

INTERIM RESPONSE CONSTRUCTION SUMMARY REPORT FOR AREA WIDE ABANDONED CONTAINER REMOVAL

ABANDONED MINING WASTES – TORCH LAKE NON-SUPERFUND SITE
CHLL AND CHTC AREAS
HOUGHTON COUNTY, MICHIGAN
SITE ID# 31000098



NOVEMBER 2017

PREPARED FOR:

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION & REDEVELOPMENT DIVISION
CALUMET FIELD OFFICE
CALUMET, MICHIGAN



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Area Wide Abandoned Container Removal
Site ID: 31000098
Houghton County, Michigan

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1.0 INTRODUCTION

The Mannik & Smith Group, Inc. (MSG) has prepared this *Interim Response Construction Summary Report (CSR)* for *Area Wide Abandoned Container Removal* as part of the Abandoned Mining Wastes – Torch Lake non-Superfund Site (Project) http://www.michigan.gov/deq/0,4561,7-135-3311_4109_9846_76560---,00.html (Site ID: 31000098). This CSR summarizes the area wide abandoned container interim response (IR) completed at the:

- Calumet & Hecla Lake Linden Operations Area (CHLL)
 - Torch Lake Backwater Area (Lake Linden)
 - Hubbell Processing Area – Coal Dock and Mineral Building Properties (Hubbell)
 - Hubbell Slag Dump and Beach Area (Hubbell)
- Calumet & Hecla Tamarack City Operations Area (CHTC)
 - Tamarack Processing Area (Tamarack City)
 - Tamarack Sands Area (Tamarack City)

The IR entailed the removal and disposal of abandoned containers. The abandoned containers were located in Lake Linden, Hubbell, and Tamarack City, Houghton County, Michigan. This CSR was prepared in accordance with the *Indefinite Scope Indefinite Delivery (ISID) Discretionary Proposal for FS and Remedial Action Activities* (24 February 2016) prepared by MSG in response to a request from the Michigan Department of Environmental Quality (DEQ), Remediation and Redevelopment Division (RRD), Calumet Field Office under MSG's 2015 Environmental Services ISID Contract Number 00538 with the State of Michigan.

1.1 **Project Location**

The Project area is located along the shoreline and in Torch Lake, Houghton County, Michigan. Due to the complex nature and very large area RRD subdivided the Project into study areas based on past use and known issues. Depicted on *Figure 1, Project Location Map* are the CHLL and CHTC areas and their respective former industrial operations.

Centralized around Calumet & Hecla's copper mining and processing operations near Lake Linden and Hubbell, Michigan, the CHLL consists of approximately 155 acres of land extending approximately two miles along the shoreline of Torch Lake and incorporates over 40 different parcels with multiple property owners.

The CHLL Torch Lake Backwater Area is located within and northeast of Lake Linden along the south side of 9th Street/Bootjack Road and is comprised of a mining era clinker disposal area and a former municipal dump. The Torch Lake Backwater Area is bordered by residential (single-family residences), commercial (restaurant and retail business), and vacant land uses, and Torch Lake.

The CHLL Hubbell Processing Area is located between Lake Linden and Hubbell along the southeast side of Highway M-26 and is comprised of three mining era industrial properties including the Hubbell Coal Dock and Mineral Building that are vacant, and the Hubbell Smelter that is the location of an operating industrial facility. The Hubbell Processing Area is bordered by residential (single-family residences and an apartment complex), commercial (restaurant and retail business), and industrial (sand and gravel pit, construction company, and manufacturing) land uses, and Torch Lake.

The CHLL Hubbell Slag Dump and Beach Area is located south and adjacent to the Hubbell Processing Area and is comprised of the Hubbell Red Slags, the Hubbell Slag Dump, and a reported municipal landfill that was collocated with the slag dump. The Hubbell Red Slags and the Hubbell Slag Dump were smelting waste generated by the Hubbell Smelter. The Hubbell Slag Dump and Beach Area is bordered by residential (single-family residences), commercial (restaurant and nursing home), municipal (garage), and recreational (public beach and playground) land uses, and Torch Lake.

The CHTC, centralized around Calumet & Hecla's copper mining and processing operations near Tamarack City, Michigan, consists of approximately 110 acres of land extending approximately 1.25 miles along the shoreline of Torch Lake, and incorporates over 187 different parcels with multiple property owners.

The CHTC Tamarack Processing Area is located just south of Tamarack City along the southwest side of Highway M-26 and is comprised of mining era industrial properties including the Tamarack Reclamation Plant and three stamp mills, being Tamarack Mill No. 1, Lake Stamp Mill No. 2, and Osceola Stamp Mill. Currently the ruins of the Tamarack Reclamation Plant property are used as a scrap yard while the mill areas are largely ruins with residences also located on the properties. The Tamarack Processing Area is bordered by residential (single-family residences), commercial (trucking company), and industrial (capped stamp sands) land uses.

The CHTC Tamarack Sands Area is located just south of Tamarack City along the southeast side of Highway M-26 and is comprised of mining era industrial properties, historic municipal dump, and a capped in-lake stamp sand deposit associated with the industrial operations in the Ahmeek Mill and Tamarack Processing Areas. The Tamarack Sands Area is bordered by residential (single-family residences) and industrial (vacant mining era properties and a scrap yard) land uses, and Torch Lake.

The IR for abandoned container removal included mining era containers throughout the CHLL and CHTC. Figures 2 through 7 depict features and the former location of removed abandoned containers.

1.2 Project Background

Copper mining was extensive in the Keweenaw and formed the backbone of the regional economy and society. Copper ore milling and smelting operations conducted from the mid-1860s to the 1960s, included the importation, reprocessing, and smelting of various scrap metals in the later years of operation. Consistent with past industrial practices, Torch Lake served as dumping grounds for virtually all mining industry related waste products produced, including tailings, slag, and various chemicals. It is estimated that at least 20 percent of Torch Lake's volume was filled with tailings and other waste products.

The environmental legacy resulting from over 100 years of mining and reclamation led to Torch Lake and its western shoreline to be designated as a Superfund site by the United States Environmental Protection Agency (EPA) <https://cumulis.epa.gov/supercpad/cursites/csinfo.cfm?id=0503034> and a Great Lakes Area of Concern by the U.S./Canada Great Lakes Water Quality Agreement <https://www.epa.gov/torch-lake-aoc>. The EPA undertook cleanup activities to address some of the byproducts of the mining industry while others were not addressed or left to recover through natural processes.

The DEQ Project is addressing some of the remaining concerns in Houghton County not addressed by the EPA. The Project concerns involve groundwater, surface water, sediments, and "upland" media. Known or suspected problems which are being evaluated include: an unidentified, significant in-lake and/or terrestrial source of polychlorinated biphenyls (PCBs); uncharacterized waste deposits and >750 uncharacterized drums on the lake bottom; slag; landfills; industrial ruins; coal storage areas; underground storage tanks (USTs); residual process materials (RPM); asbestos containing materials (ACM); and any other waste materials identified during future investigations.

During 2014 and 2015, RRD conducted Site Investigation activities and confirmed the remaining concerns in the Project area involve groundwater, surface water, sediments, and "upland" media. Priority concerns which were evaluated and deemed to require IRs include: significant terrestrial sources of PCBs; ACM; RPM; abandoned mining era containers; seeps; limited areas of soil in which there are Direct Contact Criteria (DCC) and Particulate Soil Inhalation Criteria (PSIC) exceedances; and, physical hazards.

In the case of the CHLL and CHTC Torch Lake Backwater Area, Hubbell Processing Area, Hubbell Beach and Slag Dump, Tamarack Processing Area, and Tamarack Sands Area the identified risks from abandoned

mining era containers posed potential threats to human and ecological receptors, including but not limited to human health risks in the event of direct contact with affected media and inhalation of particulates and asbestos; physical hazards; and, erosion and deposition of PCB-contaminated wastes into Torch Lake.

Based on these conditions the Upper Peninsula RRD staff prepared an Emergency Procurement Action Form included in *Appendix A, Emergency Procurement Action Form*. Upon authorization, RRD staff completed an IR that removed and disposed of abandoned mining era containers to mitigate potential risks to human health and the environment.

2.0 OBJECTIVE AND SCOPE OF WORK

The objective of the IR was to remove and dispose of abandoned mining era containers within the CHLL and CHTC to mitigate potential risks to human health and the environment. To meet this objective MSG developed a Trade Contractor (TC) scope of work and assisted DEQ with soliciting bids in accordance with DEQ RRD Emergency Funding and Procurement Procedures.

3.0 INTERIM RESPONSE ACTIVITIES

MSG supported the DEQ RRD in the procurement and oversight of a TC during implementation of the IR. The TC selected and retained by the State of Michigan was UP Environmental Services (UPES) of Bark River, Michigan. Refer to *Appendix B, Purchase Order*. UPES completed the work in accordance with the TC procurement package included in *Appendix C, Area Wide Abandoned Container Removal Interim Response Scope of Work* during September, October, and November 2016 at a cost of \$73,408.00 (\$18,056.00 less than the purchase order amount). *Appendix D, Removed Abandoned Container Inventory* details the 118 abandoned containers removed by area, including 59 containers discovered during test pitting of a suspect drum disposal area at the Hubbell Processing Area Coal Dock property. Based on analytical testing and an evaluation of waste disposal methods:

- 25 of the containers were disposed of as liquid or solid hazardous wastes based on the levels of lead and/or selenium and/or the flammability of the material;
- 36 of the containers were combined and disposed of as a non-hazardous solid waste; and,
- 57 of the drums were determined to be empty and were recycled.

The contents of the drums were unknown, but based on field observations, drum contents appeared to include, but were not limited to, pine oil, silver paint-like material, lubricating oils, petroleum, granular materials, tailings and slag-like materials, and a watery white substance. Documentation of abandoned container disposal is included in *Appendix E, Waste Management Records*. Photographs of the IR operations are included in *Appendix F, Photographic Log*.

4.0 SUMMARY AND CONCLUSIONS

Completed Abandoned Container IR operations within the CHLL and CHTC included test pitting and characterization, transportation, and disposal of the following abandoned containers:

- 1 from the Torch Lake Backwater Area.
- 67 from the Hubbell Processing Area Coal Dock property.
- 16 from the Hubbell Processing Area Mineral Building property.
- 2 from the Hubbell Slag Dump and Beach Area.
- 22 from the Tamarack Processing Area.
- 10 from the Tamarack Sands Area.

The completed IR operations met the objective of abandoned container removal to mitigate potential risks to human health and the environment.

5.0 RECOMMENDATIONS

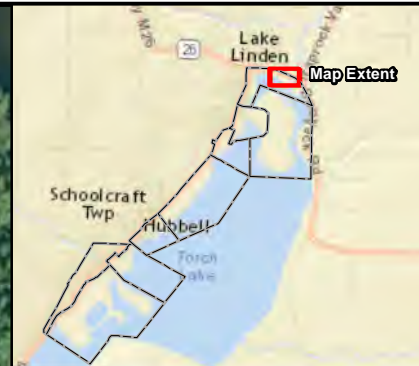
MSG has the following recommendations:

- Conduct characterization, transportation, and disposal of any additional abandoned containers identified during future Project SI or IR activities.

FIGURES







- 



0 100 Ft
Coordinate System: MGeoRef(m)



Prepared for:
**Michigan Department of
Environmental Quality**



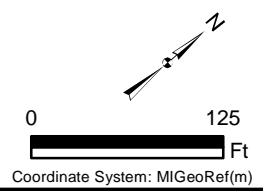
Figure 2
Abandoned Container Location Map
Torch Lake Backwater Area
Lake Linden, Houghton County, Michigan

Image Source: ESRI World Imagery (NAIP 2014)



FILE: C:\temp\Projects\WDE00070\GIS\mxd\Planning\20170524-AreaWideAbandonedContainerRemoval_IR\Fig03_Hubbell_Coal_Dock_v20170524.mxd 3:00:47 PM 5/24/2017 KBrown

- Removed Abandoned Container
- Fence
- Property Boundary
- Conceptual Site and Geographic Area Boundaries



DEQ
Prepared for:
**Michigan Department of
Environmental Quality**



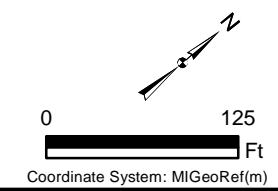
Figure 3
Abandoned Container Location Map
Hubbell Processing Area - Hubbell Coal Dock
Hubbell, Houghton County, Michigan

Image Source: ESRI World Imagery (NAIP 2014)

FILE: C:\temp\Projects\WDE00070\GIS\mxd\Planning\20170524-AreaWideAbandonedContainerRemoval_IR\Fig04_HubbellMineralBuilding_v20170524.mxd 3:51:28 PM 5/24/2017 KBrown



- Removed Abandoned Container
- Fence
- Property Boundary
- Conceptual Site and Geographic Area Boundaries






DEQ
Prepared for:
**Michigan Department of
Environmental Quality**

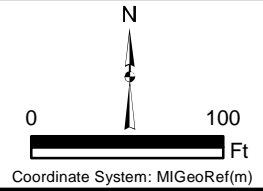
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GROUP**
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ENVIRONMENTAL INTEGRITY.
www.MannikSmithGroup.com

Figure 4
Abandoned Container Location Map
Hubbell Processing Area - Hubbell Mineral Building
Hubbell, Houghton County, Michigan

Image Source: ESRI World Imagery (NAIP 2014)



-  Removed Abandoned Container
-  Approximate Parcel Boundaries
-  Conceptual Site and Geographic Area Boundaries



DEQ
Prepared for:
**Michigan Department of
Environmental Quality**



Figure 5
Abandoned Container Location Map
Hubbell Slag Dump and Beach Area
Hubbell, Houghton County, Michigan

FILE: C:\temp\Projects\WDE00070\GIS\mxd\Planning\20170524-AreaWideAbandonedContainerRemoval_IR\Fig05_HubbellSlagDumpandBeach_v20170524.mxd 4:03:14 PM 5/24/2017 KBrown



FILE: C:\temp\Projects\WDE00070\GIS\mxd\Planning\20170524-AreaWideAbandonedContainerRemoval_IR\Fig06 TamarackSandsArea_v20171110.mxd 9:52:20 AM 11/10/2017 KBrown



FILE: C:\temp\Projects\WDE00070\GIS\mxds\Planning\20170524-AreaWideAbandonedContainerRemoval_IR\Fig07 TamarackProcessingArea v20171110.mxd 11/10/2017 KBrown

APPENDIX A

Emergency Procurement Action Form



EMERGENCY PROCUREMENT ACTION FORM

Site Name: Abandoned Mining Wastes County: Houghton
Index: 44251 PCA: 30872 Project #: 456990
ERD Staff Contact: Amy Keranen Date of Emergency: May 2016
District Supervisor's Signature: Clifton Clark

Site Description: The "Abandoned Mining Wastes- abandoned container removal" portion of the Abandoned Mining Wastes (AMW) project involves multiple properties in Lake Linden, Hubbell and Tamarack City where various drums and containers containing waste materials were recently discovered as being left behind after copper mine processing and reclamation activities ended in ~1969. Approximately 40 containers have been identified on 8 different properties. These containers are present in areas accessible to human direct contact.

