TECHNICAL MEMORANDUM
LAKE LINDEN RECREATION AREA SOIL AND SEDIMENT SAMPLING
REVISION 3

LAKE LINDEN RECREATION AREA
TORCH LAKE SUPERFUND SITE
LAKE LINDEN, MICHIGAN

Prepared for:

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April 19, 2018

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LIST OF ACRONYMS

COC	constituent of concern
DU	decision unit
ESL	ecological screening level
FSP	field sampling plan
ft	foot/feet
ID	identification
ICS	incremental composite sampling
IDW	investigative derived waste
LLRA	Lake Linden Recreation Area
MDEQ	Michigan Department of Environmental Quality
mg/kg	milligrams per kilogram
PCB	polychlorinated biphenyl
R	replicate
RDCC	residential direct contact criteria
RML	removal management level
TOC	total organic carbon
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Honeywell developed this Technical Memorandum (Tech Memo) to provide details of the October 2017 sampling activities for the Lake Linden Recreation Area (LLRA) and summarize results of other sampling conducted to date. The LLRA is located along the northern shore of Torch Lake and is part of the Torch Lake Area of Concern. A Removal Assessment Report was prepared to assess soil and sediment quality within the LLRA. The report was prepared by Tetra Tech on behalf of the United States Environmental Protection Agency (USEPA; USEPA 2017). The report evaluated the potential for threats to human health and the environment, in order to evaluate potential approaches for a removal action. The Removal Assessment Report identified three areas (Areas A, B, and C) of sediment containing elevated levels of metals and polychlorinated biphenyls (PCBs). The location of the LLRA is shown on Figure 1 and the three areas are shown on Figure 2.

Ramboll conducted soil and sediment sampling in the LLRA on behalf of Honeywell in October 2017. The purpose of this sampling was to further evaluate the extent of sediment contamination in the LLRA and investigate the need for remedial action in the three sediment areas. The intended soil and sediment sampling was detailed in a Field Sampling Plan (FSP) submitted to and approved by USEPA in September 2017 (Ramboll Environ 2017a). The FSP identified proposed locations and procedures for collection of beach soil and sediment samples. The FSP also specified the analysis for constituents of concern (COCs) and other testing pertinent to the design of a remedy, if needed, for the LLRA. Changes to the FSP were implemented in the field, as necessary, and as discussed in Section 2. When possible, changes were discussed with, and approved by, USEPA or USEPA's oversight contractor.

The following tasks were completed as part of the October 2017 investigation:

- A total of 17 composite samples (including six replicates) were collected from the beach and from shallow water swimming/wading areas of the lake to provide concentration data to evaluate direct contact risks for human receptors.
- A total of five subsurface sediment samples were collected for chemical analyses in Area A to provide better horizontal and vertical delineation of waste material in this area.
- A total of 27 surface and subsurface sediment samples (including three duplicates) were collected for chemical analyses in deeper water areas of the lake to evaluate potential impacts to ecological receptors.

- Geotechnical samples were collected from select sediment sampling intervals and tested for physical properties of the sediment to inform remedy design alternatives, if necessary.

Previous soil and sediment sampling conducted by others within the LLRA has included the following:

- Soil and sediment samples were collected as part of a 2007 USEPA Emergency Response Action that was conducted in two upland areas adjacent to Areas A and C of the LLRA. Samples were designated with "LLV-__" and are discussed in more detail as part of the *Letter Report for Lake Linden Emergency Response Site* (USEPA 2007).
- Sediment sampling was conducted as part of an MDEQ investigation in 2007 to evaluate sediment chemistry in Torch Lake. Samples were designated with "TL07-__" and collected across Torch Lake, with a total of five samples falling in the LLRA. Further details of this sampling investigation can be found in *A Sediment Chemistry Survey of Torch Lake* (MDEQ Water Bureau 2008).
- Sediment samples were collected as part of a USEPA investigation in 2008 to investigate PCB concentrations across Torch Lake. Samples were designated with "TL08-__" and collected across Torch Lake, with one sample falling in the vicinity of the LLRA. Further details of this sampling investigation can be found in Aroclor Sediment Investigation of Torch Lake (USEPA 2009).
- The MDEQ Pre-Remedial Group conducted sampling activities in the upland and sediment areas of Lake Linden in October 2011, which included collection of soil, groundwater, surface water, and sediment samples. One location (SD-03/SW-03) fell within Area A of the LLRA. Further details on this investigation can be found in the *SI Report for C&H Lake Linden Operations* (MDEQ Pre-Remedial Group, 2014).
- During 2014 and 2015, the MDEQ Remediation and Redevelopment Division collected samples as part of a site investigation to assess potential human health and environmental risks present in the Calumet and Hecla Lake Linden Operations Area. A number of sediment and surface water samples were collected in the LLRA as part of this investigation. Samples were designated with "CHLL-SD/SW-__" and further detail can be found in the *Site Investigation Report for Abandoned Mining Wastes Torch Lake Non-Superfund Site, Calumet and Hecla – Lake Linden Operations* (MDEQ 2016).
- During June 2017, MDEQ collected a limited number of samples which supplemented the 2014-2015 sampling investigation. Further details on this investigation have not

been provided to date; however, the core locations and sample data from five cores collected as part of this investigation are presented in this Tech Memo.

This Tech Memo provides sample collection and testing details for the October 2017 sampling activities and evaluates the results of soil and sediment sampling conducted to date in the LLRA.

2.0 SUMMARY OF OCTOBER 2017 SAMPLING ACTIVITIES

2.1 BEACH AND NEARSHORE SOIL/SEDIMENT INCREMENTAL COMPOSITE SAMPLE LOCATIONS

Incremental composite sampling (ICS) methods were used to collect soil and sediment samples from the beach and from nearshore shallow water areas of the lake. ICS was conducted in eight decision units (DUs) in the LLRA (see Figure 3). Three DUs were established for the beach area, where beach sand exists, and two DUs were established in the wading areas, from the water's edge to a water depth of approximately 3-4 feet (ft). Additionally, DUs were established across the incoming tributary to the north of Area A (CS-06), within Area A (CS-07), and in Area C (CS-08). Soil samples were collected from the DUs on the beach sands (CS-01 through CS-03) and sediment samples were collected from the two DUs located adjacent to the beach in the nearshore shallow water (CS-04 and CS-05). Field replicates (i.e. a total of three composite samples) were collected and analyzed for DUs CS-01 and CS-05.

Samples were collected across a number of ICS locations (increments) within each individual DU and combined into a single sample (composite) representative of the entire DU. 30 increments were combined for each DU composite sample. In beach sand locations, overlying imported beach sand (material that was imported by the Village of Lake Linden and assumed uncontaminated were visually identified in the field to be approximately 0.5 ft thick) was discarded prior to sampling and the 0.5-1.0 ft and 1.0-2.0 ft depth intervals below beach surface sands were collected for each increment. ICS increment cores were collected using a soil sampling apparatus, which utilized a slide hammer to drive core liners into the sand. At the time of sampling, the water elevation in Torch Lake was almost 1.5 ft above the long-term average; therefore, a number of the beach sand increments on the lake side of the beach were below water. However, the ICS increment locations were collected as prescribed in the FSP and composited with the other beach sand increments, as appropriate.

For in-water locations, increment cores were collected by pushing sampling liners directly into the sand from a small boat and/or by wading to the location, depending on the depth of water at the ICS increment location. ICS increments were collected in the surficial 0-0.5 ft depth interval.

All composite samples were analyzed for the following constituents:

- Total PCBs as Aroclors
- Michigan 10 metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) plus iron and nickel
- Total organic carbon (TOC) and moisture content.

A photolog for the ICS activities is provided in Appendix A.

2.2 SEDIMENT DISCRETE SAMPLE LOCATIONS

Discrete sediment cores were all collected from a boat equipped with a Geoprobe 420M unit. This was a slight deviation from the FSP, which identified that a vibracore, or similar, would be used to complete the work. The Geoprobe pushes cores in a similar manner to the vibracore, however, it also incorporates a catcher on the end of the core that can help with recovery of primarily sandy materials that are present in the LLRA. Additionally, use of a Geoprobe allowed the field team to re-enter the same core location and capture deeper materials, as was particularly required in Area A.

2.2.1 Area A Delineation Cores

Sediment cores were collected at five discrete locations (LLRA-SD-08 through LLRA-SD-12; see Figure 3) within Area A to further delineate a discolored sediment “waste layer”. The “waste layer” had been identified during earlier investigations by USEPA and MDEQ (as detailed in the Removal Assessment Report) and consisted of very soft silt-like material with a horizontal striated color pattern. The FSP originally proposed two core locations within Area A (LLRA-SD-08 and LLRA-SD-09). Following discussions in the field with USEPA, an additional three cores (LLRA-SD-10, LLRA-SD-11, and LLRA-SD-12) were also collected to further delineate the waste layer. Cores were advanced to native soil, located below the stamp sand, or to refusal. For each core where a waste layer was visually identified, samples were collected from the one-foot sediment layer below the waste material. No sample was collected from location LLRA-SD-12 as no waste material was identified within the core. Additionally, one sample was collected from the visually identified waste layer at sediment location LLRA-SD-09.

Discrete samples collected from Area A were analyzed for the following constituents:

- Total PCBs as Aroclors

- Michigan 10 metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) plus iron and nickel
- TOC, moisture content, grain size, and bulk density, where sufficient material was available from the core.

A photolog from the Area A discrete coring activities is provided in Appendix A and boring logs are provided in Appendix B.

2.2.2 Area B Discrete Cores

Discrete sediment cores were collected at seven locations (LLRA-SD-01 through LLRA-SD-07; see Figure 3) within Area B to evaluate potential impact to ecological receptors throughout the deeper water areas of the LLRA. Field duplicates were collected from cores LLRA-SD-05, LLRA-SD-06, and LLRA-SD-07. Cores were advanced to refusal or to a maximum depth of 5 ft, whichever came first. Cores were then generally divided into sampling intervals based on depth as follows: 0-0.5 ft, 0.5-1.0 ft, 1.0-3.0 ft, and 3.0-5.0 ft. The following samples were not collected due to lack of core recovery:

- LLRA-SD-02: 1.0-3.0 ft and 3.0-5.0 ft intervals.
- LLRA-SD-04 and LLRA-SD-07: 3.0-5.0 ft interval.

Additionally, core location LLRA-SD-03 was collected slightly north and east from the coordinates identified in the FSP. Discrete samples collected from Area B were analyzed for the following constituents:

- Total PCBs as Aroclors
- Michigan 10 metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) plus iron and nickel
- TOC, moisture content, grain size, and bulk density, where sufficient material was available from the core.

A photolog from the Area B discrete coring activities is provided in Appendix A and boring logs are provided in Appendix B.

3.0 REVIEW OF OCTOBER 2017 AND PREVIOUS INVESTIGATION RESULTS

The results of the October 2017 soil and sediment investigation are summarized below and in Tables 1 through 3 and Figures 4A through 4C and 5. Summary laboratory reports are provided in Appendix C. The sampling results were validated by Ramboll consistent with the requirements of the Quality Assurance Project Plan (Ramboll Environ 2017b). The laboratory corrected two of the reports (JC52646 and JC52655) during the review and validation process: The final results reports for job number JC52646 were updated to correct an error in the reported sample ID (LLRA-SD08-92-102 was originally reported as SD0E-92-102). Also, during validation it was found that certain raw data for the grain size analysis were reported incorrectly on JC52655. Both reports were reissued with corrected data.

The following sections provide an overview of all the available data within the LLRA, including the results of the October 2017 sampling conducted by Honeywell and the previous investigations conducted by USEPA and MDEQ. Area B has been subdivided into nearshore (Area B1) and offshore (deeper water; Area B2) areas, as shown on Figure 4B, to better evaluate potential risk pathways (see Section 4).

3.1 BEACH AND NEAR SHORE SOIL/SEDIMENT INCREMENTAL COMPOSITE SAMPLE LOCATIONS

A total of 17 ICS samples (including six replicates) were collected from the beach and near shore areas of Areas A, B1, and C of the LLRA during the October 2017 sampling event and analyzed for the constituents identified in Section 2.1. The ICS sample results are summarized in Table 1. One sample was identified with a COC detected at a concentration above the Michigan Department of Environmental Quality (MDEQ) Part 201 residential direct contact criteria (RDCC; MDEQ 2013) - the arsenic concentration at DU CS-08 (Area C) was 8.3 milligrams per kilogram (mg/kg) and exceeded the MDEQ RDCC of 7.6 mg/kg.

3.1.1 Area A

Two surficial composite samples were collected within Area A and the tributary to the north during the October 2017 sampling activities (LLRA-CS06 and CS07; see Figure 4A). The samples did not exceed any of the MDEQ RDCC or USEPA RML screening levels, but did

exceed ecological screening levels (ESLs[1]) for barium and copper. Further discussion of previous Area A sampling is provided in Section 3.2.

3.1.2 Area B1

In the beach sand areas, material recovered from the increment cores was consistent in grain size type and appearance; there were no indications of discolored material in any of the cores. All of the beach sand ICS samples had one or more exceedances of ESLs for barium, copper, iron, lead, nickel, and silver (see Figure 4B). PCBs were not detected in any of the beach area samples. Sample results were generally similar between the upper and lower sampled depth intervals and from west to east along the beach. In addition to the ICS work in October 2017, 14 samples were collected from seven discrete cores (LLV-26 through LLV-32; see Figure 4B) in the upland area a short distance away from the beach sand during the 2007 Emergency Response activities. These samples, collected in the upper 0-0.25 ft and the 1-1.5 ft depth intervals, showed one exceedance of the MDEQ RDCC for arsenic (location LLV-27 in the surficial 0.25 ft depth interval). PCBs were not detected in any of the samples. Consistent with the results of beach sand ICS, each of these cores contained exceedances of the ESLs for arsenic, barium, copper, and lead.

In the nearshore areas of Area B1 (CS04 and CS05), there were no indications of discolored materials in the surficial increment cores collected as part of the ICS work in October 2017. Sample results were similar in level to those of the beach sand ICS samples; however, no ESL exceedances were identified for lead in these ICS samples. In addition to the ICS work in October 2017, previous sampling conducted in this area included five cores during the 2007 Emergency Response activities (LLV-15 through LLV-19), one core during the MDEQ 2014-2015 investigation (CHLL-SD75), and one core during the MDEQ July 2017 investigation (CHLL-SD105). All but four samples were collected from within the upper 1.5 ft depth interval. Similar to the 2017 ICS samples from the beach and nearshore, there were no exceedances of the MDEQ RDCC and PCBs were not detected in any of the samples. There were a number of ESL exceedances for barium, copper, and lead. Two samples from CHLL-SD105 were collected in the deeper intervals 1-3 ft and 3-6 ft. These samples exceeded only the ESL for lead and PCBs were not detected. Two samples collected from

[1] Ecological screening levels developed and recommended by USEPA in the Region 4 Interim Draft Ecological Risk Assessment Supplemental Guidance (USEPA, 2015)

the 1-3 ft and 3-5 ft intervals at location CHLL-SD75 were only analyzed for PCBs, which were not detected.

3.1.3 Area C

As mentioned above, the October 2017 ICS work conducted in the nearshore area at Area C resulted in an exceedance of the MDEQ RDCC for arsenic (see Figure 4C and Figure 5). Additionally, ESLs were exceeded for copper, iron, nickel, and silver. Previous sampling within Area C was conducted as part of the 2007 Emergency Response activities (LLV-3, which was sampled to a depth of 1.5 ft) and 2007 MDEQ Sediment Chemistry Survey in Torch Lake (TL07-13, which was sampled to a depth of 5.5 ft). Two samples taken from the TL07-13 core resulted in exceedances of the MDEQ RDCC for arsenic and one of these samples also exceeded the ESL for arsenic. Additionally, samples from the TL07-13 core resulted in ESL exceedances for copper and silver (all depth intervals) and barium and lead (the two depth intervals between 0.5 ft and 3.33 ft).

3.2 AREA A DELINEATION CORE LOCATIONS

A total of five cores were collected in Area A as part of the October 2017 sampling activities and discolored material (waste material) was observed in four of the five cores ranging from depths of 1.4-1.9 to 8.8-9.2 ft within the sediment. The fifth core, LLRA-SD-12, extended to approximately 10 ft below the sediment surface and no waste materials were identified (see boring log in Appendix B) and no samples were collected for laboratory analysis. As described in Section 2.2, one sample was collected from the material that made up the waste layer (located in the 4.1 ft – 4.6 ft interval) and analytical results are provided in Table 2. Elevated metals levels, including MDEQ RDCC and USEPA RML exceedances for arsenic, copper, and lead, were measured in the sample, along with a PCB result (1.4 mg/kg) that also exceeded the MDEQ RDCC. The sample results from the layer are consistent with the range of other previously-collected samples where a clearly-defined waste layer was identified in the boring logs (TL07-01, TL07-02, and TL07-03, which were collected in August 2007 by the MDEQ Water Bureau [MDEQ Water Bureau, 2008]). Figure 4A presents sample analytical results for Area A and Figure 5 shows MDEQ RDCC and USEPA RML exceedances in the surficial 1 ft of sediment and depicts approximate extents of these exceedances.

The four October 2017 cores in which a waste layer was identified were sampled in the one-foot soil (generally a stiff fine-grained silt) interval below the waste material and analytical

results are provided in Table 2. ESL exceedances for metals were identified in each of the four samples (LLRA-SD08-92-102, LLRA-SD09-46-56, LLRA-SD10-92-102, LLRA-SD11-23-33). Additionally, two of the samples exceeded the ESL for PCBs. None of the four samples exceeded any of the MDEQ RDCC or USEPA RML values for metals or PCBs.

Previous (pre-October 2017) sampling in Area A was conducted across multiple investigations between 2007 and June 2017. Nine of the 20 previously-collected cores contained constituents exceeding the MDEQ RDCC and USEPA RMLs, including arsenic, barium, copper, lead, and Total PCBs. Concentrations of each of these constituents were greatest in the three cores TL07-01, TL07-02, and TL07-03 at depth intervals where a clearly-defined waste layer was identified. Observations of staining/discoloration have also been noted on boring logs for CHLL-SD18 (1.6 ft below sediment surface) and CHLL-SD108 (in the upper 0.5 ft). Concentrations in the materials overlying the waste layer in these three cores did not exceed MDEQ RDCCs or USEPA RMLs.

Ramboll developed a set of cross sections through Area A and extending into Area B to depict the approximate horizontal and vertical extent of the waste layer, based on the results of cores collected in the LLRA to date, the approximate extents of the USEPA 2007 Emergency Response area, and the approximate bathymetry of the lake (based on MDEQ 2017 bathymetry survey). These cross sections are provided in Appendix D. The approximate horizontal extents of the waste layer are provided on the sections. It is noted that there is the potential for the waste layer to daylight along the drop off from shallow water to deeper water; however, it is recognized that additional delineation may be required as part of a pre-design investigation in order to fully define an area for remedy, if warranted.

3.3 AREA B2 DISCRETE SEDIMENT SAMPLE LOCATIONS

Seven cores were collected in the deeper water areas of Area B2 in October 2017 and resulted in a total of 27 samples (including duplicates). Sample results are provided in Table 2. Exceedances of the metals ESLs were identified in all of the cores. Additional exceedances of the ESL for PCBs and both the MDEQ RDCC and USEPA RML for lead were identified in three of the cores (LLRA-SD01, LLRA-SD-02, and LLRA-SD03), the ESL for PCBs was also exceeded in LLRA-SD04, the USEPA RML for copper was also exceeded in LLRA-SD02, and the MDEQ RDCC for arsenic was also exceeded in LLRA-SD01 and LLRA-SD02. Each of these exceedances were within the upper 1 ft of the sediment.

These results are generally consistent with the results of sampling conducted previously through Area B2; previous investigations resulted in exceedances of the metals ESLs in all but four of the cores and the ESL for PCBs was exceeded in ten of the cores. Additionally, the following MDEQ RDCC and USEPA RML exceedances were identified in previously-collected cores in Area B2:

- Location TL07-04 exceeded the MDEQ RDCC for arsenic and both the MDEQ RDCC and USEPA RMLs for copper and lead in the upper 0.5 ft interval. Additionally, the MDEQ RDCC and USEPA RML for lead only was exceeded in the subsurface 0.5-2.17 ft interval.
- Locations CHLL-SD14 and CHLL-SD79 exceeded the MDEQ RDCC for arsenic, the USEPA RML for copper, and both the MDEQ RDCC and USEPA RML for lead in the upper 0.5 ft interval.
- Location CHLL-SD80 exceeded the exceeded the MDEQ RDCC for arsenic and both the MDEQ RDCC and USEPA RML for lead in the upper 0.5 ft interval
- Location CHLL-SD81 exceeded the USEPA RML for copper and both the MDEQ RDCC and USEPA RML for lead in the upper 0.5 ft interval
- Locations LLV-21 and CHLL-SD78 exceeded the MDEQ RDCC for arsenic in the upper 0.25 and 0.5 ft intervals, respectively
- Location CHLL-SD17 exceeded the total PCB MDEQ RDCC in the upper 0.5 ft interval

The majority of MDEQ RDCC and USEPA RML exceedances from sampling conducted in Area B2 prior to October 2017 were identified within the upper 1 ft depth interval. Figure 4B presents sample analytical results for Area B and Figure 5 shows MDEQ RDCC and USEPA RML exceedances in the surficial 1 ft of sediment and depicts approximate extents of these exceedances.

3.4 INVESTIGATIVE DERIVED WASTE MANAGEMENT

Investigative derived waste (IDW; i.e., excess sediment from discrete sampling and decontamination water) was placed in sealed and labeled containers and stored indoors at a Village of Lake Linden maintenance building. Based on the analytical results, the IDW was classified as nonhazardous waste and is scheduled to be collected for off-site disposal.

4.0 EVALUATION OF POTENTIAL EXPOSURE PATHWAYS AND ASSESSMENT OF DATA GAPS

4.1 BEACH SANDS AND NEARSHORE AREAS IN AREA B1

The primary potential exposure risk pathway in the beach sands and nearshore areas of Area B1 is through direct contact with the sands and sediments by human receptors through digging in the sand and/or wading and swimming in the shallow water areas.

The beach area is used primarily for recreational purposes; however, in lieu of generating site-specific recreational human health risk screening criteria, the more conservative MDEQ RDCC screening levels have been used for this evaluation. As described in Section 3, none of the composite or discrete samples within the beach sand and nearshore areas of Area B1 exceed any of the MDEQ RDCC screening levels; therefore, there appears to be no current significant risk to human health in these beach and nearshore wading areas. One sample collected to the north of the beach area contained arsenic (14 mg/kg) above the MDEQ RDCC level (7.6 mg/kg)

As stated in the project QAPP, one of the goals of sampling conducted in 2017 was to support eventual removal of signs in the beach areas related to contact with LLRA sediments. This goal is supported by the sample data presented above. No additional evaluation or remedial activities are proposed within Area B1.

4.2 AREA A

Direct human contact to sediments in Area A could occur in the shallow water zones, where wading/swimming is possible (it is noted that this is not a designated swimming area). The nearshore portion of Area A and the tributary area to the north generally has less than 5 ft depth of water (based on the review of bathymetry provided by MDEQ from June 2017, when lake levels were approximately 0.9 ft above the long-term average of 601.7 ft[2]) and therefore direct human contact through wading is possible. Lake levels vary on a cyclical basis and if levels went down below the long-term average, the extent of the wadable area may increase slightly within Area A. Results from the October 2017 composite sampling

[2] Based on review of National Oceanic and Atmospheric Administration great lakes water level data for Lake Superior

event indicate that there is no immediate risk through direct contact with surficial sediments (i.e., the upper 0.5 ft depth interval) in these shallow water areas as there were no exceedances of the MDEQ RDCC or USEPA RML. Discrete sampling in Area A does indicate MDEQ RDCC or USEPA RML exceedance of arsenic and/or lead in the 0.0-1.0 ft depth interval. Elevated metals and PCB concentrations in the underlying sediments, in particular within the waste layer that extends offshore from the USEPA 2007 Emergency Response area, may pose a risk if exposed at the surface through erosion from extreme episodic events or if contacted where the waste layer potentially daylights along the dropoff from shallow to deeper water. Honeywell is currently evaluating a potential remedial project in Area A to address these potential exposure risks. Additional sampling may be conducted as part of a pre-design phase of work to provide additional delineation of the waste layer.

There is also the potential for ecological receptors to come into contact with surficial sediments in Area A, which may have a subsequent impact on fish in Torch Lake. The results of sampling through the area indicate exceedances of the ESLs for metals and PCBs to depths of up to approximately 10 ft below the sediment surface; however, risk of exposure is highest in the surficial sediments, where ecological receptors are predominantly located. As noted above, there is a potential for exposure of subsurface sediments through erosion of surficial materials. This potential is reduced in deeper water areas, where effects from wind and wave action are less than in shallow water areas as discussed above. Ecological receptors may also be at risk of exposure if and where the waste layer “daylights” along the drop off from shallow water to deeper water; in these locations the waste layer would be exposed at the surface of the lake bottom, not entirely buried, and available to interact with potential ecological receptors. Additional ecological risk evaluation of the area may be necessary to identify the most appropriate path forward. Depending on the results of this additional evaluation, further sampling may be required to characterize the extent of contamination, both horizontally and vertically in Area A.

4.3 AREA B2

Similar to the deeper water area portions of Area A, the primary risk concern through Area B2 is to ecological receptors that are in contact with the surficial sediment. Exceedances of metals and PCB ESLs were identified throughout Area B2 and further evaluation of the area will be necessary to identify an appropriate risk-based strategy moving forward. Depending

on the results of this additional evaluation, further sampling may be required to characterize the extent of contamination, both horizontally and vertically in Area B2.

4.4 AREA C

Both the composite sample and one previously-collected discrete core collected in Area C showed arsenic concentrations that were above the MDEQ RDCC. Water depths are shallow throughout the area; therefore, there is a potential for human direct contact exposure risk through wading in the area, in addition to ecological risk exposure. Additional evaluation of the area may be necessary to determine appropriate site-specific risk criteria or risk-based strategy moving forward.

5.0 REFERENCES

MDEQ, 2016. Site Investigation Report for Abandoned Mining Wastes Torch Lake Non-Superfund Site, Calumet and Hecla – Lake Linden Operations, Houghton County, Michigan. March 2016.

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Ramboll Environ, 2017b. Lake Linden Recreation Area 2017 Quality Assurance Project Plan. August 10, 2017.

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USEPA, 2009. Great Lakes National Program Office Aroclor Sediment Investigation of Torch Lake, Area of Concern, Houghton County, Michigan. June 2009.

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Tables

Table 1: Composite Soil and Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-CS01			LLRA-CS01			LLRA-CS02
Sample ID	EPA ESL[a]	MDEQ RDCC for Soil[b]	EPA RML for Soil[c]	LLRA-CS01-05-10	LLRA-R2 (LLRA-CS01-05-10 Replicate)	LLRA-R5 (LLRA-CS01-05-10 Replicate)	LLRA-CS01-10-20	LLRA-R3 (LLRA-CS01-10-20 Replicate)	LLRA-R6 (LLRA-CS01-10-20 Replicate)	LLRA-CS02-05-10
Collection Date				10/10/2017	10/11/2017	10/11/2017	10/10/2017	10/11/2017	10/11/2017	10/09/2017
Sample Depth Interval (feet)				0.5-1.0	0.5-1.0	0.5-1.0	1.0-2.0	1.0-2.0	1.0-2.0	0.5-1.0
Inorganics - Metals (mg/kg)										
ARSENIC	9.8	7.6	68	2.6	2.3	2.5	4.6	3.7	4.0	3.4
BARIUM	20	37,000	46,000	<20 U	<19 U	<20 U	47.8	25.8	30.4	<20 U
CADMIUM	1	550	210	<0.49 U	<0.49 U	<0.50 U	<0.52 U	<0.49 U	<0.51 U	<0.51 U
CHROMIUM	43.4	790,000	NA	20.7	19.2	17.1	31.7	24.1	24.0	23.5
COPPER	31.6	20,000	9,400	585	585	476	922	956	972	512
IRON	20,000	160,000	160,000	14,100	13,400	13,200	21,900	17,900	17,100	18,300
LEAD	35.8	400	400	7.7	6.6	10.8	60.8	40.9	45.7	24.5
MERCURY	0.18	160	33	<0.030 U	<0.032 U	<0.032 U	0.029	<0.030 U	<0.032 U	<0.031 U
NICKEL	22.7	40,000	4,600	20.4	21.2	18.8	29.7	24.7	24.6	24.0
SELENIUM	11	2,600	1,200	<2.0 U	<1.9 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<2.0 U
SILVER	1	2,500	1,200	<1.5 U	1.3	<1.0 U	<1.6 U	3.1	2.3	2.2
ZINC	121	170,000	70,000	41.5	44.5	45.6	101	71.3	73.6	62.4
Organics - PCBs (mg/kg)										
AROCLOR-1016	NA	NA	12	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1221	NA	NA	20	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1232	NA	NA	17	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1242	NA	NA	23	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1248	NA	NA	23	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1254	NA	NA	3.5	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1260	NA	NA	24	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1262	NA	NA	NA	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
AROCLOR-1268	NA	NA	NA	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
TOTAL PCBS	0.06	1.00	NA	<0.032 U	<0.033 U	<0.033 U	<0.031 U	<0.032 U	<0.033 U	<0.031 U
Other										
Total Organic Carbon (mg/kg)	NA	NA	NA	474	342	1,440	952	537	495	1,010
% Solids	NA	NA	NA	99.8%	99.8%	99.8%	99.7%	99.8%	99.8%	99.7%
Moisture Content	NA	NA	NA	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Shaded values exceed the USEPA RML
Bold borders indicate values exceed MDEQ Part 201 RDCC for Soil
Red TEXT indicate values exceed the USEPA ESL

mg/kg = milligrams per kilogram
NA = criteria is not available
U = not detected above the reported sample reporting limit

Table 1: Composite Soil and Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-CS02	LLRA-CS03	LLRA-CS03	LLRA-CS04	LLRA-CS05		
Sample ID	EPA ESL[a]	MDEQ RDCC for Soil[b]	EPA RML for Soil[c]	LLRA-CS02-10-20	LLRA-CS03-05-10	LLRA-CS03-10-20	LLRA-CS04-00-05	LLRA-CS05-00-05	LLRA-R1 (LLRA-CS05-00-05 Replicate)	LLRA-R4 (LLRA-CS05-00-05 Replicate)
Collection Date				10/09/2017	10/06/2017	10/06/2017	10/08/2017	10/10/2017	10/10/2017	10/11/2017
Sample Depth Interval (feet)				1.0-2.0	0.5-1.0	1.0-2.0	0-0.5	0-0.5	0-0.5	0-0.5
Inorganics - Metals (mg/kg)										
ARSENIC	9.8	7.6	68	3.1	3.2	3.2	2.9	4.2	4.4	4.4
BARIUM	20	37,000	46,000	37.0	19.2	22.9	29.1	21.4	21.4	22.9
CADMIUM	1	550	210	<0.49 U	<0.49 U	<0.48 U	<0.48 U	<0.48 U	<0.48 U	<0.50 U
CHROMIUM	43.4	790,000	NA	21.3	27.8	28.9	18.1	28.0	28.6	30.3
COPPER	31.6	20,000	9,400	494	544	572	309	599	545	541
IRON	20,000	160,000	160,000	17,000	23,300	23,900	15,500	22,400	22,100	23,700
LEAD	35.8	400	400	48.6	13.7	<9.6 U	5.5	18.8	16.5	18.2
MERCURY	0.18	160	33	0.036	0.085	0.075	<0.032 U	<0.032 U	<0.033 U	<0.032 U
NICKEL	22.7	40,000	4,600	22.6	26.6	27.7	17.9	27.0	27.5	29.1
SELENIUM	11	2,600	1,200	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<2.0 U
SILVER	1	2,500	1,200	3.2	2.8	3.7	1.0	<2.4 U	<2.4 U	<2.5 U
ZINC	121	170,000	70,000	96.0	63.4	70.5	34.5	66.0	66.4	70.7
Organics - PCBs (mg/kg)										
AROCLOR-1016	NA	NA	12	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1221	NA	NA	20	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1232	NA	NA	17	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1242	NA	NA	23	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1248	NA	NA	23	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1254	NA	NA	3.5	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1260	NA	NA	24	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1262	NA	NA	NA	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
AROCLOR-1268	NA	NA	NA	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
TOTAL PCBS	0.06	1.00	NA	<0.033 U	<0.032 U	<0.032 U	<0.032 U	<0.033 U	<0.031 U	<0.032 U
Other										
Total Organic Carbon (mg/kg)	NA	NA	NA	1,740	843	<100	230	356	423	384
% Solids	NA	NA	NA	99.7%	99.6%	99.5%	99.7%	99.8.%	99.7%	99.7%
Moisture Content	NA	NA	NA	0.3%	0.4%	0.5%	0.3%	0.2%	0.3%	0.3%

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Shaded values exceed the USEPA RML
Bold borders indicate values exceed MDEQ Part 201 RDCC for Soil
Red TEXT indicate values exceed the USEPA ESL

mg/kg = milligrams per kilogram
NA = criteria is not available
U = not detected above the reported sample reporting limit

Table 1: Composite Soil and Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-CS06	LLRA-CS07	LLRA-CS08
Sample ID	EPA ESL[a]	MDEQ RDCC for Soil[b]	EPA RML for Soil[c]	LLRA-CS06-00-05	LLRA-CS07-00-05	LLRA-CS08-00-05
Collection Date				10/07/2017	10/08/2017	10/09/2017
Sample Depth Interval (feet)				0-0.5	0-0.5	0-0.5
Inorganics - Metals (mg/kg)						
ARSENIC	9.8	7.6	68	<2.0 U	2.6	8.3
BARIUM	20	37,000	46,000	47.7	59.0	<20 U
CADMIUM	1	550	210	<0.50 U	<0.50 U	<0.50 U
CHROMIUM	43.4	790,000	NA	13.3	14.5	34.3
COPPER	31.6	20,000	9,400	107	157	1,140
IRON	20,000	160,000	160,000	14,500	15,700	22,800
LEAD	35.8	400	400	6.8	8.2	28.0
MERCURY	0.18	160	33	0.035	<0.029 U	<0.033 U
NICKEL	22.7	40,000	4,600	13.7	17.1	37.1
SELENIUM	11	2,600	1,200	<2.0 U	<2.0 U	<2.0 U
SILVER	1	2,500	1,200	<0.50 U	<0.50 U	3.6
ZINC	121	170,000	70,000	31.8	36.2	79.4
Organics - PCBs (mg/kg)						
AROCLOR-1016	NA	NA	12	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1221	NA	NA	20	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1232	NA	NA	17	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1242	NA	NA	23	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1248	NA	NA	23	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1254	NA	NA	3.5	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1260	NA	NA	24	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1262	NA	NA	NA	<0.013 U	<0.031 U	<0.032 U
AROCLOR-1268	NA	NA	NA	<0.013 U	<0.031 U	<0.032 U
TOTAL PCBS	0.06	1.00	NA	<0.013 U	<0.031 U	<0.032 U
Other						
Total Organic Carbon (mg/kg)	NA	NA	NA	3,650	4,130	637
% Solids	NA	NA	NA	99.4%	99.4%	99.6%
Moisture Content	NA	NA	NA	0.6%	0.6%	0.4%

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Shaded values exceed the USEPA RML
Bold borders indicate values exceed MDEQ Part 201 RDCC for Soil
Red TEXT indicate values exceed the USEPA ESL

mg/kg = milligrams per kilogram
NA = criteria is not available
U = not detected above the reported sample reporting limit

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD12		CHLL-SD13			CHLL-SD14		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD 12-0"-6"	CHLL-SD 12-1'-2.5'	CHLL-SD 13-0"-6"	CHLL-SD 13-1'-2'	CHLL-SD 13-1'-2' dup	CHLL-SD-14-0"-6"	CHLL-SD-14-1'-3'	CHLL-SD-14-3'-4'
Collection Date				6/15/2014	6/15/2014	6/15/2014	6/15/2014	6/15/2014	7/11/2014	7/11/2014	7/11/2014
Sample Depth Interval (feet)				0-0.5	1-2.5	0-0.5	1-2	1-2	0-0.5	1-3	3-4
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	7,700	--	--	15,000	--	--
ANTIMONY	NA	180	94	--	--	<0.6 U	--	--	15	--	--
ARSENIC	9.8	7.6	68	--	--	1.9	--	--	16	--	--
BARIUM	20	37,000	46,000	--	--	26	--	--	2,300 J	--	--
BERYLLIUM	NA	410	470	--	--	0.8	--	--	1.3	--	--
CADMIUM	1	550	210	--	--	<0.2 U	--	--	3.6	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	19	--	--	42	--	--
COBALT	50	2,600	70	--	--	8.8	--	--	19	--	--
COPPER	31.6	20,000	9,400	--	--	550	--	--	9,800	--	--
IRON	20,000	160,000	160,000	--	--	14,000	--	--	31,000	--	--
LEAD	35.8	400	400	--	--	4.3	--	--	2,200	--	--
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	270 J	--	--	420	--	--
MERCURY	0.18	160	33	--	--	<0.07 U	--	--	0.3	--	--
NICKEL	22.7	40,000	4,600	--	--	25	--	--	52	--	--
SELENIUM	11	2,600	1,200	--	--	<0.4 U	--	--	1.6	--	--
SILVER	1	2,500	1,200	--	--	1.7	--	--	26	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	61	--	--	430	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	<0.14 U	--	--	<0.23 U	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.34 UJ	<0.30 U	<0.29 U
AROCLOR-1221	NA	NA	20	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.34 UJ	<0.30 U	<0.29 U
AROCLOR-1232	NA	NA	17	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.34 UJ	<0.30 U	<0.29 U
AROCLOR-1242	NA	NA	23	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	0.34 J	<0.30 U	<0.29 U
AROCLOR-1248	NA	NA	23	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.34 UJ	<0.30 U	<0.29 U
AROCLOR-1254	NA	NA	3.5	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	0.39 J	<0.30 U	<0.29 U
AROCLOR-1260	NA	NA	24	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.23 UJ	<0.30 U	<0.29 U
AROCLOR-1262	NA	NA	NA	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.23 UJ	<0.30 U	<0.29 U
AROCLOR-1268	NA	NA	NA	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	<0.23 UJ	<0.30 U	<0.29 U
TOTAL PCBS	0.06	1.00	NA	<0.14 U	<0.13 U	<0.14 U	<0.13 U	<0.13 U	0.73 J	<0.30 U	<0.29 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	<0.28 UJ	--	--	<1.10 U	--	--
PYRENE	0.195	29,000	5,400	--	--	<0.28 UJ	--	--	<1.10 U	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	72.50%	76.70%	70.90%	78.20%	78.90%	43.50%	65.90%	67.90%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD15		CHLL-SD16				CHLL-SD17		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD 15-0-6''	CHLL-SD 15-1'-2.7'	CHLL-SD-16-0''-6''	CHLL-SD-16-1'-3'	CHLL-SD-16-3'-4'	CHLL-SD-16-3'-4' DUP	CHLL-SD 17-0''-6''	CHLL-SD 17-1'-3'	CHLL-SD 17-3'-5'
Collection Date				6/16/2014	6/16/2014	7/11/2014	7/11/2014	7/11/2014	7/11/2014	7/12/2014	7/12/2014	7/12/2014
Sample Depth Interval (feet)				0-0.5	1-2.7	0-0.5	1-3	3-4	3-4	0-0.5	1-3	3-5
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	--	--	--	--	--	--	--	--	--
BARIUM	20	37,000	46,000	--	--	--	--	--	--	--	--	--
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	--	--	--	--	--	--	--	--	--
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	--	--	--	--	--	--	--	--	--
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.24 UJ	<0.21 U	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.79 UJ	<0.30 U	<0.15 U
AROCLOR-1221	NA	NA	20	<0.24 UJ	<0.21 U	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.79 UJ	<0.30 U	<0.15 U
AROCLOR-1232	NA	NA	17	<0.24 UJ	<0.21 U	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.79 UJ	<0.30 U	<0.15 U
AROCLOR-1242	NA	NA	23	<0.24 UJ	<0.21 U	0.34 J	<0.30 U	<0.30 U	<0.29 U	0.76 J	<0.30 U	<0.15 U
AROCLOR-1248	NA	NA	23	0.23 J	<0.21 U	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.79 UJ	<0.30 U	<0.15 U
AROCLOR-1254	NA	NA	3.5	0.27 J	<0.18 U	0.22 J	<0.30 U	<0.30 U	<0.29 U	0.89 J	<0.30 U	<0.15 U
AROCLOR-1260	NA	NA	24	<0.17 UJ	<0.30 U	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.42 UJ	<0.30 U	<0.15 U
AROCLOR-1262	NA	NA	NA	<0.17 UJ	0.29	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.42 UJ	<0.30 U	<0.15 U
AROCLOR-1268	NA	NA	NA	<0.17 UJ	<0.14 U	<0.43 UJ	<0.30 U	<0.30 U	<0.29 U	<0.42 UJ	<0.30 U	<0.15 U
TOTAL PCBS	0.06	1.00	NA	0.50 J	0.29	0.56 J	<0.30 U	<0.30 U	<0.29 U	1.65 J	<0.30 U	<0.15 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	0.132	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	58.50%	70.50%	46.40%	66%	66.80%	67.90%	48%	66.10%	68.90%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD18		CHLL-SD19		CHLL-SD20		CHLL-SD21
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD 18-0"-6"	CHLL-SD 18-1'-2.7'	CHLL-SD 19-0"-6"	CHLL-SD-19-1'-2.4'	CHLL-SD 20-0-6"	CHLL-SD 20-1'-2'	CHLL-SD21-0"-6"
Collection Date				7/12/2014	7/12/2014	7/12/2014	7/12/2014	6/16/2014	6/16/2014	7/10/2014
Sample Depth Interval (feet)				0-0.5	1-2.7	0-0.5	1-2.4	0-0.5	1-2	0-0.5
Inorganics - Metals (mg/kg)										
ALUMINUM	NA	50,000	230,000	4,800	3,200	4,400	3,800	--	--	--
ANTIMONY	NA	180	94	<0.3 U	17	<0.3 U	<0.3 U	--	--	--
ARSENIC	9.8	7.6	68	1.7	2.3	1.2	1.4	--	--	--
BARIUM	20	37,000	46,000	78 J	2,700 J	31 J	20 J	--	--	--
BERYLLIUM	NA	410	470	0.5	1	0.4	0.3	--	--	--
CADMIUM	1	550	210	<0.2 U	3.1	<0.2 U	<0.2 U	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	9	13	8.5	8.5	--	--	--
COBALT	50	2,600	70	4.5	6.4	4.5	4.5	--	--	--
COPPER	31.6	20,000	9,400	130	4,400	89	140	--	--	--
IRON	20,000	160,000	160,000	12,000	9,900	10,000	9,000	--	--	--
LEAD	35.8	400	400	27	1,600	5.6	5.4	--	--	--
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	160	120	130	110	--	--	--
MERCURY	0.18	160	33	<0.07 U	0.1	<0.08 U	<0.07 U	--	--	--
NICKEL	22.7	40,000	4,600	12	17	12	12	--	--	--
SELENIUM	11	2,600	1,200	<0.2 U	1.1	<0.2 U	<0.2 U	--	--	--
SILVER	1	2,500	1,200	0.3	13	<0.1 U	0.2	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	24	220	23	25	--	--	--
Inorganics - Cyanide (mg/kg)										
CYANIDE	0.0001	12	69	<0.14 U	<0.12 U	<0.15 U	--	--	--	--
Organics - PCBs (mg/kg)										
AROCLOR-1016	NA	NA	12	<0.14 U	<0.37 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1221	NA	NA	20	<0.14 U	<0.37 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1232	NA	NA	17	<0.14 U	<0.37 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1242	NA	NA	23	<0.14 U	0.36 J	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1248	NA	NA	23	<0.14 U	<0.37 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1254	NA	NA	3.5	<0.14 U	0.36 J	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1260	NA	NA	24	<0.14 U	<0.12 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1262	NA	NA	NA	<0.14 U	<0.12 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
AROCLOR-1268	NA	NA	NA	<0.14 U	<0.12 UJ	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
TOTAL PCBS	0.06	1.00	NA	<0.14 U	0.72 J	<0.15 U	<0.13 U	<0.15 U	<0.12 U	<0.26 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)										
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	<0.70 U	<0.62 U	<0.75 U	<0.66 U	--	--	--
PYRENE	0.195	29,000	5,400	<0.70 U	<0.62 U	<0.75 U	<0.66 U	--	--	--
DRO/ORO (mg/kg)										
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--
Other										
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--
% Solids	NA	NA	NA	71.80%	80.20%	66.20%	76.20%	68.10%	84.70%	77.50%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD22			CHLL-SD23		CHLL-SD73			
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD 22-0-6"	CHLL-SD 22-0-6" dup	CHLL-SD 22-1'-1.5'	CHLL-SD23-0"-6"	CHLL-SD-23-1'-1.5'	CHLL-SD-73 0'-6"	CHLL-SD-73 1'-3'	CHLL-SD-73 1'-3' DUP	CHLL-SD-73 3'-4.9'
Collection Date				6/16/2014	6/16/2014	6/16/2014	7/10/2014	7/10/2014	5/27/2015	5/27/2015	5/27/2015	5/27/2015
Sample Depth Interval (feet)				0-0.5	0-0.5	1-1.5	0-0.5	1-1.5	0-0.5	1-3	1-3	3-4.9
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	7,100	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	13	--	--	--
ARSENIC	9.8	7.6	68	--	--	--	--	--	4.8	--	--	--
BARIUM	20	37,000	46,000	--	--	--	--	--	2,300	--	--	--
BERYLLIUM	NA	410	470	--	--	--	--	--	0.8	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	2.7	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	19	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	8.9	--	--	--
COPPER	31.6	20,000	9,400	--	--	--	--	--	3,800	--	--	--
IRON	20,000	160,000	160,000	--	--	--	--	--	12,000	--	--	--
LEAD	35.8	400	400	--	--	--	--	--	1,900	--	--	--
LITHIUM	NA	4,200	470	--	--	--	--	--	6.8	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	6,000	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	190	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	0.1	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	27	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	0.4	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	13	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	290	--	--	--
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	--	--	--	--	--	<0.2 U	--	--	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1221	NA	NA	20	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1232	NA	NA	17	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1242	NA	NA	23	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1248	NA	NA	23	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1254	NA	NA	3.5	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	0.18 J	0.25 J	0.23 J	<0.30 U
AROCLOR-1260	NA	NA	24	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1262	NA	NA	NA	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
AROCLOR-1268	NA	NA	NA	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	<0.40 UJ	<0.33 UJ	<0.32 UJ	<0.30 U
TOTAL PCBS	0.06	1.00	NA	<0.12 U	<0.11 U	<0.11 U	<0.32 U	<0.15 U	0.18 J	0.25 J	0.23 J	<0.30 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	0.94 J	1.20	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	0.70 J	0.89	--
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	86.00%	87.50%	87.10%	62.10%	68.40%	49.80%	59.90%	61.90%	66.90%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

9.5

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD74			CHLL-SD75			CHLL-SD76		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD-74 0'-6"	CHLL-SD-74 1'-3'	CHLL-SD-74 3'-5'	CHLL-SD-75 0'-6"	CHLL-SD-75 1'-3'	CHLL-SD-75 3'-5'	CHLL-SD-76 0-6"	CHLL-SD-76 1'-3'	CHLL-SD-76 1'-3' DUP
Collection Date				5/27/2015	5/27/2015	5/27/2015	5/27/2015	5/27/2015	5/27/2015	5/28/2015	5/28/2015	5/28/2015
Sample Depth Interval (feet)				0-0.5	1-3	3-5	0-0.5	1-3	3-5	0-0.5	1-3	1-3
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	11,000	--	--	5,000	--	--	7,400	--	--
ANTIMONY	NA	180	94	7.5	--	--	<0.3 U	--	--	<0.3 U	--	--
ARSENIC	9.8	7.6	68	12	--	--	1.3	--	--	1.8	--	--
BARIUM	20	37,000	46,000	570	--	--	17	--	--	20	--	--
BERYLLIUM	NA	410	470	<2 U	--	--	0.4	--	--	0.7	--	--
CADMIUM	1	550	210	2.6	--	--	<0.2 U	--	--	<0.2 U	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	30	--	--	12	--	--	18	--	--
COBALT	50	2,600	70	13	--	--	6.2	--	--	9.4	--	--
COPPER	31.6	20,000	9,400	4,000	--	--	480	--	--	490	--	--
IRON	20,000	160,000	160,000	20,000	--	--	7,200	--	--	11,000	--	--
LEAD	35.8	400	400	1,100	--	--	8.2	--	--	16	--	--
LITHIUM	NA	4,200	470	10	--	--	3.4	--	--	5	--	--
MAGNESIUM	NA	1,000,000	NA	8,600	--	--	4,900	--	--	7,900	--	--
MANGANESE	460	25,000	5,500	320	--	--	150	--	--	240	--	--
MERCURY	0.18	160	33	0.2	--	--	<0.06 U	--	--	<0.06 U	--	--
NICKEL	22.7	40,000	4,600	43	--	--	17	--	--	25	--	--
SELENIUM	11	2,600	1,200	<2 U	--	--	<0.2 U	--	--	<0.2 U	--	--
SILVER	1	2,500	1,200	7.8	--	--	1.7	--	--	3	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	440	--	--	40	--	--	68	--	--
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	<0.23 U	--	--	<0.13 U	--	--	<0.13 U	--	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1221	NA	NA	20	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1232	NA	NA	17	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1242	NA	NA	23	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1248	NA	NA	23	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1254	NA	NA	3.5	0.21 J	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1260	NA	NA	24	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1262	NA	NA	NA	0.16 J	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
AROCLOR-1268	NA	NA	NA	<0.45 UJ	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
TOTAL PCBS	0.06	1.00	NA	0.37 J	<0.30 U	<0.26 U	<0.25 U	<0.11 U	<0.12 U	<0.13 U	<0.12 U	<0.12 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	<0.74 U	--	--	<0.23 U	--	--	<0.23 U	<0.25 U
PYRENE	0.195	29,000	5,400	--	<0.74 U	--	--	<0.23 U	--	--	<0.23 U	<0.25 U
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	44%	67.30%	77.10%	79.60%	87.40%	83.40%	78%	86.50%	81.30%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:

a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.

b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.

