER		
Lead, Total Calculated	4,640	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.03
Sample Tag: MW-7 NE-5
Collected Date/Time: 07/26/2007 10:15
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	78	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	7.30	mg/kg	0.10	6020	07/31/07 11:17	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.04
Sample Tag: MW-7 NE-10
Collected Date/Time: 07/26/2007 10:20
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	88	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	1.37	mg/kg	0.10	6020	07/31/07 11:20	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.05
Sample Tag: MW-7 NE-15
Collected Date/Time: 07/26/2007 10:25
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	92	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	4.24	mg/kg	0.10	6020	07/31/07 11:21	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.06
Sample Tag: MW-7 SE-5
Collected Date/Time: 07/26/2007 10:45
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	86	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	0.70	mg/kg	0.10	6020	07/31/07 11:22	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.07
Sample Tag: MW-7 SE-10
Collected Date/Time: 07/26/2007 10:50
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	89	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	0.81	mg/kg	0.10	6020	07/31/07 11:24	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.08
Sample Tag: MW-7 SE-15
Collected Date/Time: 07/26/2007 10:55
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	89	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	3.34	mg/kg	0.10	6020	07/31/07 11:25	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.09
Sample Tag: MW-7 A-5
Collected Date/Time: 07/26/2007 11:40
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	88	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	1.36	mg/kg	0.10	6020	07/31/07 11:26	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.10
Sample Tag: MW-7 A-10
Collected Date/Time: 07/26/2007 11:45
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	89	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	1.14	mg/kg	0.10	6020	07/31/07 11:27	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.11
Sample Tag: MW-7 A-15
Collected Date/Time: 07/26/2007 11:50
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	92	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	2.47	mg/kg	0.10	6020	07/31/07 11:29	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.12
Sample Tag: MW-7 A-18
Collected Date/Time: 07/26/2007 11:55
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	94	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	2.62	mg/kg	0.10	6020	07/31/07 11:30	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.13
Sample Tag: MW-7 NW-5
Collected Date/Time: 07/26/2007 12:15
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	87	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	0.83	mg/kg	0.10	6020	07/31/07 11:34	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.14
Sample Tag: MW-7 NW-10
Collected Date/Time: 07/26/2007 12:20
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	88	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	1.13	mg/kg	0.10	6020	07/31/07 11:35	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.15
Sample Tag: MW-7 NW-15
Collected Date/Time: 07/26/2007 12:25
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	92	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	2.80	mg/kg	0.10	6020	07/31/07 11:37	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.16
Sample Tag: DUP-04
Collected Date/Time: 07/26/2007 :
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	87	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	1.19	mg/kg	0.10	6020	07/31/07 11:38	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.17
Sample Tag: MW-7 SW-5
Collected Date/Time: 07/26/2007 12:40
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	87	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	0.85	mg/kg	0.10	6020	07/31/07 11:39	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.18
Sample Tag: MW-7 SW-10
Collected Date/Time: 07/26/2007 12:45
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	88	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	1.00	mg/kg	0.10	6020	07/31/07 11:40	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.19
Sample Tag: MW-7 SW-15
Collected Date/Time: 07/26/2007 12:50
Matrix: Soil
COC Reference: 041712

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3050B	07/31/07 12:00	SLS		
Inorganics								
Total Solids	90	%	1	160.3	07/30/07 11:17	LBR		
Metals								
Arsenic	2.66	mg/kg	0.10	6020	07/31/07 11:42	PER	7440-38-2	



Analytical Laboratory Report

Lab Sample ID: S32988.20
Sample Tag: SB-120 SW-3
Collected Date/Time: 07/26/2007 13:55
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	49	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	58.7	%			07/31/07 11:00	JRT		
% Fine by Weight	41.3	%			07/31/07 11:00	JRT		
Lead, Coarse	36.3	mg/kg	1.0	6020	08/02/07 14:27	PER	7439-92-1	
Lead, Fine	54.6	mg/kg	1.0	6020	08/02/07 13:56	PER		
Lead, Total Calculated	43.8	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.21
Sample Tag: SB-120 NW-3
Collected Date/Time: 07/26/2007 14:00
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	85	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	87.9	%			07/31/07 11:00	JRT		
% Fine by Weight	12.1	%			07/31/07 11:00	JRT		
Lead, Coarse	10.4	mg/kg	1.0	6020	08/02/07 14:28	PER	7439-92-1	
Lead, Fine	67.5	mg/kg	1.0	6020	08/02/07 13:57	PER		
Lead, Total Calculated	17.3	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.22
Sample Tag: OBG-219 NE-2
Collected Date/Time: 07/26/2007 14:25
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	88	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	75.5	%			07/31/07 11:00	JRT		
% Fine by Weight	24.5	%			07/31/07 11:00	JRT		
Lead, Coarse	12.5	mg/kg	1.0	6020	08/02/07 14:31	PER	7439-92-1	
Lead, Fine	35.7	mg/kg	1.0	6020	08/02/07 14:11	PER		
Lead, Total Calculated	18.1	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.23
Sample Tag: OBG-219 NW-2
Collected Date/Time: 07/26/2007 14:30
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	90	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	93.2	%			07/31/07 11:00	JRT		
% Fine by Weight	6.8	%			07/31/07 11:00	JRT		
Lead, Coarse	34.2	mg/kg	1.0	6020	08/02/07 14:32	PER	7439-92-1	
Lead, Fine	109	mg/kg	1.0	6020	08/02/07 13:59	PER		
Lead, Total Calculated	39.2	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.24
Sample Tag: OBG-219 SW-2
Collected Date/Time: 07/26/2007 14:40
Matrix: Soil
COC Reference: 041713