Failure to undertake emergency response actions will allow for the on-going release of contaminants into Torch Lake and continued presence in areas accessible to the public.

Cause of Emergency: drums and other containers of waste materials were left behind after the mining era and are present in areas accessible to leaching into the soil and groundwater, for erosion into the lake and for human direct contact.

Specific Threats: Concentrations of contaminants exceeding residential direct contact and characteristic hazardous waste criteria are present in locations accessible to human direct contact and leaking into the soils, groundwater and surface waters at Torch Lake.

Action Taken: Because of the imminent threat the emergency procurement process is being utilized to contract abandoned container pick up. Specifications have been developed and a Pre-Bid Meeting was conducted August 10, 2016 to obtain firm bids for the work.

Additional Information:

2 bids were obtained on August 25, 2016 and evaluated. Based on the evaluation, it is recommended that the bid be awarded to **UP Environmental Services** for **\$91,464.00**

Their address is:

UP Environmental Services, Inc, attn.: Wayne Stenberg
P.O. Box 127
Bark River, MI 49807
(906)466-9900

Funding Source: **CMI Funds:** **SWQIF Funds:** **\$91,464.00**

Authorized by:

Responsible Party: none identified

Cost Recovery:

APPENDIX B

Purchase Order



STATE OF MICHIGAN

PAGE : 1

FORM DMB-287
(REV 11/94)

PURCHASE ORDER

PURCHASE ORDER
NUMBER 761P6600620REQUESTING DEPARTMENT OR AGENCY : RD - CONTRACTS I
MICHIGAN DEPT OF ENVIRONMENTAL QUALITYCONSTITUTION HALL, 4TH FLOOR
525 WEST ALLEGAN
LANSING

MI 48933

CONTACT: TRACEY CURTIS 517 284-5083 EXT:	DELIVERY REQUIRED 09/06/16	AGENCY REF # 76120100	REQ NO. 761R6600719	ORDER DATE 09/02/16
---	-------------------------------	--------------------------	------------------------	------------------------

U P ENVIRONMENTAL SERVICES INC
P O BOX 127
BARK RIVER MI 49807-0127CASH DISCOUNT : NET 30 DAYS
DELIVERY REQUIRED :
FREIGHT CARRIER :
F.O.B. : DELIVERED

VENDOR PHONE : -

SHIP TO:
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
CALUMET FIELD OFFICE - RRD55195 U.S. 41
CALUMET MI 49913BILL TO:
MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION
ADMINISTRATION 5TH FLOOR SOUTH TOWER
PO BOX 30426
LANSING MI 48909-7926

ITEM	COMMODITY ID	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
1	912-68	1.00	EA	91,464.0000	91,464.00

COMMODITY NAME/SPECIFICATIONS

MANAGEMENT, CONSTRUCTION #

FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND RELATED WORK REQUIRED
FOR REMOVAL AND PROPER DISPOSAL OF APPROXIMATELY 40 ABANDONED
CONTAINERS AND DRUMS ON 8 DIFFERENT PROPERTIES WITHIN THE ABANDONED
MINING WASTE SITE #31000098

PM: A. KERANEN

START: 9/1/16

END: 10/31/16

BILL TO : MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION
ADMINISTRATION 5TH FLOOR SOUTH TOWER
PO BOX 30426
LANSING , MI, 48909-7926SHIP TO : MICHIGAN DEPT OF ENVIRONMENTAL QUALITY
CALUMET FIELD OFFICE - RRD
55195 U.S. 41
CALUMET , MI, 49913

GRAND TOTAL

91,464.00

STATE OF MICHIGAN

PAGE : 2

FORM DMB-287
(REV 11/94)

PURCHASE ORDER

PURCHASE ORDER
NUMBER 761P6600620-----
ADDITIONAL REQUIREMENTS :
-----AUTHORITY: ACT 431 OF 1984. RESPONSE: REQUIRED. PENALTY: FAILURE TO
DELIVER MAY RESULT IN CANCELLATION OF ORDER OR CONTRACT.
AUTHORIZED SIGNATURE-----
ACCOUNTING INFORMATION :

SX	AGY	Y	INDEX	PCA	COBJ	AOBJ	GRANT	PH	PROJ	PH	AG1	AG2	AG3	TOTAL
01	761	4	44251	30872		6127			45699000					91464.00

-----PENALTY: FAILURE TO DELIVER MAY RESULT IN CANCELLATION OF ORDER OR CONTRACT

--- END OF DOCUMENT ---

APPENDIX C

Area Wide Abandoned Container Removal Interim Response Scope of Work Provided on Compact Disk



Scope of Work and Bid Table
Area Wide Abandoned Container Removal Interim Response
Abandoned Mining Wastes – Torch Lake Non-Superfund Site

The Michigan Department of Environmental Quality (MDEQ) has identified the presence of numerous abandoned containers, primarily drums, at several locations associated with the Abandoned Mining Wastes – Torch Lake Non-Superfund Site (Project). To reduce potential risks to the public and the environment, MDEQ is seeking cost estimates to remove and properly dispose abandoned containers identified during Project activities from the following locations within the Calumet & Hecla (C&H) Lake Linden Operations Area (CHLL) and C&H Tamarack City Operations Area (CHTC):

- CHLL Torch Lake Backwater Area – Traprock Dump;
- CHLL Hubbell Processing Area – Hubbell Coal Dock and Mineral Building;
- CHLL Hubbell Slag Dump and Beach Area – Hubbell Slag Dump;
- CHTC Tamarack Sands Area – Historic Municipal Dump;
- CHTC Tamarack Processing Area – Tamarack Reclamation Plant Complex and Tamarack Stamp Mill Complex; and,
- Additional containers as they may be located at the above listed locations or other locations associated with the Project within five miles of Tamarack City, Michigan.

Figure 1 depicts the area locations. **Figure 2** through **Figure 8** depict the container locations at the individual areas along with existing sample results for characterization and health and safety planning purposes. **Table 1** through **Table 5** provide known information on each container.

Removal and disposal as referenced in the attached Bid Table shall consist of the following:

- Waste profiling and disposal facility coordination and acceptance.
- As may be applicable to the location, limited excavation of whole and/or partial containers and their contents, over-packing, bulking of containers, hand and/or mechanical pick-up of whole and/or partial containers and their contents, retrieval of containers from shallow water, and any other means and methods required to safely retrieve containers (and their contents if not empty) and prepare them for shipping for disposal.
- Transportation of properly packaged, labeled, and placarded containers and their contents (as may be applicable) to proper disposal facilities, including all manifests.
- Disposal of hazardous and non-hazardous containers and provision to MDEQ of fully executed manifests and any other disposal documentation as may be appropriate (such as scale receipts, destruction records, etc.).

The Contractor is responsible for compliance with all State and Federal health and safety, transportation, and disposal regulations. This also includes work practices and engineering controls to prevent contaminant release and potential exposure to site workers, the public, and the environment.

If the Contractor intends to use Waste Management, please coordinate with Mr. Dan Roddan at droddan1@wm.com / 920-539-1167 for project-specific rates.

The MDEQ shall be provided all waste characterization and disposal documents for review and approval at least two business days in advance of when they are needed. MDEQ will sign all disposal documents as the waste generator.

MDEQ will be responsible for securing access to the various parcels that comprise the work locations. The Contractor shall provide MDEQ and/or its designated agent at least one week notice before (each) mobilization. Work hours on occupied parcels shall be between 7:00 a.m. and 6:00 p.m. local time. Work hours on unoccupied parcels may extend earlier or later than these times if it is agreeable to MDEQ and is respectful of neighboring property owners and occupants.

40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training is required for all on-site persons that may encounter contaminated media. A summary of existing data for the above listed work locations is provided on the figures. The Contractor is responsible for their own health and safety, including compliance with 29 Code of Federal Regulations (CFR) Part 1910 and 29 CFR Part 1926.

Refer to **Attachment A** for Conditions for Emergency Bids that will apply to the work. In addition, the selected Contractor must supply the following written information within five business days after receiving a telephone authorization from the MDEQ district Project Manager to start the work:

- Copy of Certificate of Awardability, for contracts over \$100,000.
- Proof of 40-hour hazardous waste safety training for on-site personnel.

The Contractor's invoice(s) shall be submitted to the invoicing address on the Purchase Order as well as a copy to Amy Keranan, the MDEQ Project Manager at 55195 US 41, Calumet, MI 49913.

Schedule:

- Week of 8 August 2016 – Pre-Bid Meeting/Walkovers at the areas
- 18 August 2016 – Bids due at 5:00 p.m. local time via electronic mail
- 22 August 2016 – Award work locations (tentative)
- 29 August 2016 – Issue Purchase Order (tentative)
- Week of 29 August 2016 – Develop a mutually agreeable schedule for the initial round of container removals with the Contractor. Removals may occur as funding is available
- No on-site work shall occur on weekends or government holidays without prior written approval.

The bid table details the tasks that comprise the Scope of Work. Note that MDEQ may award all, some, or none of the Work Items or may award the Work Items individually or in groups over time depending on funding availability. Quantities shown are estimated for bid comparison purposes. Actual quantities may be more or less than the estimated value. Unit rates will be paid for the actual work performed. Fully executed disposal documentation will be required for payment of "remove and dispose" Work Items. Bids shall remain valid through 31 October 2017.

BID TABLE

Area Wide Abandoned Container Removal Interim Response

Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Pay Items	Pay Item 1	Pay Item 2	Pay Item 3	Pay Item 4	Pay Item 5	Pay Item 6	Pay Item 7	Pay Item 8	
	Mobilization and demobilization of all materials, tools, labor, and equipment required to characterize containers and contents for disposal acceptance. Waste characterization may be split into more than one mobilization.	Mobilization and demobilization of all materials, tools, labor, and equipment jointly required for Pay Items 3 through 15. If mobilization and demobilization of a specific piece of equipment or labor force is required for less than all of these Pay Items, include that cost in the respective Pay Item. All or some of the Pay Items may be awarded or the work may be split into more than one mobilization.	Waste characterization and analysis as may be required for disposal facility acceptance (including payment of analysis fees).	Remove and dispose RCRA empty drum.	Remove and dispose characteristically non-hazardous container - solids.	Remove and dispose characteristically non-hazardous container - liquids.	Remove and dispose characteristically hazardous container (due to metals content) - solids.	Remove and dispose characteristically hazardous container (due to flash point) - liquids.	
Locations	Units: Each Mobilization	Units: Each Mobilization	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	
Project-Wide	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	
Torch Lake Backwater Area - Traprock Dump	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: _____ _____	Quantity: _____ _____	Quantity: <u>1</u> _____	Quantity: _____ _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
Hubbell Processing Area - Hubbell Coal Dock	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>13</u> _____	Quantity: <u>1</u> _____	Quantity: <u>13</u> _____	Quantity: _____ _____	Quantity: <u>1</u> _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
Hubbell Processing Area - Mineral Building	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>2</u> _____	Quantity: <u>1</u> _____	Quantity: <u>2</u> _____	Quantity: _____ _____	Quantity: _____ _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
Hubbell Slag Dump and Beach Area - Hubbell Slag Dump	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: _____ _____	Quantity: _____ _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
Tamarack Sands Area - Historic Municipal Dump	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>2</u> _____	Quantity: <u>10</u> _____	Quantity: <u>2</u> _____	Quantity: _____ _____	Quantity: _____ _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
Tamarack Processing Area - Tamarack Reclamation Plant Complex	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>6</u> _____	Quantity: <u>3</u> _____	Quantity: <u>6</u> _____	Quantity: _____ _____	Quantity: _____ _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
Tamarack Processing Area - Tamarack Stamp Mill Complex	Quantity: <u>1</u> _____	Quantity: <u>1</u> _____	Quantity: <u>12</u> _____	Quantity: _____ _____	Quantity: <u>7</u> _____	Quantity: _____ _____	Quantity: <u>5</u> _____	Quantity: _____ _____	SUBTOTAL = 0
	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	Subtotal: _____	
	Pay Item 9	Pay Item 10	Pay Item 11	Pay Item 12	Pay Item 13	Pay Item 14	Pay Item 15	Pay Item 16	TOTAL =