c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations

Red TEXT indicate values exceed the USEPA ESL

Bold borders indicate values exceed MDEQ Part 201 RDCC

Shaded values exceed the USEPA RML

J = estimated result

mg/kg = milligrams per kilogram

g/ml = grams per milliliter

NA = criteria is not available

U = not detected above the reported sample reporting limit

-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD76	CHLL-SD77			CHLL-SD78			CHLL-SD79	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD-76 3'-5'	CHLL-SD-77 0-6"	CHLL-SD-77 1'-3'	CHLL-SD-77 3'-5'	CHLL-SD-78 0-6"	CHLL-SD-78 1'-3'	CHLL-SD-78 3'-5'	CHLL-SD-79 0-6"	CHLL-SD-79 1'-3'
Collection Date				5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015
Sample Depth Interval (feet)				3-5	0-0.5	1-3	3-5	0-0.5	1-3	3-5	0-0.5	1-3
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	--	6,600	--	--	12,000	--	--	17,000	--
ANTIMONY	NA	180	94	--	<0.3 U	--	--	1.5	--	--	14	--
ARSENIC	9.8	7.6	68	--	1.5	--	--	10	--	--	14	--
BARIUM	20	37,000	46,000	--	32	--	--	77	--	--	1,000	--
BERYLLIUM	NA	410	470	--	0.7	--	--	<2 U	--	--	1.2	--
CADMIUM	1	550	210	--	<0.2 U	--	--	0.6	--	--	3.8	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	17	--	--	32	--	--	40	--
COBALT	50	2,600	70	--	9.3	--	--	17	--	--	21	--
COPPER	31.6	20,000	9,400	--	490	--	--	1,900	--	--	11,000	--
IRON	20,000	160,000	160,000	--	10,000	--	--	23,000	--	--	27,000	--
LEAD	35.8	400	400	--	3.7	--	--	330	--	--	2,800	--
LITHIUM	NA	4,200	470	--	4.7	--	--	7.5	--	--	15	--
MAGNESIUM	NA	1,000,000	NA	--	7,800	--	--	12,000	--	--	16,000	--
MANGANESE	460	25,000	5,500	--	230	--	--	410	--	--	480	--
MERCURY	0.18	160	33	--	<0.07 U	--	--	0.1	--	--	0.2	--
NICKEL	22.7	40,000	4,600	--	24	--	--	46	--	--	53	--
SELENIUM	11	2,600	1,200	--	<0.2 U	--	--	<2 U	--	--	0.5	--
SILVER	1	2,500	1,200	--	2.2	--	--	5.5	--	--	28	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	65	--	--	150	--	--	330	--
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	--	<0.14 U	--	--	<0.18 U	--	--	<0.22 U	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1221	NA	NA	20	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1232	NA	NA	17	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1242	NA	NA	23	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1248	NA	NA	23	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1254	NA	NA	3.5	<0.12 U	<0.14 U	<0.13 U	0.088 J	<0.35 U	<0.29 U	<0.29 U	0.14 J	<0.29 U
AROCLOR-1260	NA	NA	24	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1262	NA	NA	NA	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
AROCLOR-1268	NA	NA	NA	<0.12 U	<0.14 U	<0.13 U	<0.28 UJ	<0.35 U	<0.29 U	<0.29 U	<0.44 UJ	<0.29 U
TOTAL PCBS	0.06	1.00	NA	<0.12 U	<0.14 U	<0.13 U	0.088 J	<0.35 U	<0.29 U	<0.29 U	0.14 J	<0.29 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	<0.26 U	--	--	<0.72 U	--	--	<0.74 U
PYRENE	0.195	29,000	5,400	--	--	<0.26 U	--	--	<0.72 U	--	--	<0.74 U
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	80.90%	70.80%	77.80%	70.70%	56.90%	69.80%	67.80%	45.30%	67.90%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD79		CHLL-SD80			CHLL-SD81		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD-79 1'-3' DUP	CHLL-SD-79 3'-4.75'	CHLL-SD-80 0'-6''	CHLL-SD-80 1'-3'	CHLL-SD-80 3'-4.75'	CHLL-SD-81 0'-6''	CHLL-SD-81 1'-3'	CHLL-SD-81 3'-4'
Collection Date				5/28/2015	5/28/2015	5/27/2015	5/27/2015	5/27/2015	5/27/2015	5/27/2015	5/27/2015
Sample Depth Interval (feet)				1-3	3-4.75	0-0.5	1-3	3-4.75	0-0.5	1-3	3-4
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	15,000	--	--	10,000	--	--
ANTIMONY	NA	180	94	--	--	11	--	--	12	--	--
ARSENIC	9.8	7.6	68	--	--	14	--	--	6.8	--	--
BARIUM	20	37,000	46,000	--	--	660	--	--	800	--	--
BERYLLIUM	NA	410	470	--	--	<2 U	--	--	1.3	--	--
CADMIUM	1	550	210	--	--	2.7	--	--	2.9	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	40	--	--	23	--	--
COBALT	50	2,600	70	--	--	19	--	--	13	--	--
COPPER	31.6	20,000	9,400	--	--	6,700	--	--	9,900	--	--
IRON	20,000	160,000	160,000	--	--	23,000	--	--	18,000	--	--
LEAD	35.8	400	400	--	--	1,800	--	--	1,700	--	--
LITHIUM	NA	4,200	470	--	--	15	--	--	21	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	12,000	--	--	11,000	--	--
MANGANESE	460	25,000	5,500	--	--	450	--	--	340	--	--
MERCURY	0.18	160	33	--	--	0.3	--	--	0.3	--	--
NICKEL	22.7	40,000	4,600	--	--	51	--	--	33	--	--
SELENIUM	11	2,600	1,200	--	--	<2 U	--	--	0.6	--	--
SILVER	1	2,500	1,200	--	--	16	--	--	20	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	310	--	--	290	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	<0.27 U	--	--	<0.18 U	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1221	NA	NA	20	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1232	NA	NA	17	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1242	NA	NA	23	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1248	NA	NA	23	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1254	NA	NA	3.5	<0.30 U	<0.30 U	0.21 J	<0.30 U	<0.30 U	0.13 J	<0.29 U	<0.29 U
AROCLOR-1260	NA	NA	24	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1262	NA	NA	NA	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
AROCLOR-1268	NA	NA	NA	<0.30 U	<0.30 U	<0.55 UJ	<0.30 U	<0.30 U	<0.36 UJ	<0.29 U	<0.29 U
TOTAL PCBS	0.06	1.00	NA	<0.30 U	<0.30 U	0.21 J	<0.30 U	<0.30 U	0.13 J	<0.29 U	<0.29 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	<0.74 U	--	--	<0.75 U	--	--	<0.72 U	--
PYRENE	0.195	29,000	5,400	<0.74 U	--	--	<0.75 U	--	--	<0.72 U	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	67.80%	67.20%	36.50%	66.60%	67.40%	55.80%	69.50%	68.60%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD82			CHLL-SD101			CHLL-SD102		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD-82-0"-6"	CHLL-SD-82 1'-3'	CHLL-SD-82 3'-4.75'	CHLL-SD-101-0-6"	CHLL-SD-101-1-3'	CHLL-SD-101-3-4.75'	CHLL-SD-102-0-6"	CHLL-SD-102-1-3'	CHLL-SD-102-3-5'
Collection Date				5/28/2015	5/28/2015	5/28/2015	7/12/2015	7/12/2015	7/12/2015	7/12/2015	7/12/2015	7/12/2015
Sample Depth Interval (feet)				0-0.5	1-3	3-4.75	0-0.5	1-3	3-4.75	0-0.5	1-3	3-5
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	10,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	0.9	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	2.2	--	--	--	--	--	--	--	--
BARIUM	20	37,000	46,000	160	--	--	--	--	--	--	--	--
BERYLLIUM	NA	410	470	0.7	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	0.4	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	15	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	7.4	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	110	--	--	--	--	--	--	--	--
IRON	20,000	160,000	160,000	15,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	85	--	--	--	--	--	160	--	--
LITHIUM	NA	4,200	470	13	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	5,300	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	230	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	<0.1 UJ	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	18	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	0.3	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	1.5	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	210	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.43 U	<0.41 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1221	NA	NA	20	<0.43 U	<0.41 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1232	NA	NA	17	<0.43 U	<0.41 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1242	NA	NA	23	<0.43 U	<0.41 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1248	NA	NA	23	<0.43 U	0.40 J	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1254	NA	NA	3.5	<0.43 U	0.50 J	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1260	NA	NA	24	<0.43 U	<320 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
AROCLOR-1262	NA	NA	NA	<0.43 U	<320 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	0.92	<0.29 U
AROCLOR-1268	NA	NA	NA	<0.43 U	<320 UJ	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	<0.31 U	<0.29 U
TOTAL PCBS	0.06	1.00	NA	<0.43 U	0.90 J	<0.12 U	<0.49 U	<0.30 U	<0.29 U	<0.36 U	0.92	<0.29 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	75	60	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	420	370	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	46.50%	63.30%	81.30%	40.60%	66.80%	68.10%	56.10%	65.30%	68.60%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD105				CHLL-SD106			CHLL-SD107	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD-105-0-1'	CHLL-SD-105-1-3'	CHLL-SD-105-1-3' Duplicate	CHLL-SD-105-3-6'	CHLL-SD-106-0-1'	CHLL-SD-106-1-3'	CHLL-SD-106-3-5'	CHLL-SD-107-0-1'	CHLL-SD-107-1-3'
Collection Date				6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017
Sample Depth Interval (feet)				0-1	1-3	1-3	3-6	0-1	1-3	3-5	0-1	1-3
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	2.2	1.3	1.4	1.5	10	6.7	5.5	1.2	0.9
BARIUM	20	37,000	46,000	--	--	--	--	--	--	--	--	--
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	--	--	--	--	--	--	--	--	--
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	110	59	57	37	1,100	590	41	4.3	5.8
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.350 U	<0.150 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1221	NA	NA	20	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.350 U	<0.150 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1232	NA	NA	17	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.350 U	<0.150 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1242	NA	NA	23	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.350 U	<0.180 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1248	NA	NA	23	<0.120 U	<0.130 U	<0.120 U	<0.120 U	0.33	<0.150 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1254	NA	NA	3.5	<0.120 U	<0.130 U	<0.120 U	<0.120 U	0.38	0.18	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1260	NA	NA	24	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.190 U	<0.150 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1262	NA	NA	NA	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.190 U	<0.150 U	<0.150 U	<0.160 U	<0.130 U
AROCLOR-1268	NA	NA	NA	<0.120 U	<0.130 U	<0.120 U	<0.120 U	<0.190 U	<0.150 U	<0.150 U	<0.160 U	<0.130 U
TOTAL PCBS	0.06	1.00	NA	<0.120 U	<0.130 U	<0.120 U	<0.120 U	0.71	0.18	<0.150 U	<0.160 U	<0.130 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	81.5%	78.7%	81.7%	84.6%	51.9%	66.9%	67.9%	63.2%	74.4%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			CHLL-SD107	CHLL-SD108				CHLL-SD109		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	CHLL-SD-107-3-6'	CHLL-SD-108-0-1'	CHLL-SD-108-0-1' Duplicate	CHLL-SD-108-1-3'	CHLL-SD-108-3-4'	CHLL-SD-109-0-1'	CHLL-SD-109-1-3'	CHLL-SD-109-3-6'
Collection Date				6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017	6/06/2017
Sample Depth Interval (feet)				3-6	0-1	0-1	1-3	3-4	0-1	1-3	3-6
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	0.8	11	12	3.9	6.2	0.8	0.9	1.2
BARIUM	20	37,000	46,000	--	--	--	--	--	--	--	--
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	--	--	--	--	--	--	--	--
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	3.7	4,500	3,700	12	16	2.8	3.8	4.7
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.120 U	<0.240 U	<0.350 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1221	NA	NA	20	<0.120 U	<0.240 U	<0.350 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1232	NA	NA	17	<0.120 U	<0.240 U	<0.350 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1242	NA	NA	23	<0.120 U	<0.240 U	<0.350 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1248	NA	NA	23	<0.120 U	0.23	0.33	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1254	NA	NA	3.5	<0.120 U	0.26	0.44	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1260	NA	NA	24	<0.120 U	<0.200 U	<0.200 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1262	NA	NA	NA	<0.120 U	<0.200 U	<0.200 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
AROCLOR-1268	NA	NA	NA	<0.120 U	<0.200 U	<0.200 U	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
TOTAL PCBS	0.06	1.00	NA	<0.120 U	0.49	0.77	<0.140 U	<0.160 U	<0.120 U	<0.120 U	<0.120 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	82.8%	49.7%	48.8%	73.5%	64.2%	81.2%	81.0%	80.4%
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:

a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.

b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.

c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations

Red TEXT indicate values exceed the USEPA ESL

Bold borders indicate values exceed MDEQ Part 201 RDCC

Shaded values exceed the USEPA RML

J = estimated result

mg/kg = milligrams per kilogram

g/ml = grams per milliliter

NA = criteria is not available

U = not detected above the reported sample reporting limit

-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-1		LLV-3		LLV-4		LLV-5	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-1A	LLV-1B	LLV-3A	LLV-3B	LLV-4A	LLV-4B	LLV-5A	LLV-5B
Collection Date				7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.5 UJ	3.1	<2.6 UJ	<2.6 UJ	<2.5 UJ	<2.4 UJ	<2.6 UJ	<2.4 UJ
ARSENIC	9.8	7.6	68	2.6	2.1	6.5	7	1.5	1.7	1.7	1.4
BARIUM	20	37,000	46,000	20	21	12	10	21	19	17	16
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	1,900	7,100	810	1,200	770	1,500	6,400	1,300
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	23	40	19	14	16	8.3	20	20
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1221	NA	NA	20	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1232	NA	NA	17	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1242	NA	NA	23	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1248	NA	NA	23	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1254	NA	NA	3.5	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1260	NA	NA	24	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
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Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-6		LLV-7				LLV-8	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-6A	LLV-6B	LLV-7A	LLV-7A DUP	LLV-7B	LLV-7B DUP	LLV-8A	LLV-8B
Collection Date				7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	0-0.25	1-1.5	1-1.5	0-0.25	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.6 UJ	<2.3 UJ	<2.5 UJ	<2.4 UJ	<2.6 UJ	<2.4 UJ	<2.2 UJ	<2.3 UJ
ARSENIC	9.8	7.6	68	2.4	2.3	3	3.1	1.8	1.6	<1.1 UJ	<1.2 UJ
BARIUM	20	37,000	46,000	14	11	16	14	11	9.3	7.2	7.4
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	2,600	3,900	1,000	1,100	560	470	1,500	1,000
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	35	13	27	25	22	18	11	14
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1221	NA	NA	20	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1232	NA	NA	17	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1242	NA	NA	23	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1248	NA	NA	23	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1254	NA	NA	3.5	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1260	NA	NA	24	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.10 U	<0.094 U	<0.10 U	<0.098 U	<0.11 U	<0.10 U	<0.095 U	<0.097 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

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Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-9		LLV-10		LLV-11		LLV-13	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-9A	LLV-9B	LLV-10A	LLV-10B	LLV-11A	LLV-11B	LLV-13A	LLV-13A DUP
Collection Date				7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	0-0.25
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.1 UJ	<2.4 UJ	<2.5 UJ	<2.3 UJ	<2.2 UJ	<2.4 UJ	<2.5 UJ	<2.6 UJ
ARSENIC	9.8	7.6	68	1.6	1.6	2.2	<1.2 UJ	2.7	1.3	1.7	1.7
BARIUM	20	37,000	46,000	11	12	14	8	43	41	54	49
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	1,700	2,200	910	970	800	780	300	440
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	59	36	74	18	79	16	23	20
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1221	NA	NA	20	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1232	NA	NA	17	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1242	NA	NA	23	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1248	NA	NA	23	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1254	NA	NA	3.5	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1260	NA	NA	24	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.092 U	<0.097 U	<0.10 U	<0.096 U	<0.092 U	<0.094 U	<0.10 U	<0.11 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-13		LLV-14		LLV-15			
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-13B	LLV-13B DUP	LLV-14A	LLV-14B	LLV-15A	LLV-15A DUP	LLV-15B	LLV-15B DUP
Collection Date				7/30/2007	7/30/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007
Sample Depth Interval (feet)				1-1.5	1-1.5	0-0.25	1-1.5	0-0.25	0-0.25	1-1.5	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.6 UJ	<2.6 UJ	<2.4 UJ	<2.3 UJ	<2.3 UJ	<2.3 UJ	<2.4 UJ	<2.4 UJ
ARSENIC	9.8	7.6	68	3.2	2	<1.2 UJ	11	<1.2 UJ	<1.2 UJ	2.6	3.1
BARIUM	20	37,000	46,000	100	41	19	110	15	13	21	22
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	1,100	300	72	1,500	130	130	590	550
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	49	20	4.5	470	2.5	2.4	20	27
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1221	NA	NA	20	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1232	NA	NA	17	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1242	NA	NA	23	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1248	NA	NA	23	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1254	NA	NA	3.5	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1260	NA	NA	24	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.10 U	<0.11 U	<0.097 U	<0.10 U	<0.096 U	<0.094 U	<0.10 U	<0.099 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-16		LLV-17		LLV-18		LLV-19	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-16A	LLV-16B	LLV-17A	LLV-17B	LLV-18A	LLV-18B	LLV-19A	LLV-19B
Collection Date				7/31/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.3 UJ	<2.5 UJ	<2.4 UJ	<2.5 UJ	<2.2 UJ	<2.4 UJ	<2.3 UJ	<2.7 UJ
ARSENIC	9.8	7.6	68	<1.2 UJ	1.6	2.2	2.2	2	1.2	2.8	2.1
BARIUM	20	37,000	46,000	14	23	21	40	17	20	19	25
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	160	380	390	440	290	930	440	930
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	2.7	16	10	49	9.4	13	4.7	39
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1221	NA	NA	20	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1232	NA	NA	17	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1242	NA	NA	23	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1248	NA	NA	23	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1254	NA	NA	3.5	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1260	NA	NA	24	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.095 U	<0.096 U	<0.10 U	<0.10 U	<0.087 U	<0.098 U	<0.095 U	<0.10 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
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Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-20		LLV-21		LLV-22			
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-20A	LLV-20B	LLV-21A	LLV-21B	LLV-22A	LLV-22A DUP	LLV-22B	LLV-22B DUP
Collection Date				7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/30/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	0-0.25	1-1.5	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.5 UJ	<2.4 UJ	<2.3 UJ	<2.5 UJ	<2.3 UJ	<2.4 UJ	<2.4 UJ	<2.3 UJ
ARSENIC	9.8	7.6	68	3.9	1.5	10	5	2.3	1.9	1.7	1.6
BARIUM	20	37,000	46,000	28	23	57	49	22	21	22	18
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	410	850	3,200	760	580	720	580	570
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	9.7	4	10	9.6	8.5	3.9	2.5	2.2
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1221	NA	NA	20	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1232	NA	NA	17	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1242	NA	NA	23	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1248	NA	NA	23	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1254	NA	NA	3.5	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1260	NA	NA	24	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.10 U	<0.099 U	<0.10 U	<0.10 U	<0.099 U	<0.10 U	<0.095 U	<0.098 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-23		LLV-24		LLV-26		LLV-27	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-23A	LLV-23B	LLV-24A	LLV-24B	LLV-26A	LLV-26B	LLV-27A	LLV-27B
Collection Date				7/30/2007	7/30/2007	7/30/2007	7/30/2007	7/31/2007	7/31/2007	7/31/2007	7/31/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2.6 UJ	<2.2 UJ	<2.5 UJ	<2.3 UJ	<1.9 U	<2 U	<2 U	<2 U
ARSENIC	9.8	7.6	68	5	1.6	4.6	2.1	3.0	1.4	14	1.5
BARIUM	20	37,000	46,000	66	27	80	23	28	18	110	25
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	630	880	750	570	60	1,100	2,000	730
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	15	3	5.6	3.7	6.5	29.0	110.0	43.0
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1221	NA	NA	20	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1232	NA	NA	17	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1242	NA	NA	23	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1248	NA	NA	23	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1254	NA	NA	3.5	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1260	NA	NA	24	<0.10 U	<0.10 U	<0.11 U	<0.10 U	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.10 U	<0.10 U	<0.11 U	<0.10 U	<0.7 U	<0.7 U	<0.7 U	<0.7 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-28		LLV-29		LLV-30		LLV-31	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-28A	LLV-28B	LLV-29A	LLV-29B	LLV-30A	LLV-30B	LLV-31A	LLV-31B
Collection Date				7/30/2007	7/30/2007	7/31/2007	7/31/2007	7/30/2007	7/30/2007	7/31/2007	7/31/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5	0-0.25	1-1.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<1.9 U	<2.2 U	<2 U	<2.1 U	<2 U	<2.2 U	<2 U	<2.1 U
ARSENIC	9.8	7.6	68	1.6	1.5	2.6	1.1	1.5	1.4	1.1	1.3
BARIUM	20	37,000	46,000	16	19	34	23	16	12	18	16
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	33	170	92	820	570	580	200	490
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	1.6	3.0	7.6	2.6	10.0	2.6	3.8	2.3
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	20	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	17	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	23	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	23	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	3.5	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	24	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.7 U	<0.7 U	<0.7 U	<0.7 U	<0.7 U	<0.7 U	<0.7 U	<0.7 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLV-32		LLV-MP3	LLV-MP4	LLV-MP5	LLV-MP6	LLV-MP7	LLV-MP8
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLV-32A	LLV-32B	LLV-MP3-01	LLV-MP4-01	LLV-MP5-01	LLV-MP6-01	LLV-MP7-01	LLV-MP8-01
Collection Date				7/30/2007	7/30/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007
Sample Depth Interval (feet)				0-0.25	1-1.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	<2 U	<2.3	<4.7 UJ	<5.2 UJ	<4.8 UJ	<6.2 UJ	<5 UJ	<7.4 UJ
ARSENIC	9.8	7.6	68	<0.99 U	2.4	<2.3 UJ	<2.6 UJ	<2.4 UJ	<3.1 UJ	<2.5 UJ	4.1
BARIUM	20	37,000	46,000	17	120	29	25	170	120	32	150
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	--	--	--	--	--	--	--	--
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	140	1,100	200	340	310	330	100	540
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--	--
LEAD	35.8	400	400	0.9	4.2	40	21	130	110	11	68
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	--	--	--	--	--	--	--	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	--	--	--	--	--	--	--	--
SILVER	1	2,500	1,200	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1221	NA	NA	20	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1232	NA	NA	17	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1242	NA	NA	23	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1248	NA	NA	23	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1254	NA	NA	3.5	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1260	NA	NA	24	--	--	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--
TOTAL PCBS	0.06	1.00	NA	<0.7 U	<0.7 U	<0.10 U	<0.11 U	<0.10 U	<0.13 U	<0.11 U	<0.15 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	--	--	--	--	--	--
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			SD-03		TL07-01				TL07-02		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	SD-03	SD-03D	TL07-01 0-6	TL07-01 6-24	TL07-01 24-43	TL07-01 43-64	TL07-02 0-28	TL07-02 28-48	TL07-02 48-64
Collection Date				10/12/2011	10/12/2011	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007
Sample Depth Interval (feet)				0-0.25	0-0.25	0-0.5	0.5-2	2-3.58	3.58-5.33	0-2.33	2.33-4	4-5.33
Inorganics - Metals (mg/kg)												
ALUMINUM	NA	50,000	230,000	2,060	2,140	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	0.27 J	0.34 J	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	<1 UJ	1.4 J	1	1.3	2.7	49	2.3	38	8.2
BARIUM	20	37,000	46,000	20.7 J	26.5	22	52	220	130,000	310	84,000	4,100
BERYLLIUM	NA	410	470	0.28 J	0.33 J	--	--	--	--	--	--	--
CADMIUM	1	550	210	0.51 J	0.56	<0.2 U	<0.2 U	0.33	85	0.27	38	3.6
CALCIUM	NA	NA	NA	1,630	1,600	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	8.4	7.9	9.5	11	15	200	13	130	38
COBALT	50	2,600	70	3.2 J	2.8 J	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	164	97.7	140	430	670	120,000	370	78,000	8,600
IRON	20,000	160,000	160,000	8,430	9,320	--	--	--	--	--	--	--
LEAD	35.8	400	400	7.6	8.5	9.2	110	150	75,000	100	44,000	2,500
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	1,910	1,680	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	101	107	--	--	--	--	--	--	--
MERCURY	0.18	160	33	<0.1 U	<0.1 U	<0.05 U	<0.05 U	0.09	1.5	<0.05 U	1.7	0.3
NICKEL	22.7	40,000	4,600	8.6	7.3	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	<3.5 U	<3.5 U	<0.2 U	<0.2 U	0.27	20	0.27	18	2.6
SILVER	1	2,500	1,200	<1 U	<1 U	0.22	1.3	1.2	450	0.87	290	39
SODIUM	NA	NA	NA	313 J	145 J	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	15.6	18.4	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	28.4	26	23	40	80	6,800	54	3,500	430
Inorganics - Cyanide (mg/kg)												
CYANIDE	0.0001	12	69	<0.5 UJ	<0.5 UJ	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)												
AROCLOR-1016	NA	NA	12	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<5.20 U	<0.18 U	<3.10 U	<0.14 U
AROCLOR-1221	NA	NA	20	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<5.20 U	<0.18 U	<3.10 U	<0.14 U
AROCLOR-1232	NA	NA	17	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<5.20 U	<0.18 U	<3.10 U	<0.14 U
AROCLOR-1242	NA	NA	23	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	5.10	<0.18 U	3.00	<0.14 U
AROCLOR-1248	NA	NA	23	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<5.20 U	<0.18 U	<3.10 U	0.13
AROCLOR-1254	NA	NA	3.5	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	3.80	<0.18 U	2.80	0.15
AROCLOR-1260	NA	NA	24	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<1.00 U	<0.18 U	<0.97 U	<0.14 U
AROCLOR-1262	NA	NA	NA	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<1.00 U	<0.18 U	<0.97 U	<0.14 U
AROCLOR-1268	NA	NA	NA	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	<1.00 U	<0.18 U	<0.97 U	<0.14 U
TOTAL PCBS	0.06	1.00	NA	<0.048 U	<0.045 U	<0.13 U	<0.12 U	<0.17 U	8.90	<0.18 U	5.80	0.28
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)												
ACETOPHENONE	NA	47,000	23,000	0.13 J	<0.17 U	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	<0.17 UJ	<0.17 UJ	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	<0.17 U	<0.17 UJ	--	--	--	--	--	--	--
DRO/ORO (mg/kg)												
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--	--
Other												
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	--	--	78.80%	80.20%	58.30%	50.10%	55.60%	51.80%	69.30%
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			TL07-03			TL07-04			
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	TL07-03 0-21	TL07-03 21-41	TL07-03 41-70	TL07-04 0-6	TL07-04 6-26	TL07-04 36-60	TL07-04 60-95
Collection Date				8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007
Sample Depth Interval (feet)				0-1.75	1.75-3.42	3.42-5.83	0-0.5	0.5-2.17	3-5	5-7.92
Inorganics - Metals (mg/kg)										
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	1.6	55	5.6	26	5.7	5.8	4.7
BARIUM	20	37,000	46,000	150	99,000	620	12,000	410	88	71
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--
CADMIUM	1	550	210	<0.2 U	37	0.59	<0.2 U	0.6	<0.2 U	<0.2 U
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	8.7	120	44	51	45	44	44
COBALT	50	2,600	70	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	160	120,000	3,500	28,000	3,900	3,400	3,000
IRON	20,000	160,000	160,000	--	--	--	--	--	--	--
LEAD	35.8	400	400	19	42,000	300	7,800	400	39	23
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--
MERCURY	0.18	160	33	<0.05 U	2.6	0.12	0.6	0.13	0.07	0.07
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	<0.2 U	23	0.31	5	0.4	<0.2 U	<0.2 U
SILVER	1	2,500	1,200	0.31	380	9.3	80	11	6.1	5.4
SODIUM	NA	NA	NA	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	38	4,100	140	1,000	180	110	110
Inorganics - Cyanide (mg/kg)										
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)										
AROCLOR-1016	NA	NA	12	<0.14 U	<3.20 U	<0.13 U	<0.47 UJ	<0.14 U	<0.14 U	<0.14 U
AROCLOR-1221	NA	NA	20	<0.14 U	<3.20 U	<0.13 U	<0.47 UJ	<0.14 U	<0.14 U	<0.14 U
AROCLOR-1232	NA	NA	17	<0.14 U	<3.20 U	<0.13 U	<0.47 UJ	<0.14 U	<0.14 U	<0.14 U
AROCLOR-1242	NA	NA	23	<0.14 U	3.20	<0.13 U	0.46	<0.14 U	<0.14 U	<0.14 U
AROCLOR-1248	NA	NA	23	<0.14 U	<3.20 U	<0.13 U	<0.47 UJ	<0.14 U	<0.14 U	<0.14 U
AROCLOR-1254	NA	NA	3.5	<0.14 U	2.90	<0.13 U	0.45	0.18	<0.14 U	<0.14 U
AROCLOR-1260	NA	NA	24	<0.14 U	<1.00 U	<0.13 U	<0.21 U	<0.14 U	<0.14 U	<0.14 U
AROCLOR-1262	NA	NA	NA	<0.14 U	<1.00 U	<0.13 U	<0.21 U	<0.14 U	<0.14 U	0.05
AROCLOR-1268	NA	NA	NA	<0.14 U	<1.00 U	<0.13 U	<0.21 U	<0.14 U	<0.14 U	<0.14 U
TOTAL PCBS	0.06	1.00	NA	<0.14 U	6.10	<0.13 U	0.91	0.18	<0.14 U	0.05
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)										
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--
DRO/ORO (mg/kg)										
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--
Other										
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	69.80%	49.40%	74.30%	47.20%	69.90%	72.10%	73.70%
Moisture Content	NA	NA	NA	--	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			TL07-13					TL08-080
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	TL07-13 0-6	TL07-13 6-26	TL07-13 26-40	TL07-13 40-66	TL07-13 40-66 D	TL08-080
Collection Date				8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/28/2008
Sample Depth Interval (feet)				0-0.5	0.5-2.17	2.17-3.33	3.33-5.5	3.33-5.5	--
Inorganics - Metals (mg/kg)									
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	7.5	8.7	18	3.8	2.6	--
BARIUM	20	37,000	46,000	15	19	21	17	15	--
BERYLLIUM	NA	410	470	--	--	--	--	--	--
CADMIUM	1	550	210	<0.2 U	0.22	0.27	<0.2 U	<0.2 U	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	28	27	32	20	18	--
COBALT	50	2,600	70	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	800	1,300	2,400	7,100	5,800	--
IRON	20,000	160,000	160,000	--	--	--	--	--	--
LEAD	35.8	400	400	34	70	72	10	7.8	--
LITHIUM	NA	4,200	470	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--
MERCURY	0.18	160	33	<0.05 U	0.09	0.12	0.07	<0.05 U	--
NICKEL	22.7	40,000	4,600	--	--	--	--	--	--
SELENIUM	11	2,600	1,200	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.21	--
SILVER	1	2,500	1,200	3.3	4	8.1	8	6.9	--
SODIUM	NA	NA	NA	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--
ZINC	121	170,000	70,000	98	120	120	78	65	--
Inorganics - Cyanide (mg/kg)									
CYANIDE	0.0001	12	69	--	--	--	--	--	--
Organics - PCBs (mg/kg)									
AROCLOR-1016	NA	NA	12	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1221	NA	NA	20	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1232	NA	NA	17	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1242	NA	NA	23	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1248	NA	NA	23	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1254	NA	NA	3.5	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1260	NA	NA	24	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1262	NA	NA	NA	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
AROCLOR-1268	NA	NA	NA	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	--
TOTAL PCBS	0.06	1.00	NA	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.13 U	<0.97 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--
Organics - SVOCs (mg/kg)									
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--
DRO/ORO (mg/kg)									
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--
Other									
Total Organic Carbon (mg/kg)	NA	NA	NA	--	--	--	--	--	--
% Solids	NA	NA	NA	--	--	--	--	--	--
Bulk Density (g/ml)	NA	NA	NA	76.90%	78.30%	74.40%	76.60%	75.20%	
Moisture Content	NA	NA	NA	--	--	--	--	--	--

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample
-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-SD01 (Area B)				LLRA-SD02 (Area B)		LLRA-SD03 (Area B)	
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLRA-SD01-00-05	LLRA-SD01-05-10	LLRA-SD01-10-30	LLRA-SD01-30-50	LLRA-SD02-00-05	LLRA-SD02-05-10	LLRA-SD03-00-05	LLRA-SD03-05-10
Collection Date				10/04/2017	10/04/2017	10/04/2017	10/04/2017	10/05/2017	10/05/2017	10/06/2017	10/06/2017
Sample Depth Interval (feet)				0-0.5	0.5-1.0	1.0-3.0	3.0-5.0	0-0.5	0.5-1.0	0-0.5	0.5-1.0
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	6.2	7.9	5.3	3.8	8.4	6.0	3.7	<2.9 U
BARIUM	20	37,000	46,000	612	835	151	41.4	2,970	123	1,160	78.4
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	1.2	2.2	<0.61 U	<0.62	4.9	<0.27 U	3.7	<0.72 U
CALCIUM	NA	NA	NA	--	--	--	--	33,100	--	--	--
CHROMIUM	43.4	790,000	NA	29.7	42.2	37.5	28.3	38.9	34.2	79.4	57.9
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	2,420	3,540	1,300	1,390	9,730	1,960	8,500	2,460
IRON	20,000	160,000	160,000	20,500	26,800	23,300	18,400	18,600	20,200	59,900	37,200
LEAD	35.8	400	400	660	1,040	203	79.4	2,710	91.4	1,750	25.7
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	0.079	0.14	0.052	0.037	0.31	0.093	0.35	0.091
NICKEL	22.7	40,000	4,600	31.3	48.1	40.8	27.7	56.5	49.6	80.7	56.7
SELENIUM	11	2,600	1,200	<2.7 U	<2.9 U	6.1	<2.5 U	1.4	<11 U	<17 U	<14 U
SILVER	1	2,500	1,200	8.5	13.7	5.8	4.4	32.8	5.6	33.0	6.5
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	149	259	278	143	528	121	419	103
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.040 U	<0.046 U	<0.041 U	<0.037 U	<0.052 U	<0.045 U	<0.055 U	<0.047 U
AROCLOR-1221	NA	NA	20	<0.040 U	<0.046 U	<0.041 U	<0.037 U	<0.052 U	<0.045 U	<0.055 U	<0.047 U
AROCLOR-1232	NA	NA	17	<0.040 U	<0.046 U	<0.041 U	<0.037 U	<0.052 U	<0.045 U	<0.055 U	<0.047 U
AROCLOR-1242	NA	NA	23	<0.040 U	<0.046 U	<0.041 U	<0.037 U	<0.052 U	<0.045 U	<0.055 U	<0.047 U
AROCLOR-1248	NA	NA	23	0.0409	0.0431 J	<0.041 U	<0.037 U	0.103	<0.045 U	0.0682	<0.047 U
AROCLOR-1254	NA	NA	3.5	0.0534	0.0730	<0.041 U	<0.037 U	0.202	<0.045 U	<0.055 U	<0.047 U
AROCLOR-1260	NA	NA	24	<0.040 U	<0.046 U	0.126	<0.037 U	<0.052 U	<0.045 U	<0.055 U	<0.047 U
AROCLOR-1262	NA	NA	NA	<0.040 U	<0.046 U	<0.041	<0.037 U	0.0814	<0.045 U	0.0366 J	<0.047 U
AROCLOR-1268	NA	NA	NA	<0.040 U	<0.046 U	<0.041	<0.037 U	<0.052 U	<0.045 U	<0.055 U	<0.047 U
TOTAL PCBS	0.06	1.00	NA	0.0943	0.1161 J	0.126	<0.037 U	0.3864	<0.045 U	0.1048	<0.047 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	6,650	11,000	2,420	456	11,400	1,970	15,400	5,540
% Solids	NA	NA	NA	73.8%	69.7%	77.9%	82.2%	64.7%	73.2%	56.6%	70.4%
Bulk Density (g/ml)	NA	NA	NA	1.0	1.2	1.2	1.3	--	1.4	--	1.1
Moisture Content	NA	NA	NA	35.5%	43.4%	28.3%	21.6%	54.6%	36.5%	76.6%	42.1%

Notes:

a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.

b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.

c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations

Red TEXT indicate values exceed the USEPA ESL

Bold borders indicate values exceed MDEQ Part 201 RDCC

Shaded values exceed the USEPA RML

J = estimated result

mg/kg = milligrams per kilogram

g/ml = grams per milliliter

NA = criteria is not available

U = not detected above the reported sample reporting limit

-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-SD03 (Area B)		LLRA-SD04 (Area B)			LLRA-SD05 (Area B)		
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLRA-SD03-10-30	LLRA-SD03-30-50	LLRA-SD04-00-05	LLRA-SD04-05-10	LLRA-SD04-10-30	LLRA-SD05-00-05	LLRA-FD1 (LLRA-SD05-00-05 Duplicate)	LLRA-SD05-05-10
Collection Date				10/06/2017	10/06/2017	10/05/2017	10/05/2017	10/05/2017	10/04/2017	10/04/2017	10/04/2017
Sample Depth Interval (feet)				1.0-3.0	3.0-5.0	0-0.5	0.5-1.0	1.0-3.0	0-0.5	0-0.5	0.5-1.0
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	<3.1 U	<2.6 U	4.0	4.9	4.0	4.7	4.4	5.0
BARIUM	20	37,000	46,000	99.9	117	61.0	91.0	42.2	27.4	27.1	28.3
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	<0.76 U	<0.64 U	<0.27 U	<0.61 U	<0.60 U	<0.65 U	<0.63 U	<0.62 U
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	57.1	38.0	26.6	33.3	32.1	26.5	24.3	29.4
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	2,830	1,090	1,670	1,670	1,520	536	562	932
IRON	20,000	160,000	160,000	36,600	25,700	13,600	19,600	19,600	20,100	17,600	21,500
LEAD	35.8	400	400	36.1	191	61.5	138	22.1	12.1	11.9	27.0
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	0.086	0.060	0.053	<0.033 U	<0.033 U	0.043	<0.039 U	<0.037 U
NICKEL	22.7	40,000	4,600	59.7	39.8	35.0	38.1	35.2	25.9	24.6	28.8
SELENIUM	11	2,600	1,200	<15 U	<13 U	<1.1 U	<2.4 U	<2.4 U	<2.6 U	<2.5 U	<2.5 U
SILVER	1	2,500	1,200	6.4	5.2	4.7	5.7	4.7	2.2	1.7	3.6
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	119	238	109	230	93.9	67.2	65.6	84.5
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1221	NA	NA	20	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1232	NA	NA	17	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1242	NA	NA	23	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1248	NA	NA	23	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1254	NA	NA	3.5	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1260	NA	NA	24	<0.048 U	<0.042 U	0.0131 J	0.0819	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1262	NA	NA	NA	<0.048 U	0.0763	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
AROCLOR-1268	NA	NA	NA	<0.048 U	<0.042 U	<0.041 U	<0.042 U	<0.042 U	<0.040 U	<0.042 U	<0.037 U
TOTAL PCBS	0.06	1.00	NA	<0.048 U	0.0763	0.0131 J	0.0819	<0.042 U	<0.040 U	<0.042 U	<0.037 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	6,000	3,410	810	649	445	598	--	523
% Solids	NA	NA	NA	68.8%	76.1%	81.3%	79.1%	79.6%	77.9%	77.5%	80.4%
Bulk Density (g/ml)	NA	NA	NA	--	1.4	--	1.0	1.1	0.81	--	0.97
Moisture Content	NA	NA	NA	45.4%	31.4%	23.0%	26.5%	25.7%	28.3%	29.1%	24.4%

Notes:

a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.

b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.

c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations

Red TEXT indicate values exceed the USEPA ESL

Bold borders indicate values exceed MDEQ Part 201 RDCC

Shaded values exceed the USEPA RML

J = estimated result

mg/kg = milligrams per kilogram

g/ml = grams per milliliter

NA = criteria is not available

U = not detected above the reported sample reporting limit

-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-SD05 (Area B)		LLRA-SD06 (Area B)					LLRA-SD07 (Area B)
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLRA-SD05-10-30	LLRA-SD05-30-50	LLRA-SD06-00-05	LLRA-SD06-05-10	LLRA-FD2 (LLRA-SD06-05-10 Duplicate)	LLRA-SD06-10-30	LLRA-SD06-30-50	LLRA-SD07-00-05
Collection Date				10/04/2017	10/04/2017	10/05/2017	10/05/2017	10/05/2017	10/05/2017	10/05/2017	10/05/2017
Sample Depth Interval (feet)				1.0-3.0	3.0-5.0	0-0.5	0.5-1.0	0.5-1.0	1.0-3.0	3.0-5.0	0.5-1.0
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	2.9	3.2	5.2	5.4	4.8	6.1	5.0	3.5
BARIUM	20	37,000	46,000	<24 U	27.5	<25 U	<25 U	<25 U	43.8	41.8	<23 U
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	<0.59 U	<0.56 U	<0.62 U	<0.62 U	<0.61 U	<0.64 U	<0.63 U	<0.57 U
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	26.9	31.2	25.7	26.9	25.2	32.0	35.8	29.8
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	821	1,290	513	570	547	904	1,060	591
IRON	20,000	160,000	160,000	17,200	19,400	17,900	18,900	16,400	19,800	19,700	20,400
LEAD	35.8	400	400	16.0	16.0	<12 U	<12 U	<12 U	79.0	25.6	<11 U
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	<0.037 U	<0.036 U	<0.038 U	<0.038 U	<0.039 U	<0.039 U	0.097	<0.036 U
NICKEL	22.7	40,000	4,600	25.9	32.4	28.9	30.9	28.5	38.7	41.9	32.2
SELENIUM	11	2,600	1,200	<2.4 U	<2.3 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.5 U	<2.3 U
SILVER	1	2,500	1,200	7.4	6.9	<3.1 U	3.7	<3.1 U	4.3	4.0	3.7
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	81.0	95.8	72.8	81.7	71.1	98.0	102	71.5
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1221	NA	NA	20	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1232	NA	NA	17	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1242	NA	NA	23	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1248	NA	NA	23	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1254	NA	NA	3.5	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1260	NA	NA	24	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1262	NA	NA	NA	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
AROCLOR-1268	NA	NA	NA	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
TOTAL PCBS	0.06	1.00	NA	<0.039 U	<0.039 U	<0.039 U	<0.042 U	<0.042 U	<0.044 U	<0.039 U	<0.039 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	393	276	1,350	814	--	2,130	1,590	377
% Solids	NA	NA	NA	84.7%	84.3%	76.8%	78.5%	79.1%	75.6%	77.8%	86.2%
Bulk Density (g/ml)	NA	NA	NA	0.95	1.0	1.2	1.0	--	1.1	1.0	1.0
Moisture Content	NA	NA	NA	18.1%	18.7%	30.3%	27.4%	26.5%	32.3%	28.5%	16.0%

Notes:

a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.

b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.

c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations

Red TEXT indicate values exceed the USEPA ESL

Bold borders indicate values exceed MDEQ Part 201 RDCC

Shaded values exceed the USEPA RML

J = estimated result

mg/kg = milligrams per kilogram

g/ml = grams per milliliter

NA = criteria is not available

U = not detected above the reported sample reporting limit

-- = analysis not conducted

Table 2: Discrete Sediment Sample Results
Lake Linden Recreation Area

Station Name	Screening Levels			LLRA-SD07 (Area B)			LLRA-SD08 (Area A)	LLRA-SD09 (Area A Waste Layer Sample)		LLRA-SD10 (Area A)	LLRA-SD11 (Area A)
Sample ID	USEPA ESL[a]	MDEQ RDCC for Soil[b]	USEPA RML for Soil[c]	LLRA-SD07-05-10	LLRA-SD07-10-30	LLRA-FD3 (LLRA-SD07-10-30 Duplicate)	LLRA-SD08-92-102	LLRA-SD09-41-46	LLRA-SD09-46-56	LLRA-SD10-92-102	LLRA-SD11-23-33
Collection Date				10/05/2017	10/05/2017	10/05/2017	10/03/2017	10/04/2017	10/04/2017	10/06/2017	10/06/2017
Sample Depth Interval (feet)				0.5-1.0	1.0-3.0	1.0-3.0	9.2-10.2	4.1-4.6	4.6-5.6	9.2-10.2	2.3-3.3
Inorganics - Metals (mg/kg)											
ALUMINUM	NA	50,000	230,000	--	--	--	--	--	--	--	--
ANTIMONY	NA	180	94	--	--	--	--	--	--	--	--
ARSENIC	9.8	7.6	68	3.7	3.2	3.2	5.3	20.5	6.5	<2.8 U	<2.7 U
BARIUM	20	37,000	46,000	<25 U	<23 U	<24 U	254	29,600	386	351	92.9
BERYLLIUM	NA	410	470	--	--	--	--	--	--	--	--
CADMIUM	1	550	210	<0.63 U	<0.59 U	<0.59 U	<0.69 U	25.6	0.69	0.78	<0.68 U
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	43.4	790,000	NA	30.6	23.2	23.3	40.8	45.7	51.6	53.7	41.9
COBALT	50	2,600	70	--	--	--	--	--	--	--	--
COPPER	31.6	20,000	9,400	592	522	609	4,010	35,000	3,330	3,610	2,910
IRON	20,000	160,000	160,000	20,400	15,900	15,200	24,600	29,200	31,500	34,400	29,600
LEAD	35.8	400	400	<13 U	<12 U	<12 U	318	15,300	284	244	75.4
LITHIUM	NA	4,200	470	--	--	--	--	--	--	--	--
MAGNESIUM	NA	1,000,000	NA	--	--	--	--	--	--	--	--
MANGANESE	460	25,000	5,500	--	--	--	--	--	--	--	--
MERCURY	0.18	160	33	<0.041 U	<0.037 U	<0.036 U	0.14	1.8	0.11	0.092	0.095
NICKEL	22.7	40,000	4,600	32.9	26.6	27.9	49.3	77.3	52.6	57.1	42.1
SELENIUM	11	2,600	1,200	<2.5 U	<2.3 U	<2.4 U	<2.8 U	<16 U	<2.7 U	<14 U	<14 U
SILVER	1	2,500	1,200	3.6	3.0	4.1	10.0	154	8.3	10.7	6.1
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	NA	750	1,200	--	--	--	--	--	--	--	--
ZINC	121	170,000	70,000	76.0	66.7	69.7	150	1,390	157	149	99.3
Inorganics - Cyanide (mg/kg)											
CYANIDE	0.0001	12	69	--	--	--	--	--	--	--	--
Organics - PCBs (mg/kg)											
AROCLOR-1016	NA	NA	12	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	<0.041 U	<0.042 U	<0.044 U
AROCLOR-1221	NA	NA	20	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	<0.041 U	<0.042 U	<0.044 U
AROCLOR-1232	NA	NA	17	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	<0.041 U	<0.042 U	<0.044 U
AROCLOR-1242	NA	NA	23	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	<0.041 U	<0.042 U	<0.044 U
AROCLOR-1248	NA	NA	23	<0.043 U	<0.041 U	<0.040 U	<0.043 U	0.812	<0.041 U	<0.042 U	<0.044 U
AROCLOR-1254	NA	NA	3.5	<0.043 U	<0.041 U	<0.040 U	<0.043 U	0.572	0.0356 J	0.0585	<0.044 U
AROCLOR-1260	NA	NA	24	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	<0.041 U	<0.042 U	<0.044 U
AROCLOR-1262	NA	NA	NA	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	0.0088 J	0.013 J	<0.044 U
AROCLOR-1268	NA	NA	NA	<0.043 U	<0.041 U	<0.040 U	<0.043 U	<0.054 U	<0.041 U	<0.042 U	<0.044 U
TOTAL PCBS	0.06	1.00	NA	<0.043 U	<0.041 U	<0.040 U	<0.043 U	1.384	0.0444 J	0.0715 J	<0.044 U
TOTAL PCB CONGENERS	NA	1.00	NA	--	--	--	--	--	--	--	--
Organics - SVOCs (mg/kg)											
ACETOPHENONE	NA	47,000	23,000	--	--	--	--	--	--	--	--
FLUORANTHENE	0.423	46,000	7,200	--	--	--	--	--	--	--	--
PYRENE	0.195	29,000	5,400	--	--	--	--	--	--	--	--
DRO/ORO (mg/kg)											
Diesel Range Organics (C10-C20)	NA	NA	NA	--	--	--	--	--	--	--	--
Oil Range Organics (C20-C34)	NA	NA	NA	--	--	--	--	--	--	--	--
Other											
Total Organic Carbon (mg/kg)	NA	NA	NA	<130	233	--	2,670	--	4,100	7,590	6,490
% Solids	NA	NA	NA	76.7%	81.4%	82.2%	71.7%	60.3%	72.2%	72.1%	73.1%
Bulk Density (g/ml)	NA	NA	NA	0.91	1.1	--	1.5	--	0.88	1.4	0.80
Moisture Content	NA	NA	NA	30.4%	22.8%	21.6%	39.6%	65.8%	38.5%	38.7%	36.8%

Notes:
a USEPA Region 4 Ecological Screening Levels (ESLs) are provided in this table.
b MDEQ Part 201 Residential Direct Contact Cleanup Criteria (RDCC) for Response Activity dated December 30, 2013.
c USEPA Removal Management Levels for Chemicals (RMLs), dated May 2016. USEPA RML uses 10^{-4} risk level for carcinogens or a Hazard Quotient (HQ) of 3 for non-carcinogens.