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	86	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	83.5	%			07/31/07 11:00	JRT		
% Fine by Weight	16.5	%			07/31/07 11:00	JRT		
Lead, Coarse	10.8	mg/kg	1.0	6020	08/02/07 14:33	PER	7439-92-1	
Lead, Fine	47.8	mg/kg	1.0	6020	08/02/07 14:00	PER		
Lead, Total Calculated	16.9	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.25
Sample Tag: OBG-219 SE-2
Collected Date/Time: 07/26/2007 14:50
Matrix: Soil
COC Reference: 041714

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	86	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	76.1	%			07/31/07 11:00	JRT		
% Fine by Weight	23.9	%			07/31/07 11:00	JRT		
Lead, Coarse	21.0	mg/kg	1.0	6020	08/02/07 14:34	PER	7439-92-1	
Lead, Fine	29.1	mg/kg	1.0	6020	08/02/07 14:01	PER		
Lead, Total Calculated	22.9	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



Analytical Laboratory Report

Lab Sample ID: S32988.26
Sample Tag: DUP-05
Collected Date/Time: 07/26/2007 :
Matrix: Soil
COC Reference: 041714

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz. Glass	None	Yes	4.4	IR

Analysis	Results	Units	RDL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Lead, Coarse Digestion	Completed			3050B	08/01/07 12:00	SLS		
Lead, Fine and Coarse Prep	Completed			3050B	07/31/07 11:00	JRT		
Lead, Fine Digestion	Completed			3050B	08/01/07 12:00	SLS		
Inorganics								
Total Solids	85	%	1	160.3	07/31/07 11:00	JRT		
Metals								
% Coarse by Weight	82.8	%			07/31/07 11:00	JRT		
% Fine by Weight	17.2	%			07/31/07 11:00	JRT		
Lead, Coarse	15.1	mg/kg	1.0	6020	08/02/07 14:35	PER	7439-92-1	
Lead, Fine	27.7	mg/kg	1.0	6020	08/02/07 14:04	PER		
Lead, Total Calculated	17.2	mg/kg	1.0	6020	08/02/07 15:00	PER	7439-92-1C	



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C.O.C. PAGE #

2 OF 3

041712

CHAIN OF CUSTODY RECORD

INVOICE TO

REPORT TO

CLIENT NAME	Cliff Yantz		
CONTACT PERSON	O'Brien + Gere		
ADDRESS	37000 Grand River		
CITY	MI	48335	
PHONE NO.	248-477-5701	FAX NO.	
E-MAIL ADDRESS			

TURNAROUND TIME REQUIRED	124 HR	48 HR	72 HR	Y STANDARD	OTHER
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USE INCHES REQUIRED	X STANDARD	LEVEL III	OTHER
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MATRIX CODE	ORG. GROUNDWATER	WASTEWATER	S-SOIL	LIQUID	SOLID	WASTE	WASTE
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YEAR	DATE	TIME	IDENTIFICATION-DESCRIPTION	ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)
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32988.13	7/26	1215	MW-7 NW-5	Lead
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14	1220		MW-7 NW-10	Asbestos
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15	1225		MW-7 NW-15	
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16			DUP-04	
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17	1240		MW-7 SW-5	
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18	1245		MW-7 SW-10	
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19	1250		MW-7 SW-15	
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20	1:55		SB-120 SW-3	
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21	2:00		SB-120 NW-3	
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22	2:25		CBG-219 NE-2	
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23	3:30		CBG-219 NW-2	
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24	3:40		CBG-219 SW-2	
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RELEASED BY: [Signature]
RECEIVED BY: [Signature]
SIGNATURE VERIFICATION: [Signature]
RECEIVED BY: [Signature]
SIGNATURE VERIFICATION: [Signature]

DATE: 7/26/07
TIME: 4:00
DATE: 7/26/07
TIME: 17:00

DATE: 7/26/07
TIME: 17:00

DATE: 7/26/07
TIME: 17:00

DATE: 7/26/07
TIME: 17:00

DATE: 7/26/07
TIME: 17:00

DATE: 7/26/07
TIME: 17:00

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

Appendix F
Zoning Information

All tax and real estate information contained on this web site are provided for the user's convenience. While we are continually updating the information contained on this site, the City of Flint does not warrant that the information found via these web pages is accurate, complete, timely, authoritative or factual.

Last Updated: 9/19/2011

Parcel #: 41-19-454-014
Address: W ATHERTON RD

Classification: IV
Zoning District: [G](#)
Lot Size: **Front:** 0 **Depth:** 0

Owner: GENERAL MOTORS
CORP
PO BOX 9024
DETROIT, MI 48202

[Legal Description](#)
[Sale Information](#)
[Ward/Precinct Information](#)

Comments: TRIANGLE SHAPED LOT

	<u>Current Year (2011)</u>	<u>Previous Year (2010)</u>
State Equalized Value	369800	383800
Taxable Value	240294	236278
Homestead%	0	0

	<u>2011 Taxes</u>	
	Summer Taxes	Winter Taxes
Original Tax	\$14,294.97	Not Available
Penalty	\$0.00	
Water Lien	\$0.00	
Special	\$0.00	
Paid To Date	\$4,764.99	
Balance Due	\$9,529.98	

**EFFECTIVE MARCH 1, 2011 ALL REAL PROPERTY TAXES FOR 2010
AND PRIOR YEARS ARE PAYABLE AT THE GENESEE COUNTY
TREASURER'S OFFICE, 1101 BEACH STREET**

[Search Genesee County Delinquent Tax Information](#)