Pay Items	Pay Item 9	Pay Item 10	Pay Item 11	Pay Item 12	Pay Item 13	Pay Item 14	Pay Item 15	Pay Item 16	TOTAL =
	Remove and dispose non-TSCA regulated material with PCB concentration less than 50 ppm - solids.	Remove and dispose non-TSCA regulated material with PCB concentration less than 50 ppm - liquids.	Remove and dispose non-TSCA regulated material with PCB concentration greater than 50 ppm - solids.	Remove and dispose non-TSCA regulated material with PCB concentration greater than 50 ppm - liquids.	Excavate and contain cache of approximately 10 drums from hillside at the Hubbell Coal Dock. This includes up to four hours of test pit excavation and backfilling with removed material. This does not include characterization, transport, or disposal of the recovered drums.	Retrieve and contain cache of seven drum carcasses from a trench in the former stamp mill foundation at the Tamarack Stamp Mill Complex. This does not include characterization, transport, or disposal of the recovered drums.	Retrieval of items that are discovered to not be containers.	Provisional Allowance for activities, situations, and/or waste streams not included in the Pay Items. Payment under the Provisional Allowance will be based on rates agreed upon prior to conducting the work and receipts provided.	
Locations	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Item	Units: None	
Project-Wide	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	\$15,000.00	SUBTOTAL = \$15,000.00
Torch Lake Backwater Area - Traprock Dump	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL = 0
Hubbell Processing Area - Hubbell Coal Dock	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL = 0
Hubbell Processing Area - Mineral Building	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL = 0
Hubbell Slag Dump and Beach Area - Hubbell Slag Dump	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL = 0
Tamarack Sands Area - Historic Municipal Dump	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL = 0
Tamarack Processing Area - Tamarack Reclamation Plant Complex	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL = 0
Tamarack Processing Area - Tamarack Stamp Mill Complex	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: 1 Subtotal: _____	Quantity: 1 Subtotal: _____		SUBTOTAL =

Notes:
PCB = Polychlorinated biphenyl
ppm = parts per million
RCRA = Resource Conservation and Recovery Act
TSCA = Toxic Substances Control Act

Bidder Company Name: _____

Represented by (print): _____

Address: _____

Telephone Number: _____

Date Submitted: _____

Signature: _____

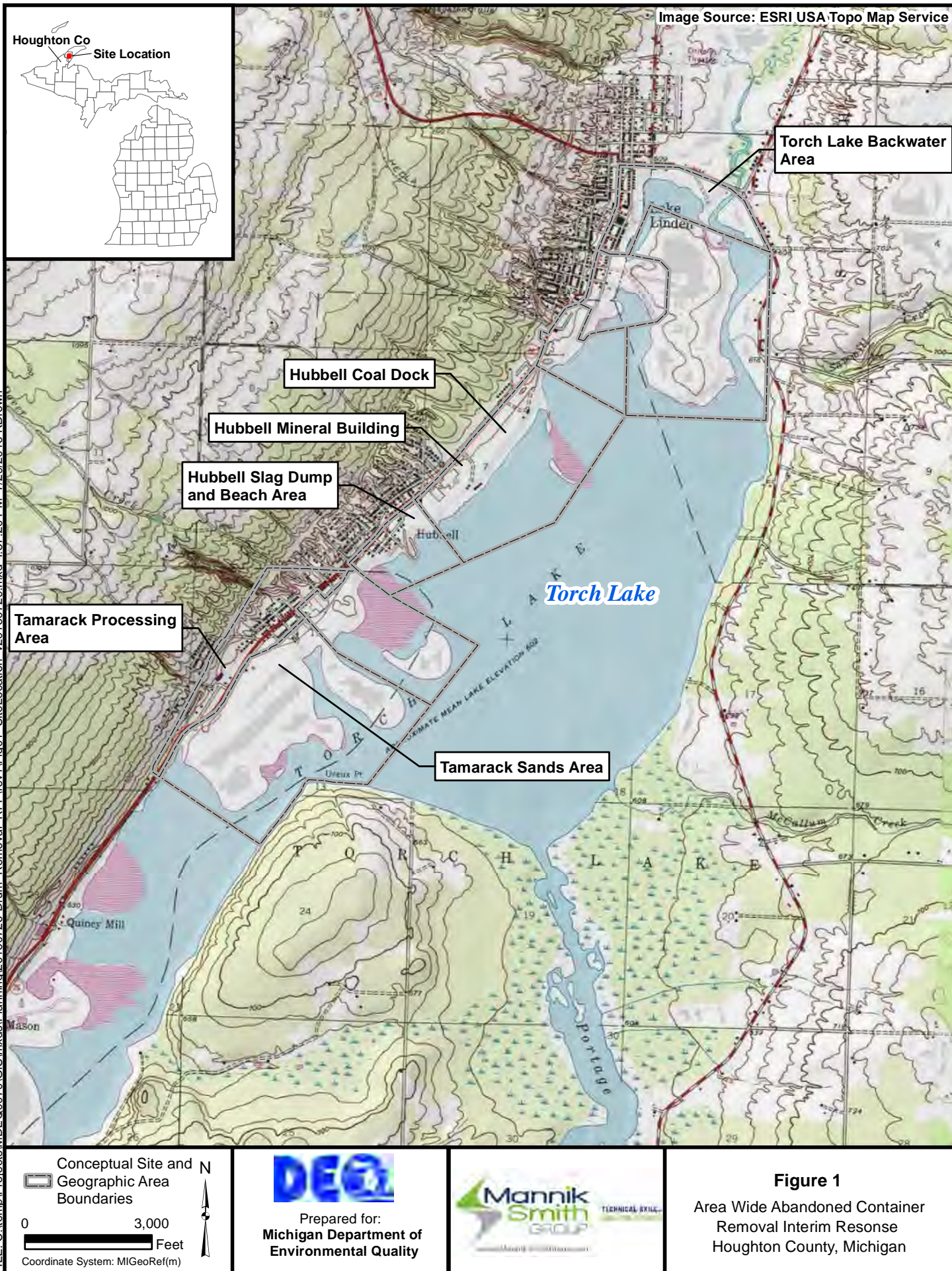
TOTAL =

GRAND TOTAL = _____

TABLES

FIGURES

FILE: C:\temp\Projects\MDE\0070\GIS\mxds\Planning\20160726-Drum Removal RFP\rev1\Fig01 SiteLocation_v20160729.mxd 4:37:20 PM 7/29/2016 KBrown







FILE: C:\temp\Projects\UDE00070\GIS\Shm\Building - v20160728.mxd 3:28:37 PM 7/29/2016 KBrown



FILE: C:\temp\Projects\UDE00070\GIS\mxd\Planning\20160728-Drum Removal_RFP\rev1\F005_HubbellSlagDumpandBeach_v20160729.mxd 3:39:46 PM 7/29/2016 KBrown

Image Source: ESRI World Imagery (NAIP 2014)





Figure 6
Abandoned Container Location Map
Tamarack Sands Area
Tamarack City, Houghton County, Michigan



FILE: C:\temp\Projects\UDE00070\GIS\Shmxd\Planning\20160728-Drum Removal RFP\prev1\F-007 TamarackSandsArea v20160729.mxd 3:57:52 PM 7/29/2016 KBrown



ATTACHMENT A



**Remediation and Redevelopment Division
Department of Environmental Quality
Conditions for Emergency Bids**

*Printed under the authority of the Natural Resources and Environmental
Protection Act, PA 451, February 1995, as amended*

By your response to the Department of Environmental Quality request for bids on the _____ site, the contractor agrees to provide all labor, materials, equipment, tools and services required to complete the work and comply with the following conditions:

- 1. INSURANCE:** No work connected with this contract shall be started until the contractor has submitted evidence that (a) all workers are insured to protect him/her from claims for damages for personal injury or death which may arise from operations under this contract and that (b) he/she is covered by Property Damage Insurance in the amount of \$100,000 and Public Liability Insurance in the amount of \$100,000-\$300,000. All of the above insurances shall be maintained until final payment is made. The contractor shall assume full responsibility for any damage which may result from any cause including fire or other casualty until completion of the contract and final payment. Any casualties shall not relieve the contractor from performing the contract.
- 2. EMPLOYEES AND SUPERINTENDENT:** Contractor shall enforce good order among his/her employees and shall not employ on the work site any disorderly, intemperate, or unfit person or anyone not skilled in the work assigned to him/her. Contractor or a competent person having authority to act for him/her shall be at the work site at all times.
- 3. PROTECTION:** Contractor shall properly protect all new and existing work from damage. Proper safety provisions shall be made at all times for the protection of all persons.
- 4. ROYALTIES, PATENTS, NOTICES, AND FEES:** Contractor shall give all notices and pay all royalties, building permits, and fees. He/she shall defend all suits or claims for infringement of any patent rights and shall save the state harmless from loss on account thereof. He/she shall comply with all laws, ordinances, and codes applicable to any portion of the work.
- 5. EXAMINATION OF PREMISES:** Bidder shall familiarize himself/herself with local conditions affecting the job. He/she shall take his/her own measurements and be responsible for the correctness of same. Bidder shall be held to have made such examinations and no allowances will be made in his/her behalf by reason of error or omission on his/her part. If any part of the contractor's work depends upon existing work for proper results or the work of another contractor, the contractor shall notify the Department before commencing work of any defects that will affect the results. Failure to so notify will constitute his/her acceptance of the conditions.
- 6. OTHER CONTRACTS:** The state may let other contracts in connection with the work and the contractor shall properly connect and coordinate his/her work with the work of such other contractors. The state shall not be liable for any damages or increased costs occasioned by the failure of other contractors to execute their work as may be anticipated by these documents.
- 7. PAYMENT:** Payment for the work will be made in one sum upon completion of the work. When applying for payment, the contractor shall submit a statement based upon an itemized schedule. The work will not be considered complete until the work has been finally accepted by the Department of Environmental Quality and the contractor has furnished satisfactory evidence that all payrolls and other indebtedness connected with the work have been paid.

- 8. REGULATIONS:** The contractor shall comply with all authorities having jurisdiction over the work. This includes all applicable federal, state, and local laws, ordinances, rules and regulations.
- 9. PREVAILING WAGES.** The contractor shall comply with Michigan's Prevailing Wage Act, MCL 408.551 et seq. Shall ensure that all employees covered by this act are compensated at a rate not less than those established by the Michigan Department of Consumer and Industry Service as Prevailing Wage and Fringe Benefit rates.

The contractor shall secure all construction permits necessary for proper execution of the work prior to starting work on the project. All fees for securing the permits shall be paid by the contractor, including all inspection costs which may be legally assessed by the Bureau of Construction Codes in accordance with authority granted under 1980 PA 371. All work shall be executed in accordance with the state of Michigan's Construction Codes. If the contractor performs any work knowing it to be contrary to the state of Michigan's Construction Codes, the contractor shall assume full responsibility and shall bear all attributable costs.

The contractor shall conform to the provisions of the Michigan Right to Know law, 1986 PA 80 and all other applicable state and federal health and safety regulations, including U.S. Occupational Safety and Health Administration (29 CFR 1910).

The contractor shall follow all state and federal laws and regulations that govern the handling, transportation, and disposal of material and waste that are deemed part of the work and shall use licensed personnel were appropriate.

STATE OF MICHIGAN
Department of Technology, Management and Budget
State Facilities Administration
3111 W. St. Joseph Street
Lansing, Michigan 48917

Date Issued: 12 August 2016
Index No(s): NA
File No: NA
Department: MDEQ-RRD
Project Name: Abandoned Mining
Wastes Torch Lake Non-Superfund Site

Subject: Revision to Scope of Work

Bid Opening Date: 18 August 2016

ADDENDUM NO. 1

TO: All Bidders

SUBJECT: Revision to the Scope of Work and Bid Table for Area Wide Abandoned Container Removal Interim Response

INTENT: This Addendum No. 1 is issued to adjust quantities to align with observations during the Pre-Bid Meeting walkover, clarify the scope of work by answering questions, and provide Prevailing Wage Rates. This Addendum No. 1 consists of one page and five attachments including Attachment A – Sign In Sheet; Attachment B – Revised Bid Table, Figures, and Tables; Attachment C – Prevailing Wages; Attachment D – Answers to Questions; and Attachment E – Lab Reports.

Item 1 – Adjustment of quantities: Five additional abandoned containers were identified in the Hubbell Processing Area – Mineral Building property during the site walkover. These additional containers were added to Figure 4 and to Table 2. Revised versions of these are provided in Attachment B.

Item 2 – Adjustment of quantities: One additional container was identified in the Tamarack Processing Area during the site walkover. This additional container was added to Figure 8 and to Table 5. Revised versions of these are provided in Attachment B.

Item 3 – Bid Table Amendments: The Bid Table has been revised to clarify the intended scope of work for several pay items. In addition, Pay Item 15 has been changed to payment for retrieval of the possible drum from the pond at the Tamarack Sands Area – Historical Municipal Dump. Pay Item 15 is just for retrieving the possible drum. Containment/overpacking, characterization, transport, and disposal are covered under other line items. A revised Bid Table is provided in Attachment B. Itemized invoices with references to the Item numbers from the Bid Table will be required.

Item 4 – Answers to Questions: Several questions have been posed by Bidders. Please refer to Attachment D for answers and clarifications.

ACKNOWLEDGEMENT: This Addendum must be acknowledged by the bidder in the space provided at the bottom of the Bid Table for submission of a valid bid. The changes and information shall become part of the contract documents.