Grey TEXT indicates non-detected concentrations
Red TEXT indicate values exceed the USEPA ESL
Bold borders indicate values exceed MDEQ Part 201 RDCC
Shaded values exceed the USEPA RML

J = estimated result
mg/kg = milligrams per kilogram
g/ml = grams per milliliter
NA = criteria is not available
U = not detected above the reported sample reporting limit
-- = analysis not conducted

Table 3: Discrete Sediment Particle Size Results
Lake Linden Recreation Area

Station Name	LLRA-SD01 (Area B)	LLRA-SD01 (Area B)	LLRA-SD01 (Area B)	LLRA-SD01 (Area B)	LLRA-SD02 (Area B)	LLRA-SD02 (Area B)	LLRA-SD03 (Area B)
Sample ID	**LLRA-SD01-00-05**	**LLRA-SD01-05-10**	**LLRA-SD01-10-30**	**LLRA-SD01-30-50**	**LLRA-SD02-00-05**	**LLRA-SD02-05-10**	**LLRA-SD03-00-05**
Collection Date	**10/04/2017**	**10/04/2017**	**10/04/2017**	**10/04/2017**	**10/05/2017**	**10/05/2017**	**10/06/2017**
Sample Depth Interval (feet)	**0-0.5**	**0.5-1.0**	**1.0-3.0**	**3.0-5.0**	**0-0.5**	**0.5-1.0**	**0-0.5**
Particle Size							
3-inch Sieve	100%	100%	100%	100%	--	--	--
1.5-inch Sieve	100%	100%	100%	100%	--	--	--
0.75-inch Sieve	100%	100%	100%	100%	--	--	--
0.375-inch Sieve	100%	100%	100%	99.4%	--	--	--
No. 4 Sieve (4.75 mm)	100%	100%	100%	99.3%	--	--	--
No. 8 Sieve (2.36 mm)	99.2%	99.9%	99.4%	91.9%	--	--	--
No. 10 Sieve (2.00 mm)	99.0%	99.7%	99.1%	89.1%	--	--	--
No. 16 Sieve (1.18 mm)	98.1%	99.6%	98.8%	81.7%	--	--	--
No. 30 Sieve (0.60 mm)	95.2%	99.1%	97.9%	68.5%	--	--	--
No. 50 Sieve (0.30 mm)	76.3%	94.3%	95.0%	53.4%	--	--	--
No. 100 Sieve (0.15 mm)	45.3%	65.3%	73.4%	35.1%	--	--	--
No. 200 Sieve (0.075 mm)	25.2%	42.4%	29.8%	22.4%	--	--	--
0.030 mm (Hydrometer)	18%	26%	15%	7.0%	--	--	--
0.005 mm (Hydrometer)	6.0%	10%	4.8%	0.90%	--	--	--
0.0015 mm (Hydrometer)	5.0%	8.0%	4.8%	0.90%	--	--	--
% Gravel	0.040%	0.0%	0.0%	0.75%	--	--	--
% Sand	74.7%	57.6%	70.2%	76.9%	--	--	--
% Silt, Clay, Colloids	25.2%	42.4%	29.8%	22.4%	--	--	--

Notes:
mm = millimeter
-- = no analysis was conducted due to reduced volume of material in core

Table 3: Discrete Sediment Particle Size Results
Lake Linden Recreation Area

Station Name	LLRA-SD03 (Area B)	LLRA-SD03 (Area B)	LLRA-SD03 (Area B)	LLRA-SD04 (Area B)	LLRA-SD04 (Area B)	LLRA-SD04 (Area B)
Sample ID	LLRA-SD03-05-10	LLRA-SD03-10-30	LLRA-SD03-30-50	LLRA-SD04-00-05	LLRA-SD04-05-10	LLRA-SD04-10-30
Collection Date	10/06/2017	10/06/2017	10/06/2017	10/05/2017	10/05/2017	10/05/2017
Sample Depth Interval (feet)	0.5-1.0	1.0-3.0	3.0-5.0	0-0.5	0.5-1.0	1.0-3.0
Particle Size						
3-inch Sieve	100%	--	100%	100%	100%	100%
1.5-inch Sieve	100%	--	100%	100%	100%	100%
0.75-inch Sieve	100%	--	100%	100%	100%	100%
0.375-inch Sieve	100%	--	100%	100%	100%	100%
No. 4 Sieve (4.75 mm)	100%	--	100%	100%	100%	100%
No. 8 Sieve (2.36 mm)	100%	--	100%	99.6%	99.8%	99.8%
No. 10 Sieve (2.00 mm)	100%	--	100%	99.2%	99.7%	99.6%
No. 16 Sieve (1.18 mm)	100%	--	100%	97.4%	99.0%	98.8%
No. 30 Sieve (0.60 mm)	100%	--	99.9%	91.9%	96.8%	96.1%
No. 50 Sieve (0.30 mm)	100%	--	99.8%	82.9%	92.6%	88.7%
No. 100 Sieve (0.15 mm)	99.9%	--	83.8%	58.5%	65.4%	71.1%
No. 200 Sieve (0.075 mm)	99.5%	--	32.8%	41.2%	28.0%	47.5%
0.030 mm (Hydrometer)	99%	--	20%	32%	16%	28%
0.005 mm (Hydrometer)	16%	--	5.1%	9.0%	4.0%	4.9%
0.0015 mm (Hydrometer)	7.0%	--	5.1%	5.0%	3.0%	4.9%
% Gravel	0.0%	--	0.0%	0.0%	0.0%	0.0%
% Sand	0.53%	--	67.2%	58.8%	72.0%	52.5%
% Silt, Clay, Colloids	99.5%	--	32.8%	41.2%	28.0%	47.5%

Notes:
mm = millimeter
-- = no analysis was conducted due to reduced volume of material in core

Table 3: Discrete Sediment Particle Size Results
Lake Linden Recreation Area

Station Name	LLRA-SD05 (Area B)		LLRA-SD05 (Area B)	LLRA-SD05 (Area B)	LLRA-SD05 (Area B)	LLRA-SD06 (Area B)
Sample ID	LLRA-SD05-00-05	LLRA-FD1 (LLRA-SD05-00-05 Duplicate)	LLRA-SD05-05-10	LLRA-SD05-10-30	LLRA-SD05-30-50	LLRA-SD06-00-05
Collection Date	10/04/2017	10/04/2017	10/04/2017	10/04/2017	10/04/2017	10/05/2017
Sample Depth Interval (feet)	0-0.5	0-0.5	0.5-1.0	1.0-3.0	3.0-5.0	0-0.5
Particle Size						
3-inch Sieve	100%	--	100%	100%	100%	100%
1.5-inch Sieve	100%	--	100%	100%	100%	100%
0.75-inch Sieve	100%	--	100%	100%	100%	100%
0.375-inch Sieve	100%	--	100%	100%	100%	100%
No. 4 Sieve (4.75 mm)	100%	--	100%	100%	100%	100%
No. 8 Sieve (2.36 mm)	99.9%	--	96%	94.5%	92.7%	100%
No. 10 Sieve (2.00 mm)	99.8%	--	95%	92.0%	89.3%	100%
No. 16 Sieve (1.18 mm)	99.5%	--	90%	83.3%	77.8%	99.9%
No. 30 Sieve (0.60 mm)	98.9%	--	85%	75.7%	71.7%	99.1%
No. 50 Sieve (0.30 mm)	85.5%	--	72%	64.1%	66.2%	91.0%
No. 100 Sieve (0.15 mm)	17.1%	--	29%	36.7%	43.5%	30.4%
No. 200 Sieve (0.075 mm)	3.8%	--	12%	13%	19.5%	6.4%
0.030 mm (Hydrometer)	1.0%	--	3.0%	2.0%	9.0%	1.0%
0.005 mm (Hydrometer)	0.50%	--	0.48%	0.93%	0.89%	1.0%
0.0015 mm (Hydrometer)	0.50%	--	0.48%	0.93%	0.89%	1.0%
% Gravel	0.0%	--	0.0%	0.0%	0.0%	0.0%
% Sand	96.2%	--	88%	87%	80.5%	93.6%
% Silt, Clay, Colloids	3.8%	--	12%	12.8%	19.5%	6.4%

Notes:
mm = millimeter
-- = no analysis was conducted due to reduced volume of material in core

Table 3: Discrete Sediment Particle Size Results
Lake Linden Recreation Area

Station Name	LLRA-SD06 (Area B)		LLRA-SD06 (Area B)	LLRA-SD06 (Area B)	LLRA-SD07 (Area B)	LLRA-SD07 (Area B)
Sample ID	LLRA-SD06-05-10	LLRA-FD2 (LLRA-SD06-05-10 Duplicate)	LLRA-SD06-10-30	LLRA-SD06-30-50	LLRA-SD07-00-05	LLRA-SD07-05-10
Collection Date	10/05/2017	10/05/2017	10/05/2017	10/05/2017	10/05/2017	10/05/2017
Sample Depth Interval (feet)	0.5-1.0	0.5-1.0	1.0-3.0	3.0-5.0	0.5-1.0	0.5-1.0
Particle Size						
3-inch Sieve	100%	--	100%	100%	100%	100%
1.5-inch Sieve	100%	--	100%	100%	100%	100%
0.75-inch Sieve	100%	--	100%	100%	100%	100%
0.375-inch Sieve	100%	--	100%	100%	100%	100%
No. 4 Sieve (4.75 mm)	100%	--	100%	100%	100%	100%
No. 8 Sieve (2.36 mm)	100%	--	100%	100%	100%	100%
No. 10 Sieve (2.00 mm)	100%	--	100%	100%	100%	100%
No. 16 Sieve (1.18 mm)	99.9%	--	100%	100%	99.9%	99.8%
No. 30 Sieve (0.60 mm)	99.2%	--	99.7%	99.9%	99.4%	98.2%
No. 50 Sieve (0.30 mm)	88.1%	--	86.9%	99.4%	90.4%	81.1%
No. 100 Sieve (0.15 mm)	21.1%	--	51.0%	83.4%	37.6%	22.1%
No. 200 Sieve (0.075 mm)	5.8%	--	27.2%	57.8%	9.2%	6.3%
0.030 mm (Hydrometer)	1.0%	--	13%	53%	6.0%	2.0%
0.005 mm (Hydrometer)	1.0%	--	3.0%	2.9%	2.9%	0.98%
0.0015 mm (Hydrometer)	1.0%	--	3.0%	2.9%	2.9%	0.98%
% Gravel	0.0%	--	0.0%	0.0%	0.0%	0.0%
% Sand	94.2%	--	72.9%	42.3%	90.8%	93.8%
% Silt, Clay, Colloids	5.8%	--	27.2%	57.8%	9.2%	6.3%

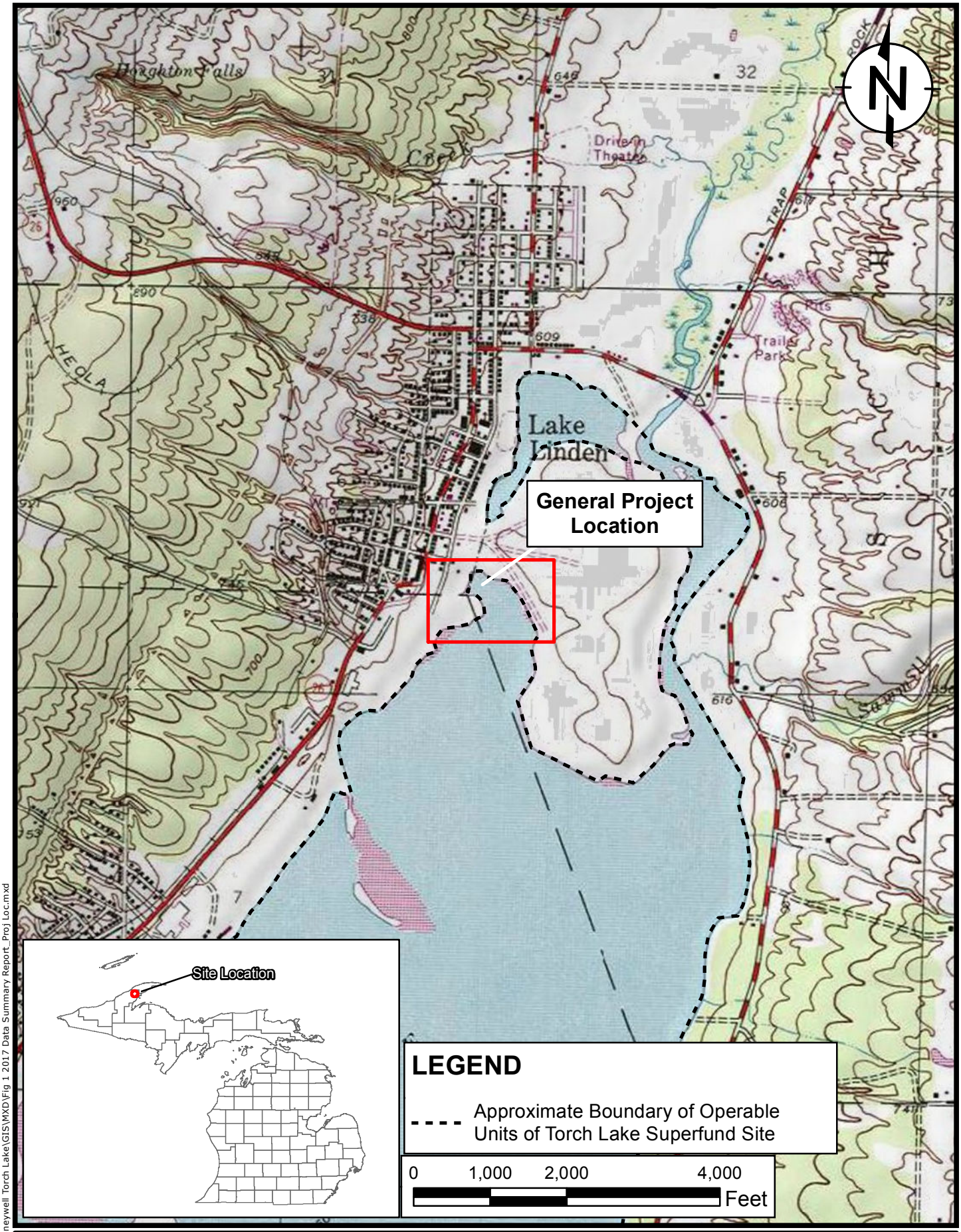
Notes:
mm = millimeter
-- = no analysis was conducted due to reduced volume of material in core

Table 3: Discrete Sediment Particle Size Results
Lake Linden Recreation Area

Station Name	LLRA-SD07 (Area B)		LLRA-SD08 (Area A)	LLRA-SD09 (Area A Waste Layer Sample)	LLRA-SD09 (Area A)	LLRA-SD10 (Area A)	LLRA-SD11 (Area A)
Sample ID	**LLRA-SD07-10-30**	**LLRA-FD3 (LLRA-SD07-10-30 Duplicate)**	**LLRA-SD08-92-102**	**LLRA-SD09-41-46**	**LLRA-SD09-46-56**	**LLRA-SD10-92-102**	**LLRA-SD11-23-33**
Collection Date	**10/05/2017**	**10/05/2017**	**10/03/2017**	**10/04/2017**	**10/04/2017**	**10/06/2017**	**10/06/2017**
Sample Depth Interval (feet)	**1.0-3.0**	**1.0-3.0**	**9.2-10.2**	**4.1-4.6**	**4.6-5.6**	**9.2-10.2**	**2.3-3.3**
Particle Size							
3-inch Sieve	100%	--	100%	--	100%	100%	100%
1.5-inch Sieve	100%	--	100%	--	100%	100%	100%
0.75-inch Sieve	100%	--	100%	--	100%	100%	100%
0.375-inch Sieve	100%	--	100%	--	100%	100%	100%
No. 4 Sieve (4.75 mm)	100%	--	100%	--	100%	100%	100%
No. 8 Sieve (2.36 mm)	100%	--	100%	--	100%	100%	99.7%
No. 10 Sieve (2.00 mm)	100%	--	100%	--	100%	100%	99.5%
No. 16 Sieve (1.18 mm)	99.8%	--	100%	--	100%	100%	99.1%
No. 30 Sieve (0.60 mm)	98.0%	--	100%	--	99.9%	99.9%	98.3%
No. 50 Sieve (0.30 mm)	80.2%	--	99.8%	--	99.6%	99.6%	97.0%
No. 100 Sieve (0.15 mm)	17.7%	--	99.0%	--	98.5%	96.1%	89.2%
No. 200 Sieve (0.075 mm)	9.6%	--	94.9%	--	95.1%	90.6%	75.0%
0.030 mm (Hydrometer)	2.0%	--	81%	--	74.0%	75%	61%
0.005 mm (Hydrometer)	1.0%	--	9.0%	--	10.0%	10%	10%
0.0015 mm (Hydrometer)	1.0%	--	5.0%	--	4.0%	5.0%	7.1%
% Gravel	0.0%	--	0.0%	--	0.0%	0.0%	0.0%
% Sand	90.4%	--	5.1%	--	4.9%	9.4%	25.0%
% Silt, Clay, Colloids	9.6%	--	94.9%	--	95.1%	90.6%	75.0%

Notes:
mm = millimeter
-- = no analysis was conducted due to reduced volume of material in core

Figures



RAMBOLL

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DATE: 12/19/2017

PROJECT LOCATION

LAKE LINDEN RECREATION AREA

LAKE LINDEN, MI

FIGURE

1

PROJECT: 1690001021

M:\Client Project Files\Honeywell Torch Lake\GIS\MXD\Fig 1 2017 Data Summary Report_Proj Loc.mxd

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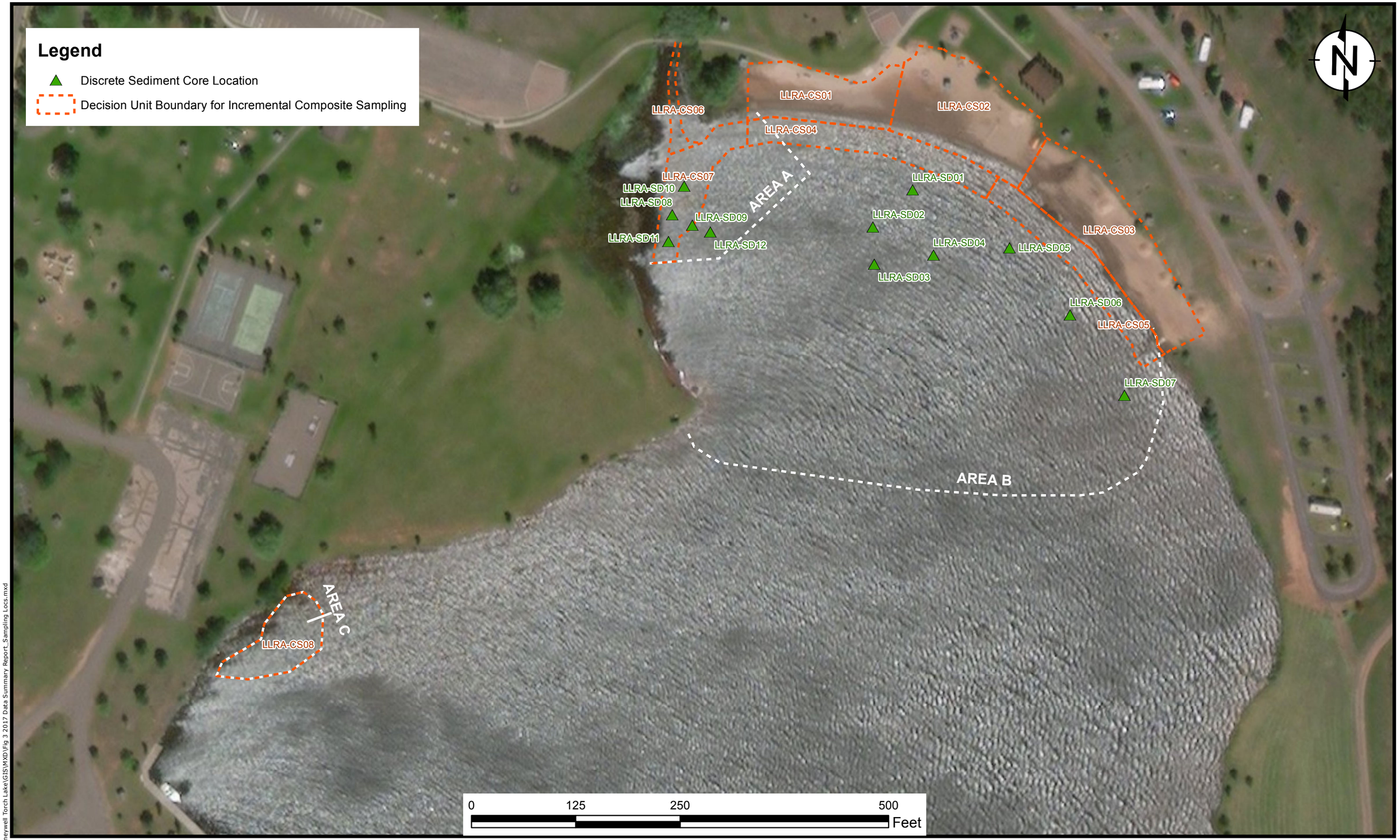
LAKE LINDEN RECREATION AREA SHOWING AREA A, B, AND C

LAKE LINDEN RECREATION AREA
LAKE LINDEN, MI

FIGURE
2

PROJECT: 1690001021

M:\Client Project Files\Honeywell Torch Lake\GIS\MXD\Fig 2 2017 Data Summary Report_Sample Areas.mxd



M:\Client Project Files\Honeywell Torch Lake\GIS\MXD\Fig 3 2017 Data Summary Report_Sampling Locs.mxd

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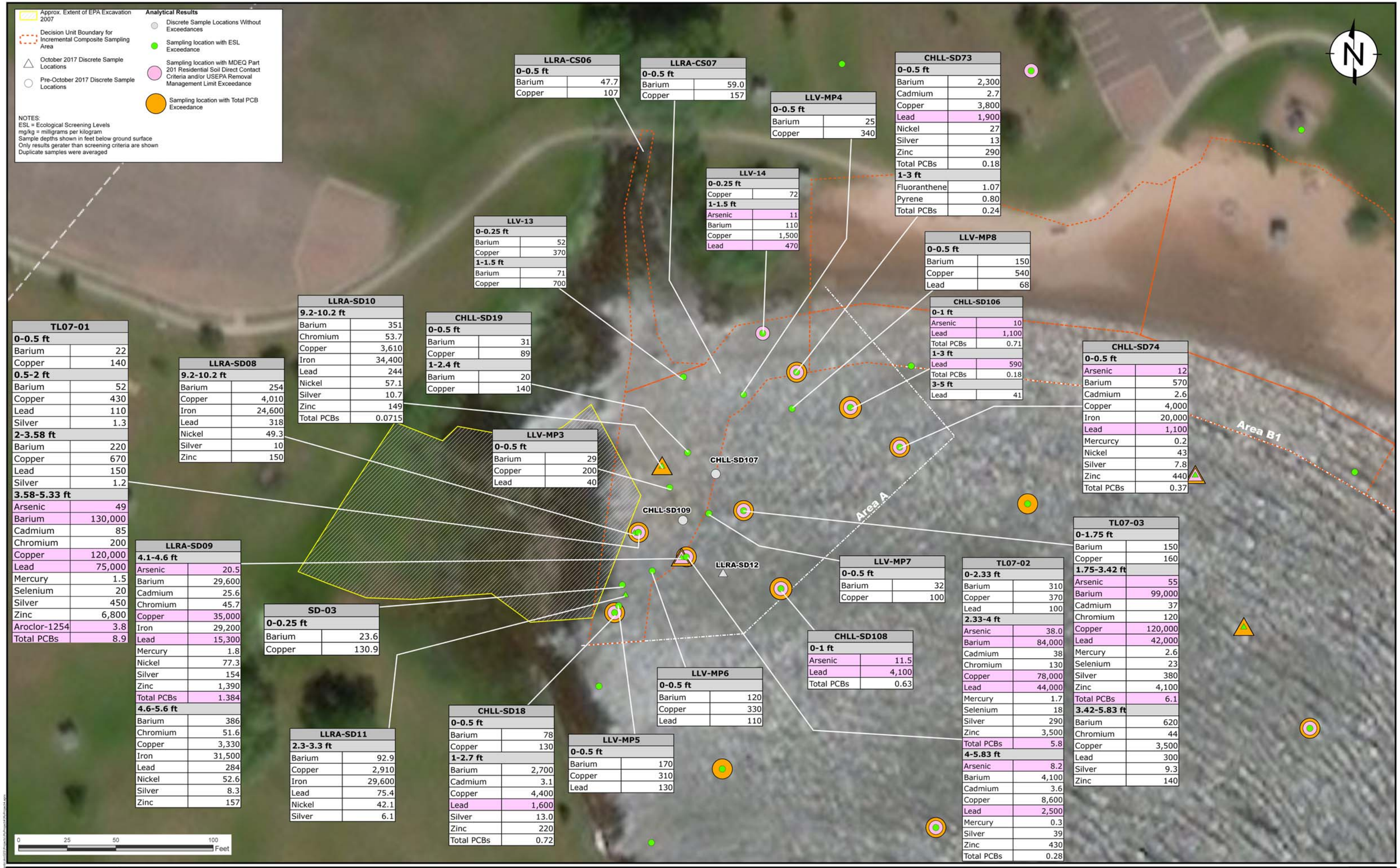
OCTOBER 2017 SOIL AND SEDIMENT CORE LOCATIONS

LAKE LINDEN RECREATION AREA
LAKE LINDEN, MI

FIGURE
3

PROJECT: 1690001021



LLRA-CS06	
0-0.5 ft	
Barium	47.7
Copper	107

LLRA-CS07	
0-0.5 ft	
Barium	59.0
Copper	157

LLV-MP4	
0-0.5 ft	
Barium	25
Copper	340

CHLL-SD73	
0-0.5 ft	
Barium	2,300
Cadmium	2.7
Copper	3,800
Lead	1,900
Nickel	27
Silver	13
Zinc	290
Total PCBs	0.18
1-3 ft	
Fluoranthene	1.07
Pyrene	0.80
Total PCBs	0.24

LLV-14	
0-0.25 ft	
Copper	72
1-1.5 ft	
Arsenic	11
Barium	110
Copper	1,500
Lead	470

LLV-13	
0-0.25 ft	
Barium	52
Copper	370
1-1.5 ft	
Barium	71
Copper	700

LLV-MP8	
0-0.5 ft	
Barium	150
Copper	540
Lead	68

CHLL-SD106	
0-1 ft	
Arsenic	10
Lead	1,100
Total PCBs	0.71
1-3 ft	
Lead	590
Total PCBs	0.18
3-5 ft	
Lead	41

TL07-01	
0-0.5 ft	
Barium	22
Copper	140
0.5-2 ft	
Barium	52
Copper	430
Lead	110
Silver	1.3
2-3.58 ft	
Barium	220
Copper	670
Lead	150
Silver	1.2
3.58-5.33 ft	
Arsenic	49
Barium	130,000
Cadmium	85
Chromium	200
Copper	120,000
Lead	75,000
Mercury	1.5
Selenium	20
Silver	450
Zinc	6,800
Aroclor-1254	3.8
Total PCBs	8.9

LLRA-SD10	
9.2-10.2 ft	
Barium	351
Chromium	53.7
Copper	3,610
Iron	34,400
Lead	244
Nickel	57.1
Silver	10.7
Zinc	149
Total PCBs	0.0715

CHLL-SD19	
0-0.5 ft	
Barium	31
Copper	89
1-2.4 ft	
Barium	20
Copper	140

LLRA-SD08	
9.2-10.2 ft	
Barium	254
Copper	4,010
Iron	24,600
Lead	318
Nickel	49.3
Silver	10
Zinc	150

LLV-MP3	
0-0.5 ft	
Barium	29
Copper	200
Lead	40

CHLL-SD74	
0-0.5 ft	
Arsenic	12
Barium	570
Cadmium	2.6
Copper	4,000
Iron	20,000
Lead	1,100
Mercurcy	0.2
Nickel	43
Silver	7.8
Zinc	440
Total PCBs	0.37

TL07-03	
0-1.75 ft	
Barium	150
Copper	160
1.75-3.42 ft	
Arsenic	55
Barium	99,000
Cadmium	37
Chromium	120
Copper	120,000
Lead	42,000
Mercury	2.6
Selenium	23
Silver	380
Zinc	4,100
Total PCBs	6.1
3.42-5.83 ft	
Barium	620
Chromium	44
Copper	3,500
Lead	300
Silver	9.3
Zinc	140

LLRA-SD09	
4.1-4.6 ft	
Arsenic	20.5
Barium	29,600
Cadmium	25.6
Chromium	45.7
Copper	35,000
Iron	29,200
Lead	15,300
Mercury	1.8
Nickel	77.3
Silver	154
Zinc	1,390
Total PCBs	1.384
4.6-5.6 ft	
Barium	386
Chromium	51.6
Copper	3,330
Iron	31,500
Lead	284
Nickel	52.6
Silver	8.3
Zinc	157

SD-03	
0-0.25 ft	
Barium	23.6
Copper	130.9

LLV-MP7	
0-0.5 ft	
Barium	32
Copper	100

TL07-02	
0-2.33 ft	
Barium	310
Copper	370
Lead	100
2.33-4 ft	
Arsenic	38.0
Barium	84,000
Cadmium	38
Chromium	130
Copper	78,000
Lead	44,000
Mercury	1.7
Selenium	18
Silver	290
Zinc	3,500
Total PCBs	5.8
4-5.83 ft	
Arsenic	8.2
Barium	4,100
Cadmium	3.6
Copper	8,600
Lead	2,500
Mercury	0.3
Silver	39
Zinc	430
Total PCBs	0.28

CHLL-SD108	
0-1 ft	
Arsenic	11.5
Lead	4,100
Total PCBs	0.63

LLV-MP6	
0-0.5 ft	
Barium	120
Copper	330
Lead	110

CHLL-SD18	
0-0.5 ft	
Barium	78
Copper	130
1-2.7 ft	
Barium	2,700
Cadmium	3.1
Copper	4,400
Lead	1,600
Silver	13.0
Zinc	220
Total PCBs	0.72

LLRA-SD11	
2.3-3.3 ft	
Barium	92.9
Copper	2,910
Iron	29,600
Lead	75.4
Nickel	42.1
Silver	6.1

LLV-MP5	
0-0.5 ft	
Barium	170
Copper	310
Lead	130

RAMBOLL

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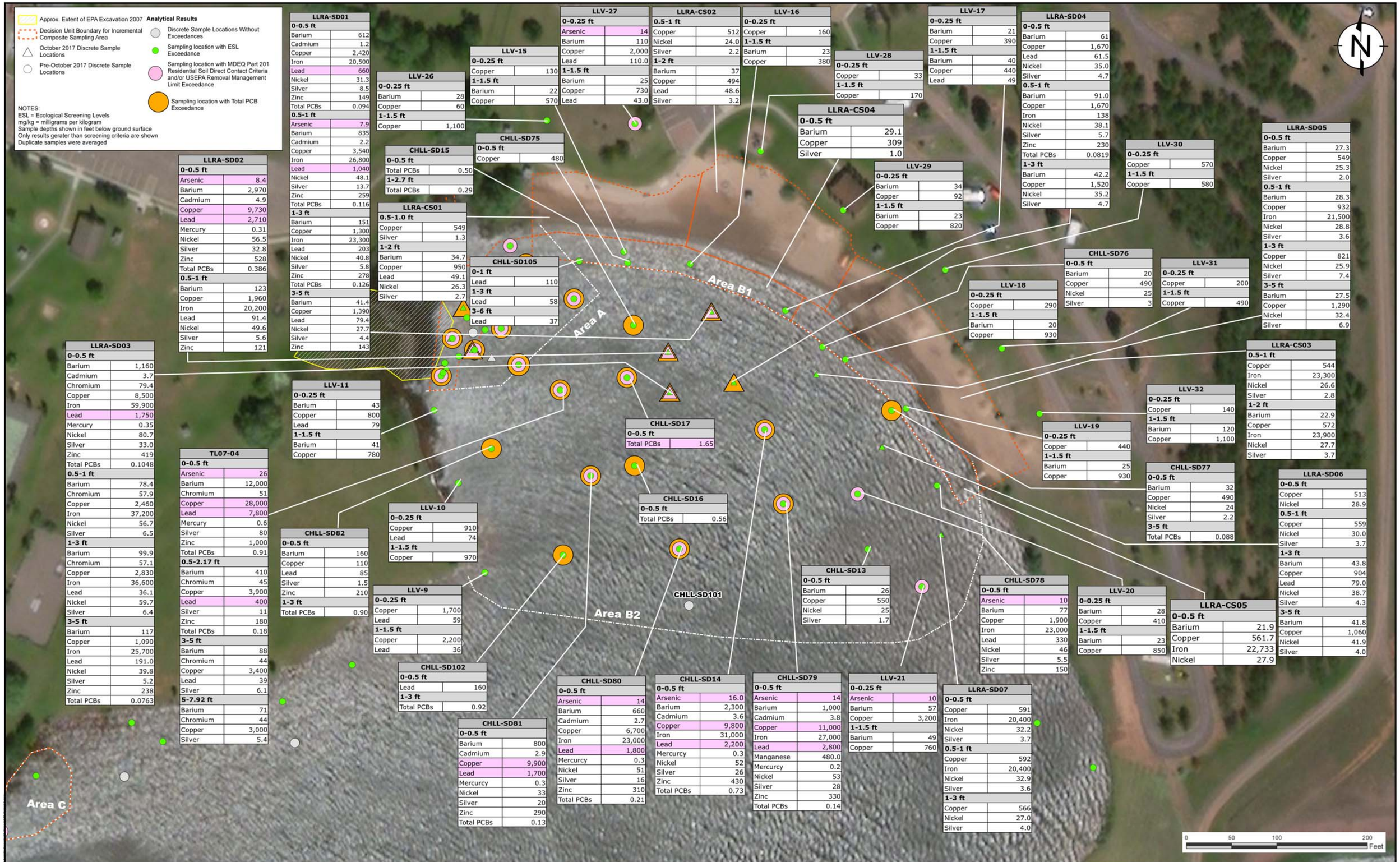
Area A Sample Analytical Results
LAKE LINDEN RECREATION AREA
LAKE LINDEN, MI

FIGURE **4A**

PROJECT: 1690001021



LLRA-SD01	
0-0.5 ft	
Barium	612
Cadmium	1.2
Copper	2,420
Iron	20,500
Lead	660
Nickel	31.3
Silver	8.5
Zinc	149
Total PCBs	0.094
0.5-1 ft	
Arsenic	7.9
Barium	835
Cadmium	2.2
Copper	3,540
Iron	26,800
Lead	1,040
Nickel	48.1
Silver	13.7
Zinc	259
Total PCBs	0.116
1-3 ft	
Barium	151
Copper	1,300
Iron	23,300
Lead	203
Nickel	40.8
Silver	5.8
Zinc	278
Total PCBs	0.126
3-5 ft	
Barium	41.4
Copper	1,390
Lead	79.4
Nickel	27.7
Silver	4.4
Zinc	143

LLRA-SD02	
0-0.5 ft	
Arsenic	8.4
Barium	2,970
Cadmium	4.9
Copper	9,730
Lead	2,710
Mercury	0.31
Nickel	56.5
Silver	32.8
Zinc	528
Total PCBs	0.386
0.5-1 ft	
Barium	123
Copper	1,960
Iron	20,200
Lead	91.4
Nickel	49.6
Silver	5.6
Zinc	121

LLRA-SD03	
0-0.5 ft	
Barium	1,160
Cadmium	3.7
Chromium	79.4
Copper	8,500
Iron	59,900
Lead	1,750
Mercury	0.35
Nickel	80.7
Silver	33.0
Zinc	419
Total PCBs	0.1048
0.5-1 ft	
Barium	78.4
Chromium	57.9
Copper	2,460
Iron	37,200
Nickel	56.7
Silver	6.5
1-3 ft	
Barium	99.9
Chromium	57.1
Copper	2,830
Iron	36,600
Lead	36.1
Nickel	59.7
Silver	6.4
3-5 ft	
Barium	117
Copper	1,090
Iron	25,700
Lead	191.0
Nickel	39.8
Silver	5.2
Zinc	238
Total PCBs	0.0763

TL07-04	
0-0.5 ft	
Arsenic	26
Barium	12,000
Chromium	51
Copper	28,000
Lead	7,800
Mercury	0.6
Silver	80
Zinc	1,000
Total PCBs	0.91
0.5-2.17 ft	
Barium	410
Chromium	45
Copper	3,900
Lead	400
Silver	11
Zinc	180
Total PCBs	0.18
3-5 ft	
Barium	88
Chromium	44
Copper	3,400
Lead	39
Silver	6.1
5-7.92 ft	
Barium	71
Chromium	44
Copper	3,000
Silver	5.4

LLV-11	
0-0.25 ft	
Barium	43
Copper	800
Lead	79
1-1.5 ft	
Barium	41
Copper	780

LLV-26	
0-0.25 ft	
Barium	28
Copper	60
1-1.5 ft	
Copper	1,100

LLV-15	
0-0.25 ft	
Copper	130
1-1.5 ft	
Barium	22
Copper	570

CHLL-SD75	
0-0.5 ft	
Copper	480

CHLL-SD15	
0-0.5 ft	
Total PCBs	0.50
1-2.7 ft	
Total PCBs	0.29

LLRA-CS01	
0.5-1.0 ft	
Copper	549
Silver	1.3
1-2 ft	
Barium	34.7
Copper	950
Lead	49.1
Nickel	26.3
Silver	2.7

CHLL-SD105	
0-1 ft	
Lead	110
1-3 ft	
Lead	58
3-6 ft	
Lead	37

LLV-27	
0-0.25 ft	
Arsenic	14
Barium	110
Copper	2,000
Lead	110.0
1-1.5 ft	
Barium	25
Copper	730
Lead	43.0

LLRA-CS02	
0.5-1 ft	
Copper	512
Nickel	24.0
Silver	2.2
1-2 ft	
Barium	37
Copper	494
Lead	48.6
Silver	3.2

LLV-16	
0-0.25 ft	
Copper	160
1-1.5 ft	
Barium	23
Copper	380

LLV-28	
0-0.25 ft	
Copper	33
1-1.5 ft	
Copper	170

LLRA-CS04	
0-0.5 ft	
Barium	29.1
Copper	309
Silver	1.0

LLV-29	
0-0.25 ft	
Barium	34
Copper	92
1-1.5 ft	
Barium	23
Copper	820

LLV-17	
0-0.25 ft	
Barium	21
Copper	390
1-1.5 ft	
Barium	40
Copper	440
Lead	49

LLRA-SD04	
0-0.5 ft	
Barium	61
Copper	1,670
Lead	61.5
Nickel	35.0
Silver	4.7
0.5-1 ft	
Barium	91.0
Copper	1,670
Iron	138
Nickel	38.1
Silver	5.7
Zinc	230
Total PCBs	0.0819
1-3 ft	
Barium	42.2
Copper	1,520
Nickel	35.2
Silver	4.7

LLV-30	
0-0.25 ft	
Copper	570
1-1.5 ft	
Copper	580

LLRA-SD05	
0-0.5 ft	
Barium	27.3
Copper	549
Nickel	25.3
Silver	2.0
0.5-1 ft	
Barium	28.3
Copper	932
Iron	21,500
Nickel	28.8
Silver	3.6
1-3 ft	
Copper	821
Nickel	25.9
Silver	7.4
3-5 ft	
Barium	27.5
Copper	1,290
Nickel	32.4
Silver	6.9

CHLL-SD76	
0-0.5 ft	
Barium	20
Copper	490
Nickel	25
Silver	3

LLV-31	
0-0.25 ft	
Copper	200
1-1.5 ft	
Copper	490

LLV-18	
0-0.25 ft	
Copper	290
1-1.5 ft	
Barium	20
Copper	930

LLRA-CS03	
0.5-1 ft	
Copper	544
Iron	23,300
Nickel	26.6
Silver	2.8
1-2 ft	
Barium	22.9
Copper	572
Iron	23,900
Nickel	27.7
Silver	3.7

LLV-32	
0-0.25 ft	
Copper	140
1-1.5 ft	
Barium	120
Copper	1,100

CHLL-SD17	
0-0.5 ft	
Total PCBs	1.65

LLV-19	
0-0.25 ft	
Copper	440
1-1.5 ft	
Barium	25
Copper	930

CHLL-SD77	
0-0.5 ft	
Barium	32
Copper	490
Nickel	24
Silver	2.2
3-5 ft	
Total PCBs	0.088

LLRA-SD06	
0-0.5 ft	
Copper	513
Nickel	28.9
0.5-1 ft	
Copper	559
Nickel	30.0
Silver	3.7
1-3 ft	
Barium	43.8
Copper	904
Lead	79.0
Nickel	38.7
Silver	4.3
3-5 ft	
Barium	41.8
Copper	1,060
Nickel	41.9
Silver	4.0

CHLL-SD16	
0-0.5 ft	
Total PCBs	0.56

LLV-10	
0-0.25 ft	
Copper	910
Lead	74
1-1.5 ft	
Copper	970

CHLL-SD82	
0-0.5 ft	
Barium	160
Copper	110
Lead	85
Silver	1.5
Zinc	210
1-3 ft	
Total PCBs	0.90

LLV-9	
0-0.25 ft	
Copper	1,700
Lead	59
1-1.5 ft	
Copper	2,200
Lead	36

CHLL-SD13	
0-0.5 ft	
Barium	26
Copper	550
Nickel	25
Silver	1.7

CHLL-SD78	
0-0.5 ft	
Arsenic	10
Barium	77
Copper	1,900
Iron	23,000
Lead	330
Nickel	46
Silver	5.5
Zinc	150

LLV-20	
0-0.25 ft	
Barium	28
Copper	410
1-1.5 ft	
Barium	23
Copper	850

LLRA-CS05	
0-0.5 ft	
Barium	21.9
Copper	561.7
Iron	22,733
Nickel	27.9

CHLL-SD102	
0-0.5 ft	
Lead	160
1-3 ft	
Total PCBs	0.92

CHLL-SD81	
0-0.5 ft	
Barium	800
Cadmium	2.9
Copper	9,900
Lead	1,700
Mercurcy	0.3
Nickel	33
Silver	20
Zinc	290
Total PCBs	0.13

CHLL-SD80	
0-0.5 ft	
Arsenic	14
Barium	660
Cadmium	2.7
Copper	6,700
Iron	23,000
Lead	1,800
Mercurcy	0.3
Nickel	51
Silver	16
Zinc	310
Total PCBs	0.21

CHLL-SD14	
0-0.5 ft	
Arsenic	16.0
Barium	2,300
Cadmium	3.6
Copper	9,800
Iron	31,000
Lead	2,200
Mercurcy	0.3
Nickel	52
Silver	26
Zinc	430
Total PCBs	0.73

CHLL-SD79	
0-0.5 ft	
Arsenic	14
Barium	1,000
Cadmium	3.8
Copper	11,000
Iron	27,000
Lead	2,800
Manganese	480.0
Mercurcy	0.2
Nickel	53
Silver	28
Zinc	330
Total PCBs	0.14

LLV-21	
0-0.25 ft	
Arsenic	10
Barium	57
Copper	3,200
1-1.5 ft	
Barium	49
Copper	760

LLRA-SD07	
0-0.5 ft	
Copper	591
Iron	20,400
Nickel	32.2
Silver	3.7
0.5-1 ft	
Copper	592
Iron	20,400
Nickel	32.9
Silver	3.6
1-3 ft	
Copper	566
Nickel	27.0
Silver	4.0

CHLL-SD101

RAMBOLL

DRAFTED BY: HJE DATE: 4/11/2018

Area B Sample Analytical Results
LAKE LINDEN RECREATION AREA
LAKE LINDEN, MI

FIGURE
4B

PROJECT: 1690001021

RAMBOLL

DRAFTED BY: HJE | DATE: 4/11/2018

Area C Sample Analytical Results
LAKE LINDEN RECREATION AREA
LAKE LINDEN, MI

FIGURE
4C

PROJECT: 1690001021

RAMBOLL

DRAFTED BY: HJE | DATE: 4/18/2018

Areas A, B and C MDEQ RDCC and USEPA RML Exceedances in Surficial 1 Foot

LAKE LINDEN RECREATION AREA

LAKE LINDEN, MI

FIGURE 5

Appendix A

Photo Logs

Photo 1: View (looking west-southwest) of sediment coring off the barge

Photo 2: View (looking south-southeast) of the drill rig setup during Attempt G at SD-09

Photo 3: View (looking north) of drilling during Attempt A at SD-04

Photo 4: View of the soil sampling apparatus and GPS unit

Photo 5: View (looking northeast) of the CS-03 area after flagging

Photo 6: View (looking north-northwest) of in-water soil sampling activities within the CS-03 area

Photo 7: View of the sediment sampling apparatus with an extender pole attached

Photo 8: View (looking southwest) of hand-push sediment sampling activities

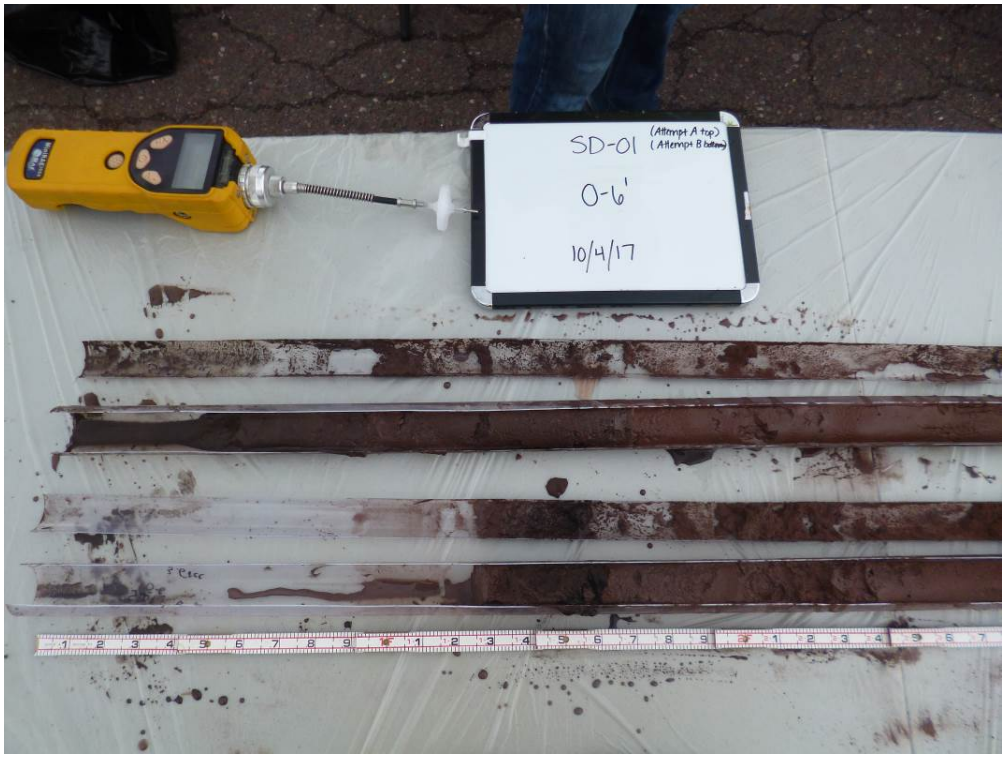


Photo 9: View of intact top portions of Attempt A (top) and Attempt B (bottom) at SD-01 (0-6' cores)

Photo 10: View of intact bottom portions of Attempt A (top) and Attempt B (bottom) at SD-01 (0-6' cores)

Photo 11: View of split full cores of Attempt B (top) and Attempt C (bottom) at SD-02 (0-6' cores)

Photo 12: View of split top portion of Attempt A at SD-03 (0-6' core)

Photo 13: View of split bottom portion of Attempt A at SD-03 (0-6' core)