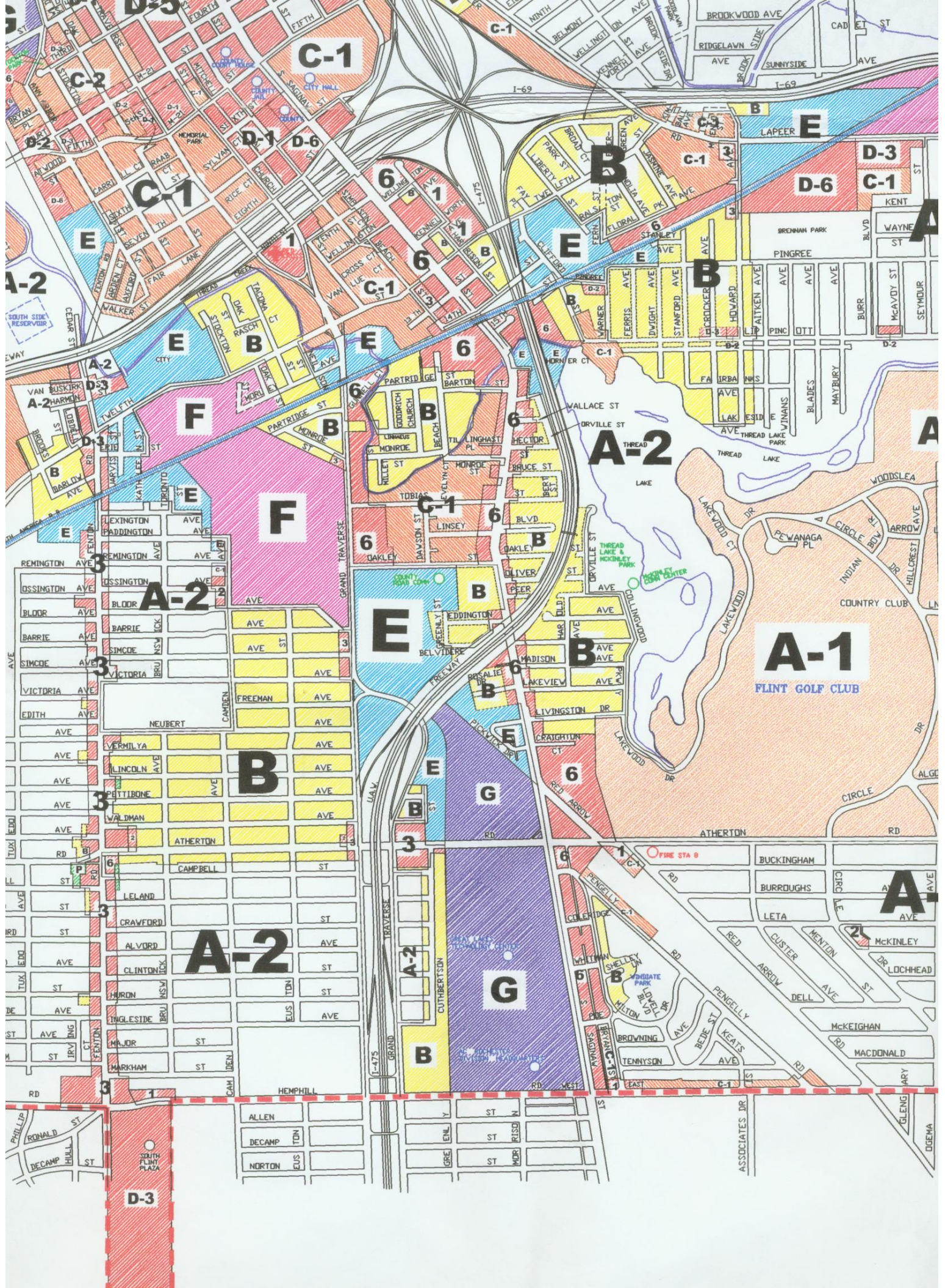


Parcel Number: 4119454014

Address: W ATHERTON RD

Legal Description:

UNPLATTED. PART OF S 1/2 OF SEC 19, T7N, R7E. BEG AT A PT ON WLY LINE OF S SAGINAW ST, 97 FT N 9 DEG 21 MIN 30 SEC W FROM ITS INT WITH NLY LINE OF ATHERTON RD; TH S 39 DEG 14 MIN W, 40 FT; TH S 50 DEG 17 MIN 54 SEC W, 78.91 FT; TH S 88 DEG 56 MIN W, 823.44 FT; TH N 3 DEG 08 MIN E, 736.56 FT; TH N 0 DEG 36 MIN E, 198.85 FT TO SWLY LINE OF C & O RR R/W; TH SELY ALG SD SWLY LINE, 1007.45 FT TO WLY LINE OF SAGINAW ST; TH SLY ALG SD WLY LINE, 63.18 FT TO POB.



ZONING SUMMARY

The following zoning district classifications are summarized from the City of Flint Zoning Ordinance.

1. **“A-1” Single-Family Low Density District.** This district allows single-family detached dwellings on minimum 10,000 square foot lots.
2. **“A-2” Single-Family Medium Density District.** This district allows single-family detached dwellings on minimum 5,000 square foot lots. This zone also allows institutional uses such as churches and schools. Home occupations are permitted subject to certain conditions.
3. **“B” Two-Family District.** This district allows one and two-family homes on 5,000 square foot lots.
4. **“B-1” Townhouse District.** This district allows townhouses (3 or more attached dwelling units with individual firewalls) on minimum 5,000 square foot lots.
5. **“C-1” Multi-Family Walk-Up Apartment District.** This district allows one and two-family homes, walk-up apartment, fraternities/sororities and children’s institutions outright. Professional offices may be allowed with an approved conditional use permit.
6. **“C-2” Multi-Family High Density Apartment District.** This district allows residential dwelling units of any kind. Hotels, offices, clinics, and funeral homes may be allowed with an approved conditional use permit.
7. **“D-1” Office District.** It is the purpose of the “D-1” district to provide definite areas that are limited to office-type uses exclusively.
8. **“D-2” Neighborhood Business District.** It is the purpose of this district to provide principally for convenience goods and the needs of persons residing in nearby residential areas. Uses permitted outright or conditionally shall be limited to those required to satisfy basic needs for goods and services required daily or frequently.
9. **“D-3” Community Business District.** It is the purpose of “D-3” districts to provide for the needs for both convenience goods and the more common and often reoccurring shopping goods and household services of a population considerably larger than that served by neighborhood business districts. The principal establishments in such districts will normally be retail stores, eating and drinking establishments, entertainment venues, automotive services, etc.
10. **“D-4” Metropolitan Business District.** The “D-4” Metropolitan Business District is intended to accommodate the several commercial types of activities and uses commonly found in the core of central business districts, as defined for the City in

the central business district plan, and as found in the largest regional shopping centers.