ATTACHMENT A

PRE-BID MEETING SIGN-IN SHEET

PROJECT DESCRIPTION/LOCATION MDEQ AMW ASBESTOS CONTAINER REMOVAL IR			DATE 8-10-16
INDEX NUMBER	FILE NUMBER	CONTRACT NUMBER	TIME 13:00

MEETING PLACE
HUBBELL PARK

[illegible]

ATTACHMENT B

REVISED BID TABLE, FIGURES, AND TABLES

BID TABLE
Area Wide Abandoned Container Removal Interim Response
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Pay Items	Pay Item 1 Mobilization and demobilization of all materials, tools, labor, and equipment required to characterize containers and contents for disposal acceptance. Waste characterization may be split into more than one mobilization.	Pay Item 2 Mobilization and demobilization of all materials, tools, labor, and equipment jointly required for Pay Items 4 through 15. If mobilization of a specific piece of equipment or labor force is required for less than all of these Pay Items, include that cost in the respective Pay Item. All or some of the Pay Items may be awarded or the work may be split into more than one mobilization.	Pay Item 3 Waste characterization and analysis as may be required for disposal facility acceptance (including payment of analysis fees).	Pay Item 4 Remove and dispose RCRA empty drum.	Pay Item 5 Remove and dispose characteristically non-hazardous container - solids.	Pay Item 6 Remove and dispose characteristically non-hazardous container - liquids.	Pay Item 7 Remove and dispose characteristically hazardous container (due to metals content) - solids.	Pay Item 8 Remove and dispose characteristically hazardous container (due to flash point) - liquids.	
Locations	Units: Each Mobilization	Units: Each Mobilization	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	
Project-Wide	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	
Torch Lake Backwater Area - Traprock Dump	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
Hubbell Processing Area - Hubbell Coal Dock	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>17</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>17</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: <u>2</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
Hubbell Processing Area - Mineral Building	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>6</u> _____ Subtotal: _____	Quantity: <u>9</u> _____ Subtotal: _____	Quantity: <u>7</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
Hubbell Slag Dump and Beach Area - Hubbell Slag Dump	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>2</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
Tamarack Sands Area	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>9</u> _____ Subtotal: _____	Quantity: <u>2</u> _____ Subtotal: _____	Quantity: <u>9</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
Tamarack Processing Area - Tamarack Reclamation Plant Complex	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>6</u> _____ Subtotal: _____	Quantity: <u>5</u> _____ Subtotal: _____	Quantity: <u>6</u> _____ Subtotal: _____	Quantity: <u>2</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
Tamarack Processing Area - Tamarack Stamp Mill Complex	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: <u>7</u> _____ Subtotal: _____	Quantity: <u>2</u> _____ Subtotal: _____	Quantity: <u>3</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	Quantity: <u>2</u> _____ Subtotal: _____	Quantity: _____ _____ Subtotal: _____	SUBTOTAL =
									TOTAL =

Pay Items	Pay Item 9 Remove and dispose non-TSCA regulated material with PCB concentration less than 50 ppm - solids.	Pay Item 10 Remove and dispose non-TSCA regulated material with PCB concentration less than 50 ppm - liquids.	Pay Item 11 Remove and dispose non-TSCA regulated material with PCB concentration greater than 50 ppm - solids.	Pay Item 12 Remove and dispose non-TSCA regulated material with PCB concentration greater than 50 ppm - liquids.	Pay Item 13 Excavate cache of approx. 12 drums from hillside at the Hubbell Coal Dock. This includes 8 hours of test pit excavation and backfilling with removed material during the first mobilization. This does not include containing, characterization, transport, or disposal of the recovered drums (which are part of other line items).	Pay Item 14 Retrieve and contain cache of seven drum carcasses and spilled contents from a trench in the former stamp mill foundation at the Tamarack Stamp Mill Complex after characterization. This does not include characterization, transport, or disposal of the recovered drums.	Pay Item 15 Retrieval of possible drum from pond. This does not include containing or overpacking, characterization, transport, or disposal which are part of other line items.	Pay Item 16 Provisional Allowance for activities, situations, and/or waste streams not included in the Pay Items. Payment under the Provisional Allowance will be based on rates agreed upon prior to conducting the work and receipts provided.	
Locations	Units: Per Container	Units: Per Container	Units: Per Container	Units: Per Container	Units: Lump Sum	Units: Per Container	Units: Per Item	Units: None	
Project-Wide	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	Unit Rate: _____	\$15,000.00	SUBTOTAL =
Torch Lake Backwater Area - Traprock Dump	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____		SUBTOTAL =
Hubbell Processing Area - Hubbell Coal Dock	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____		SUBTOTAL =
Hubbell Processing Area - Mineral Building	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____		SUBTOTAL =
Hubbell Slag Dump and Beach Area - Hubbell Slag Dump	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____		SUBTOTAL =
Tamarack Sands Area	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____		SUBTOTAL =
Tamarack Processing Area - Tamarack Reclamation Plant Complex	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____		SUBTOTAL =
Tamarack Processing Area - Tamarack Stamp Mill Complex	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: _____ Subtotal: _____	Quantity: <u>1</u> _____ Subtotal: _____	Quantity: _____ Subtotal: _____		SUBTOTAL =
									TOTAL =

Notes:
PCB = Polychlorinated biphenyl
ppm = parts per million
RCRA = Resource Conservation and Recovery Act
TSCA = Toxic Substances Control Act

Bidder Company Name: _____

Represented by (print): _____

Addendum(s) Acknowledged (Date): _____

Address: _____

Telephone Number: _____

Date Submitted: _____

Signature: _____

TOTAL =

GRAND TOTAL = _____

Revision 1

Page 1 of 1

FILE: C:\temp\Projects\WDE00070\GIS\MapDocs\Planning\20160728-Drum Removal RFP\rev2\Fig04 - HubbellMineralBuilding - v20160811.mxd 11:42:49 AM 8/11/2016 KBrown





ABANDONED DRUM SUMMARY

Abandoned Containers - Mineral Building																										
1	CHLL-HPA-DRUM-10 (Pt. 17)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'23.984"	47° 10'36.725"	Drum carcass		No	Yes					X											
2	CHLL-HPA-DRUM-11 (Pt. 28)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'18.407"	47° 10'38.389"	Crushed drum	Contains metal parts	No	No					X											
3	CHLL-HPA-DRUM-12 (Pt. 29)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'17.367"	47° 10'38.210"	Crushed drum	Leaking black tarry material	No	No					X											
4	CHLL-HPA-DRUM-13 (Pt. 30)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'13.879"	47° 10'36.390"	Crushed blue poly drum	Partially melted	No	No					X											
5	CHLL-HPA-DRUM-14 (Pt. 31)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'13.465"	47° 10'35.948"	Drum carcass		No	Unk					X											
6	CHLL-HPA-DRUM-15 (Pt. 18)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'13.680"	47° 10'35.383"	Empty steel drum		Yes	Yes					X											
7	CHLL-HPA-DRUM-16 (Pt. 34)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'11.639"	47° 10'37.864"	Crushed drum	Partially buried	No	Unk					X											
8	CHLL-HPA-DRUM-17	Spring/Summer 2016	014-307-001-75	NA	-88° 25'11.429"	47° 10'38.204"	Drum carcass		No	Unk					X											
9	CHLL-HPA-DRUM-18 (Pt. 19)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'11.327"	47° 10'38.149"	Drum carcass		No	Unk					X											
10	CHLL-HPA-DRUM-19 (Pt. 36)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'10.970"	47° 10'38.282"	Black poly drum	In the drainage ditch	Yes	Yes					X											
11	CHLL-HPA-DRUM-20 (Pt. 33)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'12.616"	47° 10'36.063"	Crushed drum		No	Yes					X											
12	CHLL-HPA-DRUM-21	8/10/2016	014-307-001-75	NA	NA	NA	Black poly drum	Partially buried	Yes	Yes					X											
13	CHLL-HPA-DRUM-22	8/10/2016	014-307-001-75	NA	NA	NA	Drum carcass		No	Yes					X											
14	CHLL-HPA-DRUM-23	8/10/2016	014-307-001-75	NA	NA	NA	Drum carcass		No	Yes					X											
15	CHLL-HPA-DRUM-22	8/10/2016	014-307-001-75	NA	NA	NA	Drum carcass		No	Yes					X											
16	CHLL-HPA-DRUM-23	8/10/2016	014-307-001-75	NA	NA	NA	Drum carcass		No	Yes					X											

Table 5
Abandoned Drum Summary
Tamarack Processing Area
C&H Tamarack City Operations
Houghton County, Michigan

Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Waste Characterization				Available Laboratory Analyses																
											Hazardous Waste	Non-Hazardous Waste	TSCA Waste	RCRA Empty Drum Unknown - Requires Characterization if Not Empty	TCLP VOCs	TCLP SVOCs	TCLP Metals	Reactive Sulfide	Reactive Cyanide	pH	Paint Filter	Flash Point	VOCs	PNAs	Metals	PCBs	Hexavalent Chromium	Chloride and Sulfate	Cyanide	Asbestos	DRO/ORO
Abandoned Containers - Tamarack Reclamation Plant Complex																															
1	CHTC-TP-DM02	5/28/2015	009-013-004-20	NA	-88.444799091	47.164635460	Rusted, crushed drum carcass	Obscured by vegetation on the hillside below/east of Amygdaloid Street.	No	Yes				X																	
2	CHTC-TP-DM03	5/28/2015	009-013-004-20	NA	-88.443400219	47.165026394	Rusted, partially crushed, open and damaged, 55-gallon drum, lying on its side.	The drum is labeled "Dowfroth 250, manufactured by Dow Chemical Company".	No	Unk				X																	
3	CHTC-TP-DM04	5/28/2015	009-013-004-20	NA	-88.443358432	47.164994689	Rusted, yellow, partially crushed, open and damaged, half-filled with building debris,55-gallon drum, standing vertically.	A black 5-gallon container is lying on its side next to the drum, labeled "SuperTech R&O Hydraulic Oil".	Yes	Unk				X																	
4	CHTC-TP-DM05	5/28/2015	009-013-004-20	1508214	-88.443647995	47.164743251	Rusted, highly-weathered and degraded, crushed, 55-gallon drum.	Grayish brown, rust fragments and granular material appear to be present on the interior of the drum. Sample CHTC-DM02 was collected on 8-20-15.	No	No				X								X	X	X	X			X			
5	CHTC-TP-DM06	5/28/2015	009-013-004-20	NA	-88.442744906	47.165194495	Black, rusted, partially crushed drum lying on its side.	Appears empty, partial label, indicates that contents may have been hydraulic oil.	Yes	Unk				X																	
6	CHTC-TP-DM07	5/28/2015	009-013-004-20	NA	-88.442356600	47.165598480	Rusted, empty drum, crushed, damaged	Lying in a wooded area.	No	Yes				X																	
7	CHTC-TP-DM08	5/28/2015	009-013-004-20	NA	-88.442126003	47.165529896	Rusted, empty drum, crushed, damaged	Partially obscured by vegetation.	No	Yes				X																	
8	CHTC-TP-DM09	5/28/2015	009-013-004-20	NA	-88.442145957	47.165355601	Bluish-green, rusted, partially crushed drum	Lying on its side. Does not appear to be empty. No obvious labeling on the drum.	Yes	No				X																	
9	CHTC-TP-DM10	5/28/2015	009-013-004-20	NA	-88.443550947	47.164193836	Rusted, empty drum, crushed, damaged	Partially buried and obscured by vegetation. Located in a wet, marshy area along the southern fence line of the property.	Yes	Unk				X																	
10	CHTC-TP-DM12	5/28/2015	009-013-004-20	NA	-88° 26'31.407"	47° 09'55.856"	Crush steel drum		No	Unk				X																	
11	CHTC-TP-DM13	5/28/2015	009-013-004-20	NA	-88° 26'34.704"	47° 09'54.416"	55-gallon blue poly drum		Yes	Yes				X																	
12	CHTC-TP-DM14	5/28/2015	009-013-004-20	NA	-88° 26'33.954"	47° 09'53.729"	55-gallon white poly drum		Yes	Yes				X																	
13	CHTC-TP-DM15	8/10/2016	009-013-004-20	NA	-88.444799091	47.164635460	5-gallon bucket with lid	Partially full of liquid	Yes	No				X																	
Abandoned Containers - Tamarack Stamp Mill Complex																															
1-7	CHTC-TP-DM11	5/28/2015	009-013-004-50	1508214	-88.444589959	47.163934225	Seven rusted drum carcasses, piled, crushed, and damaged	In a trench in the former stamp mill foundation. Wooded area midway up the hill between the warehouse and Junction Road. Samples CHTC-DM03 and CHTC-DM04 were collected of drum contents on 8-20-15. Surficial soil samples CHTC-SS-09 and CHTC-SS-10 were collected of adjaice to the drums on 8-20-15.	No	Unk				X								X	X	X	X			X			

ATTACHMENT C
PREVAILING WAGES



STATE OF MICHIGAN

Wage and Hour Division

PO Box 30476

Lansing, MI 48909

517-284-7800

Informational Sheet: Prevailing Wages on State Projects

REQUIREMENTS OF THE PREVAILING WAGES ON STATE PROJECTS ACT, PUBLIC ACT 166 OF 1965

The State of Michigan determines prevailing rates pursuant to the Prevailing Wages on State Projects Act, Public Act 166 of 1965, as amended. The purpose of establishing prevailing rates is to provide minimum rates of pay that must be paid to workers on construction projects for which the state or a school district is the contracting agent and which is financed or financially supported by the state. By law, prevailing rates are compiled from the rates contained in collectively bargained agreements which cover the locations of the state projects. The official prevailing rate schedule provides an hourly rate which includes *wage and fringe benefit totals* for designated construction mechanic classifications. The overtime rates also include *wage and fringe benefit totals*. Please pay special attention to the overtime and premium pay requirements. Prevailing wage is satisfied when wages plus fringe benefits paid to a worker are equal to or greater than the required rate.