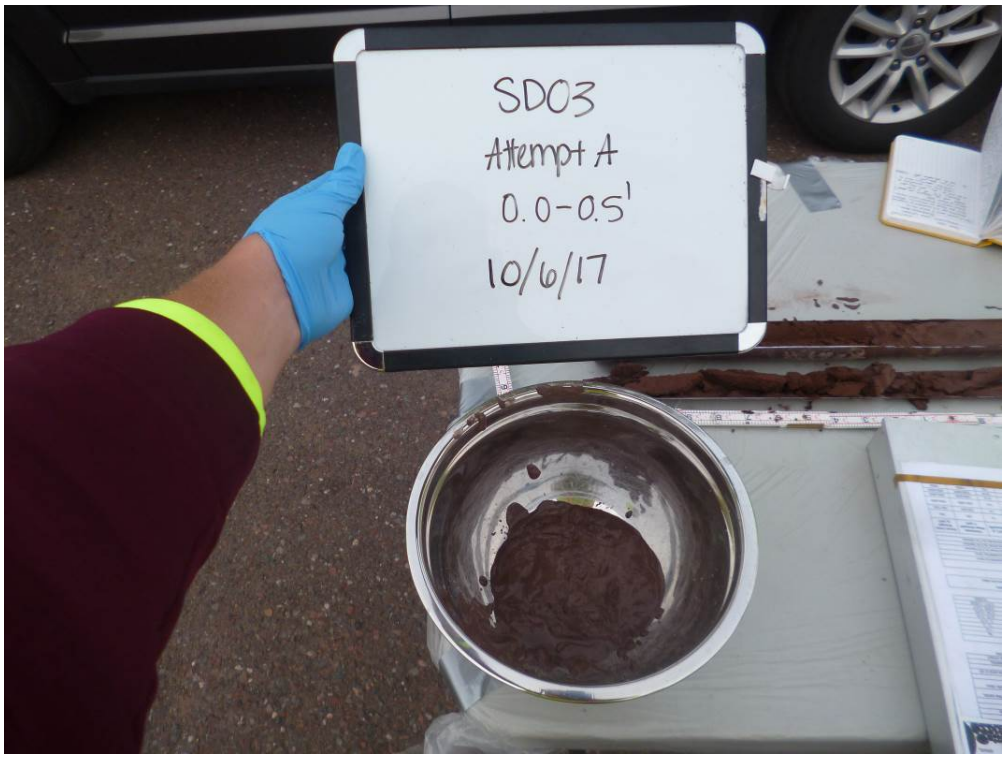


Photo 14: View of discrete sample LLRA-SD03-00-05

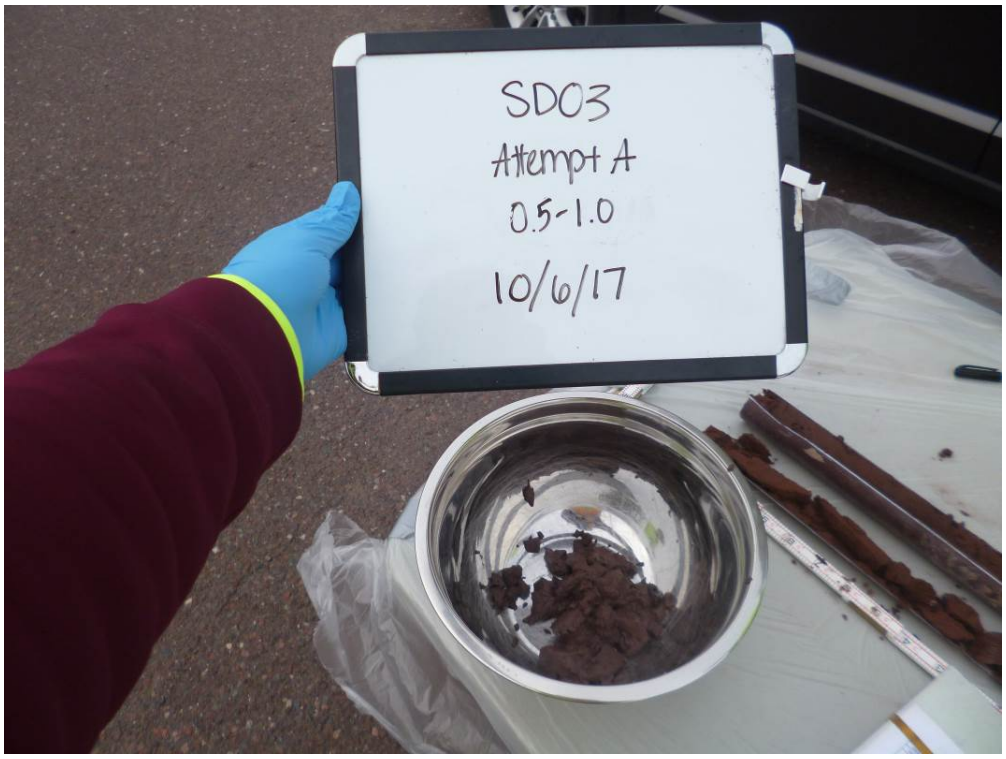


Photo 15: View of discrete sample LLRA-SD03-05-10

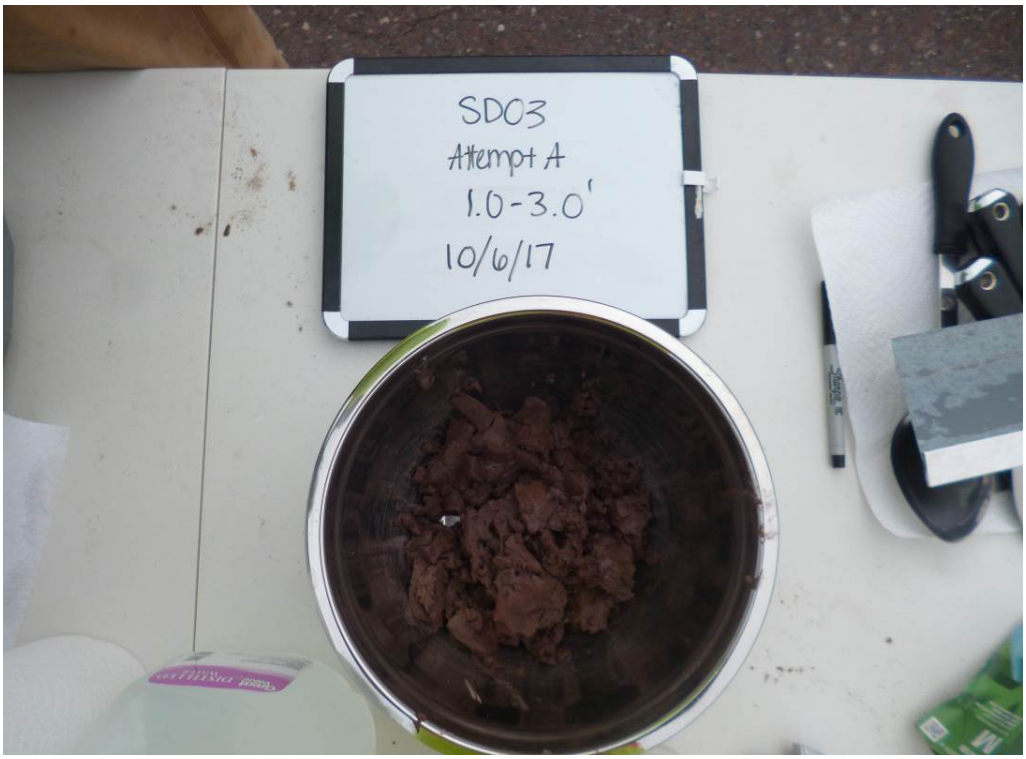


Photo 16: View of discrete sample LLRA-SD03-10-30

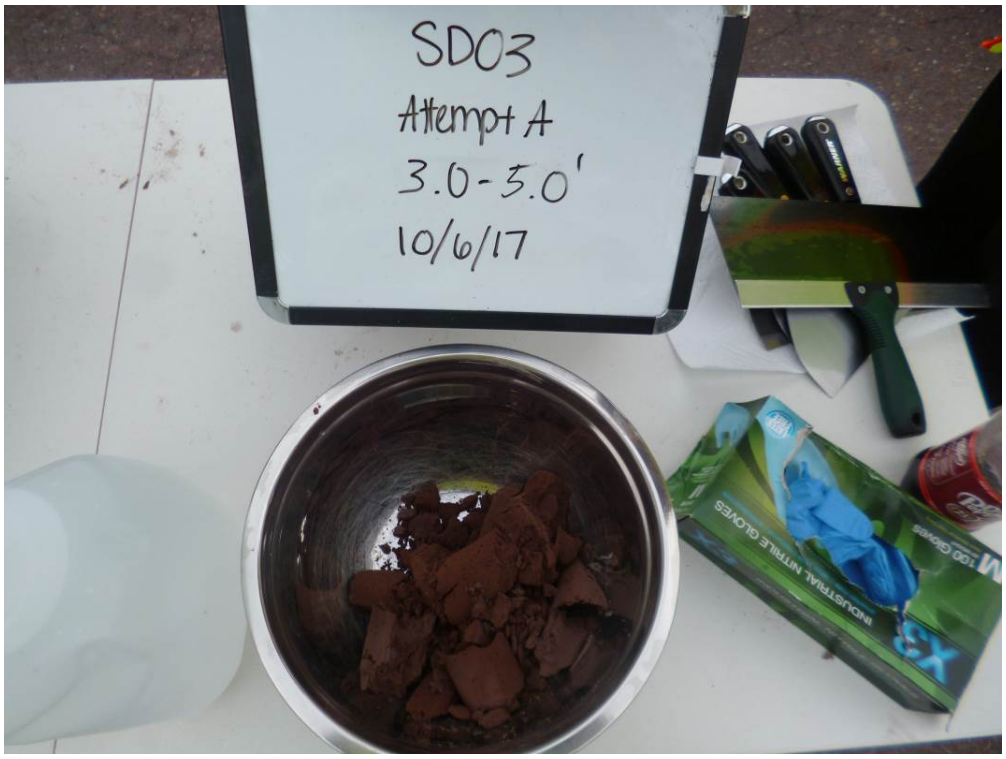


Photo 17: View of discrete sample LLRA-SD03-30-50

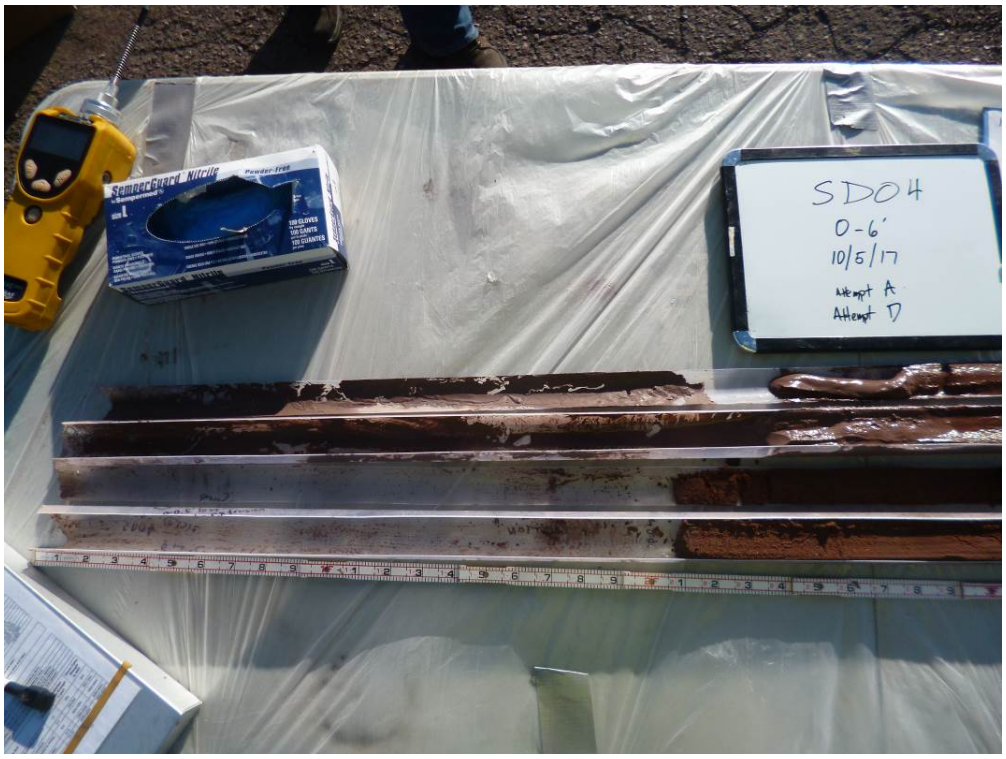


Photo 18: View of split top portions of Attempt A (top) and Attempt D (bottom) at SD-04 (0-6' cores)

Photo 19: View of split bottom portions of Attempt A (top) and Attempt D (bottom) at SD-04 (0-6' cores)

Photo 20: View of partially split top portions of Attempt C (top), Attempt B (middle), and Attempt D (bottom) at SD-05 (0-6' cores)

Photo 21: View of partially split bottom portions of Attempt C (top), Attempt B (middle), and Attempt D (bottom) at SD-05 (0-6' cores)

Photo 22: View of split top portions of Attempt A (top) and Attempt B (bottom) at SD-06 (0-6' cores)

Photo 23: View of split bottom portions of Attempt A (top) and Attempt B (bottom) at SD-06 (0-6' cores)

Photo 24: View of discrete sample LLRA-SD06-00-05

Photo 25: View of discrete sample LLRA-SD06-05-10

Photo 26: View of discrete sample LLRA-SD06-10-30

Photo 27: View of discrete sample LLRA-SD06-30-50

Photo 28: View of split top portions of Attempt A (top), Attempt B (middle), and Attempt C (bottom) at SD-07 (0-6' cores)

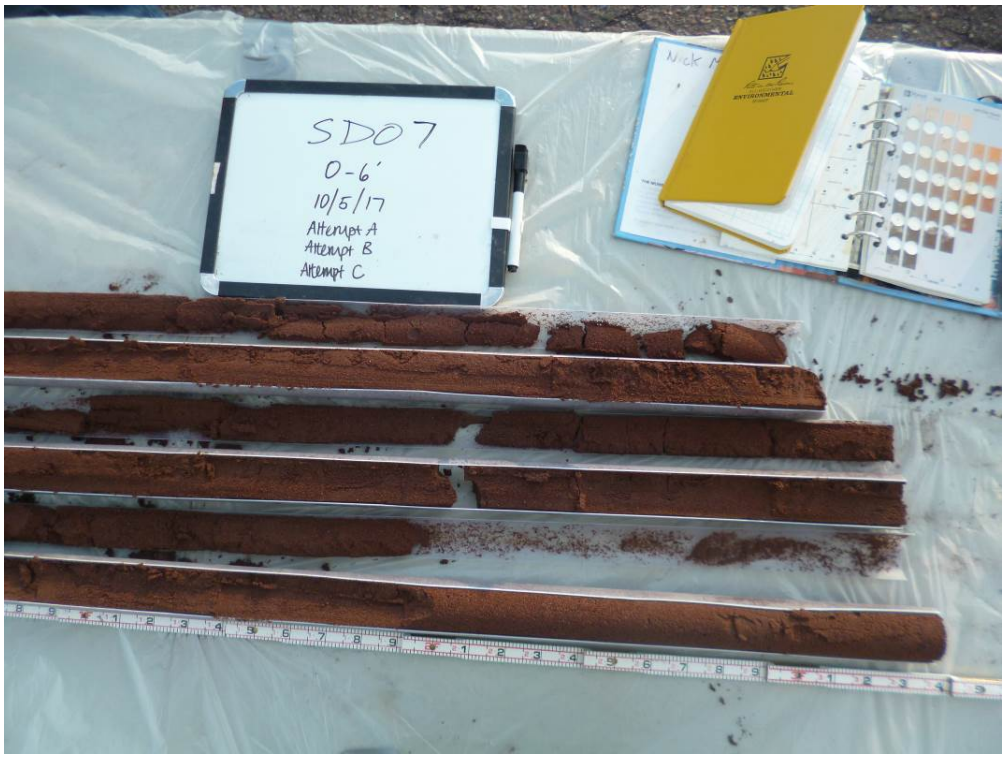


Photo 29: View of split bottom portions of Attempt A (top), Attempt B (middle), and Attempt C (bottom) at SD-07 (0-6' cores)

Photo 30: View of split full core of Attempt A at SD-08 (0-6' core)

Photo 31: View of split top portion of Attempt A at SD-08 (6-11' core)

Photo 32: View of split bottom portion of Attempt A at SD-08 (6-11' core)

Photo 33: View of intact top portion of Attempt B at SD-09 (0-6' core)

Photo 34: View of intact bottom portion of Attempt B at SD-09 (0-6' core)

Photo 35: View of split bottom portion of Attempt B at SD-09 (0-6' core)

Photo 36: View of split bottom portions of Attempt B (0-6'; top) and Attempt B (6-11'; bottom) at SD-09

Photo 37: Close up view of very bottom portion of Attempt B at SD-09 (0-6' core)

Photo 38: View of partially split top portions of Attempt E (3-8'; top), Attempt F (8-13'; second from top), Attempt G (4-9'; second from bottom), and Attempt G (9-14'; bottom) at SD-09

Photo 39: View of partially split bottom portions of Attempt E (3-8'; top), Attempt F (8-13'; second from top), Attempt G (4-9'; second from bottom), and Attempt G (9-14'; bottom) at SD-09

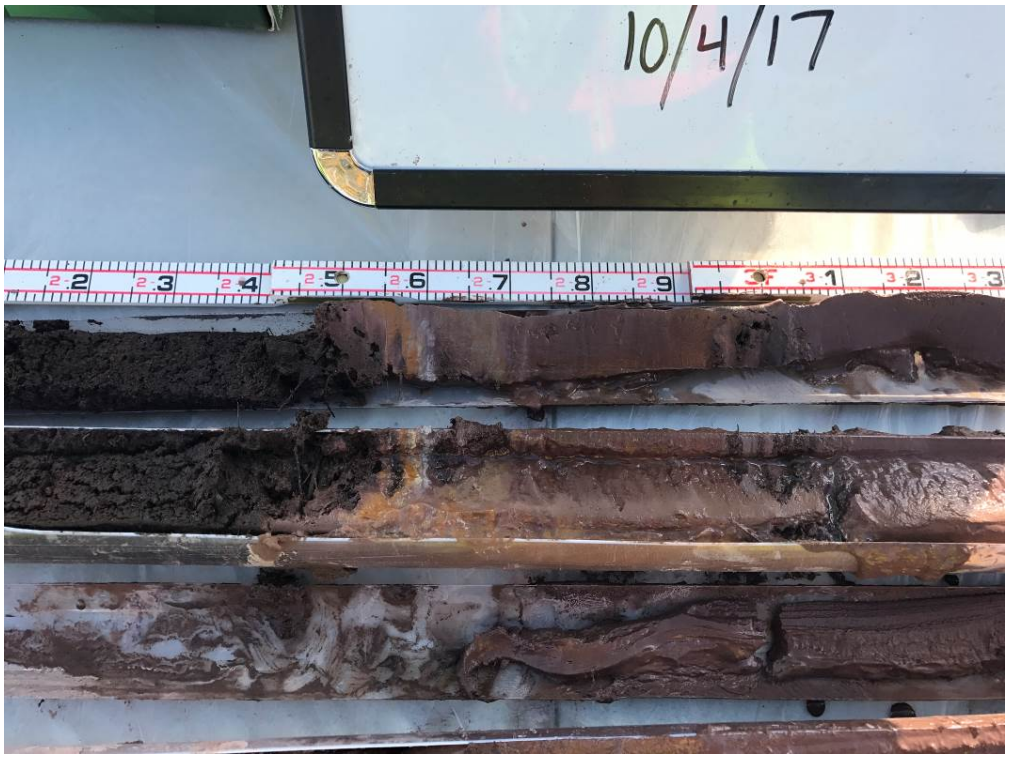


Photo 40: Close up view of waste layer in middle of Attempt E at SD-09 (3-8' core)

Photo 41: Close up view of sediment below waste layer in middle of Attempt E at SD-09 (3-8' core)

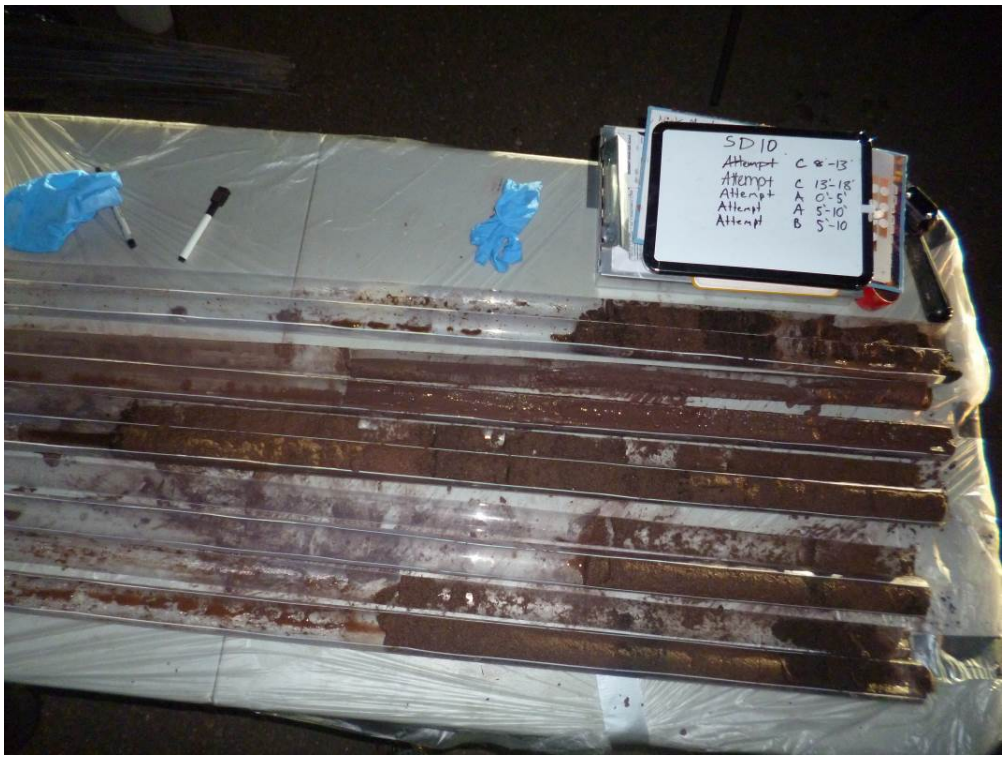


Photo 42: View of split full cores of Attempt C (8-13'; top), Attempt C (13-18'; second from top), Attempt A (0-5'; middle), Attempt A (5-10'; second from bottom), and Attempt B (5-10'; bottom) at SD-10

Photo 43: View of split full cores of Attempt A (0-5'; top), Attempt A (5-10'; middle), and Attempt B (2-7'; bottom) at SD-11

Photo 44: Close up view of near bottom portions of Attempt A (0-5'; top), Attempt A (5-10'; middle), and Attempt B (2-7'; bottom) at SD-11

Photo 45: Close up view of very bottom portions of Attempt A (0-5'; top), Attempt A (5-10'; middle), and Attempt B (2-7'; bottom) at SD-11

Photo 46: Close up view of waste layer near mid-bottom of Attempt A at SD-11 (0-5' core)

Photo 47: View of full split cores of Attempt B (0-5'; top), Attempt C (0-5'; middle), and Attempt A (5-10'; bottom) at SD-12

Photo 48: View of core from increment location #24 at CS-01

Photo 49: View of core from increment location #24 at CS-01 (R-2 + R-3)

Photo 50: View of core from increment location #14 at CS-01 (R-5 + R-6)

Photo 51: View of core from increment location #1 at CS-02

Photo 52: View of core from increment location #6 at CS-03

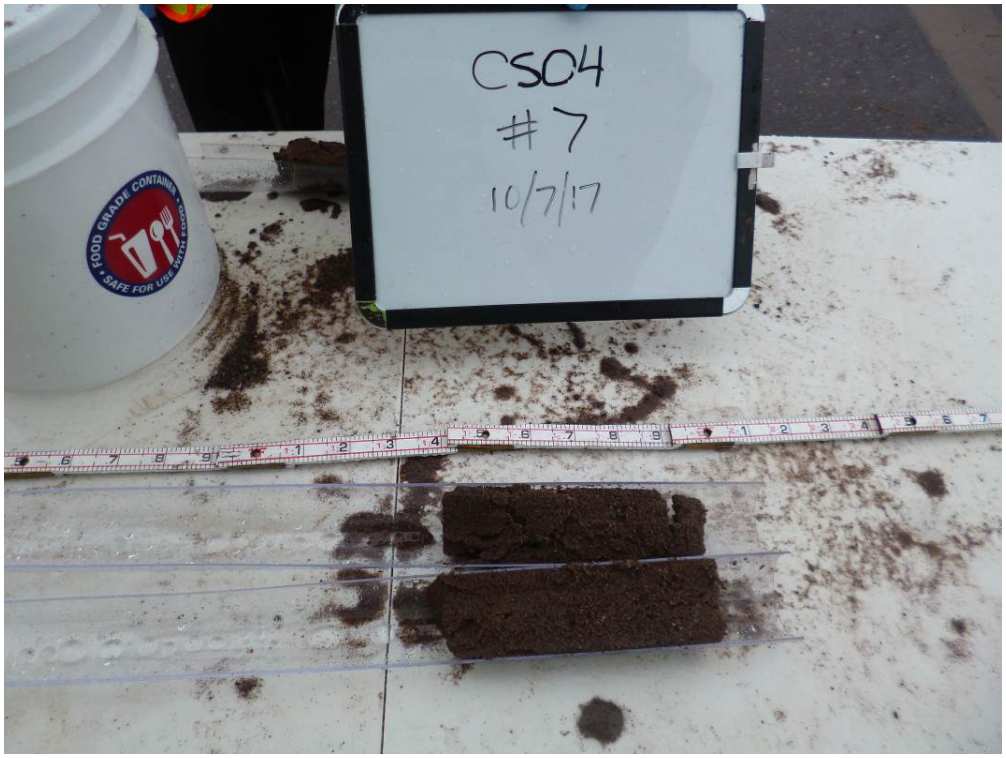


Photo 53: View of core from increment location #7 at CS-04

Photo 54: View of core from increment location #14 at CS-05

Photo 55: View of core from increment location #14 at CS-05 (R-4)

Photo 56: View of core from increment location #7 at CS-06

Photo 57: View of core from increment location #20 at CS-07

Photo 58: View of core from increment location #9 at CS-08

Appendix B

Boring Logs

SOIL BORING LOG KEY

	SAND, SP		SILT
	SAND, SW		SANDY SILT
	SILTY SAND		SILTY CLAY
	CLAYEY SAND		ORGANICS
	SANDY GRAVEL		WASTE

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A of D	**SD-01**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 4 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880351.80 N, 25897195.08 E	603.2 Feet MSL	13.1 Feet	590.1 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD01-00-05 LLRA-SD01-05-10	4.2'	1.0	(0-1.0') Silty Sand; dark reddish brown; very loose; wet; fine grained; few organics	SM	
LLRA-SD01-10-30 LLRA-SD01-30-50		2.0 3.0 4.0	(1.0-3.8') Sand; dark reddish brown; medium dense; wet; fine grained; subrounded	SP	
		5.0	(3.8-5.5') Sand; dark reddish brown; medium dense; moist; fine to coarse grained; subrounded	SW	
		6.0	(5.5-6.0') Sand; reddish brown; very dense; somewhat moist; very fine grained; rounded	SP	
			End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt B of C	**SD-02**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	10/05/2017 mm dd yyyy	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880297.15 N, 25897158.40 E	603.1 Feet MSL	19.7 Feet	583.4 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD02-00-05	1.7'		(0-0.8') Silty Sand; reddish brown; very loose; wet; very fine grained	SM	
LLRA-SD02-05-10		1.0	(0.8-1.1') Sandy Silt; reddish brown; very soft; wet; very fine grained	ML	
			(1.1-1.3') Silty Sand; reddish brown; medium stiff; moist; very fine grained	SM	
		2.0	(1.3-1.7') Sand; reddish brown; dense; moist; fine to medium grained	SP	
		3.0	No Recovery		
		4.0			
		5.0			
		6.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A of A	**SD-03**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 6 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880256.92 N, 25897155.35 E	603.1 Feet MSL	21.2 Feet	581.9 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD03-00-05	4.3'		(0-0.6') Silt; dark brown; very soft; wet; brown laminations	ML	
LLRA-SD03-05-10		1.0			
LLRA-SD03-10-30		2.0	(0.6-2.9') Silt; dark brown; medium stuff; wet; trace sand - subrounded; fine grained	ML	
		3.0	(2.9-3.2') Sandy Silt; dark reddish brown; stiff; little sand - subrounded; fine to medium grained	ML	
LLRA-SD03-30-50		4.0	(3.2-4.3') Sand; dark reddish brown; dense; fine grained; subrounded	SP	
		5.0	No Recovery		
		6.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt D of D	**SD-04**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 5 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880259.27 N, 25847230.06 E	603.1 Feet MSL	20.1 Feet	583.0 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD04-00-05 LLRA-SD04-05-10			(0-0.9') Sand; dark reddish brown; medium dense; very moist; fine to medium grained; subrounded	SP	
		1.0	(0.9-1.5') Sand; dark reddish brown; medium dense; moist; fine to coarse grained; subrounded to subangular	SW	
LLRA-SD04-10-30		2.0	(1.5-2.5') Sand; dark reddish brown; medium dense; very moist; fine to medium grained; subrounded	SP	
	2.8'	3.0	(2.5-2.8') Sand; dark reddish brown; somewhat moist; very fine grained; laminations of dark reddish gray clayey silt	SP	
		4.0 5.0	No Recovery		
		6.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt C of D	**SD-05**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 4 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880272.03 N, 25897318.97 E	603.2 Feet MSL	5.8 Feet	597.4 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD05-00-05 LLRA-SD05-05-10	4.5'	1.0	(0-0.8') Sand; dark reddish brown; medium dense; moist; fine grained; subrounded	SP	
LLRA-SD05-10-30		2.0	(0.8-2.6') Sand; dark reddish brown; dense; moist; fine grained; subrounded; few coarse grained sand	SP	
LLRA-SD05-30-50		3.0	(2.6-3.5') Sand; dark reddish brown; medium dense; somewhat moist; fine grained; subrounded	SP	
		4.0	(3.5-4.0') Sandy Gravel; dark reddish brown; dense; moist; fine grained gravel; fine to coarse sand; angular gravel	GP	
			(4.0-4.5') Sand; dark reddish brown; medium dense; moist; fine to medium grained; subrounded	SW	
		5.0	No Recovery		
		6.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A of B	**SD-06**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 5 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880197.83 N, 25897402.46 E	603.1 Feet MSL	5.5 Feet	597.6 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD06-00-05	3.8'		(0-0.1') Organics; black	OL	
LLRA-SD06-05-10		1.0	(0.1-2.1') Sand; dark reddish brown; medium dense; wet; fine to medium grained; subrounded; few silt	SP	
LLRA-SD06-10-30		2.0	(2.1-2.7') Sand; very dark brown; medium dense; wet; fine to medium grained; subrounded; few silt; trace organics	SP	
			(2.7-3.1') Sand; dark reddish brown; wet; very fine grained; rounded; trace clay; laminations of dark reddish gray clayey silt	SP	
LLRA-SD06-30-50		3.0	(3.1-3.6') Sandy Silt; dark reddish brown; moist; very fine grained; subrounded; trace clay; laminations of dark reddish gray clayey silt	ML	
		4.0	(3.6-3.8') Silty Clay; dark reddish brown; moist; stiff; low plasticity	CL	
		5.0	No Recovery		
		6.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt C of C	**SD-07**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	10/05/2017 mm dd yyyy	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880102.96 N, 25897456.50 E	603.1 Feet MSL	3.3 Feet	599.8 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
LLRA-SD07-00-05 LLRA-SD07-05-10 LLRA-SD07-10-30	3.1'	1.0 2.0 3.0	(0-3.1') Sand; dark reddish brown; medium dense; somewhat moist; fine to medium grained; subrounded to subangular	SP	
		4.0 5.0 6.0	No Recovery		

End of boring

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A of B	**SD-08**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 3 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880327.30 N, 25896910.32 E	603.1 Feet MSL	2.5 Feet	600.6 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
			(0-0.2') Organics; dark reddish brown to black; some fine grained sand	OL	
		1.0	(0.2-2.4') Sand; dark reddish brown; dense; moist; fine to coarse grained; few fine gravel	SW	
		2.0	(2.4-2.5') Sandy Silt; very dark brown; soft; moist; some organics	ML	
			(2.5-2.6') Sand; dark reddish brown; dense; moist; fine to coarse grained; few fine grained gravel	SW	
	3.6'	3.0			
		4.0	(2.6-3.6') Sandy Silt; very dark brown; soft; moist; some organics; trace fine grained sand	ML	
		5.0			
		6.0			
			(6.0-6.7') Sandy Silt; very dark brown; soft; moist; some organics; trace fine grained sand	ML	
		7.0	(6.7-8.5') Waste; silt like; orange, gray, green, white, purple, black; very soft; wet; defined layers of 0.1 cm to 0.2 feet		
	5'	8.0			
			(8.5-8.8') Sandy Silt; very dark brown; stiff	ML	
		9.0	(8.8-9.2') Waste with Organics; silt like; colors as above; very soft; wet; defined layers of 0.2 cm; some silt		
LLRA-SD08-92-102		10.0	(9.2-11.8') Silt; weak red; very stiff; moist; trace fine grained sand	ML	
		11.0			
			(11.8-12.1') Organics; reddish brown; some fine grained sand	OL	
		12.0	(12.1-13.6') Silt; weak read; very stiff; moist; trace fine grained sand	ML	
	2.6'	13.0			
		14.0	No Recovery		
		15.0			
		16.0			

End of boring

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt B, E & F of G	**SD-09**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 4 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880299.98 N, 25896944.05 E	603.2 Feet MSL	7.1 Feet	596.1 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
			(0-0.2') Organics; dark reddish brown to black; some sand - fine grained	OL	
	Attempt B 5.0/6.0	1.0	(0.2-2.0') Sand; yellowish red; medium dense; very moist; medium grained; subrounded; some organics from 1.3-1.6'	SP	
		2.0	(2.0-2.2') Sandy Silt; very dark gray; soft; moist; wood pieces	ML	
		3.0	(2.2-3.2') Sand; brown with intermittent layers of dark brown; moist; fine to coarse grained; subrounded; few gravel - fine grained	SW	
			(3.2-4.1') Sandy Silt; very dark brown; very soft; fine grained; few organics	ML	
LLRA-SD09-41-46		4.0	(4.1-4.6') Waste; silt like; orange, gray, yellow, white, purple; very soft; wet; defined layers of 0.1 cm to 0.3 cm; few fine grained sand below 4.3'		
LLRA-SD09-46-56	3.3'	5.0			
		6.0	(4.6-6.3') Sandy Silt; brown; moist; very stiff; very fine grained	ML	
		7.0			
		8.0			
		9.0	(8.0-10.1') Sandy Silt; brown; moist; very stiff; very fine grained	ML	
		10.0			
	2.1'	11.0	No Recovery		
		12.0			
		13.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

N/A: Targeted depth of 3-13', no core retrieved for 0-3' interval

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A & C of C	**SD-10**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 6 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880345.19 N, 25896926.59 E	603.1 Feet MSL	1.8 Feet	601.3 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
			(0-0.1') Organics; black	OL	
	3.2'	1.0, 2.0, 3.0	(0.1-3.2') Sand; brown; loose; moist; fine to coarse grained	SW	
		4.0, 5.0	No Recovery		
		6.0, 7.0	N/A		
	4'	8.0	(8.0-8.5') Sand; very dark gray; dense; moist; coarse grained	SP	
		9.0	(8.5-8.8') Silty Sand; very dark gray; medium dense; moist	SM	
			(8.8-9.2') Waste; silt like; orange, white, gray; very soft; wet; defined layers		
LLRA-SD10-92-102		10.0, 11.0	(9.2-12.0') Silt; dark reddish brown; very stiff; very moist; trace sand - fine grained	ML	
		12.0	No Recovery		
		13.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

N/A: Targeted depth of 0-5' and 8-13', no core retrieved for 5-8' interval

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A of B	**SD-11**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 6 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880293.43 N, 25896911.70 E	603.1 Feet MSL	4.6 Feet	598.5 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
	3.3'		(0-0.5') Sand with organics; dark reddish brown; loose; wet; medium grained	SP	
			(0.5-1.1') Sand; dark reddish brown; loose; wet; medium grained	SP	
		1.0	(1.1-1.4') Sandy Silt; soft; fine grained	ML	
			(1.4-1.9') Waste; silt like; orange, gray, purple white; very soft; wet; defined layers of 0.1 cm to 0.2 cm		
			(1.9-2.1') Organics; black; soft	OL	
		2.0	(2.1-2.3') Sand with Waste; medium grained; 2 layers of purple and gray waste of 0.2 cm		
LLRA-SD11-23-33			(2.3-2.8') Sand; dark reddish brown; dense; medium grained	SP	
		3.0	(2.8-3.3') Silt; dark reddish brown; very stiff; trace sand - fine grained	ML	
		4.0	No Recovery		
		5.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Facility/Project Name	Recovery Attempt	Boring Number
Torch Lake: Lake Linden Recreation Area	Attempt A & B of C	**SD-12**

Sediment Cored By: Name of crew chief (first, last) and Firm	Core Logged By:	Date Drilling Completed	Drilling Method
First Name Gary Last Name Swift Firm: Mateco Drilling	J. Krech	1 0 / 0 6 / 2 0 1 7 m m d d y y y y	Discrete Direct Push

International Feet in the Michigan State Plane North system, North American Datum of 1983	Approximate Lake Elevation	Approximate Depth of Water	Approximate Sediment Surface Elevation
State Plane 880294.06 N, 25896960.26 E	603.1 Feet MSL	10.6 Feet	592.5 Feet MSL

Core Diameter	County	County Code	Civil Town/City/ or Village
1.5 inches	Houghton	3 1	Lake Linden

Sample: Analytical Identification	Sample: Length Alt. & Recovered (ft)	Depth in Feet (below ground surface)	Sediment Description and Geologic Origin for Each Major Unit	USCS Classification	Graphic Log
			(0-0.2') Organics with silt; black; soft		
	3.6'	1.0, 2.0, 3.0, 4.0, 5.0	(0.2-3.6') Silt; dark brown; very stiff; wet; trace sand - fine grained	ML	
	2.4'	6.0	(5.0-7.0') Silt; dark brown; very stiff; wet; trace sand - fine grained	ML	
		7.0	(7.0-7.4') Sand; very dark brown; dense; very moist; fine to medium grained	SP	
		8.0, 9.0	No Recovery		
No Samples Collected		10.0	End of boring		

Recovery Attempt: Multiple cores were collected at most boring locations, labeled alphabetically. At each location, all cores were compared for lithological consistency, and the core with the largest recovery was logged.

Appendix C

Laboratory Reports

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Ramboll Environ US Corporation

Honeywell-Lake Linden Sampling Event, Lake Linden, MI

02-43323A

SGS Job Number: JC52646

Sampling Date: 10/03/17

Report to:

Ramboll Environ US Corporation

twyss@ramboll.com

ATTN: Troy Wyss

Total number of pages in report: 15

Nancy Cole
Laboratory Director

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499

November 16, 2017

Mr. Danielle Amber
Ramboll Environ US. Corporation
3600 Green Court
Suite 750
Ann Arbor, MI 48105

RE: SGS Accutest – Dayton, Jobs # JC52646 – Reissues

Dear Mr. Amber,

The final report for SGS Accutest job number JC52646 has been edited to reflect corrections to the final results. These edits have been incorporated into the revised report which is attached.

The sample's ID has been revised to match chain of custody. The attached revised report incorporates these revisions.

SGS Accutest apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

SGS Accutest

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

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Sample Summary

Ramboll Environ US Corporation

Job No: JC52646

Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Project No: 02-43323A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52646-1	10/03/17	18:20	ASL	10/06/17	SO	Sediment	LLRA-SD08-92-102

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Ramboll Environ US Corporation	**Job No**	JC52646
Site:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI	**Report Date**	10/20/2017 10:21:07 A

On 10/06/2017, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.7 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC52646 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP6799

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52655-11MS, JC52655-11MSD were used as the QC samples indicated.
- OP6799-BS1 for Aroclor 1016: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP6799-BSD for Aroclor 1016: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

Metals Analysis By Method SW846 6010C

Matrix: SO **Batch ID:** MP3410

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52608-1MS, JC52608-1MSD, JC52608-1SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Iron are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Silver, Arsenic are outside control limits for sample MP3410-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JC52646-1 for Silver: Elevated detection limit due to dilution required for high interfering element.

Metals Analysis By Method SW846 7471B

Matrix: SO **Batch ID:** MP3418

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52611-3MS, JC52611-3MSD were used as the QC samples for metals.

General Chemistry By Method ASTM 2216-92

Matrix: SO **Batch ID:** GN70749

- The data for ASTM 2216-92 meets quality control requirements.

General Chemistry By Method ASTM D2937-94 M

Matrix: SO **Batch ID:** GN71183

- Sample(s) JC52786-14DUP were used as the QC samples for Bulk Density (Dry Basis).

General Chemistry By Method ASTM D422-63

Matrix: SO	Batch ID: GP8382

- Sample(s) JC52655-11DUP were used as the QC samples for % Gravel, % Sand, % Silt, Clay, Colloids, 0.0015 mm (Hydrometer), 0.005 mm (Hydrometer), 0.030 mm (Hydrometer), 0.375 Inch Sieve, 0.75 inch sieve, 1.5 Inch Sieve, 3 inch sieve, No.10 Sieve (2.00 mm), No.16 Sieve (1.18 mm), No.200 Sieve (0.075 mm), No.30 Sieve (0.60 mm), No.4 Sieve (4.75 mm), No.50 Sieve (0.30 mm), No.8 Sieve (2.36 mm), No.100 Sieve (0.15 mm).
- RPD(s) for Duplicate for No.100 Sieve (0.15 mm) are outside control limits for sample GP8382-D1. High RPD due to possible sample nonhomogeneity.

General Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO	Batch ID: GP8408

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52655-11DUP, JC52655-11MS were used as the QC samples for Total Organic Carbon.
- JC52646-1 for Total Organic Carbon: Multiple injections indicate possible sample non-homogeneity.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC52646
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/03/17

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Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52646-1	**LLRA-SD08-92-102**					
Arsenic		5.3	2.8		mg/kg	SW846 6010C
Barium		254	28		mg/kg	SW846 6010C
Chromium		40.8	1.4		mg/kg	SW846 6010C
Copper		4010	17		mg/kg	SW846 6010C
Iron		24600	69		mg/kg	SW846 6010C
Lead		318	2.8		mg/kg	SW846 6010C
Mercury		0.14	0.043		mg/kg	SW846 7471B
Nickel		49.3	5.5		mg/kg	SW846 6010C
Silver [a]		10.0	3.5		mg/kg	SW846 6010C
Zinc		150	5.0		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		100			%	ASTM D422-63
No.30 Sieve (0.60 mm)		100			%	ASTM D422-63
No.50 Sieve (0.30 mm)		99.8			%	ASTM D422-63
No.100 Sieve (0.15 mm)		99.0			%	ASTM D422-63
No.200 Sieve (0.075 mm)		94.9			%	ASTM D422-63
0.030 mm (Hydrometer)		81			%	ASTM D422-63
0.005 mm (Hydrometer)		9.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		5.0			%	ASTM D422-63
% Sand		5.1			%	ASTM D422-63
% Silt, Clay, Colloids		94.9			%	ASTM D422-63
Bulk Density (Dry Basis)		1.5			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		39.6			%	ASTM 2216-92
Total Organic Carbon [b]		2670	140		mg/kg	LLOYD KAHN 1988 MOD

(a) Elevated detection limit due to dilution required for high interfering element.
(b) Multiple injections indicate possible sample non-homogeneity.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	LLRA-SD08-92-102		
Lab Sample ID:	JC52646-1	**Date Sampled:**	10/03/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	71.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74546.D	1	10/12/17 06:47	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	16.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	43	17	ug/kg	
11104-28-2	Aroclor 1221	ND	43	17	ug/kg	
11141-16-5	Aroclor 1232	ND	43	11	ug/kg	
53469-21-9	Aroclor 1242	ND	43	6.8	ug/kg	
12672-29-6	Aroclor 1248	ND	43	25	ug/kg	
11097-69-1	Aroclor 1254	ND	43	11	ug/kg	
11096-82-5	Aroclor 1260	ND	43	14	ug/kg	
11100-14-4	Aroclor 1268	ND	43	6.4	ug/kg	
37324-23-5	Aroclor 1262	ND	43	3.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	95%		24-152%
877-09-8	Tetrachloro-m-xylene	91%		24-152%
2051-24-3	Decachlorobiphenyl	87%		10-166%
2051-24-3	Decachlorobiphenyl	84%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD08-92-102		
Lab Sample ID:	JC52646-1	**Date Sampled:**	10/03/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	71.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.3	2.8	mg/kg	1	10/10/17	10/11/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	254	28	mg/kg	1	10/10/17	10/12/17	ND	SW846 6010C [3]	SW846 3050B [5]
Cadmium	< 0.69	0.69	mg/kg	1	10/10/17	10/11/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	40.8	1.4	mg/kg	1	10/10/17	10/11/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	4010	17	mg/kg	5	10/10/17	10/12/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	24600	69	mg/kg	1	10/10/17	10/12/17	ND	SW846 6010C [3]	SW846 3050B [5]
Lead	318	2.8	mg/kg	1	10/10/17	10/12/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.14	0.043	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [6]
Nickel	49.3	5.5	mg/kg	1	10/10/17	10/12/17	ND	SW846 6010C [3]	SW846 3050B [5]
Selenium	< 2.8	2.8	mg/kg	1	10/10/17	10/11/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	10.0	3.5	mg/kg	5	10/10/17	10/12/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	150	5.0	mg/kg	1	10/13/17	10/14/17	AB	SW846 6010C [4]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42991
(3) Instrument QC Batch: MA42998
(4) Instrument QC Batch: MA43006
(5) Prep QC Batch: MP3410
(6) Prep QC Batch: MP3418

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD08-92-102		
Lab Sample ID:	JC52646-1	**Date Sampled:**	10/03/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	71.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	99.8		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	99.0		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	94.9		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	81		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	9.0		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	5.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	5.1		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	94.9		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.5		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	39.6		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon [a]	2670	140	mg/kg	1	10/11/17 12:26	CD	LLOYD KAHN 1988 MOD

(a) Multiple injections indicate possible sample non-homogeneity.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC52646
Account: RAMEMIAA Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
% Gravel		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Sand		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Silt, Clay, Colloids		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
Bulk Density (Dry Basis)		**ASTM D2937-94 M**	SO	SGS is not certified for this parameter.[a]
Moisture (Dry Weight Basis)		**ASTM 2216-92**	SO	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SGS ACCUTEST SED

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #:
Bottle Order Control #: JC52646
SGS Accutest Quote #:
SGS Accutest Job #:

Client / Reporting Information

Company Name: Ramboll Environ
Street Address: 31000 Green Ct, Suite 750
City: Ann Arbor State: MI Zip: 48105
Project Contact: Danielle Amber E-mail: damber@ramboll.com
Phone #: 734-761-2175 Fax #: 734-761-2050
Sampler(s) Name(s): Alyssa Larson Phone #: 734-761-2067

Project Information

Project Name: Lake Linden Sampling Event
Street:
City: Lake Linden State: MI
Project #: 02-43323A
Client Purchase Order #:
Project Manager: Viktoriya Pushkova

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	M1 10 Metals (SW846 6010C)	Iron (SW846 6010C)	Nickel (SW846 6010C)	Total PCBs (SW846 8082)	TOC (SW846 9060)	Grain Size (ASTM D422-03)	Moisture Content (ASTM D2216)	Bulk Density (ASTM D7263)				LAB USE ONLY
1	LLRA-SD08-92-102		10/3/17	18:20	ASL	SED	3					X				X	X	X	X	X	X	X	X				L53
																											M29
																											P27

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

INITIAL ASESSMENT 28 TH
LABEL VERIFICATION GG

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other _____

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Retain extracts of all PCB samples following initial analysis
Client COC number: 37156-100317-01

*Level 4 Validation (Honeywell deliverable)

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature] FedEx	10/3/17 12:30	1 FedEx	2 FedEx	10/6/17 920	2 [signature]
3		3	4		4
5		5			

Custody Seal # 837 [x] Intact [ ] Not intact
Preserved where applicable [ ]
On Ice [x]
Cooler Temp. 3.3°C

Form:SM088-01CRev.Date:9/13/16

5.2 5

JC52646: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC52646 **Client:** _____ **Project:** _____

Date / Time Received: 10/6/2017 9:20:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.3);

Cooler Temps (Corrected) °C: Cooler 1: (1.7);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☑	☐
2. Trip Blank listed on COC:	☐	☑	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☑

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

SM089-02
Rev. Date 12/1/16

5.2

5

JC52646: Chain of Custody
Page 2 of 2

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Ramboll Environ US Corporation

Honeywell-Lake Linden Sampling Event, Lake Linden, MI

02-43323A

SGS Job Number: JC52655

Sampling Date: 10/04/17

Report to:

Ramboll Environ US Corporation

twyss@ramboll.com

ATTN: Troy Wyss

Total number of pages in report: 52

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499

SGS ACCUTEST

December 28, 2017

Mr. Danielle Amber
Ramboll Environ IS Corpioration
3600 Green Court Suite 750
Ann Arbor, MI 48105

RE: SGS Accutest – Dayton, Job # JC52655 – Reissues

Dear Mr. Amber,

The final report for SGS Accutest jobs number JC52655 has been edited to reflect corrections to the final results. These edits have been incorporated into the revised report which is attached.

Specifically, the Grains data for this job has been corrected. The attached revised report incorporates these revisions.

SGS Accutest apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

V. Pushkova

Viktoriya Pushkova

Project Manager

SGS Accutest

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

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Sample Summary

Ramboll Environ US Corporation

Job No: JC52655

Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Project No: 02-43323A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52655-1	10/04/17	17:40	ASL	10/06/17	SO	Sediment	LLRA-SD09-46-56
JC52655-2	10/04/17	17:30	ASL	10/06/17	SO	Sediment	LLRA-SD09-41-46
JC52655-3	10/04/17	16:25	ASL	10/06/17	SO	Sediment	LLRA-SD05-30-50
JC52655-4	10/04/17	16:15	ASL	10/06/17	SO	Sediment	LLRA-SD05-10-30
JC52655-5	10/04/17	16:05	ASL	10/06/17	SO	Sediment	LLRA-SD05-05-10
JC52655-6	10/04/17	00:00	ASL	10/06/17	SO	Sediment	LLRA-FD1
JC52655-7	10/04/17	15:50	ASL	10/06/17	SO	Sediment	LLRA-SD05-00-05
JC52655-8	10/04/17	12:55	ASL	10/06/17	SO	Sediment	LLRA-SD01-30-50
JC52655-9	10/04/17	12:30	ASL	10/06/17	SO	Sediment	LLRA-SD01-00-05
JC52655-10	10/04/17	12:35	ASL	10/06/17	SO	Sediment	LLRA-SD01-05-10
JC52655-11	10/04/17	12:45	ASL	10/06/17	SO	Sediment	LLRA-SD01-10-30
JC52655-11D	10/04/17	12:45	ASL	10/06/17	SO	Soil Dup/MSD	LLRA-SD01-10-30
JC52655-11S	10/04/17	12:45	ASL	10/06/17	SO	Soil Matrix Spike	LLRA-SD01-10-30

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Ramboll Environ US Corporation	**Job No**	JC52655
Site:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI	**Report Date**	10/20/2017 11:51:17 A

On 10/06/2017, 11 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.7 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC52655 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP6799

- All samples were extracted within the recommended method holding time.
- Sample(s) JC52655-11MS, JC52655-11MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP6799-BSD for Aroclor 1016: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP6799-BS1 for Aroclor 1016: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

Metals Analysis By Method SW846 6010C

Matrix: SO **Batch ID:** MP3431

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52655-11MS, JC52655-11MSD, JC52655-11SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Lead, Zinc are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Lead are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Copper, Iron are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for MSD for Copper, Lead, Zinc are outside control limits for sample MP3431-S2. High rpd due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Silver, Cadmium, Selenium, Chromium, Iron, Zinc are outside control limits for sample MP3431-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JC52655-1 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52655-2 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JC52655-3 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52655-11 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52655-2 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JC52655-11 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52655-2 for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC52655-2 for Nickel: Elevated detection limit due to dilution required for high interfering element.
- JC52655-2 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52655-2 for Silver: Elevated detection limit due to dilution required for high interfering element.

Metals Analysis By Method SW846 7471B

Matrix: SO	Batch ID: MP3420

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52655-11MS, JC52655-11MSD were used as the QC samples for metals.

General Chemistry By Method ASTM 2216-92

Matrix: SO	Batch ID: GN70749

- The data for ASTM 2216-92 meets quality control requirements.

Matrix: SO	Batch ID: GN70852

- The data for ASTM 2216-92 meets quality control requirements.

General Chemistry By Method ASTM D2937-94 M

Matrix: SO	Batch ID: GN70817

- Sample(s) JC52655-11DUP were used as the QC samples for Bulk Density (Dry Basis).

General Chemistry By Method ASTM D422-63

Matrix: SO	Batch ID: GP8382

- Sample(s) JC52655-11DUP were used as the QC samples for % Gravel, % Sand, % Silt, Clay, Colloids, 0.0015 mm (Hydrometer), 0.005 mm (Hydrometer), 0.030 mm (Hydrometer), 0.375 Inch Sieve, 0.75 inch sieve, 1.5 Inch Sieve, 3 inch sieve, No.10 Sieve (2.00 mm), No.16 Sieve (1.18 mm), No.200 Sieve (0.075 mm), No.30 Sieve (0.60 mm), No.4 Sieve (4.75 mm), No.50 Sieve (0.30 mm), No.8 Sieve (2.36 mm), No.100 Sieve (0.15 mm).
- RPD(s) for Duplicate for No.100 Sieve (0.15 mm) are outside control limits for sample GP8382-D1. High RPD due to possible sample nonhomogeneity.

General Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO	Batch ID: GP8408

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52655-11DUP, JC52655-11MS were used as the QC samples for Total Organic Carbon.
- JC52655-8 for Total Organic Carbon: Multiple injections indicate possible sample non-homogeneity.
- JC52655-10 for Total Organic Carbon: Multiple injections indicate possible sample non-homogeneity.
- JC52655-4 for Total Organic Carbon: Multiple injections indicate possible sample non-homogeneity.
- JC52655-3 for Total Organic Carbon: Multiple injections indicate possible sample non-homogeneity.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52655-1	**LLRA-SD09-46-56**					
Aroclor 1254		35.6 J	41	10	ug/kg	SW846 8082A
Aroclor 1262		8.8 J	41	3.2	ug/kg	SW846 8082A
Arsenic		6.5	2.7		mg/kg	SW846 6010C
Barium		386	27		mg/kg	SW846 6010C
Cadmium		0.69	0.67		mg/kg	SW846 6010C
Chromium		51.6	1.3		mg/kg	SW846 6010C
Copper		3330	17		mg/kg	SW846 6010C
Iron		31500	67		mg/kg	SW846 6010C
Lead		284	2.7		mg/kg	SW846 6010C
Mercury		0.11	0.036		mg/kg	SW846 7471B
Nickel		52.6	5.3		mg/kg	SW846 6010C
Silver [a]		8.3	3.3		mg/kg	SW846 6010C
Zinc		157	6.7		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		100			%	ASTM D422-63
No.30 Sieve (0.60 mm)		99.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)		99.6			%	ASTM D422-63
No.100 Sieve (0.15 mm)		98.5			%	ASTM D422-63
No.200 Sieve (0.075 mm)		95.1			%	ASTM D422-63
0.030 mm (Hydrometer)		74.0			%	ASTM D422-63
0.005 mm (Hydrometer)		10.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		4.0			%	ASTM D422-63
% Sand		4.9			%	ASTM D422-63
% Silt, Clay, Colloids		95.1			%	ASTM D422-63
Bulk Density (Dry Basis)		0.88			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		38.5			%	ASTM 2216-92
Total Organic Carbon		4100	140		mg/kg	LLOYD KAHN 1988 MOD
JC52655-2	**LLRA-SD09-41-46**					
Aroclor 1248		812	54	32	ug/kg	SW846 8082A
Aroclor 1254		572	54	13	ug/kg	SW846 8082A
Arsenic [a]		20.5	16		mg/kg	SW846 6010C
Barium		29600	790		mg/kg	SW846 6010C
Cadmium [a]		25.6	3.9		mg/kg	SW846 6010C
Chromium [a]		45.7	7.9		mg/kg	SW846 6010C
Copper		35000	99		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Iron		29200	79		mg/kg	SW846 6010C
Lead		15300	79		mg/kg	SW846 6010C
Mercury		1.8	0.088		mg/kg	SW846 7471B
Nickel [a]		77.3	32		mg/kg	SW846 6010C
Silver [a]		154	3.9		mg/kg	SW846 6010C
Zinc		1390	7.9		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		65.8			%	ASTM 2216-92
JC52655-3	**LLRA-SD05-30-50**					
Arsenic		3.2	2.3		mg/kg	SW846 6010C
Barium		27.5	23		mg/kg	SW846 6010C
Chromium		31.2	1.1		mg/kg	SW846 6010C
Copper		1290	14		mg/kg	SW846 6010C
Iron		19400	56		mg/kg	SW846 6010C
Lead		16.0	2.3		mg/kg	SW846 6010C
Nickel		32.4	4.5		mg/kg	SW846 6010C
Silver [a]		6.9	2.8		mg/kg	SW846 6010C
Zinc		95.8	5.6		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		92.7			%	ASTM D422-63
No.10 Sieve (2.00 mm)		89.3			%	ASTM D422-63
No.16 Sieve (1.18 mm)		77.8			%	ASTM D422-63
No.30 Sieve (0.60 mm)		71.7			%	ASTM D422-63
No.50 Sieve (0.30 mm)		66.2			%	ASTM D422-63
No.100 Sieve (0.15 mm)		43.5			%	ASTM D422-63
No.200 Sieve (0.075 mm)		19.5			%	ASTM D422-63
0.030 mm (Hydrometer)		9.0			%	ASTM D422-63
0.005 mm (Hydrometer)		0.89			%	ASTM D422-63
0.0015 mm (Hydrometer)		0.89			%	ASTM D422-63
% Sand		80.5			%	ASTM D422-63
% Silt, Clay, Colloids		19.5			%	ASTM D422-63
Bulk Density (Dry Basis)		1.0			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		18.7			%	ASTM 2216-92
Total Organic Carbon [b]		276	120		mg/kg	LLOYD KAHN 1988 MOD
JC52655-4	**LLRA-SD05-10-30**					
Arsenic		2.9	2.4		mg/kg	SW846 6010C
Chromium		26.9	1.2		mg/kg	SW846 6010C
Copper		821	3.0		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Iron		17200	59		mg/kg	SW846 6010C
Lead		16.0	2.4		mg/kg	SW846 6010C
Nickel		25.9	4.7		mg/kg	SW846 6010C
Silver		7.4	0.59		mg/kg	SW846 6010C
Zinc		81.0	5.9		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		94.5			%	ASTM D422-63
No.10 Sieve (2.00 mm)		92.0			%	ASTM D422-63
No.16 Sieve (1.18 mm)		83.3			%	ASTM D422-63
No.30 Sieve (0.60 mm)		75.7			%	ASTM D422-63
No.50 Sieve (0.30 mm)		64.1			%	ASTM D422-63
No.100 Sieve (0.15 mm)		36.7			%	ASTM D422-63
No.200 Sieve (0.075 mm)		13			%	ASTM D422-63
0.030 mm (Hydrometer)		2.0			%	ASTM D422-63
0.005 mm (Hydrometer)		0.93			%	ASTM D422-63
0.0015 mm (Hydrometer)		0.93			%	ASTM D422-63
% Sand		87			%	ASTM D422-63
% Silt, Clay, Colloids		12.8			%	ASTM D422-63
Bulk Density (Dry Basis)		0.95			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		18.1			%	ASTM 2216-92
Total Organic Carbon [b]		393	120		mg/kg	LLOYD KAHN 1988 MOD
JC52655-5	**LLRA-SD05-05-10**					
Arsenic		5.0	2.5		mg/kg	SW846 6010C
Barium		28.3	25		mg/kg	SW846 6010C
Chromium		29.4	1.2		mg/kg	SW846 6010C
Copper		932	3.1		mg/kg	SW846 6010C
Iron		21500	62		mg/kg	SW846 6010C
Lead		27.0	2.5		mg/kg	SW846 6010C
Nickel		28.8	5.0		mg/kg	SW846 6010C
Silver		3.6	0.62		mg/kg	SW846 6010C
Zinc		84.5	6.2		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		96			%	ASTM D422-63
No.10 Sieve (2.00 mm)		95			%	ASTM D422-63
No.16 Sieve (1.18 mm)		90			%	ASTM D422-63

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

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Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
No.30 Sieve (0.60 mm)	85			%	ASTM D422-63
No.50 Sieve (0.30 mm)	72			%	ASTM D422-63
No.100 Sieve (0.15 mm)	29			%	ASTM D422-63
No.200 Sieve (0.075 mm)	12			%	ASTM D422-63
0.030 mm (Hydrometer)	3.0			%	ASTM D422-63
0.005 mm (Hydrometer)	0.48			%	ASTM D422-63
0.0015 mm (Hydrometer)	0.48			%	ASTM D422-63
% Sand	88			%	ASTM D422-63
% Silt, Clay, Colloids	12			%	ASTM D422-63
Bulk Density (Dry Basis)	0.97			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	24.4			%	ASTM 2216-92
Total Organic Carbon	523	120		mg/kg	LLOYD KAHN 1988 MOD
JC52655-6 LLRA-FD1					
Arsenic	4.4	2.5		mg/kg	SW846 6010C
Barium	27.1	25		mg/kg	SW846 6010C
Chromium	24.3	1.3		mg/kg	SW846 6010C
Copper	562	3.2		mg/kg	SW846 6010C
Iron	17600	63		mg/kg	SW846 6010C
Lead	11.9	2.5		mg/kg	SW846 6010C
Nickel	24.6	5.1		mg/kg	SW846 6010C
Silver	1.7	0.63		mg/kg	SW846 6010C
Zinc	65.6	6.3		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)	29.1			%	ASTM 2216-92
JC52655-7 LLRA-SD05-00-05					
Arsenic	4.7	2.6		mg/kg	SW846 6010C
Barium	27.4	26		mg/kg	SW846 6010C
Chromium	26.5	1.3		mg/kg	SW846 6010C
Copper	536	3.3		mg/kg	SW846 6010C
Iron	20100	65		mg/kg	SW846 6010C
Lead	12.1	2.6		mg/kg	SW846 6010C
Mercury	0.043	0.040		mg/kg	SW846 7471B
Nickel	25.9	5.2		mg/kg	SW846 6010C
Silver	2.2	0.65		mg/kg	SW846 6010C
Zinc	67.2	6.5		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	99.9			%	ASTM D422-63
No.10 Sieve (2.00 mm)	99.8			%	ASTM D422-63

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

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Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
No.16 Sieve (1.18 mm)	99.5			%	ASTM D422-63
No.30 Sieve (0.60 mm)	98.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)	85.5			%	ASTM D422-63
No.100 Sieve (0.15 mm)	17.1			%	ASTM D422-63
No.200 Sieve (0.075 mm)	3.8			%	ASTM D422-63
0.030 mm (Hydrometer)	1.0			%	ASTM D422-63
0.005 mm (Hydrometer)	0.50			%	ASTM D422-63
0.0015 mm (Hydrometer)	0.50			%	ASTM D422-63
% Sand	96.2			%	ASTM D422-63
% Silt, Clay, Colloids	3.8			%	ASTM D422-63
Bulk Density (Dry Basis)	0.81			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	28.3			%	ASTM 2216-92
Total Organic Carbon	598	130		mg/kg	LLOYD KAHN 1988 MOD
JC52655-8 LLRA-SD01-30-50					
Arsenic	3.8	2.5		mg/kg	SW846 6010C
Barium	41.4	25		mg/kg	SW846 6010C
Chromium	28.3	1.2		mg/kg	SW846 6010C
Copper	1390	16		mg/kg	SW846 6010C
Iron	18400	62		mg/kg	SW846 6010C
Lead	79.4	2.5		mg/kg	SW846 6010C
Mercury	0.037	0.035		mg/kg	SW846 7471B
Nickel	27.7	5.0		mg/kg	SW846 6010C
Silver	4.4	0.62		mg/kg	SW846 6010C
Zinc	143	6.2		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	99.4			%	ASTM D422-63
No.4 Sieve (4.75 mm)	99.3			%	ASTM D422-63
No.8 Sieve (2.36 mm)	91.9			%	ASTM D422-63
No.10 Sieve (2.00 mm)	89.1			%	ASTM D422-63
No.16 Sieve (1.18 mm)	81.7			%	ASTM D422-63
No.30 Sieve (0.60 mm)	68.5			%	ASTM D422-63
No.50 Sieve (0.30 mm)	53.4			%	ASTM D422-63
No.100 Sieve (0.15 mm)	35.1			%	ASTM D422-63
No.200 Sieve (0.075 mm)	22.4			%	ASTM D422-63
0.030 mm (Hydrometer)	7.0			%	ASTM D422-63
0.005 mm (Hydrometer)	0.90			%	ASTM D422-63
0.0015 mm (Hydrometer)	0.90			%	ASTM D422-63
% Gravel	0.75			%	ASTM D422-63
% Sand	76.9			%	ASTM D422-63
% Silt, Clay, Colloids	22.4			%	ASTM D422-63
Bulk Density (Dry Basis)	1.3			g/ml	ASTM D2937-94 M

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Moisture (Dry Weight Basis)		21.6			%	ASTM 2216-92
Total Organic Carbon [b]		456	120		mg/kg	LLOYD KAHN 1988 MOD
JC52655-9	**LLRA-SD01-00-05**					
Aroclor 1248		40.9	40	24	ug/kg	SW846 8082A
Aroclor 1254		53.4	40	9.9	ug/kg	SW846 8082A
Arsenic		6.2	2.7		mg/kg	SW846 6010C
Barium		612	27		mg/kg	SW846 6010C
Cadmium		1.2	0.66		mg/kg	SW846 6010C
Chromium		29.7	1.3		mg/kg	SW846 6010C
Copper		2420	17		mg/kg	SW846 6010C
Iron		20500	66		mg/kg	SW846 6010C
Lead		660	2.7		mg/kg	SW846 6010C
Mercury		0.079	0.036		mg/kg	SW846 7471B
Nickel		31.3	5.3		mg/kg	SW846 6010C
Silver		8.5	0.66		mg/kg	SW846 6010C
Zinc		149	6.6		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		99.2			%	ASTM D422-63
No.10 Sieve (2.00 mm)		99.0			%	ASTM D422-63
No.16 Sieve (1.18 mm)		98.1			%	ASTM D422-63
No.30 Sieve (0.60 mm)		95.2			%	ASTM D422-63
No.50 Sieve (0.30 mm)		76.3			%	ASTM D422-63
No.100 Sieve (0.15 mm)		45.3			%	ASTM D422-63
No.200 Sieve (0.075 mm)		25.2			%	ASTM D422-63
0.030 mm (Hydrometer)		18			%	ASTM D422-63
0.005 mm (Hydrometer)		6.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		5.0			%	ASTM D422-63
% Gravel		0.040			%	ASTM D422-63
% Sand		74.7			%	ASTM D422-63
% Silt, Clay, Colloids		25.2			%	ASTM D422-63
Bulk Density (Dry Basis)		1.0			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		35.5			%	ASTM 2216-92
Total Organic Carbon		6650	140		mg/kg	LLOYD KAHN 1988 MOD
JC52655-10	**LLRA-SD01-05-10**					
Aroclor 1248		43.1 J	46	27	ug/kg	SW846 8082A
Aroclor 1254		73.0	46	11	ug/kg	SW846 8082A
Arsenic		7.9	2.9		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

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Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Barium		835	29		mg/kg	SW846 6010C
Cadmium		2.2	0.72		mg/kg	SW846 6010C
Chromium		42.2	1.4		mg/kg	SW846 6010C
Copper		3540	18		mg/kg	SW846 6010C
Iron		26800	72		mg/kg	SW846 6010C
Lead		1040	2.9		mg/kg	SW846 6010C
Mercury		0.14	0.037		mg/kg	SW846 7471B
Nickel		48.1	5.7		mg/kg	SW846 6010C
Silver		13.7	0.72		mg/kg	SW846 6010C
Zinc		259	7.2		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		99.9			%	ASTM D422-63
No.10 Sieve (2.00 mm)		99.7			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.6			%	ASTM D422-63
No.30 Sieve (0.60 mm)		99.1			%	ASTM D422-63
No.50 Sieve (0.30 mm)		94.3			%	ASTM D422-63
No.100 Sieve (0.15 mm)		65.3			%	ASTM D422-63
No.200 Sieve (0.075 mm)		42.4			%	ASTM D422-63
0.030 mm (Hydrometer)		26			%	ASTM D422-63
0.005 mm (Hydrometer)		10			%	ASTM D422-63
0.0015 mm (Hydrometer)		8.0			%	ASTM D422-63
% Sand		57.6			%	ASTM D422-63
% Silt, Clay, Colloids		42.4			%	ASTM D422-63
Bulk Density (Dry Basis)		1.2			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		43.4			%	ASTM 2216-92
Total Organic Carbon [b]		11000	140		mg/kg	LLOYD KAHN 1988 MOD
JC52655-11	**LLRA-SD01-10-30**					
Aroclor 1260		126	41	13	ug/kg	SW846 8082A
Arsenic		5.3	2.4		mg/kg	SW846 6010C
Barium		151	24		mg/kg	SW846 6010C
Chromium		37.5	1.2		mg/kg	SW846 6010C
Copper		1300	15		mg/kg	SW846 6010C
Iron		23300	61		mg/kg	SW846 6010C
Lead [a]		203	12		mg/kg	SW846 6010C
Mercury		0.052	0.041		mg/kg	SW846 7471B
Nickel		40.8	4.9		mg/kg	SW846 6010C
Selenium		6.1	2.4		mg/kg	SW846 6010C
Silver [a]		5.8	3.1		mg/kg	SW846 6010C
Zinc		278	6.1		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52655
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/04/17

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	99.4			%	ASTM D422-63
No.10 Sieve (2.00 mm)	99.1			%	ASTM D422-63
No.16 Sieve (1.18 mm)	98.8			%	ASTM D422-63
No.30 Sieve (0.60 mm)	97.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)	95.0			%	ASTM D422-63
No.100 Sieve (0.15 mm)	73.4			%	ASTM D422-63
No.200 Sieve (0.075 mm)	29.8			%	ASTM D422-63
0.030 mm (Hydrometer)	15			%	ASTM D422-63
0.005 mm (Hydrometer)	4.8			%	ASTM D422-63
0.0015 mm (Hydrometer)	4.8			%	ASTM D422-63
% Sand	70.2			%	ASTM D422-63
% Silt, Clay, Colloids	29.8			%	ASTM D422-63
Bulk Density (Dry Basis)	1.2			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	28.3			%	ASTM 2216-92
Total Organic Carbon	2420	130		mg/kg	LLOYD KAHN 1988 MOD

(a) Elevated detection limit due to dilution required for high interfering element.
(b) Multiple injections indicate possible sample non-homogeneity.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	LLRA-SD09-46-56		
Lab Sample ID:	JC52655-1	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	72.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74547.D	1	10/12/17 07:20	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	16.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	17	ug/kg	
11104-28-2	Aroclor 1221	ND	41	17	ug/kg	
11141-16-5	Aroclor 1232	ND	41	11	ug/kg	
53469-21-9	Aroclor 1242	ND	41	6.6	ug/kg	
12672-29-6	Aroclor 1248	ND	41	24	ug/kg	
11097-69-1	Aroclor 1254	35.6	41	10	ug/kg	J
11096-82-5	Aroclor 1260	ND	41	13	ug/kg	
11100-14-4	Aroclor 1268	ND	41	6.2	ug/kg	
37324-23-5	Aroclor 1262	8.8	41	3.2	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-152%
877-09-8	Tetrachloro-m-xylene	93%		24-152%
2051-24-3	Decachlorobiphenyl	97%		10-166%
2051-24-3	Decachlorobiphenyl	93%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD09-46-56		
Lab Sample ID:	JC52655-1	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	72.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.5	2.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	386	27	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	0.69	0.67	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	51.6	1.3	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	3330	17	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	31500	67	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	284	2.7	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.11	0.036	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	52.6	5.3	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.7	2.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	8.3	3.3	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	157	6.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD09-46-56		
Lab Sample ID:	JC52655-1	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	72.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9		%	1	10/19/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	99.6		%	1	10/19/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	98.5		%	1	10/19/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	95.1		%	1	10/19/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	74.0		%	1	10/19/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	10.0		%	1	10/19/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	4.0		%	1	10/19/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/19/17	GD	ASTM D422-63
% Sand	4.9		%	1	10/19/17	GD	ASTM D422-63
% Silt, Clay, Colloids	95.1		%	1	10/19/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	0.88		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	38.5		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon	4100	140	mg/kg	1	10/11/17 13:37	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD09-41-46		
Lab Sample ID:	JC52655-2	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	60.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74548.D	1	10/12/17 07:52	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	54	22	ug/kg	
11104-28-2	Aroclor 1221	ND	54	22	ug/kg	
11141-16-5	Aroclor 1232	ND	54	15	ug/kg	
53469-21-9	Aroclor 1242	ND	54	8.6	ug/kg	
12672-29-6	Aroclor 1248	812	54	32	ug/kg	
11097-69-1	Aroclor 1254	572	54	13	ug/kg	
11096-82-5	Aroclor 1260	ND	54	17	ug/kg	
11100-14-4	Aroclor 1268	ND	54	8.1	ug/kg	
37324-23-5	Aroclor 1262	ND	54	4.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		24-152%
877-09-8	Tetrachloro-m-xylene	86%		24-152%
2051-24-3	Decachlorobiphenyl	77%		10-166%
2051-24-3	Decachlorobiphenyl	85%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD09-41-46		
Lab Sample ID:	JC52655-2	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	60.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	20.5	16	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	29600	790	mg/kg	25	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium [a]	25.6	3.9	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium [a]	45.7	7.9	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	35000	99	mg/kg	25	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	29200	79	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	15300	79	mg/kg	25	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	1.8	0.088	mg/kg	2	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [3]
Nickel [a]	77.3	32	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 16	16	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	154	3.9	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Zinc	1390	7.9	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA43005
(3) Prep QC Batch: MP3420
(4) Prep QC Batch: MP3431

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD09-41-46		
Lab Sample ID:	JC52655-2	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	60.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	65.8		%	1	10/11/17 23:35	SA	ASTM 2216-92

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-30-50		
Lab Sample ID:	JC52655-3	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	84.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74553.D	1	10/12/17 10:34	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	15	ug/kg	
11104-28-2	Aroclor 1221	ND	39	16	ug/kg	
11141-16-5	Aroclor 1232	ND	39	10	ug/kg	
53469-21-9	Aroclor 1242	ND	39	6.1	ug/kg	
12672-29-6	Aroclor 1248	ND	39	23	ug/kg	
11097-69-1	Aroclor 1254	ND	39	9.5	ug/kg	
11096-82-5	Aroclor 1260	ND	39	12	ug/kg	
11100-14-4	Aroclor 1268	ND	39	5.7	ug/kg	
37324-23-5	Aroclor 1262	ND	39	2.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		24-152%
877-09-8	Tetrachloro-m-xylene	81%		24-152%
2051-24-3	Decachlorobiphenyl	90%		10-166%
2051-24-3	Decachlorobiphenyl	84%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD05-30-50		
Lab Sample ID:	JC52655-3	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	84.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.2	2.3	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	27.5	23	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.56	0.56	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	31.2	1.1	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	1290	14	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	19400	56	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	16.0	2.3	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.036	0.036	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	32.4	4.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.3	2.3	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	6.9	2.8	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	95.8	5.6	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-30-50		
Lab Sample ID:	JC52655-3	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	84.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	92.7		%	1	10/19/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	89.3		%	1	10/19/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	77.8		%	1	10/19/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	71.7		%	1	10/19/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	66.2		%	1	10/19/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	43.5		%	1	10/19/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	19.5		%	1	10/19/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	9.0		%	1	10/19/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	0.89		%	1	10/19/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	0.89		%	1	10/19/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/19/17	GD	ASTM D422-63
% Sand	80.5		%	1	10/19/17	GD	ASTM D422-63
% Silt, Clay, Colloids	19.5		%	1	10/19/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.0		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	18.7		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon [a]	276	120	mg/kg	1	10/11/17 09:43	CD	LLOYD KAHN 1988 MOD

(a) Multiple injections indicate possible sample non-homogeneity.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-10-30		
Lab Sample ID:	JC52655-4	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	84.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74554.D	1	10/12/17 11:06	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	16	ug/kg	
11104-28-2	Aroclor 1221	ND	39	16	ug/kg	
11141-16-5	Aroclor 1232	ND	39	10	ug/kg	
53469-21-9	Aroclor 1242	ND	39	6.2	ug/kg	
12672-29-6	Aroclor 1248	ND	39	23	ug/kg	
11097-69-1	Aroclor 1254	ND	39	9.6	ug/kg	
11096-82-5	Aroclor 1260	ND	39	12	ug/kg	
11100-14-4	Aroclor 1268	ND	39	5.8	ug/kg	
37324-23-5	Aroclor 1262	ND	39	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		24-152%
877-09-8	Tetrachloro-m-xylene	84%		24-152%
2051-24-3	Decachlorobiphenyl	96%		10-166%
2051-24-3	Decachlorobiphenyl	89%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD05-10-30		
Lab Sample ID:	JC52655-4	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	84.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.9	2.4	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 24	24	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.59	0.59	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	26.9	1.2	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	821	3.0	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	17200	59	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	16.0	2.4	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Mercury	< 0.037	0.037	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	25.9	4.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.4	2.4	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	7.4	0.59	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	81.0	5.9	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-10-30		
Lab Sample ID:	JC52655-4	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	84.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	94.5		%	1	10/19/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	92.0		%	1	10/19/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	83.3		%	1	10/19/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	75.7		%	1	10/19/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	64.1		%	1	10/19/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	36.7		%	1	10/19/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	13		%	1	10/19/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	2.0		%	1	10/19/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	0.93		%	1	10/19/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	0.93		%	1	10/19/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/19/17	GD	ASTM D422-63
% Sand	87		%	1	10/19/17	GD	ASTM D422-63
% Silt, Clay, Colloids	12.8		%	1	10/19/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	0.95		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	18.1		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon [a]	393	120	mg/kg	1	10/11/17 10:21	CD	LLOYD KAHN 1988 MOD

(a) Multiple injections indicate possible sample non-homogeneity.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-05-10		
Lab Sample ID:	JC52655-5	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	80.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74555.D	1	10/12/17 11:38	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	16.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	15	ug/kg	
11104-28-2	Aroclor 1221	ND	37	15	ug/kg	
11141-16-5	Aroclor 1232	ND	37	10	ug/kg	
53469-21-9	Aroclor 1242	ND	37	6.0	ug/kg	
12672-29-6	Aroclor 1248	ND	37	22	ug/kg	
11097-69-1	Aroclor 1254	ND	37	9.2	ug/kg	
11096-82-5	Aroclor 1260	ND	37	12	ug/kg	
11100-14-4	Aroclor 1268	ND	37	5.6	ug/kg	
37324-23-5	Aroclor 1262	ND	37	2.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	92%		24-152%
877-09-8	Tetrachloro-m-xylene	90%		24-152%
2051-24-3	Decachlorobiphenyl	105%		10-166%
2051-24-3	Decachlorobiphenyl	96%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD05-05-10		
Lab Sample ID:	JC52655-5	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	80.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.0	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	28.3	25	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.62	0.62	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	29.4	1.2	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	932	3.1	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	21500	62	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	27.0	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Mercury	< 0.037	0.037	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	28.8	5.0	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	3.6	0.62	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	84.5	6.2	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-05-10		
Lab Sample ID:	JC52655-5	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	80.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	96		%	1	10/19/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	95		%	1	10/19/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	90		%	1	10/19/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	85		%	1	10/19/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	72		%	1	10/19/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	29		%	1	10/19/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	12		%	1	10/19/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	3.0		%	1	10/19/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	0.48		%	1	10/19/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	0.48		%	1	10/19/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/19/17	GD	ASTM D422-63
% Sand	88		%	1	10/19/17	GD	ASTM D422-63
% Silt, Clay, Colloids	12		%	1	10/19/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	0.97		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	24.4		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon	523	120	mg/kg	1	10/11/17 10:46	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-FD1		
Lab Sample ID:	JC52655-6	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	77.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74556.D	1	10/12/17 12:11	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	25	ug/kg	
11097-69-1	Aroclor 1254	ND	42	10	ug/kg	
11096-82-5	Aroclor 1260	ND	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.3	ug/kg	
37324-23-5	Aroclor 1262	ND	42	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	96%		24-152%
877-09-8	Tetrachloro-m-xylene	93%		24-152%
2051-24-3	Decachlorobiphenyl	105%		10-166%
2051-24-3	Decachlorobiphenyl	96%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-FD1		
Lab Sample ID:	JC52655-6	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	77.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.4	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	27.1	25	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.63	0.63	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	24.3	1.3	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	562	3.2	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	17600	63	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	11.9	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Mercury	< 0.039	0.039	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	24.6	5.1	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	1.7	0.63	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	65.6	6.3	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-FD1		
Lab Sample ID:	JC52655-6	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	77.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	29.1		%	1	10/11/17 23:35	SA	ASTM 2216-92

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-00-05		
Lab Sample ID:	JC52655-7	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	77.9
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74557.D	1	10/12/17 12:43	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	16.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	40	16	ug/kg	
11104-28-2	Aroclor 1221	ND	40	16	ug/kg	
11141-16-5	Aroclor 1232	ND	40	11	ug/kg	
53469-21-9	Aroclor 1242	ND	40	6.3	ug/kg	
12672-29-6	Aroclor 1248	ND	40	23	ug/kg	
11097-69-1	Aroclor 1254	ND	40	9.8	ug/kg	
11096-82-5	Aroclor 1260	ND	40	13	ug/kg	
11100-14-4	Aroclor 1268	ND	40	5.9	ug/kg	
37324-23-5	Aroclor 1262	ND	40	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		24-152%
877-09-8	Tetrachloro-m-xylene	86%		24-152%
2051-24-3	Decachlorobiphenyl	98%		10-166%
2051-24-3	Decachlorobiphenyl	92%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD05-00-05		
Lab Sample ID:	JC52655-7	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	77.9
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.7	2.6	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	27.4	26	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.65	0.65	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	26.5	1.3	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	536	3.3	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	20100	65	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	12.1	2.6	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Mercury	0.043	0.040	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	25.9	5.2	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.6	2.6	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	2.2	0.65	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	67.2	6.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD05-00-05		
Lab Sample ID:	JC52655-7	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	77.9
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/19/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.9		%	1	10/19/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.8		%	1	10/19/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.5		%	1	10/19/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	98.9		%	1	10/19/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	85.5		%	1	10/19/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	17.1		%	1	10/19/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	3.8		%	1	10/19/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	1.0		%	1	10/19/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	0.50		%	1	10/19/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	0.50		%	1	10/19/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/19/17	GD	ASTM D422-63
% Sand	96.2		%	1	10/19/17	GD	ASTM D422-63
% Silt, Clay, Colloids	3.8		%	1	10/19/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	0.81		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	28.3		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon	598	130	mg/kg	1	10/11/17 11:03	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-30-50		
Lab Sample ID:	JC52655-8	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	82.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74558.D	1	10/12/17 13:15	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	16.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	15	ug/kg	
11104-28-2	Aroclor 1221	ND	37	15	ug/kg	
11141-16-5	Aroclor 1232	ND	37	9.9	ug/kg	
53469-21-9	Aroclor 1242	ND	37	5.9	ug/kg	
12672-29-6	Aroclor 1248	ND	37	22	ug/kg	
11097-69-1	Aroclor 1254	ND	37	9.1	ug/kg	
11096-82-5	Aroclor 1260	ND	37	12	ug/kg	
11100-14-4	Aroclor 1268	ND	37	5.5	ug/kg	
37324-23-5	Aroclor 1262	ND	37	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	93%		24-152%
877-09-8	Tetrachloro-m-xylene	90%		24-152%
2051-24-3	Decachlorobiphenyl	101%		10-166%
2051-24-3	Decachlorobiphenyl	91%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD01-30-50		
Lab Sample ID:	JC52655-8	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	82.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.8	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	41.4	25	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.62	0.62	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	28.3	1.2	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	1390	16	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	18400	62	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	79.4	2.5	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.037	0.035	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	27.7	5.0	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	4.4	0.62	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	143	6.2	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-30-50		
Lab Sample ID:	JC52655-8	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	82.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/19/17	GD	ASTM D422-63
0.375 Inch Sieve	99.4		%	1	10/19/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	99.3		%	1	10/19/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	91.9		%	1	10/19/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	89.1		%	1	10/19/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	81.7		%	1	10/19/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	68.5		%	1	10/19/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	53.4		%	1	10/19/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	35.1		%	1	10/19/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	22.4		%	1	10/19/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	7.0		%	1	10/19/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	0.90		%	1	10/19/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	0.90		%	1	10/19/17	GD	ASTM D422-63
% Gravel	0.75		%	1	10/19/17	GD	ASTM D422-63
% Sand	76.9		%	1	10/19/17	GD	ASTM D422-63
% Silt, Clay, Colloids	22.4		%	1	10/19/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.3		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	21.6		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon [a]	456	120	mg/kg	1	10/11/17 11:14	CD	LLOYD KAHN 1988 MOD

(a) Multiple injections indicate possible sample non-homogeneity.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-00-05		
Lab Sample ID:	JC52655-9	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	73.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74559.D	1	10/12/17 13:48	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	16.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	40	16	ug/kg	
11104-28-2	Aroclor 1221	ND	40	16	ug/kg	
11141-16-5	Aroclor 1232	ND	40	11	ug/kg	
53469-21-9	Aroclor 1242	ND	40	6.4	ug/kg	
12672-29-6	Aroclor 1248	40.9	40	24	ug/kg	
11097-69-1	Aroclor 1254	53.4	40	9.9	ug/kg	
11096-82-5	Aroclor 1260	ND	40	13	ug/kg	
11100-14-4	Aroclor 1268	ND	40	6.0	ug/kg	
37324-23-5	Aroclor 1262	ND	40	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		24-152%
877-09-8	Tetrachloro-m-xylene	85%		24-152%
2051-24-3	Decachlorobiphenyl	89%		10-166%
2051-24-3	Decachlorobiphenyl	86%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD01-00-05		
Lab Sample ID:	JC52655-9	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	73.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.2	2.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	612	27	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	1.2	0.66	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	29.7	1.3	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	2420	17	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	20500	66	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	660	2.7	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.079	0.036	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	31.3	5.3	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.7	2.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	8.5	0.66	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	149	6.6	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-00-05		
Lab Sample ID:	JC52655-9	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	73.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.2		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.0		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	98.1		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	95.2		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	76.3		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	45.3		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	25.2		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	18		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	6.0		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	5.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.040		%	1	10/16/17	GD	ASTM D422-63
% Sand	74.7		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	25.2		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.0		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	35.5		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon	6650	140	mg/kg	1	10/11/17 12:03	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-05-10		
Lab Sample ID:	JC52655-10	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	69.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74564.D	1	10/12/17 16:29	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	46	18	ug/kg	
11104-28-2	Aroclor 1221	ND	46	19	ug/kg	
11141-16-5	Aroclor 1232	ND	46	12	ug/kg	
53469-21-9	Aroclor 1242	ND	46	7.3	ug/kg	
12672-29-6	Aroclor 1248	43.1	46	27	ug/kg	J
11097-69-1	Aroclor 1254	73.0	46	11	ug/kg	
11096-82-5	Aroclor 1260	ND	46	15	ug/kg	
11100-14-4	Aroclor 1268	ND	46	6.8	ug/kg	
37324-23-5	Aroclor 1262	ND	46	3.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	98%		24-152%
877-09-8	Tetrachloro-m-xylene	93%		24-152%
2051-24-3	Decachlorobiphenyl	98%		10-166%
2051-24-3	Decachlorobiphenyl	94%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD01-05-10		
Lab Sample ID:	JC52655-10	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	69.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.9	2.9	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	835	29	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	2.2	0.72	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	42.2	1.4	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Copper	3540	18	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	26800	72	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	1040	2.9	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.14	0.037	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	48.1	5.7	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.9	2.9	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	13.7	0.72	mg/kg	1	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	259	7.2	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-05-10		
Lab Sample ID:	JC52655-10	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	69.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.9		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.7		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.6		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.1		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	94.3		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	65.3		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	42.4		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	26		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	10		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	8.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	57.6		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	42.4		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.2		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	43.4		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon [a]	11000	140	mg/kg	1	10/11/17 20:49	CD	LLOYD KAHN 1988 MOD

(a) Multiple injections indicate possible sample non-homogeneity.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-10-30		
Lab Sample ID:	JC52655-11	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	77.9
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G74534.D	1	10/12/17 00:19	RK	10/10/17 17:45	OP6799	G5G1732
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	16	ug/kg	
11104-28-2	Aroclor 1221	ND	41	17	ug/kg	
11141-16-5	Aroclor 1232	ND	41	11	ug/kg	
53469-21-9	Aroclor 1242	ND	41	6.5	ug/kg	
12672-29-6	Aroclor 1248	ND	41	24	ug/kg	
11097-69-1	Aroclor 1254	ND	41	10	ug/kg	
11096-82-5	Aroclor 1260	126	41	13	ug/kg	
11100-14-4	Aroclor 1268	ND	41	6.1	ug/kg	
37324-23-5	Aroclor 1262	ND	41	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	95%		24-152%
877-09-8	Tetrachloro-m-xylene	91%		24-152%
2051-24-3	Decachlorobiphenyl	99%		10-166%
2051-24-3	Decachlorobiphenyl	91%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD01-10-30		
Lab Sample ID:	JC52655-11	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	77.9
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.3	2.4	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	151	24	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.61	0.61	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	37.5	1.2	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	1300	15	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Iron	23300	61	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	203	12	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.052	0.041	mg/kg	1	10/09/17	10/10/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	40.8	4.9	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	6.1	2.4	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	5.8	3.1	mg/kg	5	10/10/17	10/13/17	ND	SW846 6010C [3]	SW846 3050B [5]
Zinc	278	6.1	mg/kg	1	10/10/17	10/12/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42971
(2) Instrument QC Batch: MA42997
(3) Instrument QC Batch: MA43005
(4) Prep QC Batch: MP3420
(5) Prep QC Batch: MP3431

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD01-10-30		
Lab Sample ID:	JC52655-11	**Date Sampled:**	10/04/17
Matrix:	SO - Sediment	**Date Received:**	10/06/17
		Percent Solids:	77.9
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.4		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.1		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	98.8		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	97.9		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	95.0		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	73.4		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	29.8		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	15		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	4.8		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	4.8		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	70.2		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	29.8		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.2		g/ml	1	10/11/17 17:00	JOO	ASTM D2937-94 M
Moisture (Dry Weight Basis)	28.3		%	1	10/10/17 16:20	LV	ASTM 2216-92
Total Organic Carbon	2420	130	mg/kg	1	10/11/17 13:18	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC52655
Account: RAMEMIAA Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
% Gravel		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Sand		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Silt, Clay, Colloids		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
Bulk Density (Dry Basis)		**ASTM D2937-94 M**	SO	SGS is not certified for this parameter.[a]
Moisture (Dry Weight Basis)		**ASTM 2216-92**	SO	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SGS ACCUTEST

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

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FED-EX Tracking #
Bottle Order Control # JC52655
SGS Accutest Quote #
SGS Accutest Job #

Client / Reporting Information

Company Name: Ramboll Environ
Street Address: 3600 Green Ct, Suite 750
City / State / Zip: Ann Arbor MI 48105
Project Contact / E-mail: Danielle Amber damber@ramboll.com
Phone #: 734-761-2175 Fax #: 734-761-2050
Sampler(s) Name(s): Alyssa Lanan Phone #: 734-761-2007

Project Information

Project Name: Lake Linden Sampling Event
Street
City / State: Lake Linden MI
Project #: 02-433323A
Client Purchase Order #
Project Manager: Viktoriya Pushkova

Billing Information (if different from Report to)
Company Name
Street Address
City / State / Zip
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	MI 10 Metals (SW846 6010C)	Iron (SW846 6010C)	Nickel (SW846 6010C)	Total PCBs (SW846 8082)	TOC (SW846 9060)	Grain Size (ASTM D422-63)	Bulk Density (ASTM D7263)	Moisture Content (ASTM D2216)				LAB USE ONLY
1	LLRA-SD09-46-56		10/4/17	17:40	ASL	SED	3					X				X	X	X	X	X	X	X	X				L53
2	LLRA-SD09-41-46			17:30			1									X	X	X	X								D54
3	LLRA-SD05-30-50			16:25			3									X	X	X	X	X	X	X	X				P32
4	LLRA-SD05-10-30			16:15			3									X	X	X	X	X	X	X	X				
5	LLRA-SD05-05-10			16:05			3									X	X	X	X	X	X	X	X				
6	LLRA-FD1			—			1									X	X	X	X								
7	LLRA-SD05-00-05			15:50			3									X	X	X	X	X	X	X	X				
8	LLRA-SD01-30-50			12:55			3									X	X	X	X	X	X	X	X				
9	LLRA-SD01-00-05			12:30			3									X	X	X	X	X	X	X	X				
10	LLRA-SD01-05-10			12:35			3									X	X	X	X	X	X	X	X				
11	LLRA-SD01-10-30		↓	12:45	↓	↓	4					↓				X	X	X	X	X	X	X	X	*MS/MSD*			

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other _____

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:

INITIAL ASESSMENT ZBTH
LABEL VERIFICATION GG

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format _____
- [ ] Other _____

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

retain extracts of all PCB samples following initial analysis
Client cost number: 37156-100417-01
*level 4 validation (Honeywell deliverable)

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature] to FedEx	10/5/17 12:30	1 FEDEX	2 FEDEX	10/6/17 920	2 [signature]
3		3	4		4
5		5			

Custody Seal # 832 [x] Intact [ ] Not intact — Preserved where applicable [ ] — On Ice [x] — Cooler Temp. 3.3°C

Form:SM088-01CRev.Date:9/13/16

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JC52655: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC52655 **Client:** _____ **Project:** _____

Date / Time Received: 10/6/2017 9:20:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.3);

Cooler Temps (Corrected) °C: Cooler 1: (1.7);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☑	☐
2. Trip Blank listed on COC:	☐	☑	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☑

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

SM089-02
Rev. Date 12/1/16

5.2

5

JC52655: Chain of Custody
Page 2 of 2

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Ramboll Environ US Corporation

Honeywell-Lake Linden Sampling Event, Lake Linden, MI

02-43323A

SGS Job Number: JC52780

Sampling Dates: 10/06/17 - 10/08/17

Report to:

Ramboll Environ US Corporation

twyss@ramboll.com

ATTN: Troy Wyss

Total number of pages in report: 51

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499

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Sample Summary

Ramboll Environ US Corporation

Job No: JC52780

Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Project No: 02-43323A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52780-1	10/06/17	18:00	ASL	10/10/17	SO	Sediment	LLRA-SD03-00-05
JC52780-2	10/06/17	18:10	ASL	10/10/17	SO	Sediment	LLRA-SD03-05-10
JC52780-3	10/06/17	18:15	ASL	10/10/17	SO	Sediment	LLRA-SD03-10-30
JC52780-4	10/06/17	18:35	ASL	10/10/17	SO	Sediment	LLRA-SD03-30-50
JC52780-5	10/06/17	20:00	ASL	10/10/17	SO	Sediment	LLRA-SD10-92-102
JC52780-6	10/06/17	19:30	ASL	10/10/17	SO	Sediment	LLRA-SD11-23-33
JC52780-7	10/06/17	16:45	ASL	10/10/17	SO	Sediment	LLRA-CS03-05-10
JC52780-8	10/06/17	16:45	ASL	10/10/17	SO	Sediment	LLRA-CS03-10-20
JC52780-9	10/07/17	12:55	ASL	10/10/17	SO	Sediment	LLRA-CS06-00-05
JC52780-10	10/08/17	11:20	ASL	10/10/17	SO	Sediment	LLRA-CS04-00-05
JC52780-11	10/08/17	18:20	ASL	10/10/17	SO	Sediment	LLRA-CS07-00-05

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Ramboll Environ US Corporation	**Job No**	JC52780
Site:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI	**Report Date**	11/14/2017 3:08:42 P

On 10/10/2017, 11 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 2.6 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC52780 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Extractables by GC By Method SW846 8082A

Matrix: SO **Batch ID:** OP6896

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52786-14MS, JC52786-14MSD, OP6896-MSMSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP7093

- All samples were extracted within the recommended method holding time.
- Sample(s) JC52780-8MS, JC52780-8MSD, OP7093-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix: SO **Batch ID:** MP3453

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52726-4MS, JC52726-4MSD, JC52726-4SDL were used as the QC samples for metals.
- LCS Recovery(s) for Barium are outside control limits.
- Matrix Spike Duplicate Recovery(s) for Zinc are outside control limits. Please refer to certification exceptions summary for additional certification information.
- RPD(s) for Serial Dilution for Selenium are outside control limits for sample MP3453-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JC52780-1 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-1 for Chromium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-1 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-2 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-2 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-3 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-3 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-4 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-4 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-5 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-5 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-6 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52780-6 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-1 for Lead: Elevated detection limit due to dilution required for high interfering element.

Matrix: SO **Batch ID:** MP3595

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53225-10MS, JC53225-10MSD, JC53225-10SDL were used as the QC samples for metals.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Iron are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Selenium, Silver are outside control limits for sample MP3595-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JC52780-8 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52780-8 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52780-7 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52780-7 for Silver: Elevated detection limit due to dilution required for high interfering element.

Metals By Method SW846 7471B

Matrix: SO	Batch ID: MP3460

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52780-4MS, JC52780-4MSD were used as the QC samples for metals.

Matrix: SO	Batch ID: MP3605

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53319-1MS, JC53319-1MSD were used as the QC samples for metals.

Wet Chemistry By Method ASTM 2216-92

Matrix: SO	Batch ID: GN70890

- The data for ASTM 2216-92 meets quality control requirements.

Matrix: SO	Batch ID: GN71468

- The data for ASTM 2216-92 meets quality control requirements.

Wet Chemistry By Method ASTM D2937-94 M

Matrix: SO	Batch ID: GN71183

- Sample(s) JC52786-14DUP were used as the QC samples for Bulk Density (Dry Basis).

Wet Chemistry By Method ASTM D422-63

Matrix: SO	Batch ID: GP8420

- Sample(s) JC52786-14DUP were used as the QC samples for % Gravel, % Sand, % Silt, Clay, Colloids, 0.0015 mm (Hydrometer), 0.005 mm (Hydrometer), 0.375 Inch Sieve, 0.75 inch sieve, 1.5 Inch Sieve, 3 inch sieve, No.10 Sieve (2.00 mm), No.100 Sieve (0.15 mm), No.16 Sieve (1.18 mm), No.200 Sieve (0.075 mm), No.30 Sieve (0.60 mm), No.4 Sieve (4.75 mm), No.50 Sieve (0.30 mm), No.8 Sieve (2.36 mm), 0.030 mm (Hydrometer).
- RPD(s) for Duplicate for 0.030 mm (Hydrometer) are outside control limits for sample GP8420-D1. High RPD due to possible sample nonhomogeneity.
- JC52780-2 for 0.030 mm (Hydrometer): Data extrapolated from higher and lower data points due to possible analytical problem with hydrometer analysis at short analysis times.

Wet Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO	Batch ID: GP8479

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52786-14DUP, JC52786-14MS were used as the QC samples for Total Organic Carbon.
- JC52780-3 for Total Organic Carbon: Multiple injections indicate possible sample non-homogeneity.