11. **“D-5” Metropolitan Commercial Service District.** The “D-5” Metropolitan Commercial Service District is intended to accommodate the various commercial and multi-family residential activities and uses which are commonly found and properly located in the area adjacent to the core of the central business districts, which are characteristic of the frame area as defined by the central business district plan.
12. **“D-6” General and Highway Commercial Services District.** The “D-6” General and Highway Commercial Service district is intended to accommodate primarily those establishments offering accommodations, supplies or service to motorists and certain specialized uses: retail outlets, repair and service establishments, which, although serving the entire City or a major sections of, do not customarily locate in the central business district or in community districts. Ordinarily The “D-6” district will be located along numbered State or Federal highways, or other primary thoroughfares so designated in the major street plan.
13. **“E” Heavy Commercial Limited Manufacturing District.** The “E” Heavy Commercial Light Manufacturing district is intended to accommodate heavy commercial and certain light manufacturing uses which are generally incompatible with uses appropriate in retail business districts but which do not warrant an exclusive industrial classification.
14. **“F” Intermediate Manufacturing District.** The “F” Intermediate Manufacturing District is designed to accommodate those manufacturing establishments which are either free of objectionable influences in their operation of which can readily obviate or control any objectionable features which may otherwise result from the manufacturing process.
15. **“G” Heavy Manufacturing District.** The “G” Heavy Manufacturing District is intended to accommodate those heavy industries that cannot eliminate entirely objectionable features and influences but which, nevertheless, must be provided for somewhere in the City.
16. **“P” Parking District.** The purpose of the Parking District is to provide off-street parking lots where the parking lot is not accessory to a principal permitted use or is physically separated from the principal permitted use by a public right-of-way or parcel(s) of ownership.

Appendix G
Restrictive Covenant Notice

DECLARATION OF RESTRICTIVE COVENANT

DEQ Reference No: RC-RD-201-____(A)____

This Declaration of Restrictive Covenant ("Restrictive Covenant") has been recorded with the Genesee County Register of Deeds for the purpose of protecting public health, safety, and welfare, and the environment by prohibiting or restricting activities that could result in unacceptable exposure to environmental contamination present at the property located northwest of the intersection of South Saginaw Street and Atherton Road known as the Great Lakes Tech Center (GLTC) Land in the City of Flint, Genesee County, Michigan and legally described in Exhibit 1 attached hereto ("Property") and illustrated in Figure E-1.

Response activities were implemented to address environmental contamination at the Property pursuant to Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.20101 *et seq.* The response activities that were implemented to address environmental contamination are fully described in the Interim Remedial Action (IRA) Technical Memorandum prepared by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) dated March 2011, and were conducted in accordance with the IRA Work Plan dated October 2010 prepared by O'Brien & Gere. The Michigan Department of Environmental Quality (DEQ) approved the IRA Work Plan on November 17, 2010, pursuant to Part 201 of NREPA.

The Property described contains hazardous substances in excess of the concentrations developed as the unrestricted residential criteria under Section 20120a(1)(a) or (17) of the NREPA. The DEQ recommends that prospective purchasers or users of the Property undertake appropriate due diligence prior to acquiring or using this Property, and undertake appropriate actions to comply with the requirements of Section 20107a of NREPA.

The response activities required the recording of this Restrictive Covenant with the Genesee County Register of Deeds to: 1) restrict unacceptable exposures to hazardous substances located on the Property; 2) assure that the use of Property is consistent with the exposure assumptions used to develop the nonresidential cleanup criteria under Section 20120a(1)(b) of the NREPA and the exposure control measures relied upon at the Property; and 3) to prevent damage or disturbance of any element of the response activity constructed on the Property.

The restrictions contained in this Restrictive Covenant are based upon information available at the time the response activities were implemented. Failure of the response activities to achieve and maintain the criteria, exposure controls, and any requirements specified by the response activities; future changes in the environmental condition of the Property or changes in the nonresidential cleanup criteria under Section 20120a(1)(b) of NREPA; the discovery of environmental conditions at the Property that were not accounted for during implementation of the response activities; or use of the Property in a manner inconsistent with the restrictions described herein, may result in this Restrictive Covenant not being protective of public health, safety, and welfare, and the environment.

Exhibit 2 provides a survey of the Property that is subject to the land use or resource use restrictions specified herein.

Definitions

For the purposes of this Restrictive Covenant, the following definitions shall apply:

“DEQ” means the Michigan Department of Environmental Quality, its successor entities, and those persons or entities acting on its behalf.

“Owner” means at any given time the then current title holder of the Property or any portion thereof. The current Owner of the Property is RACER Properties, LLC, a wholly-owned subsidiary of the Revitalizing Auto Communities Environmental Response Trust (collectively “RACER”). The RACER Trust was established pursuant to the Findings of Fact, Conclusions of Law, and Order Pursuant to Sections 1129(a) and (b) of the Bankruptcy Code and Rule 3020 of the Federal Rules of Bankruptcy Procedure Confirming Debtors’ Second Amended Joint Chapter 11 Plan, dated March 29, 2011, issued by the Bankruptcy Court and filed as Docket No. 9941 in the case of *In re Motors Liquidation Company*, etc. et al, Debtors, United States Bankruptcy Court, Southern District of New York, Case No. 09-50026 (REG) (the “Confirmation Order”), which includes that certain Environmental Response Trust Consent Decree and Settlement Agreement (the “Settlement Agreement”) among the Debtors, the United States of America, certain states (collectively, the “States”) and the Saint Regis Mohawk Tribe, and EPLET, LLC, (not individually but solely in its representative capacity as Administrative Trustee of the “Environmental Response Trust” established thereby). Notice of the Settlement Agreement was published in 75 Fed. Reg. 66390 (Oct. 28, 2010) and is available on the Trust’s website at http://racertrust.org/About_RACER/Settlement_Agreement.