State of Michigan responsibilities under the law:

- The department establishes the prevailing rate for each classification of construction mechanic ***requested by a contracting agent*** prior to contracts being let out for bid on a state project.

Contracting agent responsibilities under the law:

- If a contract is not awarded or construction does not start within 90 days of the date of the issuance of rates, a re-determination of rates must be requested by the contracting agent.
- Rates for classifications needed but not provided on the Prevailing Rate Schedule, ***must*** be obtained ***prior*** to contracts being let out for bid on a state project.
- The contracting agent, by written notice to the contractor and the sureties of the contractor known to the contracting agent, may terminate the contractor's right to proceed with that part of the contract, for which less than the prevailing rates have been or will be paid, and may proceed to complete the contract by separate agreement with another contractor or otherwise, and the original contractor and his sureties shall be liable to the contracting agent for any excess costs occasioned thereby.

Contractor responsibilities under the law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing rates prescribed in a contract.
- Every contractor and subcontractor shall keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each construction mechanic employed by him in connection including certified payroll, as used in the industry, with said contract. This record shall be available for reasonable inspection by the contracting agent or the department.
- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic ***shall only*** be paid the apprentice rate if registered with the United States Department of Labor, Bureau of Apprenticeship and Training and the rate is included in the contract.

Enforcement:

A person who has information of an alleged prevailing wage violation on a state project may file a complaint with the State of Michigan. The department will investigate and attempt to resolve the complaint informally. During the course of an investigation, if the requested records and posting certification are not made available in compliance with Section 5 of Act 166, the investigation will be concluded and a referral to the Office of Attorney General for civil action will be made. The Office of Attorney General will pursue costs and fees associated with a lawsuit if filing is necessary to obtain records.



STATE OF MICHIGAN

Wage and Hour Division

PO Box 30476

Lansing, MI 48909

517-284-7800

Informational Sheet: Prevailing Wages on State Projects

General Information Regarding Fringe Benefits

Certain fringe benefits **may** be credited toward the payment of the Prevailing Wage Rate:

- If a fringe benefit is paid directly to a construction mechanic
- If a fringe benefit contribution or payment is made on behalf of a construction mechanic
- If a fringe benefit, which may be provided to a construction mechanic, is pursuant to a written contract or policy
- If a fringe benefit is paid into a fund, for a construction mechanic

When a fringe benefit is not paid by an hourly rate, the hourly credit will be calculated based on the annual value of the fringe benefit divided by 2080 hours per year (52 weeks @ 40 hours per week).

The following is an example of the types of fringe benefits allowed and how an hourly credit is calculated:

Vacation	40 hours X \$14.00 per hour = \$560/2080 =	\$0.27
Dental insurance	\$31.07 monthly premium X 12 mos. = \$372.84 /2080 =	\$0.18
Vision insurance	\$5.38 monthly premium X 12 mos. = \$64.56/2080 =	\$0.03
Health insurance	\$230.00 monthly premium X 12 mos. = \$2,760.00/2080 =	\$1.33
Life insurance	\$27.04 monthly premium X 12 mos. = \$324.48/2080 =	\$0.16
Tuition	\$500.00 annual cost/2080 =	\$0.24
Bonus	4 quarterly bonus/year x \$250 = \$1000.00/2080 =	\$0.48
401k Employer Contribution	\$2000.00 total annual contribution/2080 =	\$0.96
Total Hourly Credit		\$3.65

Other examples of the types of fringe benefits allowed:

- Sick pay
- Holiday pay
- Accidental Death & Dismemberment insurance premiums

The following are examples of items that **will not** be credited toward the payment of the Prevailing Wage Rate

- Legally required payments, such as:
 - Unemployment Insurance payments
 - Workers' Compensation Insurance payments
 - FICA (Social Security contributions, Medicare contributions)
- Reimbursable expenses, such as:
 - Clothing allowance or reimbursement
 - Uniform allowance or reimbursement
 - Gas allowance or reimbursement
 - Travel time or payment
 - Meals or lodging allowance or reimbursement
 - Per diem allowance or payment
- Other payments to or on behalf of a construction mechanic that are not wages or fringe benefits, such as:
 - Industry advancement funds
 - Financial or material loans



State of Michigan

OVERTIME PROVISIONS for MICHIGAN PREVAILING WAGE RATE COMMERCIAL SCHEDULE

- Overtime is represented as a nine character code. Each character represents a certain period of time after the first 8 hours Monday thru Friday.

	Monday thru Friday	Saturday	Sunday & Holidays	Four 10s
First 8 Hours		4	8	9
9th Hour	1	5		
10th Hour	2	6		
Over 10 hours	3	7		

Overtime for Monday thru Friday after 8 hours:

the 1st character is for time worked in the 9th hour (8.1 - 9 hours)

the 2nd character is for time worked in the 10th hour (9.1 - 10 hours)

the 3rd character is for time worked beyond the 10th hour (10.1 and beyond)

Overtime on Saturday:

the 4th character is for time worked in the first 8 hours on Saturday (0 - 8 hours)

the 5th character is for time worked in the 9th hour on Saturday (8.1 - 9 hours)

the 6th character is for time worked in the 10th hour (9.1 - 10 hours)

the 7th character is for time worked beyond the 10th hour (10.01 and beyond)

Overtime on Sundays & Holidays

The 8th character is for time worked on Sunday or on a holiday

Four Ten Hour Days

The 9th character indicates if an optional 4-day 10-hour per day workweek can be worked **between Monday and Friday without paying overtime after 8 hours worked, unless otherwise noted in the rate schedule. To utilize a 4 ten workweek, notice is required from the employer to employee prior to the start of work on the project.**

- Overtime Indicators Used in the Overtime Provision:

H - means TIME AND ONE-HALF due

X - means TIME AND ONE-HALF due after 40 HOURS worked

D - means DOUBLE PAY due

Y - means YES an optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked

N - means NO an optional 4-day 10-hour per day workweek *can not* be worked without paying overtime after 8 hours worked

- EXAMPLES:

HHHHHHHDN - This example shows that the 1½ rate must be used for time worked after 8 hours Monday thru Friday (*characters 1 - 3*); for all hours worked on Saturday, 1½ rate is due (*characters 4 - 7*). Work done on Sundays or holidays must be paid double time (*character 8*). The N (*character 9*) indicates that 4 ten-hour days is not an acceptable workweek at regular pay.

XXXHHHHDY - This example shows that the 1½ rate must be used for time worked after 40 hours are worked Monday thru Friday (*characters 1-3*); for hours worked on Saturday, 1½ rate is due (*characters 4 – 7*). Work done on Sundays or holidays must be paid double time (*character 8*). The Y (*character 9*) indicates that 4 ten-hour days is an acceptable alternative workweek.

LARA is an equal opportunity employer.

Auxiliary aids, services and other reasonable accommodations are available, upon request, to individuals with disabilities.

Wage and Hour Division

P.O. BOX 30476 • LANSING, MICHIGAN 48909

www.michigan.gov/wagehour • Phone : (517) 284-7800

ENGINEERS - CLASSES OF EQUIPMENT LIST

UNDERGROUND ENGINEERS

CLASS I

Backfiller Tamper, Backhoe, Batch Plant Operator, Clam-Shell, Concrete Paver (2 drums or larger), Conveyor Loader (Euclid type), Crane (crawler, truck type or pile driving), Dozer, Dragline, Elevating Grader, End Loader, Gradall (and similar type machine), Grader, Power Shovel, Roller (asphalt), Scraper (self propelled or tractor drawn), Side Broom Tractor (type D-4 or larger), Slope Paver, Trencher (over 8' digging capacity), Well Drilling Rig, Mechanic, Slip Form Paver, Hydro Excavator.

CLASS II

Boom Truck (power swing type boom), Crusher, Hoist, Pump (1 or more 6" discharge or larger gas or diesel powered by generator of 300 amps or more, inclusive of generator), Side Boom Tractor (smaller than type D-4 or equivalent), Tractor (pneu-tired, other than backhoe or front end loader), Trencher (8' digging capacity and smaller), Vac Truck.

CLASS III

Air Compressors (600 cfm or larger), Air Compressors (2 or more less than 600 cfm), Boom Truck (non-swinging, non-powered type boom), Concrete Breaker (self-propelled or truck mounted, includes compressor), Concrete Paver (1 drum, ½ yard or larger), Elevator (other than passenger), Maintenance Man, Mechanic Helper, Pump (2 or more 4" up to 6" discharge, gas or diesel powered, excluding submersible pump), Pumpcrete Machine (and similar equipment), Wagon Drill Machine, Welding Machine or Generator (2 or more 300 amp or larger, gas or diesel powered).

CLASS IV

Boiler, Concrete Saw (40HP or over), Curing Machine (self-propelled), Farm Tractor (w/attachment), Finishing Machine (concrete), Firemen, Hydraulic Pipe Pushing Machine, Mulching Equipment, Oiler (2 or more up to 4", exclude submersible), Pumps (2 or more up to 4" discharge if used 3 hrs or more a day-gas or diesel powered, excluding submersible pumps), Roller (other than asphalt), Stump Remover, Vibrating Compaction Equipment (6' wide or over), Trencher (service) Sweeper (Wayne type and similar equipment), Water Wagon, Extend-a-Boom Forklift.

HAZARDOUS WASTE ABATEMENT ENGINEERS

CLASS I

Backhoe, Batch Plant Operator, Clamshell, Concrete Breaker when attached to hoe, Concrete Cleaning Decontamination Machine Operator, Concrete Pump, Concrete Paver, Crusher, Dozer, Elevating Grader, Endloader, Farm Tractor (90 h.p. and higher), Gradall, Grader, Heavy Equipment Robotics Operator, Hydro Excavator, Loader, Pug Mill, Pumpcrete Machines, Pump Trucks, Roller, Scraper (self-propelled or tractor drawn), Side Boom Tractor, Slip Form Paver, Slope Paver, Trencher, Ultra High Pressure Waterjet Cutting Tool System Operator, Vactors, Vacuum Blasting Machine Operator, Vertical Lifting Hoist, Vibrating Compaction Equipment (self-propelled), and Well Drilling Rig.

CLASS II

Air Compressor, Concrete Breaker when not attached to hoe, Elevator, End Dumps, Equipment Decontamination Operator, Farm Tractor (less than 90 h.p.), Forklift, Generator, Heater, Mulcher, Pigs (Portable Reagent Storage Tanks), Power Screens, Pumps (water), Stationary Compressed Air Plant, Sweeper, Water Wagon and Welding Machine.

State of Michigan

WHPWRequest@michigan.gov

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process material removal and disposal

Project Number: 761/16108.SAR

Houghton County

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				
=====					
Asbestos & Lead Abatement Laborer					
Asbestos & Lead Abatement Laborer	MLDC		\$40.75	\$54.34	\$67.93 H H H X X X D Y
4 ten hour days @ straight time allowed					
Monday-Saturday, must be consecutive					
10/30/2015					

Asbestos & Lead Abatement, Hazardous Material Handler

Asbestos and Lead Abatement, Hazardous Material Handler	AS207		\$40.75	\$54.25	\$67.75 H H H X X X D Y
4 ten hour days @ straight time allowed					
Monday-Saturday, must be consecutive					
10/30/2015					

Boilermaker

Boilermaker	BO169		\$54.70	\$81.08	\$107.45 H H H H H H D Y
2/17/2015					

Apprentice Rates:

1st 6 months	\$40.31	\$59.49	\$78.67
2nd 6 months	\$41.45	\$61.21	\$80.95
3rd 6 months	\$42.57	\$62.88	\$83.19
4th 6 months	\$43.69	\$64.57	\$85.43
5th 6 months	\$44.81	\$66.24	\$87.67
6th 6 months	\$48.63	\$72.50	\$96.36
7th 6 months	\$49.32	\$73.01	\$96.69
8th 6 months	\$51.58	\$76.40	\$101.21

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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<u>Classification</u>		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					
=====						
Bricklayer						
Marble, Tile and Terrazzo Finisher	BR6		\$36.55	\$45.79	\$55.03	H H D X H H D D Y
<i>Make up day allowed comment</i>		6/2/2014				
Four 10s allowed Monday-Thurs. Make up days: Friday & Saturday.						
Bricklayer, stone mason, moisaic worker, plasterer, tuck pointer, pointer, caulker & cleaner	BR6-2		\$42.71	\$55.03	\$67.35	X X H X X H H D Y
<i>Make up day allowed comment</i>		6/2/2014				
Saturday						
All time over 12 hours pr day - double						
Apprentice Rates:						
0 - 749 hours			\$32.85	\$40.24	\$47.63	
750 - 1499 hours			\$34.09	\$42.10	\$50.11	
1500 - 2249 hours			\$35.32	\$43.95	\$52.57	
2250 - 2999 hours			\$36.55	\$45.79	\$55.03	
3000 - 3749 hours			\$37.78	\$47.63	\$57.49	
3750 - 4499 hours			\$39.01	\$49.48	\$59.95	
4500 - 5249 hours			\$40.25	\$51.34	\$62.43	
5250 - 6000 hours			\$41.48	\$53.19	\$64.89	
Marble, Tile and Terrazzo Layer	BR6TL		\$42.71	\$55.03	\$67.35	H H D X H H D D Y
<i>Make up day allowed comment</i>		6/2/2014				
Four 10s allowed Monday-Thurs. Make up days: Friday & Saturday.						