Matrix: SO	Batch ID: GP8610

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52780-7DUP, JC52780-7MS were used as the QC samples for Total Organic Carbon.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC52780
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/06/17 thru 10/08/17

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52780-1	**LLRA-SD03-00-05**					
Aroclor 1248		68.2	55	32	ug/kg	SW846 8082A
Aroclor 1262		36.6 J	55	4.2	ug/kg	SW846 8082A
Arsenic		3.7	3.4		mg/kg	SW846 6010C
Barium		1160	34		mg/kg	SW846 6010C
Cadmium		3.7	0.84		mg/kg	SW846 6010C
Chromium [a]		79.4	8.4		mg/kg	SW846 6010C
Copper		8500	42		mg/kg	SW846 6010C
Iron		59900	420		mg/kg	SW846 6010C
Lead [a]		1750	17		mg/kg	SW846 6010C
Mercury		0.35	0.044		mg/kg	SW846 7471B
Nickel		80.7	6.7		mg/kg	SW846 6010C
Silver [a]		33.0	4.2		mg/kg	SW846 6010C
Zinc		419	8.4		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		76.6			%	ASTM 2216-92
Total Organic Carbon		15400	180		mg/kg	LLOYD KAHN 1988 MOD
JC52780-2	**LLRA-SD03-05-10**					
Barium		78.4	29		mg/kg	SW846 6010C
Chromium		57.9	1.4		mg/kg	SW846 6010C
Copper		2460	18		mg/kg	SW846 6010C
Iron		37200	72		mg/kg	SW846 6010C
Lead		25.7	2.9		mg/kg	SW846 6010C
Mercury		0.091	0.036		mg/kg	SW846 7471B
Nickel		56.7	5.7		mg/kg	SW846 6010C
Silver [a]		6.5	3.6		mg/kg	SW846 6010C
Zinc		103	7.2		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		100			%	ASTM D422-63
No.30 Sieve (0.60 mm)		100			%	ASTM D422-63
No.50 Sieve (0.30 mm)		100			%	ASTM D422-63
No.100 Sieve (0.15 mm)		99.9			%	ASTM D422-63
No.200 Sieve (0.075 mm)		99.5			%	ASTM D422-63
0.030 mm (Hydrometer) [b]		99			%	ASTM D422-63
0.005 mm (Hydrometer)		16			%	ASTM D422-63
0.0015 mm (Hydrometer)		7.0			%	ASTM D422-63
% Sand		0.53			%	ASTM D422-63

Summary of Hits

Job Number: JC52780
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/06/17 thru 10/08/17

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
% Silt, Clay, Colloids	99.5			%	ASTM D422-63
Bulk Density (Dry Basis)	1.1			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	42.1			%	ASTM 2216-92
Total Organic Carbon	5540	140		mg/kg	LLOYD KAHN 1988 MOD
JC52780-3 LLRA-SD03-10-30					
Barium	99.9	31		mg/kg	SW846 6010C
Chromium	57.1	1.5		mg/kg	SW846 6010C
Copper	2830	19		mg/kg	SW846 6010C
Iron	36600	76		mg/kg	SW846 6010C
Lead	36.1	3.1		mg/kg	SW846 6010C
Mercury	0.086	0.036		mg/kg	SW846 7471B
Nickel	59.7	6.1		mg/kg	SW846 6010C
Silver [a]	6.4	3.8		mg/kg	SW846 6010C
Zinc	119	7.6		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)	45.4			%	ASTM 2216-92
Total Organic Carbon [c]	6000	150		mg/kg	LLOYD KAHN 1988 MOD
JC52780-4 LLRA-SD03-30-50					
Aroclor 1262	76.3	42	3.2	ug/kg	SW846 8082A
Barium	117	26		mg/kg	SW846 6010C
Chromium	38.0	1.3		mg/kg	SW846 6010C
Copper	1090	3.2		mg/kg	SW846 6010C
Iron	25700	64		mg/kg	SW846 6010C
Lead	191	2.6		mg/kg	SW846 6010C
Mercury	0.060	0.039		mg/kg	SW846 7471B
Nickel	39.8	5.2		mg/kg	SW846 6010C
Silver [a]	5.2	3.2		mg/kg	SW846 6010C
Zinc	238	6.4		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	100			%	ASTM D422-63
No.10 Sieve (2.00 mm)	100			%	ASTM D422-63
No.16 Sieve (1.18 mm)	100			%	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)	99.8			%	ASTM D422-63
No.100 Sieve (0.15 mm)	83.8			%	ASTM D422-63
No.200 Sieve (0.075 mm)	32.8			%	ASTM D422-63
0.030 mm (Hydrometer)	20			%	ASTM D422-63
0.005 mm (Hydrometer)	5.1			%	ASTM D422-63

Summary of Hits

Job Number: JC52780
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/06/17 thru 10/08/17

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
0.0015 mm (Hydrometer)	5.1			%	ASTM D422-63
% Sand	67.2			%	ASTM D422-63
% Silt, Clay, Colloids	32.8			%	ASTM D422-63
Bulk Density (Dry Basis)	1.4			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	31.4			%	ASTM 2216-92
Total Organic Carbon	3410	130		mg/kg	LLOYD KAHN 1988 MOD
JC52780-5 LLRA-SD10-92-102					
Aroclor 1254	58.5	42	10	ug/kg	SW846 8082A
Aroclor 1262	13.0 J	42	3.2	ug/kg	SW846 8082A
Barium	351	28		mg/kg	SW846 6010C
Cadmium	0.78	0.69		mg/kg	SW846 6010C
Chromium	53.7	1.4		mg/kg	SW846 6010C
Copper	3610	17		mg/kg	SW846 6010C
Iron	34400	69		mg/kg	SW846 6010C
Lead	244	2.8		mg/kg	SW846 6010C
Mercury	0.092	0.041		mg/kg	SW846 7471B
Nickel	57.1	5.5		mg/kg	SW846 6010C
Silver [a]	10.7	3.5		mg/kg	SW846 6010C
Zinc	149	6.9		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	100			%	ASTM D422-63
No.10 Sieve (2.00 mm)	100			%	ASTM D422-63
No.16 Sieve (1.18 mm)	100			%	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)	99.6			%	ASTM D422-63
No.100 Sieve (0.15 mm)	96.1			%	ASTM D422-63
No.200 Sieve (0.075 mm)	90.6			%	ASTM D422-63
0.030 mm (Hydrometer)	75			%	ASTM D422-63
0.005 mm (Hydrometer)	10			%	ASTM D422-63
0.0015 mm (Hydrometer)	5.0			%	ASTM D422-63
% Sand	9.4			%	ASTM D422-63
% Silt, Clay, Colloids	90.6			%	ASTM D422-63
Bulk Density (Dry Basis)	1.4			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	38.7			%	ASTM 2216-92
Total Organic Carbon	7590	140		mg/kg	LLOYD KAHN 1988 MOD
JC52780-6 LLRA-SD11-23-33					
Barium	92.9	27		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52780
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/06/17 thru 10/08/17

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Chromium	41.9	1.4		mg/kg	SW846 6010C
Copper	2910	17		mg/kg	SW846 6010C
Iron	29600	68		mg/kg	SW846 6010C
Lead	75.4	2.7		mg/kg	SW846 6010C
Mercury	0.095	0.040		mg/kg	SW846 7471B
Nickel	42.1	5.5		mg/kg	SW846 6010C
Silver [a]	6.1	3.4		mg/kg	SW846 6010C
Zinc	99.3	6.8		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	99.7			%	ASTM D422-63
No.10 Sieve (2.00 mm)	99.5			%	ASTM D422-63
No.16 Sieve (1.18 mm)	99.1			%	ASTM D422-63
No.30 Sieve (0.60 mm)	98.3			%	ASTM D422-63
No.50 Sieve (0.30 mm)	97.0			%	ASTM D422-63
No.100 Sieve (0.15 mm)	89.2			%	ASTM D422-63
No.200 Sieve (0.075 mm)	75.0			%	ASTM D422-63
0.030 mm (Hydrometer)	61			%	ASTM D422-63
0.005 mm (Hydrometer)	10			%	ASTM D422-63
0.0015 mm (Hydrometer)	7.1			%	ASTM D422-63
% Sand	25.0			%	ASTM D422-63
% Silt, Clay, Colloids	75.0			%	ASTM D422-63
Bulk Density (Dry Basis)	0.80			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	36.8			%	ASTM 2216-92
Total Organic Carbon	6490	140		mg/kg	LLOYD KAHN 1988 MOD
JC52780-7 LLRA-CS03-05-10					
Arsenic	3.2	1.9		mg/kg	SW846 6010C
Barium	19.2	19		mg/kg	SW846 6010C
Chromium	27.8	0.97		mg/kg	SW846 6010C
Copper	544	2.4		mg/kg	SW846 6010C
Iron	23300	49		mg/kg	SW846 6010C
Lead [a]	13.7	9.7		mg/kg	SW846 6010C
Mercury	0.085	0.030		mg/kg	SW846 7471B
Nickel	26.6	3.9		mg/kg	SW846 6010C
Silver [a]	2.8	2.4		mg/kg	SW846 6010C
Zinc	63.4	4.9		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)	0.4			%	ASTM 2216-92
Total Organic Carbon	843	100		mg/kg	LLOYD KAHN 1988 MOD

Summary of Hits

Job Number: JC52780
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/06/17 thru 10/08/17

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Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52780-8	**LLRA-CS03-10-20**					
Arsenic		3.2	1.9		mg/kg	SW846 6010C
Barium		22.9	19		mg/kg	SW846 6010C
Chromium		28.9	0.96		mg/kg	SW846 6010C
Copper		572	2.4		mg/kg	SW846 6010C
Iron		23900	48		mg/kg	SW846 6010C
Mercury		0.075	0.032		mg/kg	SW846 7471B
Nickel		27.7	3.8		mg/kg	SW846 6010C
Silver [a]		3.7	2.4		mg/kg	SW846 6010C
Zinc		70.5	4.8		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.5			%	ASTM 2216-92
JC52780-9	**LLRA-CS06-00-05**					
Barium		47.7	20		mg/kg	SW846 6010C
Chromium		13.3	1.0		mg/kg	SW846 6010C
Copper		107	2.5		mg/kg	SW846 6010C
Iron		14500	50		mg/kg	SW846 6010C
Lead		6.8	2.0		mg/kg	SW846 6010C
Mercury		0.035	0.031		mg/kg	SW846 7471B
Nickel		13.7	4.0		mg/kg	SW846 6010C
Zinc		31.8	5.0		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.6			%	ASTM 2216-92
Total Organic Carbon		3650	100		mg/kg	LLOYD KAHN 1988 MOD
JC52780-10	**LLRA-CS04-00-05**					
Arsenic		2.9	1.9		mg/kg	SW846 6010C
Barium		29.1	19		mg/kg	SW846 6010C
Chromium		18.1	0.96		mg/kg	SW846 6010C
Copper		309	2.4		mg/kg	SW846 6010C
Iron		15500	48		mg/kg	SW846 6010C
Lead		5.5	1.9		mg/kg	SW846 6010C
Nickel		17.9	3.9		mg/kg	SW846 6010C
Silver		1.0	0.48		mg/kg	SW846 6010C
Zinc		34.5	4.8		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.3			%	ASTM 2216-92
Total Organic Carbon		230	100		mg/kg	LLOYD KAHN 1988 MOD
JC52780-11	**LLRA-CS07-00-05**					
Arsenic		2.6	2.0		mg/kg	SW846 6010C
Barium		59.0	20		mg/kg	SW846 6010C
Chromium		14.5	1.0		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52780
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/06/17 thru 10/08/17

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Copper	157	2.5		mg/kg	SW846 6010C
Iron	15700	50		mg/kg	SW846 6010C
Lead	8.2	2.0		mg/kg	SW846 6010C
Nickel	17.1	4.0		mg/kg	SW846 6010C
Zinc	36.2	5.0		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)	0.6			%	ASTM 2216-92
Total Organic Carbon	4130	100		mg/kg	LLOYD KAHN 1988 MOD

(a) Elevated detection limit due to dilution required for high interfering element.
(b) Data extrapolated from higher and lower data points due to possible analytical problem with hydrometer analysis at short analysis times.
(c) Multiple injections indicate possible sample non-homogeneity.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	LLRA-SD03-00-05		
Lab Sample ID:	JC52780-1	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	56.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217619.D	1	10/17/17 06:18	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	16.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	55	22	ug/kg	
11104-28-2	Aroclor 1221	ND	55	22	ug/kg	
11141-16-5	Aroclor 1232	ND	55	15	ug/kg	
53469-21-9	Aroclor 1242	ND	55	8.7	ug/kg	
12672-29-6	Aroclor 1248	68.2	55	32	ug/kg	
11097-69-1	Aroclor 1254	ND	55	13	ug/kg	
11096-82-5	Aroclor 1260	ND	55	17	ug/kg	
11100-14-4	Aroclor 1268	ND	55	8.2	ug/kg	
37324-23-5	Aroclor 1262	36.6	55	4.2	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		24-152%
877-09-8	Tetrachloro-m-xylene	76%		24-152%
2051-24-3	Decachlorobiphenyl	81%		10-166%
2051-24-3	Decachlorobiphenyl	81%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD03-00-05		
Lab Sample ID:	JC52780-1	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	56.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.7	3.4	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	1160	34	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	3.7	0.84	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium [a]	79.4	8.4	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Copper	8500	42	mg/kg	10	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Iron	59900	420	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Lead [a]	1750	17	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Mercury	0.35	0.044	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	80.7	6.7	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 17	17	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Silver [a]	33.0	4.2	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Zinc	419	8.4	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43004
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3453
(5) Prep QC Batch: MP3460

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-00-05		
Lab Sample ID:	JC52780-1	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	56.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	76.6		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	15400	180	mg/kg	1	10/13/17 22:16	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-05-10		
Lab Sample ID:	JC52780-2	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	70.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217620.D	1	10/17/17 06:35	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	47	19	ug/kg	
11104-28-2	Aroclor 1221	ND	47	19	ug/kg	
11141-16-5	Aroclor 1232	ND	47	13	ug/kg	
53469-21-9	Aroclor 1242	ND	47	7.5	ug/kg	
12672-29-6	Aroclor 1248	ND	47	28	ug/kg	
11097-69-1	Aroclor 1254	ND	47	12	ug/kg	
11096-82-5	Aroclor 1260	ND	47	15	ug/kg	
11100-14-4	Aroclor 1268	ND	47	7.0	ug/kg	
37324-23-5	Aroclor 1262	ND	47	3.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	85%		24-152%
877-09-8	Tetrachloro-m-xylene	80%		24-152%
2051-24-3	Decachlorobiphenyl	86%		10-166%
2051-24-3	Decachlorobiphenyl	82%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD03-05-10		
Lab Sample ID:	JC52780-2	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	70.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.9	2.9	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	78.4	29	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.72	0.72	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	57.9	1.4	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	2460	18	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Iron	37200	72	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	25.7	2.9	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.091	0.036	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	56.7	5.7	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 14	14	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Silver [a]	6.5	3.6	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Zinc	103	7.2	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43004
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3453
(5) Prep QC Batch: MP3460

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-05-10		
Lab Sample ID:	JC52780-2	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	70.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	99.9		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	99.5		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer) [a]	99		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	16		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	7.0		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	0.53		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	99.5		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.1		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	42.1		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	5540	140	mg/kg	1	10/13/17 13:43	CD	LLOYD KAHN 1988 MOD

(a) Data extrapolated from higher and lower data points due to possible analytical problem with hydrometer analysis at short analysis times.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-10-30		
Lab Sample ID:	JC52780-3	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	68.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217621.D	1	10/17/17 06:51	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	48	19	ug/kg	
11104-28-2	Aroclor 1221	ND	48	20	ug/kg	
11141-16-5	Aroclor 1232	ND	48	13	ug/kg	
53469-21-9	Aroclor 1242	ND	48	7.6	ug/kg	
12672-29-6	Aroclor 1248	ND	48	28	ug/kg	
11097-69-1	Aroclor 1254	ND	48	12	ug/kg	
11096-82-5	Aroclor 1260	ND	48	15	ug/kg	
11100-14-4	Aroclor 1268	ND	48	7.1	ug/kg	
37324-23-5	Aroclor 1262	ND	48	3.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		24-152%
877-09-8	Tetrachloro-m-xylene	78%		24-152%
2051-24-3	Decachlorobiphenyl	85%		10-166%
2051-24-3	Decachlorobiphenyl	81%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD03-10-30		
Lab Sample ID:	JC52780-3	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	68.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.1	3.1	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	99.9	31	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.76	0.76	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	57.1	1.5	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	2830	19	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Iron	36600	76	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	36.1	3.1	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.086	0.036	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	59.7	6.1	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 15	15	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Silver [a]	6.4	3.8	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Zinc	119	7.6	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43004
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3453
(5) Prep QC Batch: MP3460

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-10-30		
Lab Sample ID:	JC52780-3	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	68.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	45.4		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon [a]	6000	150	mg/kg	1	10/13/17 16:55	CD	LLOYD KAHN 1988 MOD

(a) Multiple injections indicate possible sample non-homogeneity.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-30-50		
Lab Sample ID:	JC52780-4	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	76.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217622.D	1	10/17/17 07:08	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	25	ug/kg	
11097-69-1	Aroclor 1254	ND	42	10	ug/kg	
11096-82-5	Aroclor 1260	ND	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.2	ug/kg	
37324-23-5	Aroclor 1262	76.3	42	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	81%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	90%		10-166%
2051-24-3	Decachlorobiphenyl	86%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD03-30-50		
Lab Sample ID:	JC52780-4	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	76.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.6	2.6	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	117	26	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.64	0.64	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	38.0	1.3	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	1090	3.2	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	25700	64	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	191	2.6	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.060	0.039	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	39.8	5.2	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 13	13	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Silver [a]	5.2	3.2	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Zinc	238	6.4	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43004
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3453
(5) Prep QC Batch: MP3460

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD03-30-50		
Lab Sample ID:	JC52780-4	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	76.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	99.8		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	83.8		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	32.8		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	20		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	5.1		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	5.1		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	67.2		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	32.8		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.4		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	31.4		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	3410	130	mg/kg	1	10/13/17 14:34	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD10-92-102		
Lab Sample ID:	JC52780-5	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	72.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217623.D	1	10/17/17 07:25	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	16.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	24	ug/kg	
11097-69-1	Aroclor 1254	58.5	42	10	ug/kg	
11096-82-5	Aroclor 1260	ND	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.2	ug/kg	
37324-23-5	Aroclor 1262	13.0	42	3.2	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	79%		24-152%
877-09-8	Tetrachloro-m-xylene	75%		24-152%
2051-24-3	Decachlorobiphenyl	84%		10-166%
2051-24-3	Decachlorobiphenyl	82%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD10-92-102		
Lab Sample ID:	JC52780-5	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	72.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.8	2.8	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	351	28	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	0.78	0.69	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	53.7	1.4	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	3610	17	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Iron	34400	69	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	244	2.8	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.092	0.041	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	57.1	5.5	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 14	14	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Silver [a]	10.7	3.5	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Zinc	149	6.9	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43004
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3453
(5) Prep QC Batch: MP3460

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD10-92-102		
Lab Sample ID:	JC52780-5	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	72.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	99.6		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	96.1		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	90.6		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	75		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	10		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	5.0		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	9.4		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	90.6		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.4		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	38.7		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	7590	140	mg/kg	1	10/13/17 20:57	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD11-23-33		
Lab Sample ID:	JC52780-6	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	73.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217624.D	1	10/17/17 07:41	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	44	18	ug/kg	
11104-28-2	Aroclor 1221	ND	44	18	ug/kg	
11141-16-5	Aroclor 1232	ND	44	12	ug/kg	
53469-21-9	Aroclor 1242	ND	44	7.0	ug/kg	
12672-29-6	Aroclor 1248	ND	44	26	ug/kg	
11097-69-1	Aroclor 1254	ND	44	11	ug/kg	
11096-82-5	Aroclor 1260	ND	44	14	ug/kg	
11100-14-4	Aroclor 1268	ND	44	6.6	ug/kg	
37324-23-5	Aroclor 1262	ND	44	3.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		24-152%
877-09-8	Tetrachloro-m-xylene	75%		24-152%
2051-24-3	Decachlorobiphenyl	86%		10-166%
2051-24-3	Decachlorobiphenyl	82%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD11-23-33		
Lab Sample ID:	JC52780-6	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	73.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.7	2.7	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	92.9	27	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.68	0.68	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	41.9	1.4	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	2910	17	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Iron	29600	68	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	75.4	2.7	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.095	0.040	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	42.1	5.5	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium [a]	< 14	14	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Silver [a]	6.1	3.4	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [4]
Zinc	99.3	6.8	mg/kg	1	10/12/17	10/13/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43004
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3453
(5) Prep QC Batch: MP3460

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD11-23-33		
Lab Sample ID:	JC52780-6	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	73.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.7		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.5		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.1		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	98.3		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	97.0		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	89.2		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	75.0		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	61		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	10		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	7.1		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	25.0		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	75.0		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	0.80		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	36.8		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	6490	140	mg/kg	1	10/13/17 15:26	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS03-05-10		
Lab Sample ID:	JC52780-7	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX218119.D	1	10/23/17 15:36	RK	10/20/17 01:30	OP7093	GXX6153
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.5	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.1	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	7.8	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.7	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		24-152%
877-09-8	Tetrachloro-m-xylene	75%		24-152%
2051-24-3	Decachlorobiphenyl	96%		10-166%
2051-24-3	Decachlorobiphenyl	84%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS03-05-10		
Lab Sample ID:	JC52780-7	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.2	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Barium	19.2	19	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.49	0.49	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Chromium	27.8	0.97	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Copper	544	2.4	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Iron	23300	49	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Lead [a]	13.7	9.7	mg/kg	5	10/19/17	10/20/17	AB	SW846 6010C [3]	SW846 3050B [4]
Mercury	0.085	0.030	mg/kg	1	10/19/17	10/19/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	26.6	3.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 1.9	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	2.8	2.4	mg/kg	5	10/19/17	10/20/17	AB	SW846 6010C [3]	SW846 3050B [4]
Zinc	63.4	4.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43039
(2) Instrument QC Batch: MA43044
(3) Instrument QC Batch: MA43051
(4) Prep QC Batch: MP3595
(5) Prep QC Batch: MP3605

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS03-05-10		
Lab Sample ID:	JC52780-7	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.4		%	1	10/24/17 09:30	AC	ASTM 2216-92
Total Organic Carbon	843	100	mg/kg	1	10/19/17 17:28	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS03-10-20		
Lab Sample ID:	JC52780-8	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX218112.D	1	10/23/17 13:16	RK	10/20/17 01:30	OP7093	GXX6153
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.6	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.1	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	7.9	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.8	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	62%		24-152%
877-09-8	Tetrachloro-m-xylene	55%		24-152%
2051-24-3	Decachlorobiphenyl	63%		10-166%
2051-24-3	Decachlorobiphenyl	55%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS03-10-20		
Lab Sample ID:	JC52780-8	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.2	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Barium	22.9	19	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.48	0.48	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Chromium	28.9	0.96	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Copper	572	2.4	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Iron	23900	48	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Lead [a]	< 9.6	9.6	mg/kg	5	10/19/17	10/20/17	GT	SW846 6010C [3]	SW846 3050B [4]
Mercury	0.075	0.032	mg/kg	1	10/19/17	10/19/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	27.7	3.8	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 1.9	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	3.7	2.4	mg/kg	5	10/19/17	10/20/17	GT	SW846 6010C [3]	SW846 3050B [4]
Zinc	70.5	4.8	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43039
(2) Instrument QC Batch: MA43044
(3) Instrument QC Batch: MA43056
(4) Prep QC Batch: MP3595
(5) Prep QC Batch: MP3605

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS03-10-20		
Lab Sample ID:	JC52780-8	**Date Sampled:**	10/06/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.5		%	1	10/24/17 09:30	AC	ASTM 2216-92
Total Organic Carbon	< 100	100	mg/kg	1	10/19/17 12:34	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS06-00-05		
Lab Sample ID:	JC52780-9	**Date Sampled:**	10/07/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX218120.D	1	10/23/17 15:53	RK	10/20/17 01:30	OP7093	GXX6153
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.6	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.1	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	7.9	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.8	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	45%		24-152%
877-09-8	Tetrachloro-m-xylene	38%		24-152%
2051-24-3	Decachlorobiphenyl	50%		10-166%
2051-24-3	Decachlorobiphenyl	45%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS06-00-05		
Lab Sample ID:	JC52780-9	**Date Sampled:**	10/07/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.0	2.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Barium	47.7	20	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.50	0.50	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Chromium	13.3	1.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Copper	107	2.5	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Iron	14500	50	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Lead	6.8	2.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Mercury	0.035	0.031	mg/kg	1	10/19/17	10/19/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	13.7	4.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 2.0	2.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Silver	< 0.50	0.50	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Zinc	31.8	5.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA43039
(2) Instrument QC Batch: MA43044
(3) Prep QC Batch: MP3595
(4) Prep QC Batch: MP3605

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS06-00-05		
Lab Sample ID:	JC52780-9	**Date Sampled:**	10/07/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.6		%	1	10/24/17 09:30	AC	ASTM 2216-92
Total Organic Carbon	3650	100	mg/kg	1	10/19/17 23:18	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS04-00-05		
Lab Sample ID:	JC52780-10	**Date Sampled:**	10/08/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX218047.D	1	10/22/17 18:10	RK	10/20/17 01:30	OP7093	GXX6152
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.7	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.2	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	8.0	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.8	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	68%		24-152%
877-09-8	Tetrachloro-m-xylene	60%		24-152%
2051-24-3	Decachlorobiphenyl	82%		10-166%
2051-24-3	Decachlorobiphenyl	67%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS04-00-05		
Lab Sample ID:	JC52780-10	**Date Sampled:**	10/08/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.9	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Barium	29.1	19	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.48	0.48	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Chromium	18.1	0.96	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Copper	309	2.4	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Iron	15500	48	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Lead	5.5	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Mercury	< 0.032	0.032	mg/kg	1	10/19/17	10/19/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	17.9	3.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 1.9	1.9	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Silver	1.0	0.48	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Zinc	34.5	4.8	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA43039
(2) Instrument QC Batch: MA43044
(3) Prep QC Batch: MP3595
(4) Prep QC Batch: MP3605

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS04-00-05		
Lab Sample ID:	JC52780-10	**Date Sampled:**	10/08/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.3		%	1	10/24/17 09:30	AC	ASTM 2216-92
Total Organic Carbon	230	100	mg/kg	1	10/19/17 14:15	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS07-00-05		
Lab Sample ID:	JC52780-11	**Date Sampled:**	10/08/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX218048.D	1	10/22/17 18:27	RK	10/20/17 01:30	OP7093	GXX6152
Run #2							

	Initial Weight	Final Volume
Run #1	16.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	31	13	ug/kg	
11104-28-2	Aroclor 1221	ND	31	13	ug/kg	
11141-16-5	Aroclor 1232	ND	31	8.4	ug/kg	
53469-21-9	Aroclor 1242	ND	31	5.0	ug/kg	
12672-29-6	Aroclor 1248	ND	31	18	ug/kg	
11097-69-1	Aroclor 1254	ND	31	7.7	ug/kg	
11096-82-5	Aroclor 1260	ND	31	9.9	ug/kg	
11100-14-4	Aroclor 1268	ND	31	4.7	ug/kg	
37324-23-5	Aroclor 1262	ND	31	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		24-152%
877-09-8	Tetrachloro-m-xylene	63%		24-152%
2051-24-3	Decachlorobiphenyl	86%		10-166%
2051-24-3	Decachlorobiphenyl	73%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS07-00-05		
Lab Sample ID:	JC52780-11	**Date Sampled:**	10/08/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.6	2.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Barium	59.0	20	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Cadmium	< 0.50	0.50	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Chromium	14.5	1.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Copper	157	2.5	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Iron	15700	50	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Lead	8.2	2.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Mercury	< 0.029	0.029	mg/kg	1	10/19/17	10/19/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	17.1	4.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Selenium	< 2.0	2.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Silver	< 0.50	0.50	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]
Zinc	36.2	5.0	mg/kg	1	10/19/17	10/19/17	AB	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA43039
(2) Instrument QC Batch: MA43044
(3) Prep QC Batch: MP3595
(4) Prep QC Batch: MP3605

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS07-00-05		
Lab Sample ID:	JC52780-11	**Date Sampled:**	10/08/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	99.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.6		%	1	10/24/17 09:30	AC	ASTM 2216-92
Total Organic Carbon	4130	100	mg/kg	1	10/19/17 20:06	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC52780
Account: RAMEMIAA Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
% Gravel		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Sand		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Silt, Clay, Colloids		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
Bulk Density (Dry Basis)		**ASTM D2937-94 M**	SO	SGS is not certified for this parameter.[a]
Moisture (Dry Weight Basis)		**ASTM 2216-92**	SO	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SGS ACCUTEST

SED SUB

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

8106 7101 6928
8106 7101 6940

PAGE 1 OF 1

FED-EX Tracking # 8106 7101 6950
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # JC52780

Client / Reporting Information

Company Name: Ramboll Environ
Street Address: 3600 Green Ct Suite 750
City State Zip: Ann Arbor MI 48105
Project Contact E-mail: Danielle Amber damber@ramboll.com
Phone # Fax #: 734-761-2175 734-761-2050
Sampler(s) Name(s) Phone #: Alyssa Lanon 734-761-2007

Project Information

Project Name: Lake Linden Sampling Event
Street
City State: Lake Linden MI
Project #: 02-43323A
Client Purchase Order #
Project Manager: Viktoriya Pushkova

Billing Information (if different from Report to)

Company Name
Street Address
City State Zip
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	M1 10 Metals (SW846 6010C)	Iron (SW846 6010C)	Nickel (SW846 6010C)	Total PCBs (SW846 8082)	TOC (SW846 9060)	Grain Size (ASTM D422-63)	Bulk Density (ASTM D7263)	Moisture Content (ASTM D2216)				LAB USE ONLY
1	LLRA-SD03-00-05		10/6/17	18:00	AS	SED	2					X				X	X	X	X	X			X	only do moisture if enough volume			
2	LLRA-SD03-05-10			18:10			2									X	X	X	X	X			X	only do ~~bulk density~~ if enough volume			
3	LLRA-SD03-10-30			18:15			3									X	X	X	X	X	X	X	X				D56
4	LLRA-SD03-30-50			18:35			3									X	X	X	X	X	X	X	X				P62
5	LLRA-SD10-92-102			20:00			3									X	X	X	X	X	X	X	X				D53
6	LLRA-SD11-23-33			19:30			3									X	X	X	X	X	X	X	X	only do bulk density if enough volume			SUB
7	LLRA-CS03-05-10		Begin: 10/5/17 End: 10/6/17	Begin: 14:45 End: 16:45			1									X	X	X	X	X				*lab homogenize*			
8	LLRA-CS03-10-20						1									X	X	X	X	X				*lab homogenize*			
9	LLRA-CS06-00-05		Begin: 10/7/17 End: 10/7/17	Begin: 11:40 End: 12:55			1									X	X	X	X	X				*lab homogenize*			
10	LLRA-CS04-00-05		Begin: 10/7/17 End: 10/8/17	Begin: 14:40 End: 11:20			1									X	X	X	X	X				*lab homogenize*			
11	LLRA-CS07-00-05		Begin: 10/8/17 End: 10/8/17	Begin: 11:45 End: 15:30			1									X	X	X	X	X				*lab homogenize*			

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other _____

INITIAL ASESSMENT ZB 10/7/17
LABEL VERIFICATION DO

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format _____
- [ ] Other _____

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

*Retain extract of all PCB samples following initial analysis
*Client ca number: 371516-100817-01
*Level 4 validation (Honeywell deliverable)
*only run bulk density/moisture if enough va
*Lab to homogenize composite samples

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Alyssa to FedEx	10/9/17 14:45	1 fedex	2 fedex	10/10/17 9:45	2
3		3	4		4
5		5			

Custody Seal # 838, 836, 834, 835 — Intact / Not intact — Preserved where applicable — On Ice — Cooler Temp: 3.2, 3.8, 4.2, 3.1 °C

Form:SM088-01CRev.Date:9/13/16

5.2 5

JC52780: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC52780 **Client:** _____ **Project:** _____

Date / Time Received: 10/10/2017 9:45:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.2); Cooler 2: (3.8); Cooler 3: (4.2); Cooler 4: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.6); Cooler 2: (2.2); Cooler 3: (2.6); Cooler 4: (1.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	4		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

5.2

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JC52780: Chain of Custody
Page 2 of 2

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Ramboll Environ US Corporation

Honeywell-Lake Linden Sampling Event, Lake Linden, MI

02-43323A

SGS Job Number: JC52786

Sampling Date: 10/05/17

Report to:

Ramboll Environ US Corporation

twyss@ramboll.com

ATTN: Troy Wyss

Total number of pages in report: **64**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

SGS North America Inc. • 2235 Route 130 • Dayton, NJ 08810 • tel: 732-329-0200 • fax: 732-329-3499

Table of Contents

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Sample Summary

Ramboll Environ US Corporation

Job No: JC52786

Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Project No: 02-43323A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52786-1	10/05/17	17:40	ASL	10/10/17	SO	Sediment	LLRA-SD04-00-05
JC52786-2	10/05/17	17:55	ASL	10/10/17	SO	Sediment	LLRA-SD04-05-10
JC52786-3	10/05/17	18:05	ASL	10/10/17	SO	Sediment	LLRA-SD04-10-30
JC52786-4	10/05/17	18:40	ASL	10/10/17	SO	Sediment	LLRA-SD07-00-05
JC52786-5	10/05/17	18:50	ASL	10/10/17	SO	Sediment	LLRA-SD07-05-10
JC52786-6	10/05/17	18:55	ASL	10/10/17	SO	Sediment	LLRA-SD07-10-30
JC52786-7	10/05/17	19:20	ASL	10/10/17	SO	Sediment	LLRA-SD02-00-05
JC52786-8	10/05/17	19:30	ASL	10/10/17	SO	Sediment	LLRA-SD02-05-10
JC52786-9	10/05/17	00:00	ASL	10/10/17	SO	Sediment	LLRA-FD2
JC52786-10	10/05/17	00:00	ASL	10/10/17	SO	Sediment	LLRA-FD3
JC52786-11	10/05/17	16:20	ASL	10/10/17	SO	Sediment	LLRA-SD06-00-05
JC52786-12	10/05/17	16:30	ASL	10/10/17	SO	Sediment	LLRA-SD06-05-10
JC52786-13	10/05/17	16:40	ASL	10/10/17	SO	Sediment	LLRA-SD06-10-30

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Ramboll Environ US Corporation

Job No: JC52786

Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Project No: 02-43323A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52786-14	10/05/17	16:50	ASL	10/10/17	SO	Sediment	LLRA-SD06-30-50
JC52786-14D	10/05/17	16:50	ASL	10/10/17	SO	Soil Dup/MSD	LLRA-SD06-30-50
JC52786-14S	10/05/17	16:50	ASL	10/10/17	SO	Soil Matrix Spike	LLRA-SD06-30-50

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Ramboll Environ US Corporation	**Job No**	JC52786
Site:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI	**Report Date**	10/26/2017 11:28:33 A

On 10/10/2017, 14 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 2.6 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC52786 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP6896

- All samples were extracted within the recommended method holding time.
- Sample(s) JC52786-14MS, JC52786-14MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC52786-1 for Aroclor 1260: More than 40 % RPD for detected concentrations between the two GC columns.

Metals Analysis By Method SW846 6010C

Matrix: SO	**Batch ID:** MP3466

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52786-14MSD, JC52786-14SDL, JC52786-14MSD were used as the QC samples for metals.
- Matrix Spike/Matrix Spike Duplicate Recovery(s) for Copper, Iron are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Arsenic, Cadmium are outside control limits. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP3466-SD1 for Barium: Serial dilution indicates possible matrix interference.
- MP3466-SD1 for Zinc: Serial dilution indicates possible matrix interference.
- MP3466-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- MP3466-SD1 for Iron: Serial dilution indicates possible matrix interference.
- JC52786-10 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-8 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-8 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JC52786-2 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-9 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-13 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-12 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-9 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-12 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-10 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-11 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-13 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-1 for Copper: Elevated detection limit due to dilution required for high interfering element.
- JC52786-1 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-7 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JC52786-11 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-3 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-4 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-8 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-7 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-2 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-7 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-1 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-6 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-4 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-5 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JC52786-5 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC52786-6 for Lead: Elevated detection limit due to dilution required for high interfering element.

Metals Analysis By Method SW846 7471B

Matrix: SO	Batch ID: MP3462

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52786-14MS, JC52786-14MSD were used as the QC samples for metals.

Matrix: SO	Batch ID: MP3577

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53007-46MS, JC53007-46MSD were used as the QC samples for metals.

General Chemistry By Method ASTM 2216-92

Matrix: SO	Batch ID: GN70890

- The data for ASTM 2216-92 meets quality control requirements.

General Chemistry By Method ASTM D2937-94 M

Matrix: SO	Batch ID: GN71183

- Sample(s) JC52786-14DUP were used as the QC samples for Bulk Density (Dry Basis).

General Chemistry By Method ASTM D422-63

Matrix: SO	Batch ID: GP8420

- Sample(s) JC52786-14DUP were used as the QC samples for % Gravel, % Sand, % Silt, Clay, Colloids, 0.0015 mm (Hydrometer), 0.005 mm (Hydrometer), 0.375 Inch Sieve, 0.75 inch sieve, 1.5 Inch Sieve, 3 inch sieve, No.10 Sieve (2.00 mm), No.100 Sieve (0.15 mm), No.16 Sieve (1.18 mm), No.200 Sieve (0.075 mm), No.30 Sieve (0.60 mm), No.4 Sieve (4.75 mm), No.50 Sieve (0.30 mm), No.8 Sieve (2.36 mm), 0.030 mm (Hydrometer).
- RPD(s) for Duplicate for 0.030 mm (Hydrometer) are outside control limits. High RPD due to possible sample nonhomogeneity.

General Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO	Batch ID: GP8479

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52786-14DUP, JC52786-14MS were used as the QC samples for Total Organic Carbon.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52786-1	**LLRA-SD04-00-05**					
Aroclor 1260 [a]		13.1 J	41	13	ug/kg	SW846 8082A
Arsenic		4.0	1.1		mg/kg	SW846 6010C
Barium		61.0	11		mg/kg	SW846 6010C
Chromium		26.6	0.54		mg/kg	SW846 6010C
Copper [b]		1670	6.7		mg/kg	SW846 6010C
Iron		13600	27		mg/kg	SW846 6010C
Lead [b]		61.5	5.4		mg/kg	SW846 6010C
Mercury		0.053	0.036		mg/kg	SW846 7471B
Nickel		35.0	2.2		mg/kg	SW846 6010C
Silver [b]		4.7	1.3		mg/kg	SW846 6010C
Zinc		109	2.7		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		99.6			%	ASTM D422-63
No.10 Sieve (2.00 mm)		99.2			%	ASTM D422-63
No.16 Sieve (1.18 mm)		97.4			%	ASTM D422-63
No.30 Sieve (0.60 mm)		91.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)		82.9			%	ASTM D422-63
No.100 Sieve (0.15 mm)		58.5			%	ASTM D422-63
No.200 Sieve (0.075 mm)		41.2			%	ASTM D422-63
0.030 mm (Hydrometer)		32			%	ASTM D422-63
0.005 mm (Hydrometer)		9.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		5.0			%	ASTM D422-63
% Sand		58.8			%	ASTM D422-63
% Silt, Clay, Colloids		41.2			%	ASTM D422-63
Moisture (Dry Weight Basis)		23			%	ASTM 2216-92
Total Organic Carbon		810	120		mg/kg	LLOYD KAHN 1988 MOD
JC52786-2	**LLRA-SD04-05-10**					
Aroclor 1260		81.9	42	13	ug/kg	SW846 8082A
Arsenic		4.9	2.4		mg/kg	SW846 6010C
Barium		91.0	24		mg/kg	SW846 6010C
Chromium		33.3	1.2		mg/kg	SW846 6010C
Copper		1670	15		mg/kg	SW846 6010C
Iron		19600	61		mg/kg	SW846 6010C
Lead [b]		138	12		mg/kg	SW846 6010C
Nickel		38.1	4.9		mg/kg	SW846 6010C
Silver [b]		5.7	3.0		mg/kg	SW846 6010C
Zinc		230	6.1		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		99.8			%	ASTM D422-63
No.10 Sieve (2.00 mm)		99.7			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.0			%	ASTM D422-63
No.30 Sieve (0.60 mm)		96.8			%	ASTM D422-63
No.50 Sieve (0.30 mm)		92.6			%	ASTM D422-63
No.100 Sieve (0.15 mm)		65.4			%	ASTM D422-63
No.200 Sieve (0.075 mm)		28.0			%	ASTM D422-63
0.030 mm (Hydrometer)		16			%	ASTM D422-63
0.005 mm (Hydrometer)		4.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		3.0			%	ASTM D422-63
% Sand		72.0			%	ASTM D422-63
% Silt, Clay, Colloids		28.0			%	ASTM D422-63
Bulk Density (Dry Basis)		1.0			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		26.5			%	ASTM 2216-92
Total Organic Carbon		649	130		mg/kg	LLOYD KAHN 1988 MOD
JC52786-3	**LLRA-SD04-10-30**					
Arsenic		4.0	2.4		mg/kg	SW846 6010C
Barium		42.2	24		mg/kg	SW846 6010C
Chromium		32.1	1.2		mg/kg	SW846 6010C
Copper		1520	15		mg/kg	SW846 6010C
Iron		19600	60		mg/kg	SW846 6010C
Lead		22.1	2.4		mg/kg	SW846 6010C
Nickel		35.2	4.8		mg/kg	SW846 6010C
Silver [b]		4.7	3.0		mg/kg	SW846 6010C
Zinc		93.9	6.0		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		99.8			%	ASTM D422-63
No.10 Sieve (2.00 mm)		99.6			%	ASTM D422-63
No.16 Sieve (1.18 mm)		98.8			%	ASTM D422-63
No.30 Sieve (0.60 mm)		96.1			%	ASTM D422-63
No.50 Sieve (0.30 mm)		88.7			%	ASTM D422-63
No.100 Sieve (0.15 mm)		71.1			%	ASTM D422-63
No.200 Sieve (0.075 mm)		47.5			%	ASTM D422-63
0.030 mm (Hydrometer)		28			%	ASTM D422-63

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
0.005 mm (Hydrometer)		4.9			%	ASTM D422-63
0.0015 mm (Hydrometer)		4.9			%	ASTM D422-63
% Sand		52.5			%	ASTM D422-63
% Silt, Clay, Colloids		47.5			%	ASTM D422-63
Bulk Density (Dry Basis)		1.1			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		25.7			%	ASTM 2216-92
Total Organic Carbon		445	130		mg/kg	LLOYD KAHN 1988 MOD
JC52786-4	**LLRA-SD07-00-05**					
Arsenic		3.5	2.3		mg/kg	SW846 6010C
Chromium		29.8	1.1		mg/kg	SW846 6010C
Copper		591	2.9		mg/kg	SW846 6010C
Iron		20400	57		mg/kg	SW846 6010C
Nickel		32.2	4.6		mg/kg	SW846 6010C
Silver [b]		3.7	2.9		mg/kg	SW846 6010C
Zinc		71.5	5.7		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.9			%	ASTM D422-63
No.30 Sieve (0.60 mm)		99.4			%	ASTM D422-63
No.50 Sieve (0.30 mm)		90.4			%	ASTM D422-63
No.100 Sieve (0.15 mm)		37.6			%	ASTM D422-63
No.200 Sieve (0.075 mm)		9.2			%	ASTM D422-63
0.030 mm (Hydrometer)		6.0			%	ASTM D422-63
0.005 mm (Hydrometer)		2.9			%	ASTM D422-63
0.0015 mm (Hydrometer)		2.9			%	ASTM D422-63
% Sand		90.8			%	ASTM D422-63
% Silt, Clay, Colloids		9.2			%	ASTM D422-63
Bulk Density (Dry Basis)		1.0			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		16			%	ASTM 2216-92
Total Organic Carbon		377	120		mg/kg	LLOYD KAHN 1988 MOD
JC52786-5	**LLRA-SD07-05-10**					
Arsenic		3.7	2.5		mg/kg	SW846 6010C
Chromium		30.6	1.3		mg/kg	SW846 6010C
Copper		592	3.2		mg/kg	SW846 6010C
Iron		20400	63		mg/kg	SW846 6010C
Nickel		32.9	5.1		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Silver [b]		3.6	3.2		mg/kg	SW846 6010C
Zinc		76.0	6.3		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.8			%	ASTM D422-63
No.30 Sieve (0.60 mm)		98.2			%	ASTM D422-63
No.50 Sieve (0.30 mm)		81.1			%	ASTM D422-63
No.100 Sieve (0.15 mm)		22.1			%	ASTM D422-63
No.200 Sieve (0.075 mm)		6.3			%	ASTM D422-63
0.030 mm (Hydrometer)		2.0			%	ASTM D422-63
0.005 mm (Hydrometer)		0.98			%	ASTM D422-63
0.0015 mm (Hydrometer)		0.98			%	ASTM D422-63
% Sand		93.8			%	ASTM D422-63
% Silt, Clay, Colloids		6.3			%	ASTM D422-63
Bulk Density (Dry Basis)		0.91			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		30.4			%	ASTM 2216-92
JC52786-6	**LLRA-SD07-10-30**					
Arsenic		3.2	2.3		mg/kg	SW846 6010C
Chromium		23.2	1.2		mg/kg	SW846 6010C
Copper		522	2.9		mg/kg	SW846 6010C
Iron		15900	59		mg/kg	SW846 6010C
Nickel		26.6	4.7		mg/kg	SW846 6010C
Silver [b]		3.0	2.9		mg/kg	SW846 6010C
Zinc		66.7	5.9		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.8			%	ASTM D422-63
No.30 Sieve (0.60 mm)		98.0			%	ASTM D422-63
No.50 Sieve (0.30 mm)		80.2			%	ASTM D422-63
No.100 Sieve (0.15 mm)		17.7			%	ASTM D422-63
No.200 Sieve (0.075 mm)		9.6			%	ASTM D422-63
0.030 mm (Hydrometer)		2.0			%	ASTM D422-63
0.005 mm (Hydrometer)		1.0			%	ASTM D422-63

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
0.0015 mm (Hydrometer)	1.0			%	ASTM D422-63
% Sand	90.4			%	ASTM D422-63
% Silt, Clay, Colloids	9.6			%	ASTM D422-63
Bulk Density (Dry Basis)	1.1			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	22.8			%	ASTM 2216-92
Total Organic Carbon	233	120		mg/kg	LLOYD KAHN 1988 MOD
JC52786-7 LLRA-SD02-00-05					
Aroclor 1248	103	52	30	ug/kg	SW846 8082A
Aroclor 1254	202	52	13	ug/kg	SW846 8082A
Aroclor 1262	81.4	52	3.9	ug/kg	SW846 8082A
Arsenic [b]	8.4	7.1		mg/kg	SW846 6010C
Barium	2970	71		mg/kg	SW846 6010C
Cadmium	4.9	0.35		mg/kg	SW846 6010C
Calcium	33100	7100		mg/kg	SW846 6010C
Chromium	38.9	0.71		mg/kg	SW846 6010C
Copper	9730	35		mg/kg	SW846 6010C
Iron	18600	35		mg/kg	SW846 6010C
Lead [b]	2710	7.1		mg/kg	SW846 6010C
Mercury	0.31	0.039		mg/kg	SW846 7471B
Nickel	56.5	2.8		mg/kg	SW846 6010C
Selenium	1.4	1.4		mg/kg	SW846 6010C
Silver [b]	32.8	1.8		mg/kg	SW846 6010C
Zinc	528	3.5		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)	54.6			%	ASTM 2216-92
Total Organic Carbon	11400	150		mg/kg	LLOYD KAHN 1988 MOD
JC52786-8 LLRA-SD02-05-10					
Arsenic	6.0	1.1		mg/kg	SW846 6010C
Barium	123	11		mg/kg	SW846 6010C
Chromium	34.2	0.54		mg/kg	SW846 6010C
Copper	1960	14		mg/kg	SW846 6010C
Iron	20200	270		mg/kg	SW846 6010C
Lead [b]	91.4	11		mg/kg	SW846 6010C
Mercury	0.093	0.041		mg/kg	SW846 7471B
Nickel	49.6	2.2		mg/kg	SW846 6010C
Silver [b]	5.6	2.7		mg/kg	SW846 6010C
Zinc	121	2.7		mg/kg	SW846 6010C
Bulk Density (Dry Basis)	1.4			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	36.5			%	ASTM 2216-92
Total Organic Carbon	1970	140		mg/kg	LLOYD KAHN 1988 MOD

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52786-9	**LLRA-FD2**					
Arsenic		4.8	2.5		mg/kg	SW846 6010C
Chromium		25.2	1.2		mg/kg	SW846 6010C
Copper		547	3.1		mg/kg	SW846 6010C
Iron		16400	61		mg/kg	SW846 6010C
Nickel		28.5	4.9		mg/kg	SW846 6010C
Zinc		71.1	6.1		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		26.5			%	ASTM 2216-92
JC52786-10	**LLRA-FD3**					
Arsenic		3.2	2.4		mg/kg	SW846 6010C
Chromium		23.3	1.2		mg/kg	SW846 6010C
Copper		609	3.0		mg/kg	SW846 6010C
Iron		15200	59		mg/kg	SW846 6010C
Nickel		27.9	4.7		mg/kg	SW846 6010C
Silver [b]		4.1	3.0		mg/kg	SW846 6010C
Zinc		69.7	5.9		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		21.6			%	ASTM 2216-92
JC52786-11	**LLRA-SD06-00-05**					
Arsenic		5.2	2.5		mg/kg	SW846 6010C
Chromium		25.7	1.2		mg/kg	SW846 6010C
Copper		513	3.1		mg/kg	SW846 6010C
Iron		17900	62		mg/kg	SW846 6010C
Nickel		28.9	5.0		mg/kg	SW846 6010C
Zinc		72.8	6.2		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.9			%	ASTM D422-63
No.30 Sieve (0.60 mm)		99.1			%	ASTM D422-63
No.50 Sieve (0.30 mm)		91.0			%	ASTM D422-63
No.100 Sieve (0.15 mm)		30.4			%	ASTM D422-63
No.200 Sieve (0.075 mm)		6.4			%	ASTM D422-63
0.030 mm (Hydrometer)		1.0			%	ASTM D422-63
0.005 mm (Hydrometer)		1.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		1.0			%	ASTM D422-63
% Sand		93.6			%	ASTM D422-63

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
% Silt, Clay, Colloids		6.4			%	ASTM D422-63
Bulk Density (Dry Basis)		1.2			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		30.3			%	ASTM 2216-92
Total Organic Carbon		1350	130		mg/kg	LLOYD KAHN 1988 MOD
JC52786-12	**LLRA-SD06-05-10**					
Arsenic		5.4	2.5		mg/kg	SW846 6010C
Chromium		26.9	1.2		mg/kg	SW846 6010C
Copper		570	3.1		mg/kg	SW846 6010C
Iron		18900	62		mg/kg	SW846 6010C
Nickel		30.9	5.0		mg/kg	SW846 6010C
Silver [b]		3.7	3.1		mg/kg	SW846 6010C
Zinc		81.7	6.2		mg/kg	SW846 6010C
3 Inch Sieve		100			%	ASTM D422-63
1.5 Inch Sieve		100			%	ASTM D422-63
0.75 Inch Sieve		100			%	ASTM D422-63
0.375 Inch Sieve		100			%	ASTM D422-63
No.4 Sieve (4.75 mm)		100			%	ASTM D422-63
No.8 Sieve (2.36 mm)		100			%	ASTM D422-63
No.10 Sieve (2.00 mm)		100			%	ASTM D422-63
No.16 Sieve (1.18 mm)		99.9			%	ASTM D422-63
No.30 Sieve (0.60 mm)		99.2			%	ASTM D422-63
No.50 Sieve (0.30 mm)		88.1			%	ASTM D422-63
No.100 Sieve (0.15 mm)		21.1			%	ASTM D422-63
No.200 Sieve (0.075 mm)		5.8			%	ASTM D422-63
0.030 mm (Hydrometer)		1.0			%	ASTM D422-63
0.005 mm (Hydrometer)		1.0			%	ASTM D422-63
0.0015 mm (Hydrometer)		1.0			%	ASTM D422-63
% Sand		94.2			%	ASTM D422-63
% Silt, Clay, Colloids		5.8			%	ASTM D422-63
Bulk Density (Dry Basis)		1.0			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)		27.4			%	ASTM 2216-92
Total Organic Carbon		814	130		mg/kg	LLOYD KAHN 1988 MOD
JC52786-13	**LLRA-SD06-10-30**					
Arsenic		6.1	2.5		mg/kg	SW846 6010C
Barium		43.8	25		mg/kg	SW846 6010C
Chromium		32.0	1.3		mg/kg	SW846 6010C
Copper		904	3.2		mg/kg	SW846 6010C
Iron		19800	64		mg/kg	SW846 6010C
Lead [b]		79.0	13		mg/kg	SW846 6010C
Nickel		38.7	5.1		mg/kg	SW846 6010C
Silver [b]		4.3	3.2		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

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Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
Zinc	98.0	6.4		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	100			%	ASTM D422-63
No.10 Sieve (2.00 mm)	100			%	ASTM D422-63
No.16 Sieve (1.18 mm)	100			%	ASTM D422-63
No.30 Sieve (0.60 mm)	99.7			%	ASTM D422-63
No.50 Sieve (0.30 mm)	86.9			%	ASTM D422-63
No.100 Sieve (0.15 mm)	51.0			%	ASTM D422-63
No.200 Sieve (0.075 mm)	27.2			%	ASTM D422-63
0.030 mm (Hydrometer)	13			%	ASTM D422-63
0.005 mm (Hydrometer)	3.0			%	ASTM D422-63
0.0015 mm (Hydrometer)	3.0			%	ASTM D422-63
% Sand	72.9			%	ASTM D422-63
% Silt, Clay, Colloids	27.2			%	ASTM D422-63
Bulk Density (Dry Basis)	1.1			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	32.3			%	ASTM 2216-92
Total Organic Carbon	2130	130		mg/kg	LLOYD KAHN 1988 MOD
JC52786-14 LLRA-SD06-30-50					
Arsenic	5.0	2.5		mg/kg	SW846 6010C
Barium	41.8	25		mg/kg	SW846 6010C
Chromium	35.8	1.3		mg/kg	SW846 6010C
Copper	1060	16		mg/kg	SW846 6010C
Iron	19700	63		mg/kg	SW846 6010C
Lead	25.6	2.5		mg/kg	SW846 6010C
Mercury	0.097	0.041		mg/kg	SW846 7471B
Nickel	41.9	5.0		mg/kg	SW846 6010C
Silver	4.0	0.63		mg/kg	SW846 6010C
Zinc	102	6.3		mg/kg	SW846 6010C
3 Inch Sieve	100			%	ASTM D422-63
1.5 Inch Sieve	100			%	ASTM D422-63
0.75 Inch Sieve	100			%	ASTM D422-63
0.375 Inch Sieve	100			%	ASTM D422-63
No.4 Sieve (4.75 mm)	100			%	ASTM D422-63
No.8 Sieve (2.36 mm)	100			%	ASTM D422-63
No.10 Sieve (2.00 mm)	100			%	ASTM D422-63
No.16 Sieve (1.18 mm)	100			%	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9			%	ASTM D422-63
No.50 Sieve (0.30 mm)	99.4			%	ASTM D422-63
No.100 Sieve (0.15 mm)	83.4			%	ASTM D422-63

Summary of Hits

Job Number: JC52786
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/05/17

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
No.200 Sieve (0.075 mm)	57.8			%	ASTM D422-63
0.030 mm (Hydrometer)	53			%	ASTM D422-63
0.005 mm (Hydrometer)	2.9			%	ASTM D422-63
0.0015 mm (Hydrometer)	2.9			%	ASTM D422-63
% Sand	42.3			%	ASTM D422-63
% Silt, Clay, Colloids	57.8			%	ASTM D422-63
Bulk Density (Dry Basis)	1.0			g/ml	ASTM D2937-94 M
Moisture (Dry Weight Basis)	28.5			%	ASTM 2216-92
Total Organic Carbon	1590	130		mg/kg	LLOYD KAHN 1988 MOD

(a) More than 40 % RPD for detected concentrations between the two GC columns.
(b) Elevated detection limit due to dilution required for high interfering element.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	LLRA-SD04-00-05		
Lab Sample ID:	JC52786-1	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	81.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217710.D	1	10/18/17 09:05	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	16	ug/kg	
11104-28-2	Aroclor 1221	ND	41	17	ug/kg	
11141-16-5	Aroclor 1232	ND	41	11	ug/kg	
53469-21-9	Aroclor 1242	ND	41	6.5	ug/kg	
12672-29-6	Aroclor 1248	ND	41	24	ug/kg	
11097-69-1	Aroclor 1254	ND	41	10	ug/kg	
11096-82-5	Aroclor 1260 [a]	13.1	41	13	ug/kg	J
11100-14-4	Aroclor 1268	ND	41	6.1	ug/kg	
37324-23-5	Aroclor 1262	ND	41	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		24-152%
877-09-8	Tetrachloro-m-xylene	83%		24-152%
2051-24-3	Decachlorobiphenyl	99%		10-166%
2051-24-3	Decachlorobiphenyl	96%		10-166%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD04-00-05		
Lab Sample ID:	JC52786-1	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	81.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.0	1.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Barium	61.0	11	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 0.27	0.27	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Chromium	26.6	0.54	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Copper [a]	1670	6.7	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Iron	13600	27	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Lead [a]	61.5	5.4	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.053	0.036	mg/kg	1	10/18/17	10/18/17	JA	SW846 7471B [3]	SW846 7471B [5]
Nickel	35.0	2.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Selenium	< 1.1	1.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Silver [a]	4.7	1.3	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Zinc	109	2.7	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA43006
(2) Instrument QC Batch: MA43015
(3) Instrument QC Batch: MA43027
(4) Prep QC Batch: MP3466
(5) Prep QC Batch: MP3577