All other terms used in this document which are defined in Part 3, Definitions, of NREPA; Part 201 of the NREPA; or the Part 201 Administrative Rules, 2002 Michigan Register; Effective December 21, 2002, shall have the same meaning in this document as in Parts 3 and 201 of NREPA and the Part 201 Administrative Rules, as of the date of filing of this Restrictive Covenant.

Summary of Response Activities

Subsurface soil and groundwater investigations at the Property indicated Substances of Potential Concern (SOPCs), identified as constituents that were detected above the DEQ Nonresidential Drinking Water (NRDW) protection criteria, present in subsurface soil include: benzene, 1,3 dichlorobenzene, ethylbenzene, methylene chloride, toluene, xylenes, arsenic, barium, and lead. Groundwater SOPCs, identified as constituents that were detected above the DEQ NRDW criteria, include: benzene, ethylbenzene, 4-methyl-2-pentanone, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, vinyl chloride, xylenes, barium, and lead.

An Interim Remedial Action (IRA) was conducted at the Property in December 2010 to remove lead impacted soils, which were outside of the facility’s perimeter fence in the OBG-219 soil boring area and posed a direct contact risk, and to remove volatile organic compound (VOC) impacted soils in the OBG-228 soil boring area that exceeded the generic soil saturation (C_{sat}) concentrations. The IRA activities were conducted in accordance with the procedures described in the DEQ approved IRA Work Plan (O’Brien & Gere, 2010). The IRA activities and findings are presented in the IRA Technical Memorandum (O’Brien & Gere, 2011) included as Appendix B to the No Further Action (NFA) Report (O’Brien & Gere, 2011), which also documents the soil verification of remediation (SVR) monitoring that was implemented during the IRA activities.

An exposure barrier, consisting of a chain-link fence, forms a perimeter boundary around the Property to keep the public from unacceptable exposures through direct contact. Furthermore, concrete, gravel and/or asphalt cover a majority of the site and provide additional protection for exposure to impacted soil. In addition, except for four locations (S-31, SB-107, SB-120 and

OBG-227 or areas around these locations) that exhibit shallow (< 3 feet deep) impacted soils above the direct contact criteria (and are covered with either concrete or asphalt), the remaining samples containing impacted soils above the direct contact criteria were located at depths of greater than 3 feet; further reducing the risk to exposure.

NOW THEREFORE,

1. Declaration of Land Use or Resource Use Restrictions

David Favero, RACER Trust Deputy Cleanup Manager – Michigan, with the express written permission of the Owner of the Property (Exhibit 3), hereby declares and covenants that the Property shall be subject to the following restrictions and conditions:

a. Prohibited Land Uses: The Owner shall prohibit uses of the property that are not compatible with or are inconsistent with the assumptions and basis for the nonresidential cleanup criteria established pursuant to Section 20120a(1)(b) of the NREPA. Uses that are compatible with nonresidential cleanup criteria are generally described in Exhibit 4 (Allowable Uses). Cleanup criteria for land-use based response activities are located in the Government Documents Section of the State of Michigan Library.

b. Prohibited Activities to Eliminate Unacceptable Exposure to Hazardous Substances. The Owner shall prohibit activities on the property that may result in exposures to hazardous substances at the Property. These prohibited activities include:

(a) Any activity that could damage the perimeter fence thereby allowing uncontrolled access within the areas shown on Figure E-2 in Exhibit 2. The Property is suitable for access as long as proper health and safety procedures are followed during site activities. The perimeter fence will be repaired within 30 days of discovery of defects that would allow uncontrolled access to the Property.

(b) Any excavation or other intrusive activity that could expose subsurface impacted soils or groundwater in the area shown on Figure E-2 in Exhibit 2, except during short-term construction or repair projects or for the purpose of further treating or remediating the subject contamination, and such short-term or remediation activities shall include the use of engineering controls to prevent the infiltration of water into the contaminated soil until the surface condition is repaired or replaced so that it provides at least an equivalent degree of protection as the original surface condition within 30 days of the completion of the work. Furthermore, the soils exposed by any such activities shall be managed in accordance with the requirements of section 20120c of NREPA and other applicable state and federal laws. The Property is suitable for construction of nonresidential (*i.e.*, industrial/commercial) buildings as long as proper health and safety procedures are followed during excavation activities, any excavated soils are managed in accordance with the requirements of section 20120c of NREPA and other applicable state and federal laws, and capping of the areas outside of any buildings is completed (in lieu of the existing perimeter fence) and is consistent with preventing direct contact with any remaining impacted soils.

(c) Any construction of wells or other devices to extract groundwater for consumption, irrigation, dewatering, or any other use, except for wells and devices that are part of a DEQ-approved response activity.

(d) Short-term dewatering for construction purposes is permitted provided the

dewatering, including management and disposal of the groundwater, is conducted in accordance with all applicable local, state, and federal laws and regulations and does not cause or result in a new release, exacerbation of existing contamination, or any other violation of local, state, and federal environmental laws and regulations.

c. Prohibited Activities to Ensure the Effectiveness and Integrity of the Response Activity. The Owner shall prohibit activities on the Property that may interfere with any element of the response activities, including the performance of operation and maintenance activities, monitoring, or other measures necessary to ensure the effectiveness and integrity of the response activities implemented at the Property. These prohibited activities include uncontrolled excavation or other activities which may potentially expose the subsurface soil, and compromising the integrity of the chain-link fence and future permanent marker.

d. Contaminated Soil Management. The Owner shall manage all soils, media and/or debris located on the property in accordance with the applicable requirements of Section 20120c of the NREPA; Part 111, Hazardous Waste Management, of the NREPA; Subtitle C of the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 *et seq.*; the administrative rules promulgated thereunder; and all other relevant state and federal laws.