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				

Carpenter

Carpenter, Drywall Taper & Finisher, & Floor CA1510-C \$42.75 \$54.46 \$66.17 X X H X X H H D Y
Make up day allowed comment 7/26/2016
 Saturday

Apprentice Rates:

1st 6 months	\$33.38	\$40.41	\$47.43
2nd 6 months	\$34.55	\$42.16	\$49.77
3rd 6 months	\$35.72	\$43.91	\$52.11
4th 6 months	\$36.90	\$45.69	\$54.47
5th 6 months	\$38.07	\$47.44	\$56.81
6th 6 months	\$39.24	\$49.19	\$59.15
7th 6 months	\$40.41	\$50.95	\$61.49
8th 6 months	\$41.58	\$52.71	\$63.83

Pile driver CA1510-P \$42.95 \$54.76 \$66.57 X X H X X H H D Y
Make up day allowed comment 7/26/2016
 Saturday

Apprentice Rates:

1st 6 months	\$33.50	\$40.59	\$47.67
2nd 6 months	\$34.68	\$42.35	\$50.03
3rd 6 months	\$35.86	\$44.13	\$52.39
4th 6 months	\$37.05	\$45.91	\$54.77
5th 6 months	\$38.23	\$47.68	\$57.13
6th 6 months	\$39.41	\$49.45	\$59.49
7th 6 months	\$40.59	\$51.22	\$61.85
8th 6 months	\$41.77	\$52.99	\$64.21

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

Page 4 of 26

Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					

Cement Mason

Cement Mason BR6-CM \$42.71 \$55.03 \$67.35 H H D X H H D D Y

Make up day allowed comment 6/2/2014

Four 10s allowed Monday-Thurs. Make up days: Friday and Saturday.

Apprentice Rates:

0 - 749 hours	\$34.09	\$42.10	\$50.11
750 - 1499 hours	\$35.32	\$43.95	\$52.57
1500 - 2249 hours	\$36.55	\$45.79	\$55.03
2250 - 2999 hours	\$37.78	\$47.63	\$57.49
3000 - 3749 hours	\$39.01	\$49.48	\$59.95
3750 - 4500 hours	\$40.25	\$51.34	\$62.43

Cement Mason PL16-16 \$30.30 \$40.39 \$50.47 H H H H H H H D Y

Four 10s allowed Monday-Thursday with Friday or Saturday inclement weather make up days.

Saturday hours for inclement weather make up shall be paid straight rate unless over 40 hours worked.

Make up day allowed comment 10/23/2012

Friday or Saturday for inclement weather

Apprentice Rates:

1st year	\$23.24	\$29.79	\$36.35
2nd year	\$25.26	\$32.83	\$40.39
3rd year	\$27.27	\$35.84	\$44.41

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

Page 5 of 26

Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				
=====					
Electrician					
Sound and Communications Installer/Technician	EC-219-SC		\$33.43	\$43.97	\$54.51 H H H H H H D Y

A 4 day 10 hour day schedule is allowed

3/12/2013

Apprentice Rates:

1st period	\$25.00	\$31.32	\$37.65
2nd period	\$27.11	\$34.49	\$41.87
3rd period	\$28.16	\$36.07	\$43.97
4th period	\$29.22	\$37.66	\$46.09
5th period	\$30.27	\$39.23	\$48.19
6th period	\$31.33	\$40.83	\$50.31

Inside wireman for work above \$160,000	EC-219-ZA-above		\$50.05	\$66.43	\$82.80 H H H H H H D Y
---	-----------------	--	---------	---------	-------------------------

A 4 ten schedule may be worked if 4 consecutive days, M-Th

Make up day allowed comment
Friday

3/31/2016

Apprentice Rates:

Period 2	\$27.23	\$35.42	\$43.60
Period 3	\$31.64	\$41.47	\$51.29
Period 4	\$34.91	\$46.38	\$57.83
Period 5	\$38.75	\$51.86	\$64.95
Period 6	\$42.02	\$56.76	\$71.49
Period 1 indentured after 10/12/15	\$25.42	\$32.20	\$38.98
Period 2 indentured after 10/12/15	\$27.11	\$34.73	\$42.36
Period 3 indentured after 10/12/15	\$30.50	\$39.82	\$49.14
Period 4 indentured after 10/12/15	\$33.89	\$44.91	\$55.92
Period 5 indentured after 10/12/15	\$37.28	\$49.99	\$62.70
Period 6 indentured after 10/12/15	\$40.67	\$55.08	\$69.48

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last	Straight Time and a Double	Overtime		
Name	Description	Updated	Hourly	Half Time	Time	Provision
=====						
Inside wireman for work below 160,000	EC-219-ZA-below		\$47.75	\$62.97	\$78.19	H H H H H H H D Y
A 4 ten schedule may be worked if 4 consecutive days, M-Th						
Make up day allowed comment		3/31/2016				
Friday						

Apprentice Rates:

Period 1	\$25.60	\$32.97	\$40.34
Period 2	\$27.23	\$35.42	\$43.60
Period 3	\$31.64	\$41.47	\$51.29
Period 4	\$34.91	\$46.38	\$57.83
Period 5	\$38.75	\$51.86	\$64.95
Period 6	\$42.02	\$56.76	\$71.49
Period 1 indentured after 10/12/15	\$25.42	\$32.20	\$38.98
Period 2 indentured after 10/12/15	\$27.11	\$34.73	\$42.36
Period 3 indentured after 10/12/15	\$30.50	\$39.82	\$49.14
Period 4 indentured after 10/12/15	\$33.89	\$44.91	\$55.92
Period 5 indentured after 10/12/15	\$37.28	\$49.99	\$62.70
Period 6 indentured after 10/12/15	\$40.67	\$55.08	\$69.48

Elevator Constructor

Elevator Constructor Mechanic	EL-85	\$70.77	\$116.32 D D D D D D D Y
comment		4/8/2013	
4 tens allowed M-TH			

Apprentice Rates:

1st year	\$50.27	\$75.32
2nd year	\$54.83	\$84.44
3rd year	\$57.10	\$88.98
4th year	\$61.66	\$98.10

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					
=====						
Glazier						
Glazier	GL-826		\$44.78	\$60.87	\$76.95	H H H H H H D Y
4 tens allowed on consecutive days						
		6/3/2016				
Apprentice Rates:						
1st 6 months			\$31.91	\$41.57	\$51.21	
2nd 6 months			\$33.52	\$43.98	\$54.43	
3rd 6 months			\$35.12	\$46.38	\$57.63	
4th 6 months			\$36.74	\$48.81	\$60.87	
5th 6 months			\$38.35	\$51.22	\$64.09	
6th 6 months			\$39.96	\$53.64	\$67.31	
7th 6 months			\$41.57	\$56.05	\$70.53	
8th 6 months			\$43.17	\$58.45	\$73.73	
Heat and Frost Insulator						
Heat and Frost Insulator	AS127		\$42.97	\$55.93	\$68.89	H H H H D D D Y
Make up day allowed						
		11/3/2014				
Apprentice Rates:						
1st year			\$30.01	\$36.49	\$42.97	
2nd year			\$32.60	\$40.37	\$48.15	
3rd year			\$35.19	\$44.26	\$53.33	
4th year			\$37.79	\$48.16	\$58.53	
Spray Insulation	AS25S		\$25.29	\$36.51		X X X H H H H N
		6/2/2016				

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Statewide

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

Page 8 of 26

Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				

Ironworker

For work over \$10 million: Structural, IR-8-A \$50.07 \$69.76 \$89.45 H H D H D D D D Y
Ornamental, Machinery Rigger & Reinforcing
Ironworker; installation of sheet metal siding

A 4-10 work week allowed Monday thru Thursday. Friday may be used as a make-up day. Hours in excess of 40 must be paid time and one half.

Make up day allowed

9/29/2014

Apprentice Rates:

0 - 1,000 hours	\$25.39	\$37.75	\$50.11
1,001 - 2,000 hours	\$37.71	\$51.22	\$64.73
2,001 - 3,000 hours	\$39.01	\$53.17	\$67.33
3,001 - 4,000 hours	\$40.31	\$55.12	\$69.93
4,001 - 5,000 hours	\$41.61	\$57.07	\$72.53
5,001 - 6,000 hours	\$42.92	\$59.04	\$75.15
6,001 - 7,000 hours	\$44.22	\$60.98	\$77.75

For work under \$10 Million: Structural, IR-8-B \$46.73 \$64.76 \$82.79 H H D H D D D D Y
Ornamental, Machinery Rigger & Reinforcing
Ironworker; pre-engineered metal buildings

A 4-10 work week allowed Monday thru Thursday. Friday may be used as a make-up day. Hours in excess of 40 must be paid time and one half.

Make up day allowed

9/29/2014

Apprentice Rates:

0-1,000 hours	\$25.39	\$37.75	\$50.11
1,001 - 2,000 hours	\$37.71	\$51.22	\$64.73
2,001 - 3,000 hours	\$39.01	\$53.17	\$67.33
3,001 - 4,000 hours	\$40.31	\$55.12	\$69.93
4,001 - 5,000 hours	\$41.61	\$57.07	\$72.53
5,001 - 6,000 hours	\$42.92	\$59.04	\$75.15
6,001 - 7,000 hours	\$44.22	\$60.98	\$77.75

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

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Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

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Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				
=====					
Laborer					
Class A Laborer - construction laborer on building and heavy construction work, storm, and sanitary sewers on all construction sites and streets which are not included in the road builder rates, tool crib attendant, civil engineer helper, rodman, oxi-gun operator, propane or acetylene cutting torch operator, motor driven buggies, chipping hammers, tamping machines, green cutting, sand blasters, mason tenders, mortar mixers, marterial mixers, vibrator operators, concrete mixers, laborers with concrete crew, mixer to pour, including pour time from trucks.	L1329-B-A		\$33.71	\$43.89	\$54.07 X X X X X X D Y
		5/4/2016			
Apprentice Rates:					
0 - 1,000 hours			\$28.62	\$36.25	\$43.89
1,001 - 2,000 hours			\$29.64	\$37.79	\$45.93
2,001 - 3,000 hours			\$30.66	\$39.31	\$47.97
3,001 - 4,000 hours			\$32.69	\$42.36	\$52.03
Class B Laborer - Cement gun nozzleman, blasters, miners, drillers, buster operators, layers of all non-metallic pipe	L1329-B-B		\$34.13	\$44.52	\$54.91 X X X X X X D Y
		5/4/2016			
Class C Laborer - caisson worker & airtrack	L1329-B-C		\$34.49	\$45.06	\$55.63 X X X X X X D Y
		5/4/2016			
Class E Laborer - digester, tanks & kilns	L1329-B-D		\$35.85	\$47.10	\$58.35 X X X X X X D Y
		5/4/2016			

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<u>Classification</u>		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					
=====						
Laborer - Hazardous						
Class A - performing work in conjunction with site preparation and other preliminary work prior to actual removal, handling, or containment of hazardous waste substances not requiring use of personal protective equipment required by state or federal regulations; or a laborer performing work in conjunction with the removal, handling, or containment of hazardous waste substances when use of personal protective equipment level "D" is required.	LHAZ-Z11-A		\$32.91	\$46.37	\$59.82	H H H H H H D Y
<i>Make up day allowed comment</i>		11/7/2014				
4 10s allowed M-Th or T-F; inclement weather makeup day Friday						
Apprentice Rates:						
0-1,000 work hours			\$27.93	\$38.90	\$49.86	
1,001-2,000 work hours			\$28.93	\$40.40	\$51.86	
2,001-3,000 work hours			\$29.92	\$41.88	\$53.84	
3,001-4,000 work hours			\$31.91	\$44.86	\$57.82	
Class B - performing work in conjunction with the removal, handling, or containment of hazardous waste substances when the use of personal protective equipment levels "A", "B" or "C" is required.	LHAZ-Z11-B		\$33.91	\$47.87	\$61.82	H H H H H H D Y
<i>Make up day allowed comment</i>		11/7/2014				
4 10s allowed M-Th or T-F; inclement weather makeup day Friday						
Apprentice Rates:						
0-1,000 work hours			\$28.68	\$40.02	\$51.36	
1,001-2,000 work hours			\$29.73	\$41.60	\$53.46	
2,001-3,000 work hours			\$30.77	\$43.16	\$55.54	
3,001-4,000 work hours			\$32.86	\$46.29	\$59.72	

Official Request #: 982

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Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					

Laborer Underground - Tunnel, Shaft & Caisson

Class I - Tunnel, shaft and caisson laborer, LAUCT-Z2-1 \$35.67 \$47.07 \$58.47 X X X X X X D Y
 dump man, shanty man, hog house tender,
 testing man (on gas), and watchman.