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD04-00-05		
Lab Sample ID:	JC52786-1	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	81.3
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.6		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.2		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	97.4		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	91.9		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	82.9		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	58.5		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	41.2		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	32		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	9.0		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	5.0		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	58.8		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	41.2		%	1	10/25/17	GD	ASTM D422-63
Moisture (Dry Weight Basis)	23		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	810	120	mg/kg	1	10/13/17 09:22	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD04-05-10		
Lab Sample ID:	JC52786-2	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	79.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217711.D	1	10/18/17 09:21	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	25	ug/kg	
11097-69-1	Aroclor 1254	ND	42	10	ug/kg	
11096-82-5	Aroclor 1260	81.9	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.3	ug/kg	
37324-23-5	Aroclor 1262	ND	42	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		24-152%
877-09-8	Tetrachloro-m-xylene	85%		24-152%
2051-24-3	Decachlorobiphenyl	96%		10-166%
2051-24-3	Decachlorobiphenyl	92%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD04-05-10		
Lab Sample ID:	JC52786-2	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	79.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.9	2.4	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Barium	91.0	24	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 0.61	0.61	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Chromium	33.3	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Copper	1670	15	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Iron	19600	61	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Lead [a]	138	12	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.033	0.033	mg/kg	1	10/18/17	10/18/17	JA	SW846 7471B [3]	SW846 7471B [5]
Nickel	38.1	4.9	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Selenium	< 2.4	2.4	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Silver [a]	5.7	3.0	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Zinc	230	6.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA43006
(2) Instrument QC Batch: MA43015
(3) Instrument QC Batch: MA43027
(4) Prep QC Batch: MP3466
(5) Prep QC Batch: MP3577

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD04-05-10		
Lab Sample ID:	JC52786-2	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	79.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.8		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.7		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.0		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	96.8		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	92.6		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	65.4		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	28.0		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	16		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	4.0		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	3.0		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	72.0		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	28.0		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.0		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	26.5		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	649	130	mg/kg	1	10/13/17 09:34	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD04-10-30		
Lab Sample ID:	JC52786-3	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	79.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217712.D	1	10/18/17 09:38	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	25	ug/kg	
11097-69-1	Aroclor 1254	ND	42	10	ug/kg	
11096-82-5	Aroclor 1260	ND	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.2	ug/kg	
37324-23-5	Aroclor 1262	ND	42	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	87%		10-166%
2051-24-3	Decachlorobiphenyl	88%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD04-10-30		
Lab Sample ID:	JC52786-3	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	79.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.0	2.4	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Barium	42.2	24	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 0.60	0.60	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Chromium	32.1	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Copper	1520	15	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Iron	19600	60	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [1]	SW846 3050B [4]
Lead	22.1	2.4	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.033	0.033	mg/kg	1	10/18/17	10/18/17	JA	SW846 7471B [3]	SW846 7471B [5]
Nickel	35.2	4.8	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.4	2.4	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	4.7	3.0	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]
Zinc	93.9	6.0	mg/kg	1	10/12/17	10/16/17	MET	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43006
(2) Instrument QC Batch: MA43015
(3) Instrument QC Batch: MA43027
(4) Prep QC Batch: MP3466
(5) Prep QC Batch: MP3577

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD04-10-30		
Lab Sample ID:	JC52786-3	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	79.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	99.8		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	99.6		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	98.8		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	96.1		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	88.7		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	71.1		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	47.5		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	28		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	4.9		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	4.9		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	52.5		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	47.5		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.1		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	25.7		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	445	130	mg/kg	1	10/13/17 09:45	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD07-00-05		
Lab Sample ID:	JC52786-4	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	86.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217713.D	1	10/18/17 09:55	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	16	ug/kg	
11104-28-2	Aroclor 1221	ND	39	16	ug/kg	
11141-16-5	Aroclor 1232	ND	39	10	ug/kg	
53469-21-9	Aroclor 1242	ND	39	6.2	ug/kg	
12672-29-6	Aroclor 1248	ND	39	23	ug/kg	
11097-69-1	Aroclor 1254	ND	39	9.5	ug/kg	
11096-82-5	Aroclor 1260	ND	39	12	ug/kg	
11100-14-4	Aroclor 1268	ND	39	5.8	ug/kg	
37324-23-5	Aroclor 1262	ND	39	2.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%		24-152%
877-09-8	Tetrachloro-m-xylene	76%		24-152%
2051-24-3	Decachlorobiphenyl	99%		10-166%
2051-24-3	Decachlorobiphenyl	95%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD07-00-05		
Lab Sample ID:	JC52786-4	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	86.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.5	2.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 23	23	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.57	0.57	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	29.8	1.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	591	2.9	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	20400	57	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 11	11	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.036	0.036	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	32.2	4.6	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.3	2.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	3.7	2.9	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	71.5	5.7	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD07-00-05		
Lab Sample ID:	JC52786-4	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	86.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/25/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/25/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.9		%	1	10/25/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.4		%	1	10/25/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	90.4		%	1	10/25/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	37.6		%	1	10/25/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	9.2		%	1	10/25/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	6.0		%	1	10/25/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	2.9		%	1	10/25/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	2.9		%	1	10/25/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/25/17	GD	ASTM D422-63
% Sand	90.8		%	1	10/25/17	GD	ASTM D422-63
% Silt, Clay, Colloids	9.2		%	1	10/25/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.0		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	16		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	377	120	mg/kg	1	10/13/17 09:57	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD07-05-10		
Lab Sample ID:	JC52786-5	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	76.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217714.D	1	10/18/17 10:11	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	43	17	ug/kg	
11104-28-2	Aroclor 1221	ND	43	18	ug/kg	
11141-16-5	Aroclor 1232	ND	43	12	ug/kg	
53469-21-9	Aroclor 1242	ND	43	6.9	ug/kg	
12672-29-6	Aroclor 1248	ND	43	25	ug/kg	
11097-69-1	Aroclor 1254	ND	43	11	ug/kg	
11096-82-5	Aroclor 1260	ND	43	14	ug/kg	
11100-14-4	Aroclor 1268	ND	43	6.5	ug/kg	
37324-23-5	Aroclor 1262	ND	43	3.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		24-152%
877-09-8	Tetrachloro-m-xylene	83%		24-152%
2051-24-3	Decachlorobiphenyl	106%		10-166%
2051-24-3	Decachlorobiphenyl	102%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD07-05-10		
Lab Sample ID:	JC52786-5	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	76.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.7	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 25	25	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.63	0.63	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	30.6	1.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	592	3.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	20400	63	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 13	13	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.041	0.041	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	32.9	5.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	3.6	3.2	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	76.0	6.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD07-05-10		
Lab Sample ID:	JC52786-5	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	76.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.8		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	98.2		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	81.1		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	22.1		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	6.3		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	2.0		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	0.98		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	0.98		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	93.8		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	6.3		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	0.91		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	30.4		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	< 130	130	mg/kg	1	10/13/17 10:22	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD07-10-30		
Lab Sample ID:	JC52786-6	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	81.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217715.D	1	10/18/17 10:28	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	16.9 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	16	ug/kg	
11104-28-2	Aroclor 1221	ND	41	17	ug/kg	
11141-16-5	Aroclor 1232	ND	41	11	ug/kg	
53469-21-9	Aroclor 1242	ND	41	6.5	ug/kg	
12672-29-6	Aroclor 1248	ND	41	24	ug/kg	
11097-69-1	Aroclor 1254	ND	41	10	ug/kg	
11096-82-5	Aroclor 1260	ND	41	13	ug/kg	
11100-14-4	Aroclor 1268	ND	41	6.1	ug/kg	
37324-23-5	Aroclor 1262	ND	41	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		24-152%
877-09-8	Tetrachloro-m-xylene	88%		24-152%
2051-24-3	Decachlorobiphenyl	102%		10-166%
2051-24-3	Decachlorobiphenyl	104%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD07-10-30		
Lab Sample ID:	JC52786-6	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	81.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.2	2.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 23	23	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.59	0.59	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	23.2	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	522	2.9	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	15900	59	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 12	12	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.037	0.037	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	26.6	4.7	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.3	2.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	3.0	2.9	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	66.7	5.9	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD07-10-30		
Lab Sample ID:	JC52786-6	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	81.4
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.8		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	98.0		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	80.2		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	17.7		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	9.6		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	2.0		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	90.4		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	9.6		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.1		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	22.8		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	233	120	mg/kg	1	10/13/17 10:36	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD02-00-05		
Lab Sample ID:	JC52786-7	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	64.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217716.D	1	10/18/17 10:45	RK	10/13/17 17:00	OP6896	GXX6148
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	52	21	ug/kg	
11104-28-2	Aroclor 1221	ND	52	21	ug/kg	
11141-16-5	Aroclor 1232	ND	52	14	ug/kg	
53469-21-9	Aroclor 1242	ND	52	8.2	ug/kg	
12672-29-6	Aroclor 1248	103	52	30	ug/kg	
11097-69-1	Aroclor 1254	202	52	13	ug/kg	
11096-82-5	Aroclor 1260	ND	52	16	ug/kg	
11100-14-4	Aroclor 1268	ND	52	7.7	ug/kg	
37324-23-5	Aroclor 1262	81.4	52	3.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		24-152%
877-09-8	Tetrachloro-m-xylene	81%		24-152%
2051-24-3	Decachlorobiphenyl	89%		10-166%
2051-24-3	Decachlorobiphenyl	90%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD02-00-05		
Lab Sample ID:	JC52786-7	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	64.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	8.4	7.1	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Barium	2970	71	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Cadmium	4.9	0.35	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Calcium	33100	7100	mg/kg	20	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Chromium	38.9	0.71	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	9730	35	mg/kg	20	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Iron	18600	35	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	2710	7.1	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.31	0.039	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	56.5	2.8	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	1.4	1.4	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	32.8	1.8	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	528	3.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD02-00-05		
Lab Sample ID:	JC52786-7	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	64.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	54.6		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	11400	150	mg/kg	1	10/13/17 20:01	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD02-05-10		
Lab Sample ID:	JC52786-8	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	73.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217606.D	1	10/17/17 02:42	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	45	18	ug/kg	
11104-28-2	Aroclor 1221	ND	45	18	ug/kg	
11141-16-5	Aroclor 1232	ND	45	12	ug/kg	
53469-21-9	Aroclor 1242	ND	45	7.1	ug/kg	
12672-29-6	Aroclor 1248	ND	45	26	ug/kg	
11097-69-1	Aroclor 1254	ND	45	11	ug/kg	
11096-82-5	Aroclor 1260	ND	45	14	ug/kg	
11100-14-4	Aroclor 1268	ND	45	6.6	ug/kg	
37324-23-5	Aroclor 1262	ND	45	3.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	85%		24-152%
877-09-8	Tetrachloro-m-xylene	79%		24-152%
2051-24-3	Decachlorobiphenyl	86%		10-166%
2051-24-3	Decachlorobiphenyl	80%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD02-05-10		
Lab Sample ID:	JC52786-8	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	73.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.0	1.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	123	11	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.27	0.27	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	34.2	0.54	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	1960	14	mg/kg	10	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Iron	20200	270	mg/kg	10	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Lead [a]	91.4	11	mg/kg	10	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	0.093	0.041	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	49.6	2.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium [a]	< 11	11	mg/kg	10	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Silver [a]	5.6	2.7	mg/kg	10	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	121	2.7	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD02-05-10		
Lab Sample ID:	JC52786-8	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	73.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Bulk Density (Dry Basis)	1.4		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	36.5		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	1970	140	mg/kg	1	10/13/17 11:57	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-FD2		
Lab Sample ID:	JC52786-9	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	79.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217607.D	1	10/17/17 02:59	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	25	ug/kg	
11097-69-1	Aroclor 1254	ND	42	10	ug/kg	
11096-82-5	Aroclor 1260	ND	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.3	ug/kg	
37324-23-5	Aroclor 1262	ND	42	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		24-152%
877-09-8	Tetrachloro-m-xylene	81%		24-152%
2051-24-3	Decachlorobiphenyl	93%		10-166%
2051-24-3	Decachlorobiphenyl	87%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-FD2		
Lab Sample ID:	JC52786-9	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	79.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.8	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 25	25	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.61	0.61	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	25.2	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	547	3.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	16400	61	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 12	12	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.039	0.039	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	28.5	4.9	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	< 3.1	3.1	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	71.1	6.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-FD2		
Lab Sample ID:	JC52786-9	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	79.1
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	26.5		%	1	10/12/17 14:50	LV	ASTM 2216-92

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-FD3		
Lab Sample ID:	JC52786-10	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	82.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217608.D	1	10/17/17 03:15	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	40	16	ug/kg	
11104-28-2	Aroclor 1221	ND	40	16	ug/kg	
11141-16-5	Aroclor 1232	ND	40	11	ug/kg	
53469-21-9	Aroclor 1242	ND	40	6.3	ug/kg	
12672-29-6	Aroclor 1248	ND	40	23	ug/kg	
11097-69-1	Aroclor 1254	ND	40	9.8	ug/kg	
11096-82-5	Aroclor 1260	ND	40	13	ug/kg	
11100-14-4	Aroclor 1268	ND	40	5.9	ug/kg	
37324-23-5	Aroclor 1262	ND	40	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		24-152%
877-09-8	Tetrachloro-m-xylene	79%		24-152%
2051-24-3	Decachlorobiphenyl	94%		10-166%
2051-24-3	Decachlorobiphenyl	85%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-FD3		
Lab Sample ID:	JC52786-10	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	82.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.2	2.4	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 24	24	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.59	0.59	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	23.3	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	609	3.0	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	15200	59	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 12	12	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.036	0.036	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	27.9	4.7	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.4	2.4	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	4.1	3.0	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	69.7	5.9	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-FD3		
Lab Sample ID:	JC52786-10	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	82.2
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	21.6		%	1	10/12/17 14:50	LV	ASTM 2216-92

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-00-05		
Lab Sample ID:	JC52786-11	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	76.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217609.D	1	10/17/17 03:32	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	16.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	16	ug/kg	
11104-28-2	Aroclor 1221	ND	39	16	ug/kg	
11141-16-5	Aroclor 1232	ND	39	11	ug/kg	
53469-21-9	Aroclor 1242	ND	39	6.2	ug/kg	
12672-29-6	Aroclor 1248	ND	39	23	ug/kg	
11097-69-1	Aroclor 1254	ND	39	9.6	ug/kg	
11096-82-5	Aroclor 1260	ND	39	12	ug/kg	
11100-14-4	Aroclor 1268	ND	39	5.8	ug/kg	
37324-23-5	Aroclor 1262	ND	39	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		24-152%
877-09-8	Tetrachloro-m-xylene	72%		24-152%
2051-24-3	Decachlorobiphenyl	88%		10-166%
2051-24-3	Decachlorobiphenyl	84%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD06-00-05		
Lab Sample ID:	JC52786-11	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	76.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.2	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 25	25	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.62	0.62	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	25.7	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	513	3.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	17900	62	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 12	12	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.038	0.038	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	28.9	5.0	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	< 3.1	3.1	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	72.8	6.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-00-05		
Lab Sample ID:	JC52786-11	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	76.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.9		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.1		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	91.0		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	30.4		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	6.4		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	93.6		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	6.4		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.2		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	30.3		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	1350	130	mg/kg	1	10/13/17 12:11	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-05-10		
Lab Sample ID:	JC52786-12	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	78.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217610.D	1	10/17/17 03:49	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	16.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	42	17	ug/kg	
11104-28-2	Aroclor 1221	ND	42	17	ug/kg	
11141-16-5	Aroclor 1232	ND	42	11	ug/kg	
53469-21-9	Aroclor 1242	ND	42	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	42	25	ug/kg	
11097-69-1	Aroclor 1254	ND	42	10	ug/kg	
11096-82-5	Aroclor 1260	ND	42	13	ug/kg	
11100-14-4	Aroclor 1268	ND	42	6.2	ug/kg	
37324-23-5	Aroclor 1262	ND	42	3.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	79%		24-152%
877-09-8	Tetrachloro-m-xylene	75%		24-152%
2051-24-3	Decachlorobiphenyl	87%		10-166%
2051-24-3	Decachlorobiphenyl	82%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD06-05-10		
Lab Sample ID:	JC52786-12	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	78.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.4	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	< 25	25	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.62	0.62	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	26.9	1.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	570	3.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	18900	62	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	< 12	12	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.038	0.038	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	30.9	5.0	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	3.7	3.1	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	81.7	6.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-05-10		
Lab Sample ID:	JC52786-12	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	78.5
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	99.9		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.2		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	88.1		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	21.1		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	5.8		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	1.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	94.2		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	5.8		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.0		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	27.4		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	814	130	mg/kg	1	10/13/17 12:41	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-10-30		
Lab Sample ID:	JC52786-13	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	75.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217611.D	1	10/17/17 04:05	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	44	17	ug/kg	
11104-28-2	Aroclor 1221	ND	44	18	ug/kg	
11141-16-5	Aroclor 1232	ND	44	12	ug/kg	
53469-21-9	Aroclor 1242	ND	44	6.9	ug/kg	
12672-29-6	Aroclor 1248	ND	44	25	ug/kg	
11097-69-1	Aroclor 1254	ND	44	11	ug/kg	
11096-82-5	Aroclor 1260	ND	44	14	ug/kg	
11100-14-4	Aroclor 1268	ND	44	6.5	ug/kg	
37324-23-5	Aroclor 1262	ND	44	3.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	81%		24-152%
877-09-8	Tetrachloro-m-xylene	78%		24-152%
2051-24-3	Decachlorobiphenyl	90%		10-166%
2051-24-3	Decachlorobiphenyl	86%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD06-10-30		
Lab Sample ID:	JC52786-13	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	75.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.1	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	43.8	25	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.64	0.64	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	32.0	1.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	904	3.2	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Iron	19800	64	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead [a]	79.0	13	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Mercury	< 0.039	0.039	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	38.7	5.1	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver [a]	4.3	3.2	mg/kg	5	10/12/17	10/16/17	MET	SW846 6010C [3]	SW846 3050B [5]
Zinc	98.0	6.4	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43006
(3) Instrument QC Batch: MA43015
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-10-30		
Lab Sample ID:	JC52786-13	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	75.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.7		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	86.9		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	51.0		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	27.2		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	13		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	3.0		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	3.0		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	72.9		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	27.2		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.1		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	32.3		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	2130	130	mg/kg	1	10/13/17 12:57	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-30-50		
Lab Sample ID:	JC52786-14	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	77.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217612.D	1	10/17/17 04:22	RK	10/13/17 17:00	OP6896	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	16.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	16	ug/kg	
11104-28-2	Aroclor 1221	ND	39	16	ug/kg	
11141-16-5	Aroclor 1232	ND	39	11	ug/kg	
53469-21-9	Aroclor 1242	ND	39	6.3	ug/kg	
12672-29-6	Aroclor 1248	ND	39	23	ug/kg	
11097-69-1	Aroclor 1254	ND	39	9.7	ug/kg	
11096-82-5	Aroclor 1260	ND	39	12	ug/kg	
11100-14-4	Aroclor 1268	ND	39	5.9	ug/kg	
37324-23-5	Aroclor 1262	ND	39	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		24-152%
877-09-8	Tetrachloro-m-xylene	78%		24-152%
2051-24-3	Decachlorobiphenyl	88%		10-166%
2051-24-3	Decachlorobiphenyl	83%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-SD06-30-50		
Lab Sample ID:	JC52786-14	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	77.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.0	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Barium	41.8	25	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Cadmium	< 0.63	0.63	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Chromium	35.8	1.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Copper	1060	16	mg/kg	5	10/12/17	10/13/17	AB	SW846 6010C [3]	SW846 3050B [5]
Iron	19700	63	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Lead	25.6	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Mercury	0.097	0.041	mg/kg	1	10/11/17	10/12/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	41.9	5.0	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Selenium	< 2.5	2.5	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Silver	4.0	0.63	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]
Zinc	102	6.3	mg/kg	1	10/12/17	10/13/17	AB	SW846 6010C [2]	SW846 3050B [5]

(1) Instrument QC Batch: MA42985
(2) Instrument QC Batch: MA43003
(3) Instrument QC Batch: MA43006
(4) Prep QC Batch: MP3462
(5) Prep QC Batch: MP3466

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-SD06-30-50		
Lab Sample ID:	JC52786-14	**Date Sampled:**	10/05/17
Matrix:	SO - Sediment	**Date Received:**	10/10/17
		Percent Solids:	77.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Particle Size Analysis (Sieve and Hydrometer Testing)							
3 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
1.5 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.75 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
0.375 Inch Sieve	100		%	1	10/16/17	GD	ASTM D422-63
No.4 Sieve (4.75 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.8 Sieve (2.36 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.10 Sieve (2.00 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.16 Sieve (1.18 mm)	100		%	1	10/16/17	GD	ASTM D422-63
No.30 Sieve (0.60 mm)	99.9		%	1	10/16/17	GD	ASTM D422-63
No.50 Sieve (0.30 mm)	99.4		%	1	10/16/17	GD	ASTM D422-63
No.100 Sieve (0.15 mm)	83.4		%	1	10/16/17	GD	ASTM D422-63
No.200 Sieve (0.075 mm)	57.8		%	1	10/16/17	GD	ASTM D422-63
0.030 mm (Hydrometer)	53		%	1	10/16/17	GD	ASTM D422-63
0.005 mm (Hydrometer)	2.9		%	1	10/16/17	GD	ASTM D422-63
0.0015 mm (Hydrometer)	2.9		%	1	10/16/17	GD	ASTM D422-63
% Gravel	0.0		%	1	10/16/17	GD	ASTM D422-63
% Sand	42.3		%	1	10/16/17	GD	ASTM D422-63
% Silt, Clay, Colloids	57.8		%	1	10/16/17	GD	ASTM D422-63
Bulk Density (Dry Basis)	1.0		g/ml	1	10/18/17 14:00	TG	ASTM D2937-94 M
Moisture (Dry Weight Basis)	28.5		%	1	10/12/17 14:50	LV	ASTM 2216-92
Total Organic Carbon	1590	130	mg/kg	1	10/13/17 08:55	CD	LLOYD KAHN 1988 MOD

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC52786
Account: RAMEMIAA Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
% Gravel		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Sand		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
% Silt, Clay, Colloids		**ASTM D422-63**	SO	SGS is not certified for this parameter.[a]
Bulk Density (Dry Basis)		**ASTM D2937-94 M**	SO	SGS is not certified for this parameter.[a]
Moisture (Dry Weight Basis)		**ASTM 2216-92**	SO	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SGS ACCUTEST

SED

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

8106 7101 6928
8106 7101 6940

PAGE 1 OF 2

FED-EX Tracking # 8106 7101 6950
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # JC52786

Client / Reporting Information

Company Name: Ramboll Environ
Street Address: 3600 Green Ct, Suite 750
City State Zip: Ann Arbor, MI 48105
Project Contact E-mail: Danielle Amber damber@ramboll.com 02-43323A
Phone # Fax #: 734-761-2175 734-761-2050
Sampler(s) Name(s) Phone #: Alyssa Carson 734-761-2167

Project Information

Project Name: Lake Linden Sampling Event
Street:
City State: Lake Linden MI
Project #:
Client Purchase Order #:
Project Manager: Viktoriya Pushkova

Billing Information (if different from Report to)
Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Mn 10 Metals (SW846 6010C)	Iron (SW846 6010C)	Nickel (SW846 6010C)	Total PCBs (SW846 8082)	TOC (SW846 9060)	Grain Size (ASTM D422-63)	Bulk Density (ASTM D7263)	Moisture Content (ASTM D2216)				LAB USE ONLY
1	LLRA-SD04-00-05		10/5/17	17:40	ASL	SED	3					X				X	X	X	X	X	X		X				
2	LLRA-SD04-05-10			17:55												X	X	X	X	X	X	X	X				D56
3	LLRA-SD04-10-30			18:05												X	X	X	X	X	X	X	X				C40TY
4	LLRA-SD07-00-05			18:40												X	X	X	X	X	X	X	X				
5	LLRA-SD07-05-10			18:50												X	X	X	X	X	X	X	X				
6	LLRA-SD07-10-30			18:55												X	X	X	X	X	X	X	X				
7	LLRA-SD02-00-05			19:20			2									X	X	X	X	X			X				
8	LLRA-SD02-05-10			19:30			2									X	X	X	X	X		X	X				
9	LLRA-FD2			—			1									X	X	X	X								
10	LLRA-FD3			—			1									X	X	X	X								

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other _____

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:
INITIAL ASSESSMENT 2A/JP
LABEL VERIFICATION

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format _____
- [ ] Other _____

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Retain extracts of all PCB samples following initial analysis
*Client COC number: 371156-100517-01
*Level 4 validation (Honeywell deliverable)
*Only run bulk density if enough volume

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery. 9:45

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Alyssa Carson to FedEx	10/9/17 14:45	1 fedex	2 fedex	10/10/17	2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 838 836 834 835	[x] Intact [ ] Not intact	Preserved where applicable [ ]

On Ice [x] Cooler Temp. 3.2, 3.2, 4.2, 3.1

Form:SM088-01CRev.Date:9/13/16

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JC52786: Chain of Custody
Page 1 of 3

SGS ACCUTEST

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CHAIN OF CUSTODY

SGS Accutest - Dayton
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TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

8106 7101 6951
8106 7101 6928
8106 7101 6940

FED-EX Tracking # 8106 7101 6950
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # JC52786

Client / Reporting Information

Company Name: Ramboll Environ
Street Address: 3600 Green Ct, Suite 780
City / State / Zip: Ann Arbor MI 48105
Project Contact / E-mail: Danielle Amber damber@ramboll.com
Phone #: 734-761-2175 Fax #: 734-761-2050
Sampler(s) Name(s): Alyssa Lanan Phone #: 734-761-2067

Project Information

Project Name: Lake Linden Sampling Event
Street:
City / State: Lake Linden MI
Project #: 02-43323A
Client Purchase Order #:
Project Manager: Viktonya Pushkova

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	MI 10 Metals (SW846 6010C)	Iron (SW846 6010C)	Nickel (SW846 6010C)	Total PCBs (SW846 8082)	TOC (SW846 9060)	Grain Size (ASTM D422-63)	Bulk Density (ASTM D7263)	Moisture Content (ASTM D2216)				LAB USE ONLY
11	LLRA-SD06-00-05		10/5/17	16:20	ASL	SED	3					X				X	X	X	X	X	X	X	X				
12	LLRA-SD06-05-10			16:30												X	X	X	X	X	X	X	X				
13	LLRA-SD06-10-30			16:40												X	X	X	X	X	X	X	X				
14	LLRA-SD06-30-50			16:50			4									X	X	X	X	X	X	X	X	*MS/MSD*			

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other _____

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM): / Date:
~~INITIAL ASESSMENT~~
~~LABEL VERIFICATION~~

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format _____
- [ ] Other _____

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

*Retain extracts of all PCB samples following initial analysis
*Client COC number: 37156-100517-02
*Level 4 validation (Honeywell deliverables)

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Alyssa Lanan to FedEX	10/9/17 14:45	1 fedex	2 fedex	10/10/19 9:45	2
3		3	4		4
5		5			

Custody Seal # 838, 836, 834 835 — [x] Intact [ ] Not intact — Preserved where applicable [ ] — On Ice [x] — Cooler Temp. 3.2, 3.8, 4.2, 3.1°C

Form:SM088-01CRev.Date:9/13/16

5.2 5

JC52786: Chain of Custody
Page 2 of 3

SGS Accutest Sample Receipt Summary

Job Number: JC52786 **Client:** _____ **Project:** _____

Date / Time Received: 10/10/2017 9:45:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.2); Cooler 2: (3.8); Cooler 3: (4.2); Cooler 4: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.6); Cooler 2: (2.2); Cooler 3: (2.6); Cooler 4: (1.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	4		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

5.2

5

JC52786: Chain of Custody
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The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Ramboll Environ US Corporation

Honeywell-Lake Linden Sampling Event, Lake Linden, MI

02-43323A

SGS Job Number: JC53085

Sampling Dates: 10/09/17 - 10/11/17

Report to:

Ramboll Environ US Corporation

twyss@ramboll.com

ATTN: Troy Wyss

Total number of pages in report: 53

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

Ramboll Environ US Corporation

Job No: JC53085

Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Project No: 02-43323A

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JC53085-1	10/10/17	17:55 ASL	10/13/17	SO	Sediment	LLRA-CS05-00-05
JC53085-2	10/09/17	16:30 ASL	10/13/17	SO	Sediment	LLRA-CS08-00-05
JC53085-3	10/10/17	00:00 ASL	10/13/17	SO	Sediment	LLRA-RI
JC53085-4	10/10/17	16:25 ASL	10/13/17	SO	Sediment	LLRA-CS01-05-10
JC53085-5	10/10/17	16:25 ASL	10/13/17	SO	Sediment	LLRA-CS01-10-20
JC53085-6	10/09/17	18:25 ASL	10/13/17	SO	Sediment	LLRA-CS02-05-10
JC53085-7	10/09/17	18:25 ASL	10/13/17	SO	Sediment	LLRA-CS02-10-20
JC53085-8	10/11/17	00:00 ASL	10/13/17	SO	Sediment	LLRA-R2
JC53085-9	10/11/17	00:00 ASL	10/13/17	SO	Sediment	LLRA-R3
JC53085-10	10/11/17	00:00 ASL	10/13/17	SO	Sediment	LLRA-R4
JC53085-11	10/11/17	00:00 ASL	10/13/17	SO	Sediment	LLRA-R5
JC53085-12	10/11/17	00:00 ASL	10/13/17	SO	Sediment	LLRA-R6

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Ramboll Environ US Corporation	**Job No**	JC53085
Site:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI	**Report Date**	11/14/2017 3:36:59 P

On 10/13/2017, 12 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.8 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC53085 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Extractables by GC By Method SW846 8082A

Matrix: SO **Batch ID:** OP7288

- All samples were extracted within the recommended method holding time.
- Sample(s) JC53085-1MS, JC53085-1MSD, OP7288-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix: SO **Batch ID:** MP3778

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53085-1MS, JC53085-1MSD, JC53085-1SDL were used as the QC samples for metals.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Copper are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Iron are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Silver are outside control limits for sample MP3778-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- RPD(s) for Serial Dilution for Cadmium, Chromium, Iron, Zinc are outside control limits for sample MP3778-SD1. Serial dilution indicates possible matrix interference.
- JC53085-10 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-8 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-9 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-3 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-7 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-6 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-4 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-5 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-2 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-12 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-11 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JC53085-1 for Silver: Elevated detection limit due to dilution required for high interfering element.

Metals By Method SW846 7471B

Matrix: SO	Batch ID: MP3790

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53085-1MS, JC53085-1MSD were used as the QC samples for metals.

Wet Chemistry By Method ASTM 2216-92

Matrix: SO	Batch ID: GN71997

- The data for ASTM 2216-92 meets quality control requirements.

Wet Chemistry By Method LLOYD KAHN 1988 MOD

Matrix: SO	Batch ID: GP8841

- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53085-1DUP, JC53085-1MS were used as the QC samples for Total Organic Carbon.
- The following samples were prepared outside of holding time for method LLOYD KAHN 1988 MOD: JC53085-1, JC53085-10, JC53085-12, JC53085-7, JC53085-8, JC53085-4, JC53085-11, JC53085-2, JC53085-3, JC53085-5, JC53085-6, JC53085-9 Analysis done out of holding time.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC53085
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/09/17 thru 10/11/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC53085-1	**LLRA-CS05-00-05**					
Arsenic		4.2	1.9		mg/kg	SW846 6010C
Barium		21.4	19		mg/kg	SW846 6010C
Chromium		28.0	0.96		mg/kg	SW846 6010C
Copper		599	2.4		mg/kg	SW846 6010C
Iron		22400	48		mg/kg	SW846 6010C
Lead		18.8	1.9		mg/kg	SW846 6010C
Nickel		27.0	3.9		mg/kg	SW846 6010C
Zinc		66.0	4.8		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.2			%	ASTM 2216-92
Total Organic Carbon [a]		356	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-2	**LLRA-CS08-00-05**					
Arsenic		8.3	2.0		mg/kg	SW846 6010C
Chromium		34.3	0.99		mg/kg	SW846 6010C
Copper		1140	12		mg/kg	SW846 6010C
Iron		22800	50		mg/kg	SW846 6010C
Lead		28.0	2.0		mg/kg	SW846 6010C
Nickel		37.1	4.0		mg/kg	SW846 6010C
Silver [b]		3.6	2.5		mg/kg	SW846 6010C
Zinc		79.4	5.0		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.4			%	ASTM 2216-92
Total Organic Carbon [a]		637	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-3	**LLRA-RI**					
Arsenic		4.4	1.9		mg/kg	SW846 6010C
Barium		21.4	19		mg/kg	SW846 6010C
Chromium		28.6	0.96		mg/kg	SW846 6010C
Copper		545	2.4		mg/kg	SW846 6010C
Iron		22100	48		mg/kg	SW846 6010C
Lead		16.5	1.9		mg/kg	SW846 6010C
Nickel		27.5	3.9		mg/kg	SW846 6010C
Zinc		66.4	4.8		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.3			%	ASTM 2216-92
Total Organic Carbon [a]		423	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-4	**LLRA-CS01-05-10**					
Arsenic		2.6	2.0		mg/kg	SW846 6010C
Chromium		20.7	0.98		mg/kg	SW846 6010C
Copper		585	2.5		mg/kg	SW846 6010C
Iron		14100	49		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC53085
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/09/17 thru 10/11/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Lead		7.7	2.0		mg/kg	SW846 6010C
Nickel		20.4	3.9		mg/kg	SW846 6010C
Zinc		41.5	4.9		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.2			%	ASTM 2216-92
Total Organic Carbon [a]		474	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-5	**LLRA-CS01-10-20**					
Arsenic		4.6	2.1		mg/kg	SW846 6010C
Barium		47.8	21		mg/kg	SW846 6010C
Chromium		31.7	1.0		mg/kg	SW846 6010C
Copper		922	2.6		mg/kg	SW846 6010C
Iron		21900	52		mg/kg	SW846 6010C
Lead		60.8	2.1		mg/kg	SW846 6010C
Mercury		0.029	0.029		mg/kg	SW846 7471B
Nickel		29.7	4.1		mg/kg	SW846 6010C
Zinc		101	5.2		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.3			%	ASTM 2216-92
Total Organic Carbon [a]		952	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-6	**LLRA-CS02-05-10**					
Arsenic		3.4	2.0		mg/kg	SW846 6010C
Chromium		23.5	1.0		mg/kg	SW846 6010C
Copper		512	2.5		mg/kg	SW846 6010C
Iron		18300	51		mg/kg	SW846 6010C
Lead		24.5	2.0		mg/kg	SW846 6010C
Nickel		24.0	4.1		mg/kg	SW846 6010C
Silver [b]		2.2	1.5		mg/kg	SW846 6010C
Zinc		62.4	5.1		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.3			%	ASTM 2216-92
Total Organic Carbon [a]		1010	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-7	**LLRA-CS02-10-20**					
Arsenic		3.1	1.9		mg/kg	SW846 6010C
Barium		37.0	19		mg/kg	SW846 6010C
Chromium		21.3	0.97		mg/kg	SW846 6010C
Copper		494	2.4		mg/kg	SW846 6010C
Iron		17000	49		mg/kg	SW846 6010C
Lead		48.6	1.9		mg/kg	SW846 6010C
Mercury		0.036	0.032		mg/kg	SW846 7471B
Nickel		22.6	3.9		mg/kg	SW846 6010C
Silver [b]		3.2	1.5		mg/kg	SW846 6010C
Zinc		96.0	4.9		mg/kg	SW846 6010C

Summary of Hits

Job Number: JC53085
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/09/17 thru 10/11/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Moisture (Dry Weight Basis)		0.3			%	ASTM 2216-92
Total Organic Carbon [a]		1740	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-8	**LLRA-R2**					
Arsenic		2.3	1.9		mg/kg	SW846 6010C
Chromium		19.2	0.97		mg/kg	SW846 6010C
Copper		585	2.4		mg/kg	SW846 6010C
Iron		13400	49		mg/kg	SW846 6010C
Lead		6.6	1.9		mg/kg	SW846 6010C
Nickel		21.2	3.9		mg/kg	SW846 6010C
Silver [b]		1.3	0.97		mg/kg	SW846 6010C
Zinc		44.5	4.9		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.2			%	ASTM 2216-92
Total Organic Carbon [a]		342	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-9	**LLRA-R3**					
Arsenic		3.7	2.0		mg/kg	SW846 6010C
Barium		25.8	20		mg/kg	SW846 6010C
Chromium		24.1	0.98		mg/kg	SW846 6010C
Copper		956	7.4		mg/kg	SW846 6010C
Iron		17900	49		mg/kg	SW846 6010C
Lead		40.9	2.0		mg/kg	SW846 6010C
Nickel		24.7	3.9		mg/kg	SW846 6010C
Silver [b]		3.1	1.5		mg/kg	SW846 6010C
Zinc		71.3	4.9		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.2			%	ASTM 2216-92
Total Organic Carbon [a]		537	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-10	**LLRA-R4**					
Arsenic		4.4	2.0		mg/kg	SW846 6010C
Barium		22.9	20		mg/kg	SW846 6010C
Chromium		30.3	1.0		mg/kg	SW846 6010C
Copper		541	2.5		mg/kg	SW846 6010C
Iron		23700	50		mg/kg	SW846 6010C
Lead		18.2	2.0		mg/kg	SW846 6010C
Nickel		29.1	4.0		mg/kg	SW846 6010C
Zinc		70.7	5.0		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.3			%	ASTM 2216-92
Total Organic Carbon [a]		384	100		mg/kg	LLOYD KAHN 1988 MOD

Summary of Hits

Job Number: JC53085
Account: Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI
Collected: 10/09/17 thru 10/11/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC53085-11	**LLRA-R5**					
Arsenic		2.5	2.0		mg/kg	SW846 6010C
Chromium		17.1	1.0		mg/kg	SW846 6010C
Copper		476	2.5		mg/kg	SW846 6010C
Iron		13200	50		mg/kg	SW846 6010C
Lead		10.8	2.0		mg/kg	SW846 6010C
Nickel		18.8	4.0		mg/kg	SW846 6010C
Zinc		45.6	5.0		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.2			%	ASTM 2216-92
Total Organic Carbon [a]		1440	100		mg/kg	LLOYD KAHN 1988 MOD
JC53085-12	**LLRA-R6**					
Arsenic		4.0	2.0		mg/kg	SW846 6010C
Barium		30.4	20		mg/kg	SW846 6010C
Chromium		24.0	1.0		mg/kg	SW846 6010C
Copper		972	7.7		mg/kg	SW846 6010C
Iron		17100	51		mg/kg	SW846 6010C
Lead		45.7	2.0		mg/kg	SW846 6010C
Nickel		24.6	4.1		mg/kg	SW846 6010C
Silver [b]		2.3	1.5		mg/kg	SW846 6010C
Zinc		73.6	5.1		mg/kg	SW846 6010C
Moisture (Dry Weight Basis)		0.2			%	ASTM 2216-92
Total Organic Carbon [a]		495	100		mg/kg	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.
(b) Elevated detection limit due to dilution required for high interfering element.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	LLRA-CS05-00-05		
Lab Sample ID:	JC53085-1	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154760.D	1	10/30/17 10:41	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	13	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.8	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.2	ug/kg	
12672-29-6	Aroclor 1248	ND	33	19	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.1	ug/kg	
11096-82-5	Aroclor 1260	ND	33	10	ug/kg	
11100-14-4	Aroclor 1268	ND	33	4.9	ug/kg	
37324-23-5	Aroclor 1262	ND	33	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	78%		24-152%
877-09-8	Tetrachloro-m-xylene	75%		24-152%
2051-24-3	Decachlorobiphenyl	87%		10-166%
2051-24-3	Decachlorobiphenyl	76%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS05-00-05		
Lab Sample ID:	JC53085-1	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.2	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	21.4	19	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.48	0.48	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	28.0	0.96	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	599	2.4	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	22400	48	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	18.8	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.032	0.032	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	27.0	3.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 1.9	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	< 2.4	2.4	mg/kg	5	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	66.0	4.8	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS05-00-05		
Lab Sample ID:	JC53085-1	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.2		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	356	100	mg/kg	1	10/28/17 14:29	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS08-00-05		
Lab Sample ID:	JC53085-2	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154767.D	1	10/30/17 12:39	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.5	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.1	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	7.8	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.7	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		24-152%
877-09-8	Tetrachloro-m-xylene	85%		24-152%
2051-24-3	Decachlorobiphenyl	92%		10-166%
2051-24-3	Decachlorobiphenyl	81%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS08-00-05		
Lab Sample ID:	JC53085-2	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	8.3	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	< 20	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.50	0.50	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	34.3	0.99	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	1140	12	mg/kg	5	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Iron	22800	50	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	28.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.033	0.033	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	37.1	4.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	3.6	2.5	mg/kg	5	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	79.4	5.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS08-00-05		
Lab Sample ID:	JC53085-2	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.6
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.4		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	637	100	mg/kg	1	10/28/17 14:43	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-RI		
Lab Sample ID:	JC53085-3	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154768.D	1	10/30/17 12:56	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	16.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	31	12	ug/kg	
11104-28-2	Aroclor 1221	ND	31	13	ug/kg	
11141-16-5	Aroclor 1232	ND	31	8.2	ug/kg	
53469-21-9	Aroclor 1242	ND	31	4.9	ug/kg	
12672-29-6	Aroclor 1248	ND	31	18	ug/kg	
11097-69-1	Aroclor 1254	ND	31	7.6	ug/kg	
11096-82-5	Aroclor 1260	ND	31	9.7	ug/kg	
11100-14-4	Aroclor 1268	ND	31	4.6	ug/kg	
37324-23-5	Aroclor 1262	ND	31	2.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	71%		24-152%
877-09-8	Tetrachloro-m-xylene	67%		24-152%
2051-24-3	Decachlorobiphenyl	78%		10-166%
2051-24-3	Decachlorobiphenyl	70%		10-166%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-RI		
Lab Sample ID:	JC53085-3	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.4	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	21.4	19	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.48	0.48	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	28.6	0.96	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	545	2.4	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	22100	48	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	16.5	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.033	0.033	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	27.5	3.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 1.9	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	< 2.4	2.4	mg/kg	5	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	66.4	4.8	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-RI		
Lab Sample ID:	JC53085-3	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.3		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	423	100	mg/kg	1	10/28/17 15:15	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS01-05-10		
Lab Sample ID:	JC53085-4	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154769.D	1	10/30/17 13:13	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.6	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.1	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	7.9	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.8	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		24-152%
877-09-8	Tetrachloro-m-xylene	83%		24-152%
2051-24-3	Decachlorobiphenyl	91%		10-166%
2051-24-3	Decachlorobiphenyl	81%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS01-05-10		
Lab Sample ID:	JC53085-4	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.6	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	< 20	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.49	0.49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	20.7	0.98	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	585	2.5	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	14100	49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	7.7	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.030	0.030	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	20.4	3.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	< 1.5	1.5	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	41.5	4.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS01-05-10		
Lab Sample ID:	JC53085-4	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.2		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	474	100	mg/kg	1	10/28/17 15:41	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS01-10-20		
Lab Sample ID:	JC53085-5	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154770.D	1	10/30/17 13:30	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	16.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	31	13	ug/kg	
11104-28-2	Aroclor 1221	ND	31	13	ug/kg	
11141-16-5	Aroclor 1232	ND	31	8.3	ug/kg	
53469-21-9	Aroclor 1242	ND	31	5.0	ug/kg	
12672-29-6	Aroclor 1248	ND	31	18	ug/kg	
11097-69-1	Aroclor 1254	ND	31	7.7	ug/kg	
11096-82-5	Aroclor 1260	ND	31	9.8	ug/kg	
11100-14-4	Aroclor 1268	ND	31	4.6	ug/kg	
37324-23-5	Aroclor 1262	ND	31	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	85%		24-152%
877-09-8	Tetrachloro-m-xylene	81%		24-152%
2051-24-3	Decachlorobiphenyl	90%		10-166%
2051-24-3	Decachlorobiphenyl	80%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS01-10-20		
Lab Sample ID:	JC53085-5	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.6	2.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	47.8	21	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.52	0.52	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	31.7	1.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	922	2.6	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	21900	52	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	60.8	2.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.029	0.029	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	29.7	4.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.1	2.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	< 1.6	1.6	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	101	5.2	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS01-10-20		
Lab Sample ID:	JC53085-5	**Date Sampled:**	10/10/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.3		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	952	100	mg/kg	1	10/28/17 16:55	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS02-05-10		
Lab Sample ID:	JC53085-6	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154771.D	1	10/30/17 13:47	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	16.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	31	13	ug/kg	
11104-28-2	Aroclor 1221	ND	31	13	ug/kg	
11141-16-5	Aroclor 1232	ND	31	8.3	ug/kg	
53469-21-9	Aroclor 1242	ND	31	5.0	ug/kg	
12672-29-6	Aroclor 1248	ND	31	18	ug/kg	
11097-69-1	Aroclor 1254	ND	31	7.7	ug/kg	
11096-82-5	Aroclor 1260	ND	31	9.8	ug/kg	
11100-14-4	Aroclor 1268	ND	31	4.6	ug/kg	
37324-23-5	Aroclor 1262	ND	31	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		24-152%
877-09-8	Tetrachloro-m-xylene	71%		24-152%
2051-24-3	Decachlorobiphenyl	84%		10-166%
2051-24-3	Decachlorobiphenyl	75%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS02-05-10		
Lab Sample ID:	JC53085-6	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.4	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	< 20	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.51	0.51	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	23.5	1.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	512	2.5	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	18300	51	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	24.5	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.031	0.031	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	24.0	4.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	2.2	1.5	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	62.4	5.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS02-05-10		
Lab Sample ID:	JC53085-6	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.3		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	1010	100	mg/kg	1	10/28/17 18:02	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS02-10-20		
Lab Sample ID:	JC53085-7	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154772.D	1	10/30/17 14:04	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	14	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.9	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.3	ug/kg	
12672-29-6	Aroclor 1248	ND	33	19	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.2	ug/kg	
11096-82-5	Aroclor 1260	ND	33	10	ug/kg	
11100-14-4	Aroclor 1268	ND	33	4.9	ug/kg	
37324-23-5	Aroclor 1262	ND	33	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	86%		10-166%
2051-24-3	Decachlorobiphenyl	77%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-CS02-10-20		
Lab Sample ID:	JC53085-7	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.1	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	37.0	19	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.49	0.49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	21.3	0.97	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	494	2.4	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	17000	49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	48.6	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.036	0.032	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	22.6	3.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 1.9	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	3.2	1.5	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	96.0	4.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-CS02-10-20		
Lab Sample ID:	JC53085-7	**Date Sampled:**	10/09/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.3		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	1740	100	mg/kg	1	10/28/17 18:34	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R2		
Lab Sample ID:	JC53085-8	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154773.D	1	10/30/17 14:21	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	13	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.7	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.2	ug/kg	
12672-29-6	Aroclor 1248	ND	33	19	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.0	ug/kg	
11096-82-5	Aroclor 1260	ND	33	10	ug/kg	
11100-14-4	Aroclor 1268	ND	33	4.8	ug/kg	
37324-23-5	Aroclor 1262	ND	33	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		24-152%
877-09-8	Tetrachloro-m-xylene	74%		24-152%
2051-24-3	Decachlorobiphenyl	96%		10-166%
2051-24-3	Decachlorobiphenyl	86%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-R2		
Lab Sample ID:	JC53085-8	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.3	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	< 19	19	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.49	0.49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	19.2	0.97	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	585	2.4	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	13400	49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	6.6	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.032	0.032	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	21.2	3.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 1.9	1.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	1.3	0.97	mg/kg	2	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	44.5	4.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R2		
Lab Sample ID:	JC53085-8	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.2		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	342	100	mg/kg	1	10/28/17 18:48	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R3		
Lab Sample ID:	JC53085-9	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154778.D	1	10/30/17 16:20	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.6	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.1	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	7.9	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.7	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	94%		10-166%
2051-24-3	Decachlorobiphenyl	84%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-R3		
Lab Sample ID:	JC53085-9	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.7	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	25.8	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.49	0.49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	24.1	0.98	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	956	7.4	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Iron	17900	49	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	40.9	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.030	0.030	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	24.7	3.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	3.1	1.5	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	71.3	4.9	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R3		
Lab Sample ID:	JC53085-9	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.2		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	537	100	mg/kg	1	10/28/17 19:03	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R4		
Lab Sample ID:	JC53085-10	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154779.D	1	10/30/17 16:37	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	13	ug/kg	
11104-28-2	Aroclor 1221	ND	32	13	ug/kg	
11141-16-5	Aroclor 1232	ND	32	8.7	ug/kg	
53469-21-9	Aroclor 1242	ND	32	5.2	ug/kg	
12672-29-6	Aroclor 1248	ND	32	19	ug/kg	
11097-69-1	Aroclor 1254	ND	32	8.0	ug/kg	
11096-82-5	Aroclor 1260	ND	32	10	ug/kg	
11100-14-4	Aroclor 1268	ND	32	4.8	ug/kg	
37324-23-5	Aroclor 1262	ND	32	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		24-152%
877-09-8	Tetrachloro-m-xylene	83%		24-152%
2051-24-3	Decachlorobiphenyl	93%		10-166%
2051-24-3	Decachlorobiphenyl	83%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-R4		
Lab Sample ID:	JC53085-10	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.4	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	22.9	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.50	0.50	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	30.3	1.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	541	2.5	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	23700	50	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	18.2	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.032	0.032	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	29.1	4.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	< 2.5	2.5	mg/kg	5	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	70.7	5.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R4		
Lab Sample ID:	JC53085-10	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.7
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.3		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	384	100	mg/kg	1	10/28/17 19:33	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R5		
Lab Sample ID:	JC53085-11	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154780.D	1	10/30/17 16:54	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	13	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.8	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.2	ug/kg	
12672-29-6	Aroclor 1248	ND	33	19	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.1	ug/kg	
11096-82-5	Aroclor 1260	ND	33	10	ug/kg	
11100-14-4	Aroclor 1268	ND	33	4.9	ug/kg	
37324-23-5	Aroclor 1262	ND	33	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	85%		24-152%
877-09-8	Tetrachloro-m-xylene	81%		24-152%
2051-24-3	Decachlorobiphenyl	93%		10-166%
2051-24-3	Decachlorobiphenyl	82%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-R5		
Lab Sample ID:	JC53085-11	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.5	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	< 20	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.50	0.50	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	17.1	1.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	476	2.5	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Iron	13200	50	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	10.8	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.032	0.032	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	18.8	4.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	< 1.0	1.0	mg/kg	2	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	45.6	5.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R5		
Lab Sample ID:	JC53085-11	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.2		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	1440	100	mg/kg	1	10/28/17 19:49	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R6		
Lab Sample ID:	JC53085-12	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G154781.D	1	10/30/17 17:11	MH	10/26/17 17:00	OP7288	G2G4166
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	13	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.8	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.2	ug/kg	
12672-29-6	Aroclor 1248	ND	33	19	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.1	ug/kg	
11096-82-5	Aroclor 1260	ND	33	10	ug/kg	
11100-14-4	Aroclor 1268	ND	33	4.9	ug/kg	
37324-23-5	Aroclor 1262	ND	33	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	81%		24-152%
877-09-8	Tetrachloro-m-xylene	76%		24-152%
2051-24-3	Decachlorobiphenyl	93%		10-166%
2051-24-3	Decachlorobiphenyl	83%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	LLRA-R6		
Lab Sample ID:	JC53085-12	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Barium	30.4	20	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Cadmium	< 0.51	0.51	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Chromium	24.0	1.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Copper	972	7.7	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Iron	17100	51	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Lead	45.7	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Mercury	< 0.032	0.032	mg/kg	1	10/27/17	10/27/17	JA	SW846 7471B [1]	SW846 7471B [5]
Nickel	24.6	4.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Selenium	< 2.0	2.0	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]
Silver [a]	2.3	1.5	mg/kg	3	10/27/17	11/03/17	ND	SW846 6010C [3]	SW846 3050B [4]
Zinc	73.6	5.1	mg/kg	1	10/27/17	10/27/17	ND	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA43095
(2) Instrument QC Batch: MA43105
(3) Instrument QC Batch: MA43156
(4) Prep QC Batch: MP3778
(5) Prep QC Batch: MP3790

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LLRA-R6		
Lab Sample ID:	JC53085-12	**Date Sampled:**	10/11/17
Matrix:	SO - Sediment	**Date Received:**	10/13/17
		Percent Solids:	99.8
Project:	Honeywell-Lake Linden Sampling Event, Lake Linden, MI		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture (Dry Weight Basis)	0.2		%	1	11/02/17 23:52	SA	ASTM 2216-92
Total Organic Carbon [a]	495	100	mg/kg	1	10/28/17 20:16	TZW	LLOYD KAHN 1988 MOD

(a) Analysis done out of holding time.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC53085
Account: RAMEMIAA Ramboll Environ US Corporation
Project: Honeywell-Lake Linden Sampling Event, Lake Linden, MI

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Moisture (Dry Weight Basis)		ASTM 2216-92	SO	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

4077 3091 3918 | 8117 3124 5832 | 8117 3124 5872
4077 3091 3907 | 8117 3124 5844

SGS ACCUTEST

Sed SUB

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 4077 3091 3907
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # JC 53085

Client / Reporting Information

Company Name: Ramboll Environ
Street Address: 3000 Green Ct, Suite 750
City State Zip: Ann Arbor MI 48105
Project Contact: Danielle Amber damber@ramboll.com
E-mail:
Phone #: 734-761-2175
Fax #: 734-761-2080
Sampler(s) Name(s): Alyssa Larson
Phone #: 734-761-2167

Project Information

Project Name: Lake Linden Sampling Event
Street:
City State: Lake Linden MI
Project #: 02-43323A
Client Purchase Order #:
Project Manager: Viktoriya Pushkova

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	M1 10 Metals (SW846 6010C)	Iron (SW846 6010C)	Nickel (SW846 6010C)	Total PCBs (SW846 8082)	TOC (SW846 9060)		LAB USE ONLY
1	LLRA-CS05-00-05		Start: 10/10/17 End: 10/10/17	Start: 1636 End: 1755	ASL	SED	1					X				X	X	X	X	X	*lab homogenize composite	
2	LLRA-CS08-00-05		Start: 10/9/17 End: 10/9/17	Start: 2020 End: 1630												X	X	X	X	X	*lab homogenize composite	
3	LLRA-R1		Start: 10/10/17 End: 10/10/17	—												X	X	X	X	X	*lab homogenize composite	SUB
4	LLRA-CS01-05-10		Start: 10/9/17 End: 10/9/17	Start: 1830 End: 1120												X	X	X	X	X	*lab homogenize composite	
5	LLRA-CS01-10-20		Start: 10/9/17 End: 10/9/17	Start: 1830 End: 1125												X	X	X	X	X	*lab homogenize composite	D9T3
6	LLRA-CS02-05-10		Start: 10/9/17 End: 10/9/17	Start: 1645 End: 1825												X	X	X	X	X	*lab homogenize composite	D9T4
7	LLRA-CS02-10-20		Start: 10/9/17 End: 10/9/17	Start: 1645 End: 1825												X	X	X	X	X	*lab homogenize composite	MFLR
8	LLRA-R2		Start: 10/11/17 End: 10/11/17	—												X	X	X	X	X	*lab homogenize composite	
9	LLRA-R3		Start: 10/11/17 End: 10/11/17	—												X	X	X	X	X	*lab homogenize composite	B6
10	LLRA-R4		Start: 10/11/17 End: 10/11/17	—												X	X	X	X	X	*lab homogenize composite	
11	LLRA-R5		Start: 10/11/17 End: 10/11/17	—												X	X	X	X	X	*lab homogenize composite	
12	LLRA-R6		Start/End: 10/9/17	—												X	X	X	X	X	*lab homogenize composite	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (SGS Accutest PM) / Date:

INITIAL ASSESMENT SEB

LABEL VERIFICATION

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

*Retain extracts of all PCB samples following initial analysis
*Client COC number: 77156-101217-01
*Level 4 validation (Hanapwell deliverable)
*Lab to homogenize all composite samples.

Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler	Date/Time	Received By	Relinquished By	Date/Time	Received By
1 [signature] FAEX	10/12/17 12:00	1 FX	2 FX	10/13/17 9:30	2 [signature]
Relinquished by Sampler: 3	Date/Time:	Received By: 3	Relinquished By: 4	Date/Time	Received By: 4
Relinquished by: 5	Date/Time:	Received By: 5	Custody Seal #	Intact / Not Intact	Preserved where applicable / On Ice / Cooler Temp

ICE 3.3° 3.0° 3.1° 2.8° 2.9° 3.4°

Form SM089.01CRev Date 9/13/16

JC53085: Chain of Custody
Page 1 of 5

SGS ACCUTEST - ORLANDO

8330B Air Drying Log

BALANCE ID: METTLER 1

Sample ID	Date/Time Started 10/25/17 08:00 First Weighing (grams)*	Date/Time Started 10/25/17 11:00 Second Weighing (grams)*	Date/Time Started Third Weighing (grams) (grams)* If Needed
JC53085-1	10.1	10.1	
-2	10.3	10.3	
-3	10.0	10.0	
-4	10.3	10.3	
-5	10.0	10.0	
-6	10.0	10.0	
-7	10.1	10.1	
-8	10.2	10.2	
-9	10.1	10.1	
-10	10.0	10.0	
-11	10.1	10.1	
-12	10.0	10.0	

* Includes weight of the aluminum dish.

Allow at least two hours between First and Second Weighing and between Second and Third Weighing

Sample is considered dry if the difference between consecutive weighings is less that 0.1 gram

Analyst's Signature:

NF 02/16

8330b drying log 020116.xls

SGS ACCUTEST - ORLANDO

8330B Weight Log

BALANCE ID: METTLER 1

DATE: 10/25/17

	Sample ID	Total Weight (grams)	Weight Remaining in #10 Sieve (grams)	Sieve ID	Comments / Description
	JC53085-1	4967.85	266.11	10A	
	-2	5235.88	511.95	10B	
	-3	5643.78	229.71	10C	
	-4	2829.07	171.36	10D	
	-5	4215.52	179.65	10E	
	-6	2713.99	198.54	10F	
	-7	4116.99	201.73	10G	
AB 10/25/17	-8	2765.~~25~~75	164.47	10A	
	-9	4841.84	273.47	10B	
AB 10/25/17	-10	5266.11	~~157~~ 150.11	10C	
	-11	2795.65	87.90	10D	
	-12	4452.50	225.43	10E	

Analyst's Signature:

SGS Accutest Sample Receipt Summary

Job Number: JC53085 **Client:** _____ **Project:** _____

Date / Time Received: 10/13/2017 9:30:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.3); Cooler 2: (3.0); Cooler 3: (3.1); Cooler 4: (2.8); Cooler 5: (2.9); Cooler 6: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (1.7); Cooler 2: (1.4); Cooler 3: (1.5); Cooler 4: (1.2); Cooler 5: (1.3); Cooler 6: (1.8);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	6	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☑	☐
2. Trip Blank listed on COC:	☐	☑	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☑

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

SM089-02
Rev. Date 12/1/16

5.2

5

JC53085: Chain of Custody
Page 4 of 5

SGS Accutest Sample Receipt Summary

Job Number: JC53085 **Client:** _____ **Project:** _____

Date / Time Received: 10/26/2017 9:30:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 7: (3.3); Cooler 8: (3.0); Cooler 9: (3.1); Cooler 10: (2.8); Cooler 11: (2.9); Cooler 12: (3.4);

Cooler Temps (Corrected) °C: Cooler 7: (1.7); Cooler 8: (1.4); Cooler 9: (1.5); Cooler 10: (1.2); Cooler 11: (1.3); Cooler 12: (1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	6		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

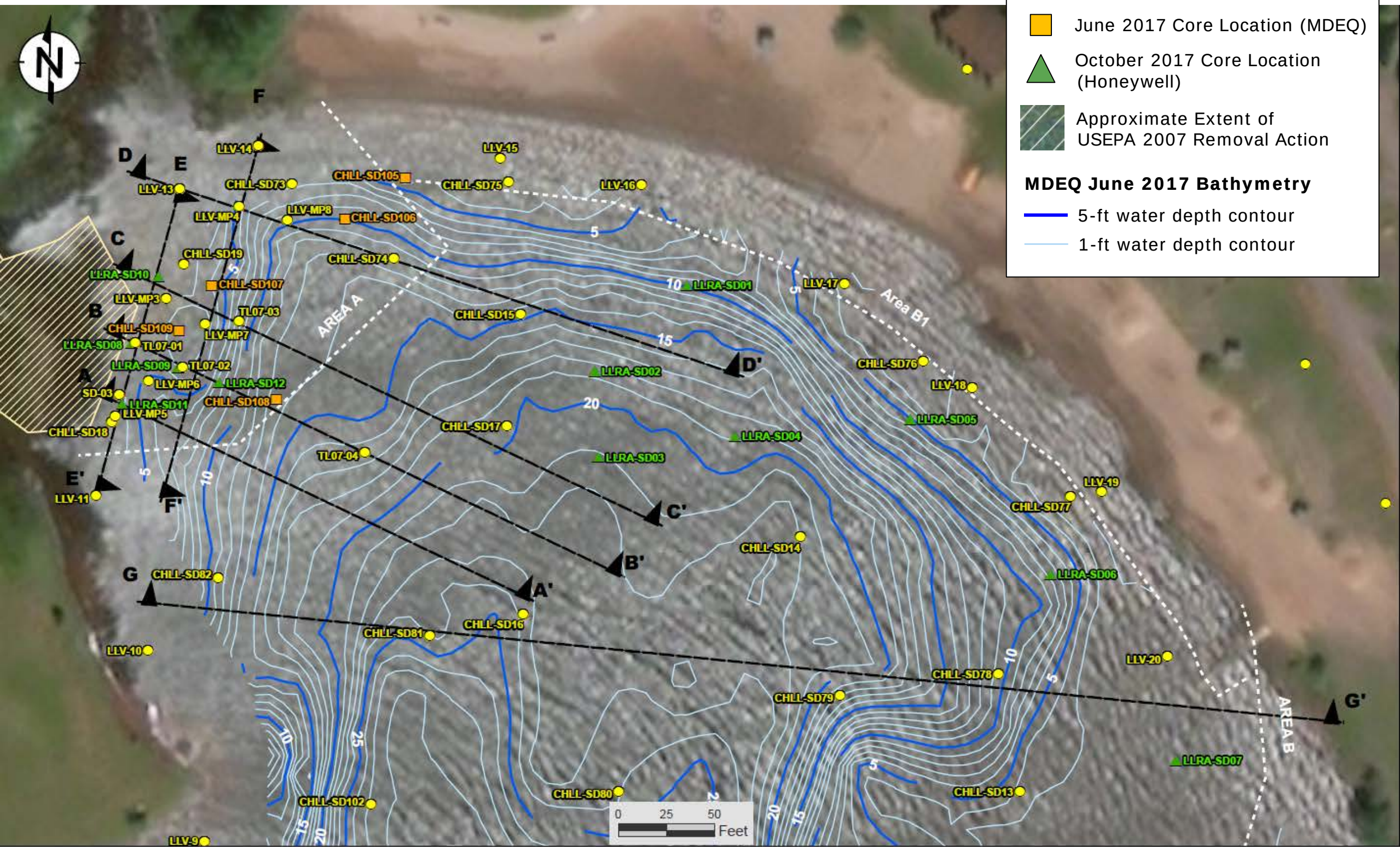
5.2

5

JC53085: Chain of Custody
Page 5 of 5

Appendix D
Area A Cross Sections

CROSS SECTION LOCATIONS



LEGEND AND NOTES

Legend

One or more exceedances of MDEQ RDCC and/or USEPA RML

One or more exceedances of Sediment ESLs

Visually-identified “Waste Layer”

Staining observed in core

Estimated limits of “Waste Layer”

Notes

1. All concentrations are provided in mg/kg; duplicate samples were averaged
2. Analytical data shown for all sediment ESL exceedances
3. Copper Pink text highlight indicates that data also exceeds MDEQ RDCC and/or USEPA RML

Acronyms

ESL: ecological screening level

mg/kg: milligrams per kilogram

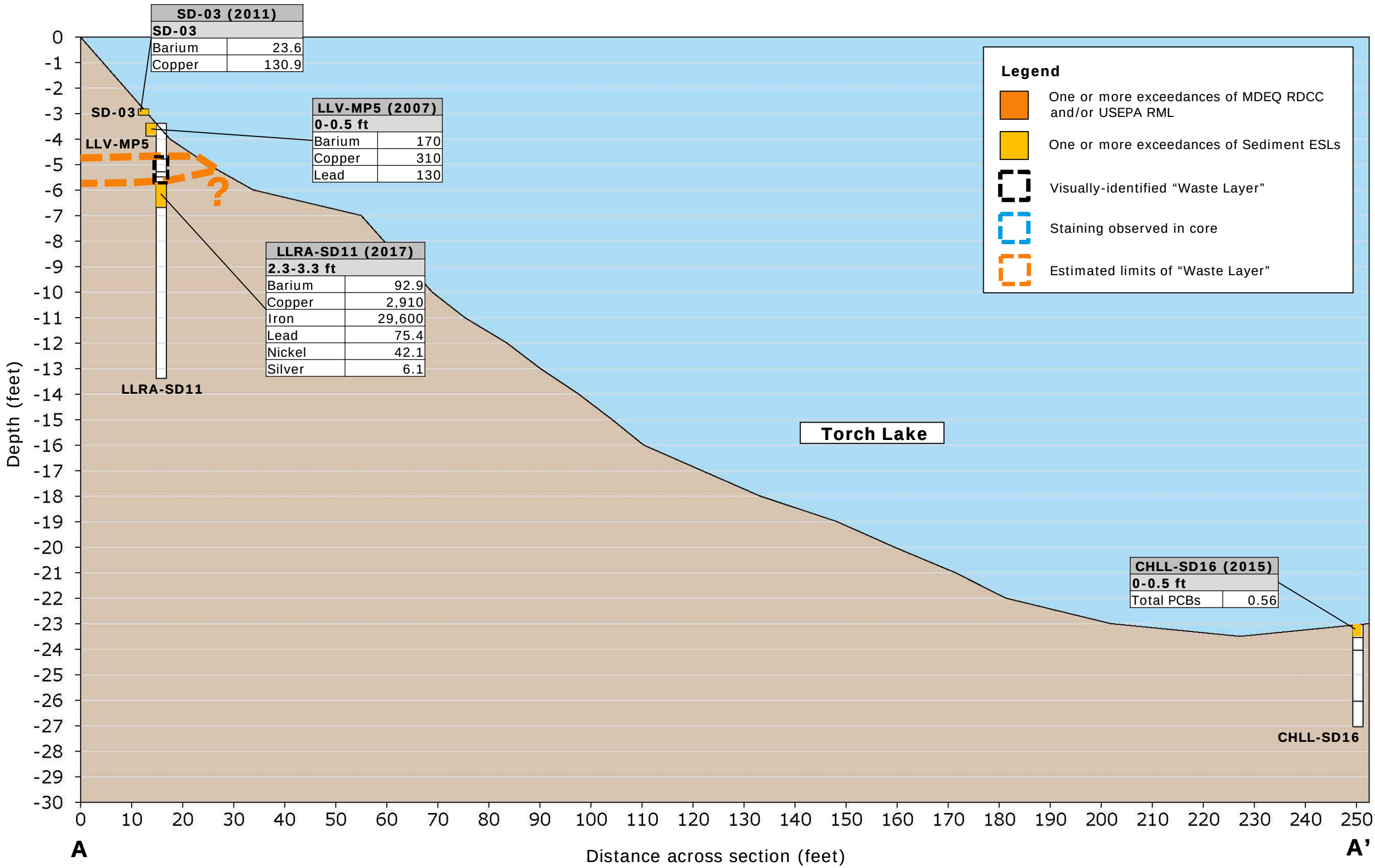
MDEQ: Michigan Department of Environmental Quality

RDCC: Residential Direct Contact Criteria

USEPA: United States Environmental Protection Agency

RML: Removal Management Limit

SECTION A-A’

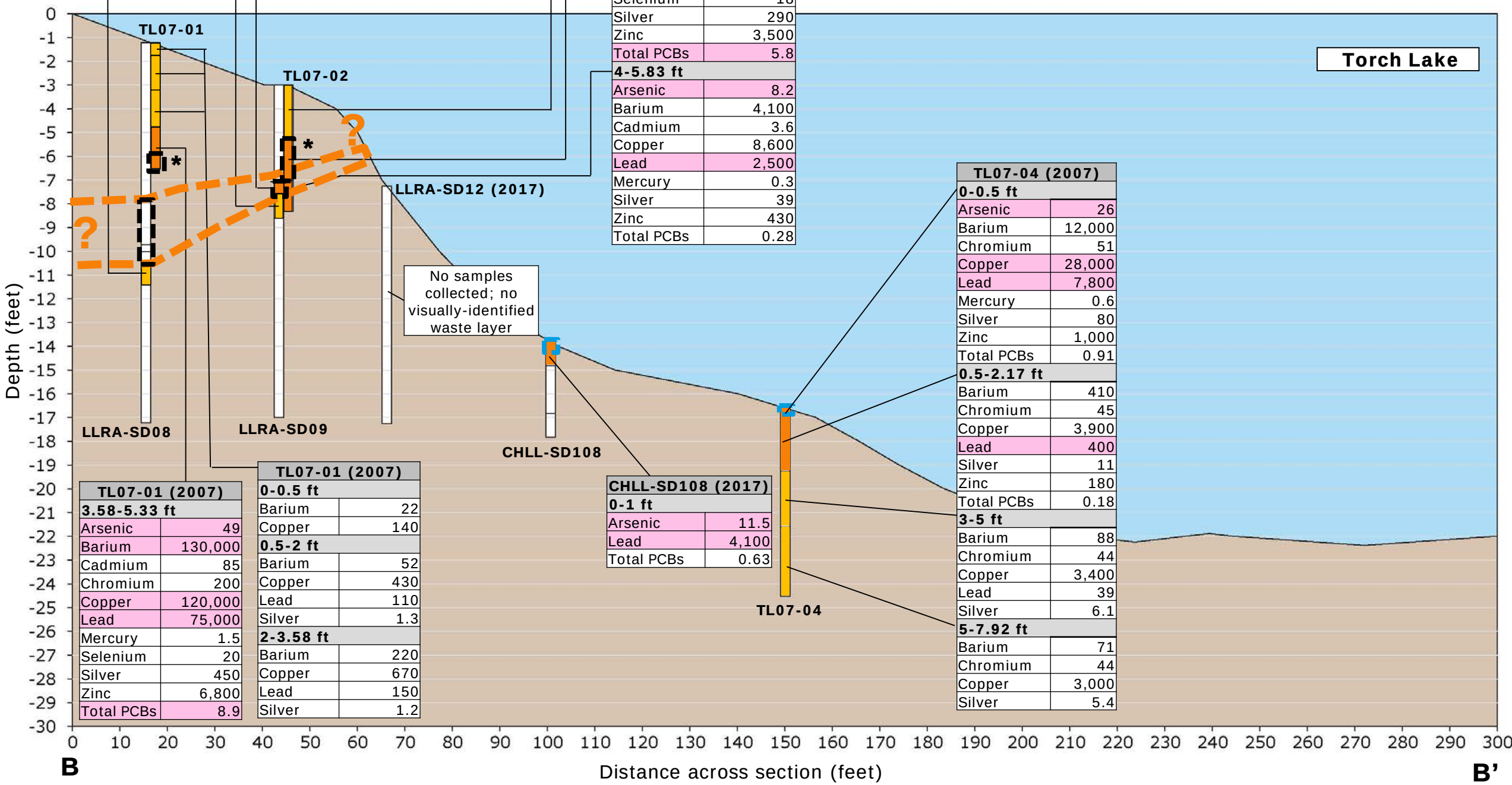

SD-03 (2011)
SD-03
Barium 23.6
Copper 130.9
SD-03
LLV-MP5
LLV-MP5 (2007)
0-0.5 ft
Barium 170
Copper 310
Lead 130
?
LLRA-SD11 (2017)
2.3-3.3 ft
Barium 92.9
Copper 2,910
Iron 29,600
Lead 75.4
Nickel 42.1
Silver 6.1
LLRA-SD11
Legend
One or more exceedances of MDEQ RDCC and/or USEPA RML
One or more exceedances of Sediment ESLs
Visually-identified “Waste Layer”
Staining observed in core
Estimated limits of “Waste Layer”
Torch Lake
CHLL-SD16 (2015)
0-0.5 ft
Total PCBs 0.56
CHLL-SD16
Depth (feet)
0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -24 -25 -26 -27 -28 -29 -30
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250
A
A’
Distance across section (feet)

SECTION B-B’

Legend

- One or more exceedances of MDEQ RDCC and/or USEPA RML
- One or more exceedances of Sediment ESLs
- Visually-identified “Waste Layer”
- Staining observed in core
- Estimated limits of “Waste Layer”

* Reported waste layer depth may be affected by low core recovery



LLRA-SD08 (2017)	
9.2-10.2 ft	
Barium	254
Copper	4,010
Iron	24,600
Lead	318
Nickel	49.3
Silver	10
Zinc	150

LLRA-SD09 (2017)	
4.6-5.6 ft	
Barium	386
Chromium	51.6
Copper	3,330
Iron	31,500
Lead	284
Nickel	52.6
Silver	8.3
Zinc	157

LLRA-SD09 (2017)	
4.1-4.6 ft	
Arsenic	20.5
Barium	29,600
Cadmium	25.6
Chromium	45.7
Copper	35,000
Iron	29,200
Lead	15,300
Mercury	1.8
Nickel	77.3
Silver	154
Zinc	1,390
Total PCBs	1.384

TL07-02 (2007)	
0-2.33 ft	
Barium	310
Copper	370
Lead	100
2.33-4 ft	
Arsenic	38.0
Barium	84,000
Cadmium	38
Chromium	130
Copper	78,000
Lead	44,000
Mercury	1.7
Selenium	18
Silver	290
Zinc	3,500
Total PCBs	5.8
4-5.83 ft	
Arsenic	8.2
Barium	4,100
Cadmium	3.6
Copper	8,600
Lead	2,500
Mercury	0.3
Silver	39
Zinc	430
Total PCBs	0.28

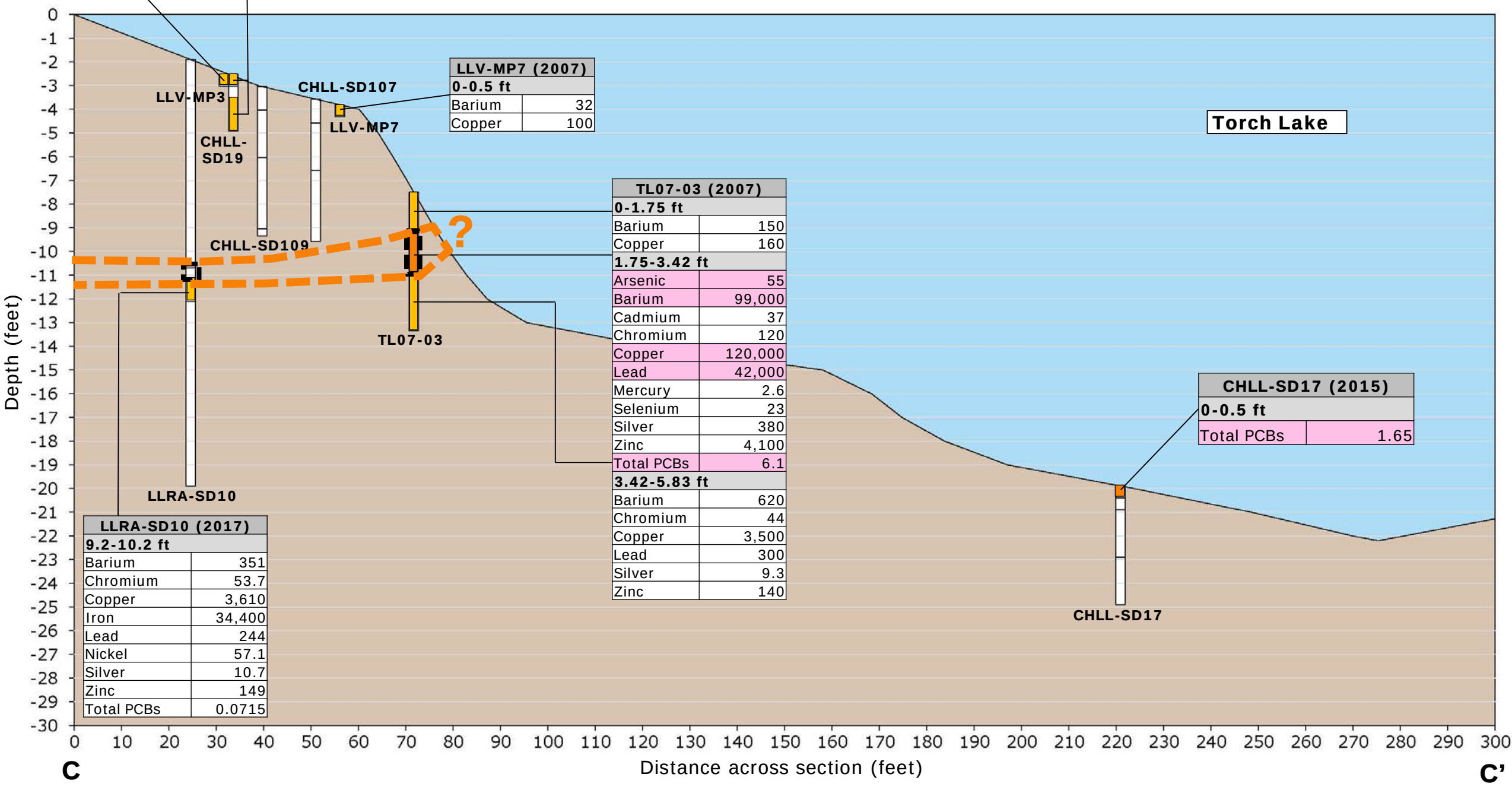
TL07-04 (2007)	
0-0.5 ft	
Arsenic	26
Barium	12,000
Chromium	51
Copper	28,000
Lead	7,800
Mercury	0.6
Silver	80
Zinc	1,000
Total PCBs	0.91
0.5-2.17 ft	
Barium	410
Chromium	45
Copper	3,900
Lead	400
Silver	11
Zinc	180
Total PCBs	0.18
3-5 ft	
Barium	88
Chromium	44
Copper	3,400
Lead	39
Silver	6.1
5-7.92 ft	
Barium	71
Chromium	44
Copper	3,000
Silver	5.4

TL07-01 (2007)	
3.58-5.33 ft	
Arsenic	49
Barium	130,000
Cadmium	85
Chromium	200
Copper	120,000
Lead	75,000
Mercury	1.5
Selenium	20
Silver	450
Zinc	6,800
Total PCBs	8.9

TL07-01 (2007)	
0-0.5 ft	
Barium	22
Copper	140
0.5-2 ft	
Barium	52
Copper	430
Lead	110
Silver	1.3
2-3.58 ft	
Barium	220
Copper	670
Lead	150
Silver	1.2

CHLL-SD108 (2017)	
0-1 ft	
Arsenic	11.5
Lead	4,100
Total PCBs	0.63

SECTION C-C’



CHLL-SD19 (2015)	
0-0.5 ft	
Barium	31
Copper	89
1-2.4 ft	
Barium	20
Copper	140

LLV-MP3 (2007)	
0-0.5 ft	
Barium	29
Copper	200
Lead	40

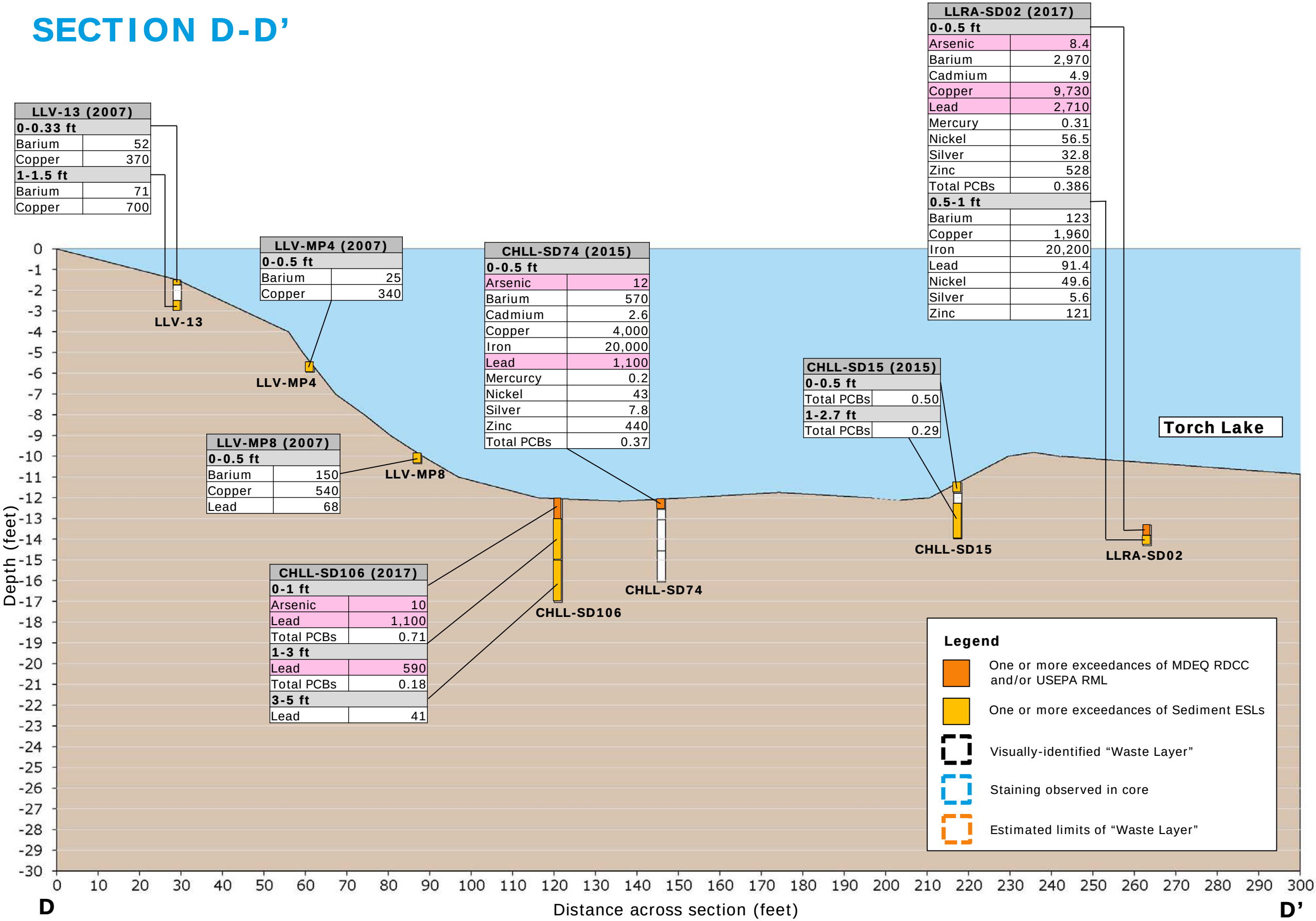
LLV-MP7 (2007)	
0-0.5 ft	
Barium	32
Copper	100

TL07-03 (2007)	
0-1.75 ft	
Barium	150
Copper	160
1.75-3.42 ft	
Arsenic	55
Barium	99,000
Cadmium	37
Chromium	120
Copper	120,000
Lead	42,000
Mercury	2.6
Selenium	23
Silver	380
Zinc	4,100
Total PCBs	6.1
3.42-5.83 ft	
Barium	620
Chromium	44
Copper	3,500
Lead	300
Silver	9.3
Zinc	140

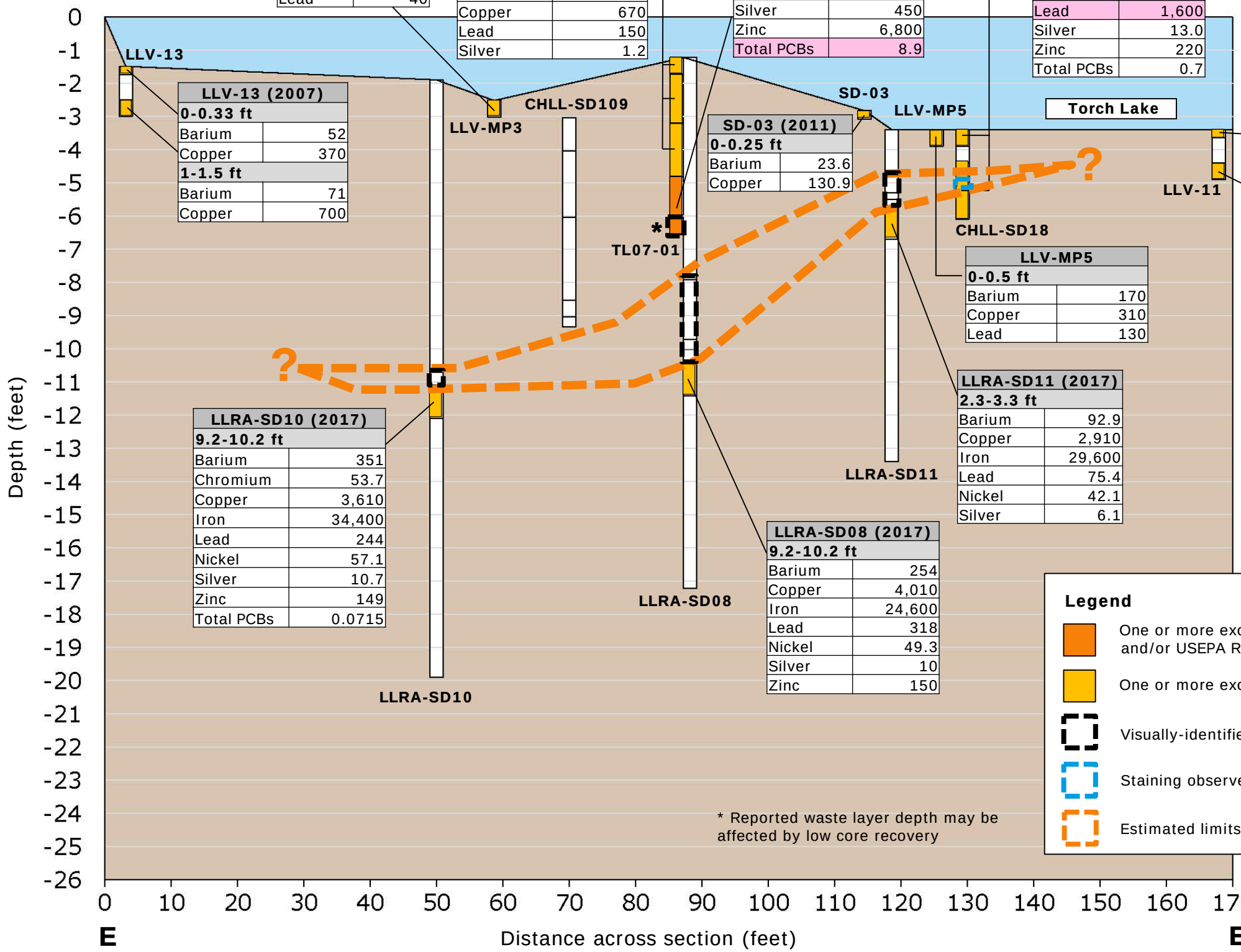
CHLL-SD17 (2015)	
0-0.5 ft	
Total PCBs	1.65

LLRA-SD10 (2017)	
9.2-10.2 ft	
Barium	351
Chromium	53.7
Copper	3,610
Iron	34,400
Lead	244
Nickel	57.1
Silver	10.7
Zinc	149
Total PCBs	0.0715

SECTION D-D’


LLV-13 (2007)
0-0.33 ft
Barium 52
Copper 370
1-1.5 ft
Barium 71
Copper 700
LLV-MP4 (2007)
0-0.5 ft
Barium 25
Copper 340
LLV-MP8 (2007)
0-0.5 ft
Barium 150
Copper 540
Lead 68
CHLL-SD74 (2015)
0-0.5 ft
Arsenic 12
Barium 570
Cadmium 2.6
Copper 4,000
Iron 20,000
Lead 1,100
Mercurcy 0.2
Nickel 43
Silver 7.8
Zinc 440
Total PCBs 0.37
CHLL-SD15 (2015)
0-0.5 ft
Total PCBs 0.50
1-2.7 ft
Total PCBs 0.29
LLRA-SD02 (2017)
0-0.5 ft
Arsenic 8.4
Barium 2,970
Cadmium 4.9
Copper 9,730
Lead 2,710
Mercury 0.31
Nickel 56.5
Silver 32.8
Zinc 528
Total PCBs 0.386
0.5-1 ft
Barium 123
Copper 1,960
Iron 20,200
Lead 91.4
Nickel 49.6
Silver 5.6
Zinc 121
CHLL-SD106 (2017)
0-1 ft
Arsenic 10
Lead 1,100
Total PCBs 0.71
1-3 ft
Lead 590
Total PCBs 0.18
3-5 ft
Lead 41
Torch Lake
LLV-13
LLV-MP4
LLV-MP8
CHLL-SD106
CHLL-SD74
CHLL-SD15
LLRA-SD02
Legend
One or more exceedances of MDEQ RDCC and/or USEPA RML
One or more exceedances of Sediment ESLs
Visually-identified “Waste Layer”
Staining observed in core
Estimated limits of “Waste Layer”
Depth (feet)
Distance across section (feet)
D
D’

SECTION E-E’



LLV-MP3 (2007)	
0-0.5 ft	
Barium	29
Copper	200
Lead	40

TL07-01 (2007)	
0-0.5 ft	
Barium	22
Copper	140
0.5-2 ft	
Barium	52
Copper	430
Lead	110
Silver	1.3
2-3.58 ft	
Barium	220
Copper	670
Lead	150
Silver	1.2

TL07-01 (2007)	
3.58-5.33 ft	
Arsenic	49
Barium	130,000
Cadmium	85
Chromium	200
Copper	120,000
Lead	75,000
Mercury	1.5
Selenium	20
Silver	450
Zinc	6,800
Total PCBs	8.9

CHLL-SD18 (2015)	
0-0.5 ft	
Barium	78
Copper	130
1-2.7 ft	
Barium	2,700
Cadmium	3.1
Copper	4,400
Lead	1,600
Silver	13.0
Zinc	220
Total PCBs	0.7

LLV-13 (2007)	
0-0.33 ft	
Barium	52
Copper	370
1-1.5 ft	
Barium	71
Copper	700

SD-03 (2011)	
0-0.25 ft	
Barium	23.6
Copper	130.9

LLV-11 (2007)	
0-0.33 ft	
Barium	43
Copper	800
Lead	79
1-1.5 ft	
Barium	41
Copper	780

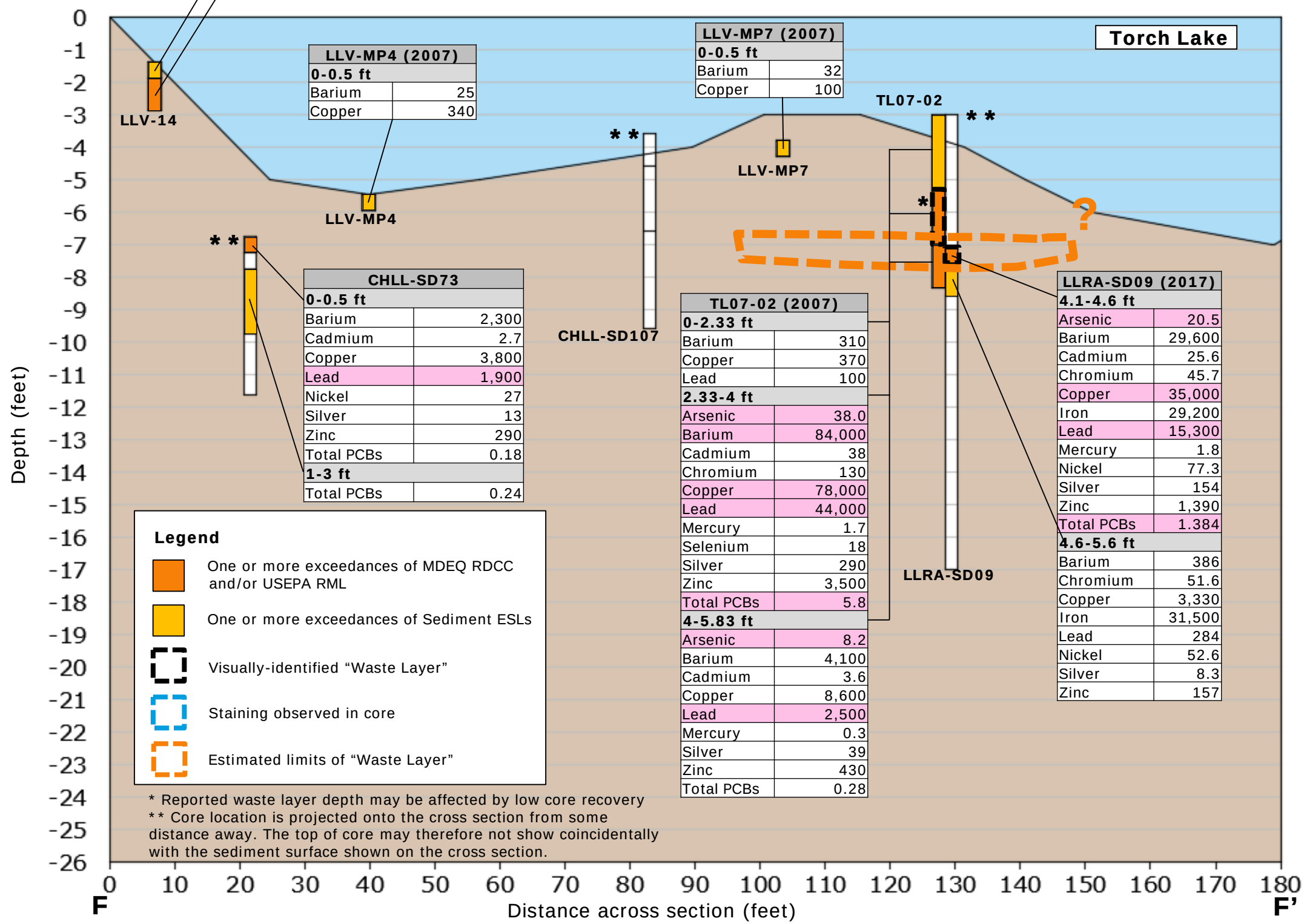
LLV-MP5	
0-0.5 ft	
Barium	170
Copper	310
Lead	130

LLRA-SD11 (2017)	
2.3-3.3 ft	
Barium	92.9
Copper	2,910
Iron	29,600
Lead	75.4
Nickel	42.1
Silver	6.1

LLRA-SD10 (2017)	
9.2-10.2 ft	
Barium	351
Chromium	53.7
Copper	3,610
Iron	34,400
Lead	244
Nickel	57.1
Silver	10.7
Zinc	149
Total PCBs	0.0715

LLRA-SD08 (2017)	
9.2-10.2 ft	
Barium	254
Copper	4,010
Iron	24,600
Lead	318
Nickel	49.3
Silver	10
Zinc	150

SECTION F-F’



LLV-14	
0-0.33 ft	
Copper	72
1-1.5 ft	
Arsenic	11
Barium	110
Copper	1,500
Lead	470

LLV-MP4 (2007)	
0-0.5 ft	
Barium	25
Copper	340

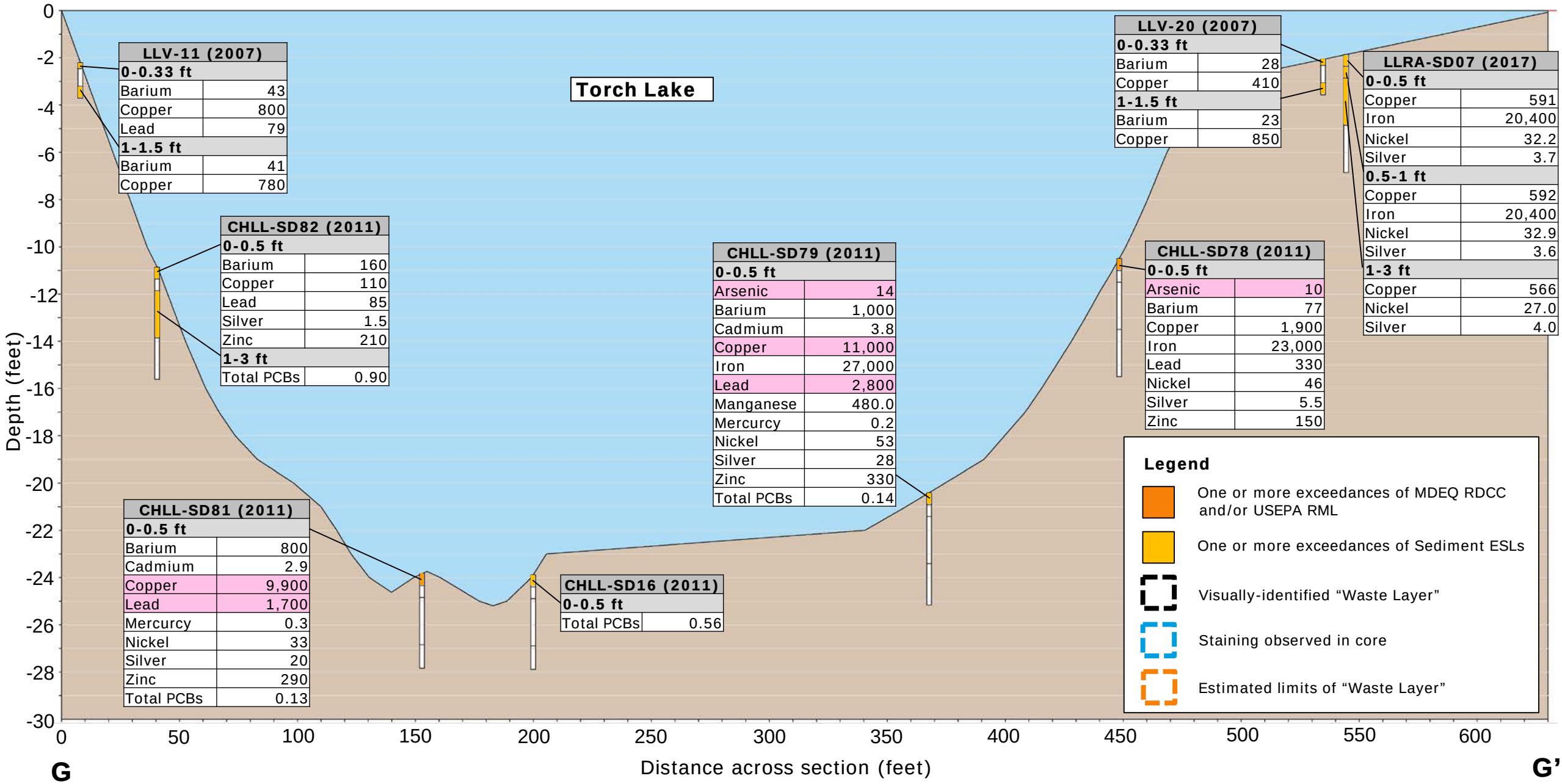
LLV-MP7 (2007)	
0-0.5 ft	
Barium	32
Copper	100

CHLL-SD73	
0-0.5 ft	
Barium	2,300
Cadmium	2.7
Copper	3,800
Lead	1,900
Nickel	27
Silver	13
Zinc	290
Total PCBs	0.18
1-3 ft	
Total PCBs	0.24

TL07-02 (2007)	
0-2.33 ft	
Barium	310
Copper	370
Lead	100
2.33-4 ft	
Arsenic	38.0
Barium	84,000
Cadmium	38
Chromium	130
Copper	78,000
Lead	44,000
Mercury	1.7
Selenium	18
Silver	290
Zinc	3,500
Total PCBs	5.8
4-5.83 ft	
Arsenic	8.2
Barium	4,100
Cadmium	3.6
Copper	8,600
Lead	2,500
Mercury	0.3
Silver	39
Zinc	430
Total PCBs	0.28

LLRA-SD09 (2017)	
4.1-4.6 ft	
Arsenic	20.5
Barium	29,600
Cadmium	25.6
Chromium	45.7
Copper	35,000
Iron	29,200
Lead	15,300
Mercury	1.8
Nickel	77.3
Silver	154
Zinc	1,390
Total PCBs	1.384
4.6-5.6 ft	
Barium	386
Chromium	51.6
Copper	3,330
Iron	31,500
Lead	284
Nickel	52.6
Silver	8.3
Zinc	157

SECTION G-G’



LLV-11 (2007)	
0-0.33 ft	
Barium	43
Copper	800
Lead	79
1-1.5 ft	
Barium	41
Copper	780

CHLL-SD82 (2011)	
0-0.5 ft	
Barium	160
Copper	110
Lead	85
Silver	1.5
Zinc	210
1-3 ft	
Total PCBs	0.90

CHLL-SD81 (2011)	
0-0.5 ft	
Barium	800
Cadmium	2.9
Copper	9,900
Lead	1,700
Mercurcy	0.3
Nickel	33
Silver	20
Zinc	290
Total PCBs	0.13

CHLL-SD16 (2011)	
0-0.5 ft	
Total PCBs	0.56

CHLL-SD79 (2011)	
0-0.5 ft	
Arsenic	14
Barium	1,000
Cadmium	3.8
Copper	11,000
Iron	27,000
Lead	2,800
Manganese	480.0
Mercurcy	0.2
Nickel	53
Silver	28
Zinc	330
Total PCBs	0.14

LLV-20 (2007)	
0-0.33 ft	
Barium	28
Copper	410
1-1.5 ft	
Barium	23
Copper	850

CHLL-SD78 (2011)	
0-0.5 ft	
Arsenic	10
Barium	77
Copper	1,900
Iron	23,000
Lead	330
Nickel	46
Silver	5.5
Zinc	150

LLRA-SD07 (2017)	
0-0.5 ft	
Copper	591
Iron	20,400
Nickel	32.2
Silver	3.7
0.5-1 ft	
Copper	592
Iron	20,400
Nickel	32.9
Silver	3.6
1-3 ft	
Copper	566
Nickel	27.0
Silver	4.0

APPROXIMATE EXTENT OF VISUALLY-IDENTIFIED WASTE LAYER