e. Soil Vapor Management. The Owner shall not build or occupy any building on the property without first completing one of the following: Option 1) Evaluate and determine, with DEQ concurrence, the absence of an unacceptable vapor intrusion risk to human health in any newly constructed site buildings, or Option 2) Install, operate and maintain a vapor barrier and/or mitigation system (consistent with U.S. EPA Brownfield Technology Primer Vapor Intrusion Considerations for Redevelopment, EPA 542-R-08-001, March 2008 or other guidance applicable at the time) within any newly constructed and human-occupied building on the property, unless DEQ concurs that the vapor barrier and/or mitigation system is no longer necessary based upon the achievement of - the Indoor Air Criteria (IAC), Soil Gas Criteria (SGC), and Nonresidential Groundwater (VI) Screening Levels (GWviSLs) contained in DEQ's September 24, 2009 Draft Vapor Intrusion Proposal (as approved, updated or replaced) or site-specific action levels approved by DEQ. This prohibition does not apply to short-term occupancy of a building for purposes of construction, renovation, repair, or other short-term activities.

If Option 2 above is selected, the Owner shall install and thereafter maintain a vapor barrier and/or install and thereafter operate and maintain a vapor intrusion mitigation system (consistent with U.S. EPA Brownfield Technology Primer Vapor Intrusion Considerations for Redevelopment, EPA 542-R-08-001, March 2008, or other guidance applicable at the time), for the purpose of mitigating the potentially impacted soil vapor below any human-occupied building constructed on the property after the date of this Restrictive Covenant until DEQ makes a determination that a vapor barrier or mitigation system is no longer necessary. DEQ's determination shall be based upon the IAC, SGC and GWviSLs contained in the DEQ's September 24, 2009 Draft Vapor Intrusion Proposal (as approved, updated or replaced) or site-specific action levels approved by DEQ

2. Permanent Marker. The Owner shall not remove, cover, obscure, or otherwise alter or interfere with the permanent marker placed at the location noted in Exhibit 5. The Owner shall keep vegetation and other materials clear of the permanent marker to assure that the marker is readily visible.

RACER shall install one permanent marker at the Property entrance within sixty (60) days of RACER's receipt of the recorded Restrictive Covenant from the Genesee County Register of Deeds. The permanent marker shall be subject to the approval of the DEQ. The permanent marker will consist of a brass plaque affixed to a stone monolith. The plaque will include a brief description of the general location and necessity of the exposure barrier, the DEQ's Part 201 Site ID number and the number and page of the restrictive covenant, and a drawing delineating the extent of the exposure barrier, including an icon that shows where the marker is located relative to the boundaries of the restricted area and the approximate scale of the restricted area. A figure (Figure E-3) illustrating the format of the permanent marker is included in Exhibit 5.

3. No Hazardous Substances. Owner shall not "treat," "store" or "dispose" of any hazardous substances, on, at, or below the Property, and shall maintain generator-only status; provided, however, that Owner may (a) accumulate such hazardous substances or wastes as allowed under applicable environmental laws for off-site treatment, off-site storage, or off-site disposal, and (b) use commercial products on-site which may contain such substances.

4. Utilities Responsibility of Owner. Any and all management utility lines or piping, including, without limitation, any sanitary or storm sewers, any gas, water, electrical, or any other gas, water or electrical utility lines or piping, and any such materials that may be included therein, and any and all management of any septic systems, and any such materials that may be included therein, which may be present at or below the Property which management may be required or necessary to properly maintain the Property or because of excavation, demolition, or soil disturbance related to future use, development, or construction at or of the Property, is the sole obligation and liability of Owner at the time of such activities.

5. Easement and Access.

a. In the event RACER sells the entire or any portion of this property, RACER hereby reserves, a non-exclusive easement (the "Easement") over those portions of the Property (the "Easement Area") necessary or appropriate solely for the following purposes, and those purposes incidental thereto: (a) conducting and completing all Required Remedial Activities, including without limitation, sampling and analyzing soils and groundwater, performing general inspections, environmental sampling, tests, borings, surveys and engineering studies; (b) ensuring and enforcing compliance of such Required Remedial Activities with any approved work plans, remedial action plans or other plans for remedying Remediation Activities conducted on, at or under the Property, including the right to inspect the operation of the Required Remedial Activities, and inspect any records relating thereto, and to perform any actions necessary to maintain compliance with, Part 201 of NREPA and the applicable plan; and (c) ingress and egress to such portions of the Property from the public street as are required for the Easement.

b. The rights and powers reserved to RACER in this Restrictive Covenant do not, and shall not be interpreted to, obligate RACER to exercise any of such rights and powers for any reason.

c. RACER shall be responsible for ensuring that all equipment and other personal property utilized by and on behalf of RACER at or in the Easement Area shall be stored safely and in a manner reasonably determined not to create a dangerous condition at the Easement Property. Furthermore, to the extent reasonably feasible, any permanent or long term wells or other monitoring devices and any Remediation Activities shall be designed and undertaken in a manner so as not to unreasonably interfere with the redevelopment and reuse of the Property in accordance with this Restrictive Covenant and in accordance with the Settlement Agreement.

d. The Easement shall remain in full force and effect unless and until such time as the DEQ and any other requisite Agency determines that RACER's access to the Property is no longer needed in order to perform, complete and/or monitor the Required Remedial Actions, or otherwise connection therewith and no more monitoring of the soils or groundwater on the Property is needed. The Owner shall have the right to seek such a determination from the DEQ and any such Agencies, at any time.

e. Owner shall cooperate with RACER, its representatives and all governmental agencies, in all commercially reasonable respects, and as required by Environmental Law, the DEQ and any governmental agency, in connection with the performance and completion of the Required Remedial Activities, and shall not unreasonably or materially interfere with, disrupt, impair, inhibit, restrict or otherwise impact such Required Remedial Activities.

f. RACER shall be solely responsible and liable for any and all environmental conditions and any violations of any applicable environmental laws to the extent arising from or related to the Required Remedial Activities, in, at or under the Property, except to the extent caused or exacerbated by Owner, or any representative thereof.

g. This Easement may be assigned by RACER to a successor or assignee who has any responsibility for completing such Required Remedial Activities with respect to the Property.

h. The Owner grants to the DEQ and other governmental agencies and their respective designated representatives the right to enter the Property at reasonable times for the purpose of determining and monitoring compliance with the response activities, including the right to take samples, inspect the operation of the response activities and inspect any records relating thereto, and to perform any actions necessary to maintain compliance with Part 201.