10/30/2014

Apprentice Rates:

0-1,000 work hours	\$30.52	\$39.35	\$48.17
1,001-2,000 work hours	\$31.55	\$40.90	\$50.23
2,001-3,000 work hours	\$32.58	\$42.44	\$52.29
3,001-4,000 work hours	\$34.64	\$45.53	\$56.41

Class II - Manhole, headwall, catch basin LAUCT-Z2-2 \$35.76 \$47.21 \$58.65 X X X X X X D Y
 builder, bricklayer tender, mortar man, material
 mixer, fence erector, and guard rail builder

10/30/2014

Apprentice Rates:

0-1,000 work hours	\$30.58	\$39.44	\$48.29
1,001-2,000 work hours	\$31.62	\$41.00	\$50.37
2,001-3,000 work hours	\$32.66	\$42.56	\$52.45
3,001-4,000 work hours	\$34.72	\$45.65	\$56.57

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

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10/30/2014

10/30/2014

Official 2016 Prevailing Wage Rates for State Funded Projects

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Contract must be awarded by: 11/9/2016

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<u>Classification</u>		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision								
Name	Description													
=====														
Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)	LAUCT-Z2-5		\$36.28	\$47.99	\$59.69	X	X	X	X	X	X	X	D	Y
		10/30/2014												
	Apprentice Rates:													
	0-1,000 work hours		\$30.98	\$40.04	\$49.09									
	1,001-2,000 work hours		\$32.04	\$41.63	\$51.21									
	2,001-3,000 work hours		\$33.10	\$43.22	\$53.33									
	3,001-4,000 work hours		\$35.22	\$46.40	\$57.57									
Class VI - Dynamite man and powder man.	LAUCT-Z2-6		\$36.59	\$48.45	\$60.31	X	X	X	X	X	X	X	D	Y
		10/30/2014												
	Apprentice Rates:													
	0-1,000 work hours		\$31.21	\$40.38	\$49.55									
	1,001-2,000 work hours		\$32.28	\$41.99	\$51.69									
	2,001-3,000 work hours		\$33.36	\$43.61	\$53.85									
	3,001-4,000 work hours		\$35.51	\$46.84	\$58.15									
Class VII - Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes and flagstones.	LAUCT-Z2-7		\$28.86	\$36.86	\$44.85	X	X	X	X	X	X	X	D	Y
		10/30/2014												
	Apprentice Rates:													
	0-1,000 work hours		\$25.41	\$31.68	\$37.95									
	1,001-2,000 work hours		\$26.10	\$32.72	\$39.33									
	2,001-3,000 work hours		\$26.79	\$33.76	\$40.71									
	3,001-4,000 work hours		\$28.17	\$35.82	\$43.47									

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

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Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision	
Name	Description						
Landscape Laborer							
	Landscape Specialist includes air, gas, and diesel equipment operator, skidsteer (or equivalent), lawn sprinkler installer on landscaping work where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintenance of landscape projects occurs. Sundays paid at time & one half. Holidays paid at double time.	LLAN-Z2-A	\$28.25	\$39.04	\$49.82	X X H X X X H D Y	
		10/13/2015					
	Skilled Landscape Laborer: small power tool operator, lawn sprinkler installers' tender, material mover, truck driver on when seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintaining of landscape projects occurs. Sundays paid at time & one half. Holidays paid at double time.	LLAN-Z2-B	\$24.05	\$32.74	\$41.42	X X H X X X H D Y	
		10/13/2015					
Operating Engineer - DIVER							
	Diver/Wet Tender/Tender/Rov Pilot/Rov Tender	GLF D	\$52.80	\$79.20	\$105.60	H H H H H H H D N	
		4/2/2014					
Operating Engineer - Marine Construction							
	Diver/Wet Tender, Engineer (hydraulic dredge)	GLF-1	\$65.00	\$84.85	\$104.70	X X H H H H H D Y	
		2/12/2014					
	<i>Make up day allowed</i>						
	<u>Subdivision of county</u>	all Great Lakes, islands therein, & connecting & tributary waters					
	Crane/Backhoe Operator, 70 ton or over Tug Operator, Mechanic/Welder, Assistant Engineer (hydraulic dredge), Leverman (hydraulic dredge), Diver Tender	GLF-2	\$63.50	\$82.60	\$101.70	X X H H H H H D Y	
		2/12/2014					
	Holiday pay = \$120.80 per hour, wages & <i>Make up day allowed</i>						
	<u>Subdivision of county</u>	All Great Lakes, islands therein, & connecting & tributary waters					

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Statewide

Official Rate Schedule

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Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

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Classification							
Name	Description	Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision	

Friction, Lattice Boom or Crane License	GLF-2B		\$64.50	\$84.10	\$103.70	X X H H H H H D Y
Certification						

Holiday pay = \$123.30

Make up day allowed

2/12/2014

Subdivision of county All Great Lakes, islands, therein, & connecting & tributary waters

Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs or more), Tug/Launch Operator, Loader, Dozer on Barge, Deck Machinery	GLF-3		\$59.30	\$76.30	\$93.30	X X H H H H H D Y
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Holiday pay = \$110.30 per hour, wages &

Make up day allowed

2/12/2014

Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters

Deck Equipment Operator, (Machineryman/Fireman), (4 equipment units or more), Off Road Trucks, Deck Hand, Tug Engineer, & Crane Maintenance 50 ton capacity and under or Backhoe 115,000 lbs or less, Assistant Tug Operator	GLF-4		\$53.60	\$67.75	\$81.90	X X H H H H H D Y
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Holiday pay = \$96.05 per hour, wages & fringes

Make up day allowed

2/12/2014

Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters

Operating Engineer General Construction & Underground

Crane 120' boom & jib	EN-324UP-120GU		\$51.45	\$65.86	\$80.26	X X H H H H H D N
<i>comment</i>		5/24/2016				
Double time after 12 hours Mon-Sat						
Crane 140' boom & jib	EN-324UP-140GU		\$51.70	\$66.23	\$80.76	X X H H H H H D N
<i>comment</i>		5/24/2016				
Double time after 12 hours Mon-Sat						
Crane with 400' or longer main boom & jib	EN-324UP-400GU		\$54.40	\$70.28	\$86.17	X X H H H H H D N
<i>comment</i>		5/24/2016				
Double time after 12 hours Mon-Sat						

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

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Official 2016 Prevailing Wage Rates for State Funded Projects

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Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				
Class A- Regular equipment operator, crane, dozer, front end loader, pumpcrete, squeeze crete, job mechanic, welder, concrete pump, excavator, milling & pulverizing machines, & scraper (self-propelled & tractor drawn).	EN-324UP-AGU		\$50.95	\$65.11	\$79.26 X X H H H H D N
<i>comment</i>		5/24/2016			
Double time after 12 hours Mon-Sat					
Apprentice Rates:					
1st 6 months			\$40.71	\$50.62	\$60.53
2nd 6 months			\$42.12	\$52.74	\$63.35
3rd 6 months			\$43.54	\$54.87	\$66.19
4th 6 months			\$44.96	\$57.00	\$69.03
5th 6 months			\$46.37	\$59.11	\$71.85
6th 6 months			\$47.79	\$61.24	\$74.69
Class B- Air-Trac Drill, boom truck (non-swing), concrete mixers, material hoist and tugger, pumps 6" and over, beltcrete, sweeping machine, trencher, head grease man, winches, well points and freeze systems	EN-324UP-BGU		\$47.70	\$60.23	\$72.76 X X H H H H D N
<i>comment</i>		5/24/2016			
Double time after 12 hours Mon-Sat					
Class C- Fork Truck, air compressor, conveyer, concrete saw, farm tractor(without attachments), generator, guard post driver, mulching machines, pumps under 6", welding machines,	EN-324UP-CGU		\$47.12	\$59.36	\$71.60 X X H H H H D N
<i>comment</i>		5/24/2016			
Double time after 12 hours Mon-Sat					
Class D- Oiler, fireman, heater operator, brock concrete breaker, elevators (other than passenger), end dump & skid steer	EN-324UP-DGU		\$46.18	\$57.95	\$69.72 X X H H H H D N
<i>comment</i>		5/24/2016			
Double time after 12 hours Mon-Sat					
Crane 220' boom & jib	EN-324UP-GU		\$51.95	\$66.61	\$81.26 X X H H H H D N
<i>comment</i>		5/24/2016			
Double time after 12 hours Mon-Sat					

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

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Classification Name Description	Last Updated	Straight Time and Hourly Half	a Double Time	Overtime Provision
=====	=====	=====	=====	=====
Mechanic w/ truck & tools <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-MGU 5/24/2016	\$52.45	\$67.36	\$82.26 X X H H H H H D N
Operating Engineer Steel Work				
Crane 120' boom & jib <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-120S 5/24/2016	\$51.85	\$66.46	\$81.06 X X H H H H H D Y
Crane 140' boom & jib <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-140S 7/8/2015	\$52.10	\$66.83	\$81.56 X X H H H H H D Y
Crane 220' boom & jib <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-220S 5/24/2016	\$52.35	\$67.21	\$82.06 X X H H H H H D Y
Crane with 300' boom & jib <i>Make up day allowed comment</i> Double time after 12 hours Mon-Sat	EN-324UP-300S 5/24/2016	\$54.07	\$69.79	\$85.50 X X H H H H H D Y
Crane with 400' boom & jib <i>Make up day allowed comment</i> Double time after 12 hours Mon-Sat	EN-324UP-400S 5/24/2016	\$55.79	\$72.37	\$88.95 X X H H H H H D Y
Compressor, Welder & Forklift <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-CWS 5/24/2016	\$48.10	\$60.83	\$73.56 X X H H H H H D Y
Mechanic w/ truck & tools <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-MS 5/24/2016	\$52.85	\$67.96	\$83.06 X X H H H H H D Y
Oiler & Fireman <i>comment</i> Double time after 12 hours Mon-Sat	EN-324UP-OFS 5/24/2016	\$46.80	\$58.88	\$70.96 X X H H H H H D Y

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Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision						
Name	Description											
Operator	EN-324UP-OS	5/24/2016	\$51.35	\$65.71	\$80.06	X	X	H	H	H	H	D Y
<i>comment</i>												
Double time after 12 hours Mon-Sat												

Apprentice Rates:

1st 6 months	\$40.99	\$51.04	\$61.09
2nd 6 months	\$42.26	\$52.95	\$63.63
3rd 6 months	\$43.87	\$55.36	\$66.85
4th 6 months	\$45.29	\$57.49	\$69.69
5th 6 months	\$46.73	\$59.65	\$72.57
6th 6 months	\$48.17	\$61.81	\$75.45

Painter

Painter	PT-1011	7/17/2015	\$31.25	\$41.01	\$50.76	H	H	H	H	H	H	D N
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Apprentice Rates:

1st 1000 hours	\$23.45	\$29.30	\$35.16
2nd 1000 hours	\$24.42	\$30.76	\$37.10
3rd 1000 hours	\$25.40	\$32.23	\$39.06
4th 1000 hours	\$26.37	\$33.68	\$41.00
5th 1000 hours	\$27.35	\$35.16	\$42.96
6th 1000 hours	\$28.32	\$36.61	\$44.90
7th 1000 hours	\$29.30	\$38.08	\$46.86
8th 1000 hours	\$30.27	\$39.54	\$48.80

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Requestor: MDEQ

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Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					

Bridge Painter (under 30 feet)	PT-1011B	8/28/2015	\$35.89	\$47.97	\$60.04	H H H H H H H D N
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Apprentice Rates:

1st 1,000 hours	\$26.23	\$33.48	\$40.72
2nd 1,000 hours	\$27.44	\$35.29	\$43.14
3rd 1,000 hours	\$28.64	\$37.09	\$45.54
4th 1,000 hours	\$29.85	\$38.90	\$47.96
5th 1,000 hours	\$31.06	\$40.72	\$50.38
6th 1,000 hours	\$32.27	\$42.54	\$52.80
7th 1,000 hours	\$33.48	\$44.35	\$55.22
8th 1,000 hours	\$34.68	\$46.15	\$57.62

Drywall Finisher, Soundproofing, & Plural Component Applicator	PT-1011-DF	7/17/2015	\$37.67	\$50.64	\$63.60	H H H H H H H D N
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Apprentice Rates:

2nd 1,000 hours	\$28.59	\$37.02	\$45.44
3rd 1,000 hours	\$29.89	\$38.96	\$48.04
4th 1,000 hours	\$31.19	\$40.92	\$50.64
5th 1,000 hours	\$32.48	\$42.85	\$53.22
6th 1,000 hours	\$33.78	\$44.80	\$55.82
7th 1,000 hours	\$35.08	\$46.75	\$58.42
8th 1,000 hours	\$36.37	\$48.68	\$61.00

Pipe and Manhole Rehab

General Laborer for rehab work or normal cleaning and cctv work-top man, scaffold man, CCTV assistant, jetter-vac assistant	TM247	4/17/2015	\$28.20	\$38.20		H H H H H H H H N
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Tap cutter/CCTV Tech/Grout Equipment Operator: unit driver and operator of CCTV; grouting equipment and tap cutting equipment	TM247-2	4/17/2015	\$32.70	\$44.95		H H H H H H H H N
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Official Request #: 982

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County: Statewide

Official Rate Schedule

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<u>Classification</u>		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					
=====						
CCTV Technician/Combo Unit Operator: unit driver and operator of cctv unit or combo unit in connection with normal cleaning and televising work	TM247-3	4/17/2015	\$31.45	\$43.07		H H H H H H H N
Boiler Operator: unit driver and operator of steam/water heater units and all ancillary equipment associated	TM247-4	4/17/2015	\$33.20	\$45.70		H H H H H H H N
Combo Unit driver & Jetter-Vac Operator	TM247-5	4/17/2015	\$33.20	\$45.70		H H H H H H H N
Pipe Bursting & Slip-lining Equipment Operator	TM247-6	4/17/2015	\$34.20	\$47.20		H H H H H H H N
Plasterer						
Plasterer	PL16UP	10/23/2012	\$38.71	\$51.63	\$64.54	H H H H H H H D N
Apprentice Rates:						
1st year			\$29.67	\$38.06	\$46.46	
2nd year			\$32.25	\$41.94	\$51.62	
3rd year			\$34.84	\$45.82	\$56.80	

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Time and Hourly	a Double Time	Overtime Provision
Name	Description				

Plumber & Pipefitter

Plumber & Pipefitter PL-111 \$47.61 \$71.42 \$95.22 H H H H H H D Y
 4 ten hour days may be worked only Monday-Thursday

Make up day allowed

7/30/2009

Apprentice Rates:

1st 6 months	\$23.96	\$35.94	\$47.92
2nd 6 months	\$25.44	\$38.16	\$50.88
3rd 6 months	\$35.32	\$52.98	\$70.64
4th 6 months	\$36.65	\$54.98	\$73.30
5th 6 months	\$37.99	\$56.98	\$75.98
6th 6 months	\$39.47	\$59.20	\$78.94
7th 6 months	\$40.80	\$61.20	\$81.60
8th 6 months	\$42.13	\$63.20	\$84.26
9th 6 months	\$43.46	\$65.19	\$86.92