6. Conveyance of Property Interest. The Owner shall provide notice to the DEQ of the Owner's intent to transfer any interest in the Property at least fourteen (14) business days prior to consummating the conveyance. A conveyance of title, easement, or other interest in the Property shall not be consummated by the Owner without adequate and complete provision for compliance with the applicable provisions of Section 20116 of NREPA. The notice required to be made to the DEQ under this Paragraph shall be made to: Chief, Remediation Division, Michigan DEQ, P.O. Box 30426, Lansing, Michigan 48909-7926; and shall include a statement that the notice is being made pursuant to the requirements of this Restrictive Covenant, DEQ Reference Number RC-RD-201-____(A)____. A copy of this Restrictive Covenant shall be provided to all future owners, heirs, successors, lessees, easement holders, assigns, and transferees by the person transferring the interest.

7. Term of Restrictive Covenant. This Restrictive Covenant shall run with the Property and shall be binding on the Owner; future owners; and their successors and assigns, lessees, easement holders, and any authorized agents, employees, or persons acting under their direction and control. This Restrictive Covenant shall continue in effect until the DEQ or its successor determines that hazardous substances no longer present an unacceptable risk to the public health, safety, or welfare, or the environment. This Restrictive Covenant may only be modified or rescinded with the written approval of the DEQ.

8. Enforcement of Restrictive Covenant. The State of Michigan, through the DEQ, and RACER may individually enforce the restrictions set forth in this Restrictive Covenant by legal action in a court of competent jurisdiction.

9. Limitation on RACER's Liability. RACER's and the Trustee's liability is limited by the terms and conditions of the Settlement Agreement, which are incorporated herein by reference.

10. Severability. If any provision of this Restrictive Covenant is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions hereof, and all such other provisions shall continue unimpaired and in full force and effect.

11. Authority to Execute Restrictive Covenant. The undersigned person executing this Restrictive Covenant is the Owner, or has the express written permission of the Owner and all other holders of a legal interest whose interest is materially affected by this Restrictive Covenant as documented and attached hereto as Exhibit 3, and represents and certifies that he or she is duly authorized and has been empowered to execute and deliver this Restrictive Covenant.

DRAFT

IN WITNESS WHEREOF, David Favero, RACER Trust Deputy Cleanup Manager – Michigan has caused this Restrictive Covenant, RC-RD-201-____(A)____, to be executed on this ____ (U) ____ day of ____ (V) ____.

David Favero
RACER Trust
Deputy Cleanup Manager – Michigan

By: _____
Signature

Name: _____
Print or Type Name

Its: _____
Title

STATE OF MICHIGAN
COUNTY OF GENESEE

The foregoing instrument was acknowledged before me this _____ [date] by _____ [name of attorney in fact] as attorney in fact on behalf of RACER Trust.

Notary Public Signature

Name of Notary Public _____

Notary Public, State of _____

County of _____

My Commission Expires: _____

Acting in the County of _____

RACER PROPERTIES LLC
By: EPLET, LLC, solely in its
capacity as Non-member Manager

By: _____
Elliott P. Laws, solely in his
representative capacity as
Managing Member

DISTRICT OF COLUMBIA

COUNTY OF _____

On _____, 20____, Elliott Laws, who
is either personally known to me or who presented his
driver's license as identification, appeared before me and
signed this document solely in his representative capacity as
the Managing Member of EPLET, LLC, acting in its capacity
as the non-member Manager of RACER Properties LLC.

Notary Public, _____ County, _____

Acting in _____ County, _____

My commission expires: _____

This document is exempt from state and county transfer taxes pursuant MCL 207.505(a) and MCL 207.526(a).]

Prepared by and when recorded return to:

David Favero
RACER Trust Deputy Cleanup Manager – Michigan
2930 Ecorse Road
Ypsilanti, Michigan 48198

DRAFT

EXHIBIT 1

LEGAL DESCRIPTION OF PROPERTY

The Property is located on parcel number 41–19–454–014 in the City of Flint, Genesee County, Michigan. The following legal description provided by Guaranty Title Company of Flint, Michigan, is also displayed on the attached Site Features/Utility Map (Figure E-1).

PARCEL DESCRIPTION

Part of the South 1/2 of Section 19, Township 7 North, Range 7 East. Beginning at a point on Westerly line of South Saginaw Street, 97 feet North 9 degrees 21 minutes 30 seconds West from its intersection with Northerly line of Atherton Road; thence South 39 degrees 14 minutes West, 40 feet; thence South 50 degrees 17 minutes 54 seconds West, 78.91 feet; thence South 88 degrees 56 minutes West, 823.44 feet; thence North 3 degrees 08 minutes East, 736.56 feet; thence North 50 degrees 36 minutes East, 198.85 feet to Southwesterly line of C & O Railroad Right of Way; thence Southeasterly along said Southwesterly line, 1007.45 feet to Westerly line of Saginaw Street; thence Southerly along said Westerly line, 63.18 feet to place of beginning.

EXHIBIT 2

SURVEY OF THE PROPERTY

The attached Figure E-2 provides a legal survey of the Property.

EXHIBIT 3

CONSENT OF OWNER

RACER Trust, the current and legal Owner of the Property, does hereby consent to the recording of this Restrictive Covenant, RC-RD-201-____(**B**)____, and authorize David Favero, RACER Trust Deputy Cleanup Manager – Michigan to file the Restrictive Covenant with the Genesee County Register of Deeds for recording.

RACER Trust

By: _____
Signature

Name: _____
Print or Type Name

Its: _____
Title

STATE OF MICHIGAN
COUNTY OF GENESEE

The foregoing instrument was acknowledged before me this _____ **[date]** by
_____ **[name of attorney in fact]** as attorney in fact on behalf of
RACER Trust.

Notary Public Signature

Name of Notary Public _____

Notary Public, State of _____

County of _____

My Commission Expires: _____

Acting in the County of _____

EXHIBIT 4

DESCRIPTION OF ALLOWABLE USES

Nonresidential Land Use: This land use is characterized by any use which is not residential in nature and is primarily characterized by industrial and commercial uses. Industrial uses typically involve manufacturing operations engaged in processing and manufacturing of materials or products. Other examples of industrial uses are utility companies, industrial research and development, and petroleum bulk storage. Commercial uses include any business or income-producing use such as commercial warehouses, lumber yards, retail gas stations, auto dealerships and service stations, as well as office buildings, banks, and medical/dental offices (not including hospitals). Commercial uses also include retail businesses whose principal activity is the sale of food or merchandise within an enclosed building and personal service establishments which perform services indoors such as health clubs, barber/beauty salons, photographic studios, etc.

Any residential use is specifically prohibited from the non-residential land use category. This would include the primary use of the property for human habitation and includes structures such as single family dwellings, multiple family structures, mobile homes, condominiums, and apartment buildings. Residential use is also characterized by any use which is intended to house, educate, or provide care for children, the elderly, the infirm, or other sensitive populations, and therefore could include day care centers, educational facilities, hospitals, elder care facilities, and nursing homes. The use of any accessory building or portion of an existing building as a dwelling unit permitted for a proprietor or storekeeper and their families, located in the same building as their place of occupation, or for a watchman or caretaker is also prohibited. Any authority that allows for residential use of the Property as a legal non-conforming is also restricted per the prohibitions contained in this restrictive covenant.

The Property is zoned for heavy manufacturing in accordance with Section 20120a(6) of Part 201, PA 451 and the intended future use of the Property will remain industrial/commercial. An exposure barrier, consisting of a chain-link fence, forms a perimeter boundary around the Property to keep the public from unacceptable exposures through direct contact or inhalation. Furthermore, concrete, gravel and/or asphalt cover a majority of the site and provide additional protection for exposure to impacted soil. In addition, except for four locations (S-31, SB-107, SB-120 and OBG-227 or areas around these locations) that exhibit shallow (< 3 feet deep) impacted soils above the direct contact criteria (and are covered with either concrete or asphalt), the remaining samples containing impacted soils above the direct contact criteria were located at depths of greater than 3 feet; further reducing the risk to exposure.

Based on available data discussed in the No Further Action Report, volatilization to indoor air is not a concern from soil and groundwater; therefore, the Property is suitable for construction of nonresidential (*i.e.*, industrial/commercial) buildings as long as proper health and safety procedures are followed during excavation activities, the soils are managed in accordance with the requirements of section 20120c of NREPA and other applicable state and federal laws, and capping of the areas outside of any buildings is completed (in lieu of the existing perimeter fence) and is consistent with preventing direct contact with any remaining impacted soils.

EXHIBIT 5

PERMANENT MARKER

The attached Figure E-3 illustrates the format of the permanent marker.

DRAFT

EXHIBIT 6

CONSENT OF EASEMENT HOLDERS

There are no official easement holders on the restricted portion of the Property; however, the City of Flint does have sewers that cross the Property, the Genesee County Road Commission does have road right of ways along the Property, and Consumers Energy does own a transformer on the southwest corner of the Property and notification of the Restrictive Covenant will be sent to the City of Flint, the Genesee County Road Commissioner, and Consumers Energy following filing of the Restrictive Covenant.

As evidenced below by my signature, I agree and consent to the recording of the land use and resource use restrictions specified in this Restrictive Covenant and hereby agree that my property interest shall be subject to, and subordinate to, the terms of the Restrictive Covenant.

City of Flint Sewer and Water Dept.

By: _____
Signature

Name: _____
Print or Type Name

Its: _____
Title

STATE OF MICHIGAN
COUNTY OF GENESEE

The foregoing instrument was acknowledged before me this _____[date] by
_____ [name of attorney in fact] as attorney in fact on behalf of City of Flint.

Notary Public Signature

Name of Notary Public _____

Notary Public, State of _____

County of _____

My Commission Expires: _____

Acting in the County of _____

As evidenced below by my signature, I agree and consent to the recording of the land use and resource use restrictions specified in this Restrictive Covenant and hereby agree that my property interest shall be subject to, and subordinate to, the terms of the Restrictive Covenant.

Genesee County Road Commission

By: _____
Signature

Name: _____
Print or Type Name

Its: _____
Title

STATE OF MICHIGAN
COUNTY OF GENESEE

The foregoing instrument was acknowledged before me this _____[*date*] by
_____[*name of attorney in fact*] as attorney in fact on behalf of the
Genesee County Road Commission.

Notary Public Signature

Name of Notary Public _____

Notary Public, State of _____

County of _____

My Commission Expires: _____

Acting in the County of _____

As evidenced below by my signature, I agree and consent to the recording of the land use and resource use restrictions specified in this Restrictive Covenant and hereby agree that my property interest shall be subject to, and subordinate to, the terms of the Restrictive Covenant.

Consumers Energy

By: _____
Signature

Name: _____
Print or Type Name

Its: _____
Title

STATE OF MICHIGAN
COUNTY OF JACKSON

The foregoing instrument was acknowledged before me this _____[*date*] by
_____[*name of attorney in fact*] as attorney in fact on behalf of Consumers
Energy.

Notary Public Signature

Name of Notary Public _____

Notary Public, State of _____

County of _____

My Commission Expires: _____

Acting in the County of _____

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