Roofer

Commercial Roofer RO-149-UP \$28.23 \$36.56 \$44.88 X X X X X X D Y
 Make up day allowed

4/17/2015

Apprentice Rates:

Apprentice 1	\$20.84	\$25.96	\$31.08
Apprentice 2	\$21.67	\$27.17	\$32.67
Apprentice 3	\$22.48	\$28.37	\$34.26
Apprentice 4	\$23.29	\$29.56	\$35.82
Apprentice 5	\$24.09	\$30.72	\$37.36
Apprentice 6	\$24.90	\$31.91	\$38.93

Sewer Relining

Class I-Operator of audio visual CCTV system including remote in-ground cutter and other equipment used in conjunction with CCTV SR-I \$43.66 \$59.01 \$74.36 H H H H H H D N

11/24/2015

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Statewide

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					
=====						
Class II-Operator of hot water heaters and circulation system; water jetters; and vacuum and mechanical debris removal systems and those assisting.	SR-II		\$42.13	\$56.72	\$71.30	H H H H H H D N

11/24/2015

Sheet Metal Worker

Sheet Metal Worker	shm-7-5		\$51.59	\$65.60	\$79.60	H H H H D D D Y
4 10s allowed as consecutive days, M-Th						

Make up day allowed comment

11/5/2015

Friday

Apprentice Rates:

1st 6 months	\$27.84	\$34.14	\$40.44
2nd 6 months	\$29.88	\$36.88	\$43.88
3rd 6 months	\$31.93	\$39.64	\$47.34
4th 6 months	\$33.96	\$42.37	\$50.77
5th 6 months	\$36.01	\$45.12	\$54.22
6th 6 months	\$38.05	\$47.86	\$57.66
7th 6 months	\$40.09	\$50.60	\$61.10
8th 6 months	\$42.13	\$53.34	\$64.54

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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<u>Classification</u>		Last	Straight Time and	a Double	Overtime	
Name	Description	Updated	Hourly	Half	Time	Provision
=====						

Sprinkler Fitter

Sprinkler Fitter	SP 669		\$51.64	\$68.45	\$85.26	H H H H H H H D Y
Make up day allowed		6/24/2016				

Apprentice Rates:

Class 1	\$23.03	\$30.60	\$38.16
Class 2	\$24.71	\$33.12	\$41.52
Class 3	\$34.01	\$43.26	\$52.50
Class 4	\$35.69	\$45.78	\$55.86
Class 5	\$37.62	\$48.55	\$59.47
Class 6	\$39.30	\$51.07	\$62.83
Class 8	\$42.67	\$56.12	\$69.57
Class 9	\$44.35	\$58.64	\$72.93
Class 10	\$46.03	\$61.16	\$76.29
Class 7	\$40.99	\$53.60	\$66.21

Truck Driver

of all trucks of 8 cubic yd capacity or over	TM-RB2		\$44.10	\$48.81		H H H H H H H Y
		6/7/2016				

of all trucks of 8 cubic yard capacity or less (except dump trucks of 8 cubic yard capacity or over, tandem axle trucks, transit mix and semis, euclid type equipment, double bottoms and low boys)	TM-RB2A		\$44.00	\$48.66		H H H H H H H Y
		6/7/2016				

on euclid type equipment	TM-RB2B		\$44.25	\$49.04		H H H H H H H Y
		6/7/2016				

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Time and a Double	Overtime						
Name	Description		Hourly	Half	Time	Provision				
=====										
Underground Laborer Open Cut, Class I										
Construction Laborer	LAUC-Z5-1	10/30/2014	\$32.75	\$42.68	\$52.61	X	X	X	X	X
Apprentice Rates:										
0-1,000 work hours			\$28.35	\$36.08	\$43.81					
1,001-2,000 work hours			\$29.23	\$37.40	\$45.57					
2,001-3,000 work hours			\$30.11	\$38.72	\$47.33					
3,001-4,000 work hours			\$31.87	\$41.36	\$50.85					
Underground Laborer Open Cut, Class II										
Mortar and material mixer, concrete form man, signal man, well point man, manhole, headwall and catch basin builder, guard rail builders, headwall, seawall, breakwall, dock builder and fence erector.	LAUC-Z5-2	10/30/2014	\$32.89	\$42.89	\$52.89	X	X	X	X	X
Apprentice Rates:										
0-1,000 work hours			\$28.46	\$36.25	\$44.03					
1,001-2,000 work hours			\$29.34	\$37.57	\$45.79					
2,001-3,000 work hours			\$30.23	\$38.90	\$47.57					
3,001-4,000 work hours			\$32.00	\$41.56	\$51.11					
Underground Laborer Open Cut, Class III										
Air, gasoline and electric tool operator, vibrator operator, drillers, pump man, tar kettle operator, bracers, rodder, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars, etc.), cement finisher, welder, pipe jacking and boring man, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger man, and directional boring man.	LAUC-Z5-3	10/30/2014	\$33.02	\$43.09	\$53.15	X	X	X	X	X
Apprentice Rates:										
0-1,000 work hours			\$28.56	\$36.40	\$44.23					
1,001-2,000 work hours			\$29.45	\$37.74	\$46.01					
2,001-3,000 work hours			\$30.34	\$39.07	\$47.79					
3,001-4,000 work hours			\$32.13	\$41.76	\$51.37					

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

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Classification		Last Updated	Straight Time and Hourly	a Double Half Time	Overtime Provision
Name	Description				

Underground Laborer Open Cut, Class IV

Trench or excavating grade man. LAUC-Z5-4 10/30/2014 \$33.07 \$43.16 \$53.25 X X X X X X D Y

Apprentice Rates:

0-1,000 work hours	\$28.59	\$36.44	\$44.29
1,001-2,000 work hours	\$29.49	\$37.80	\$46.09
2,001-3,000 work hours	\$30.38	\$39.13	\$47.87
3,001-4,000 work hours	\$32.17	\$41.82	\$51.45

Underground Laborer Open Cut, Class V

Pipe Layer LAUC-Z5-5 10/30/2014 \$33.12 \$43.24 \$53.35 X X X X X X D Y

Apprentice Rates:

0-1,000 work hours	\$28.63	\$36.50	\$44.37
1,001-2,000 work hours	\$29.53	\$37.86	\$46.17
2,001-3,000 work hours	\$30.43	\$39.20	\$47.97
3,001-4,000 work hours	\$32.22	\$41.89	\$51.55

Underground Laborer Open Cut, Class VI

Grouting man, top man assistant, audio visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work & the installation and repair of water service pipe and appurtenances. LAUC-Z5-6 10/30/2014 \$30.50 \$39.31 \$48.11 X X X X X X D Y

Apprentice Rates:

0-1,000 work hours	\$26.66	\$33.55	\$40.43
1,001-2,000 work hours	\$27.43	\$34.70	\$41.97
2,001-3,000 work hours	\$28.20	\$35.86	\$43.51
3,001-4,000 work hours	\$29.73	\$38.16	\$46.57

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2016 Prevailing Wage Rates for State Funded Projects

Issue Date: 8/11/2016

Contract must be awarded by: 11/9/2016

Page 26 of 26

Classification		Last Updated	Straight Hourly	Time and Half	a Double Time	Overtime Provision
Name	Description					

Underground Laborer Open Cut, Class VII

Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes, flagstones etc.	LAUC-Z5-7	\$28.61	\$36.47	\$44.33	X	X	X	X	X	X	X	D	Y
---	-----------	---------	---------	---------	---	---	---	---	---	---	---	---	---

10/30/2014

Apprentice Rates:

0-1,000 work hours	\$25.25	\$31.44	\$37.61
1,001-2,000 work hours	\$25.92	\$32.44	\$38.95
2,001-3,000 work hours	\$26.59	\$33.44	\$40.29
3,001-4,000 work hours	\$27.94	\$35.47	\$42.99

Official Request #: 982

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

Project Number: 761/16108.SAR

County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

ATTACHMENT D

ANSWERS TO QUESTIONS

ATTACHMENT D

ANSWERS TO QUESTIONS

Q: Can the Hubbell Coal Dock property be used as a central staging area for all containers?

A: No, not for all containers. Until containers are characterized and can be manifested they shall not be transported over public roadways to the Hubbell Coal Dock property. This does not prohibit collecting all containers from the Hubbell Coal Dock and Mineral Building properties into a central area at the Coal Dock nor does it prohibit bringing all RCRA empty containers (i.e. containers that do not require further characterization) to the Hubbell Coal Dock property. Care shall be taken during waste management such that no property can be considered a Treatment/Storage/Disposal Facility or Transfer Station under Michigan's regulations.

Q: Can you send us a copy of the prevailing wages for these projects?

A: Refer to Attachment C.

Q: What size paper would the Figures need to be printed on to for the scale to be accurate?

A: 11" x 17". Hard copies were provided at the Pre-Bid Meeting.

Q: Is the contractor required to pay for any lab testing in addition to what has already been done or will the DEQ lab cover any of these costs?

A: The Contractor is required to pay for any additional testing that is required.

Q: What is the expected time frame for the work to be completed in?

A: MDEQ would like to complete all of the abandoned containers removals prior to winter this year. However, if funding limitations or other situations do not allow for completion in 2016, some of the work may continue in 2017. As noted in the Scope of Work, bids shall remain valid through 31 October 2017.

Q: Can sample content of like similar material be composited for waste characterization?

A: No, not for bidding purposes. If during implementation such efficiencies are identified they will be considered.

Q: Can you provide us with the lab results that have already been completed for table 2?

A: Yes, refer to Attachment E for the lab reports.

Q: On the bid table for the abandoned containers, should Pay items 11 read TSCA instead of non-TSCA because they are over 50 ppm PCBs?

A: No, the release of PCBs predates 1978. Therefore, while the waste is "presumed not to present an unreasonable risk of injury to health or the environment" per the MDEQ's *Determining TSCA Applicability at PCB-Contaminated Sites* flow chart, the PCB waste is regulated for disposal. The US Environmental Protection Agency (EPA) Regional Administrator may find that the site presents an unreasonable risk and direct a cleanup under TSCA but this has not happened. MDEQ guidance states that pre-1978 waste may be voluntarily cleaned up under 40 Code of Federal Regulations

(CFR) Part 761.61. This is what we plan to do and dispose of the material as PCB remediation waste in accordance with 40 CFR 761.61(b).

Q: On the bid table for the abandoned drums what is pay item 1 specifically to include?

A: Mobilization and demobilization of all materials, tools, labor, and equipment required to characterize containers and contents for disposal acceptance.

Q: On the bid table for the abandoned drums what is pay item 2 specifically to include?

A: Mobilization and demobilization of all materials, tools, labor, and equipment required jointly for Pay Items 4 through 15. If a specific piece of equipment or labor force is required for less than all of these Pay Items, include that cost in the respective Pay Item.

Q: How are these two pay item different?

A: Pay Item 1 is mobilization for container characterization. It is intended to be an initial mobilization to characterize the containers, in-place, at one or more of the properties. The actual characterization effort will be paid under Pay Item 4 on a per container basis for containers that are not empty. Pay Item 1 is not intended to include any excavation or movement of containers beyond the minimum amount necessary to characterize the container and contents. Pay Item 2 is the follow-up mobilization for actually retrieving the containers at one or more properties (depending on how many properties are awarded at a time) after the characterization results are known. It is meant to cover all mobilization and demobilization-related costs regardless of the number of containers that will be removed and disposed at a time. The actual removal, containing/bulking/overpacking, transportation, and disposal of the various containers should be under Pay Items 4 through 12. Three special cases have been identified where costs do not fit a general per container unit rate that could be applied across the project. These special cases are broken out as Pay Items 13 through 15. If a specific piece of equipment, tool, or labor force is required only for Pay Item 13, 14, or 15, that cost shall be included in Pay Item 13, 14, or 15, not Pay Item 2. Note that Pay Item 13 will need to occur during the first mobilization to the Hubbell Coal Dock property so the containers in the test pit area are available for characterization.

ATTACHMENT E

LAB REPORTS



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

17 September 2014

Work Order: 1408233

Price: \$4,694.00

Jeff Pincumbe

MDEQ-RRD-LANSING

525 W. Allegan Street

Lansing, MI 48909

RE: ABANDONED MINING WASTE-TORCH LAKE PCB

I certify that the analyses performed by the MDEQ Environmental Laboratory were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Sincerely,

George Krisztian

Laboratory Director



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

MDEQ-RRD-LANSING
525 W. Allegan Street
Lansing MI, 48909

Project: ABANDONED MINING WASTE-TORCH LAKE PCB
Site Code: 31000098
Project Manager: Jeff Pincumbe

Reported:
09/17/2014

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
CHLL-SB65-3"-9"	1408233-01	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB71 6-12"	1408233-02	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB72 3-9"	1408233-03	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB73 3-9"	1408233-04	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB135 0-6"	1408233-05	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB136 0-6"	1408233-06	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB129 0-6"	1408233-07	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-SB128 0-6"	1408233-08	Soil/Sediment	08/19/2014	08/22/2014	
CHLL-DM01	1408233-09	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-DM02	1408233-10	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB140-0-6"	1408233-11	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB141-0-6"	1408233-12	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB110-0-6"	1408233-13	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB109-0-6"	1408233-14	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB69-0-6"	1408233-15	Soil/Sediment	08/21/2014	08/22/2014	
CHLL-SB74R-0-6"	1408233-16	Soil/Sediment	08/21/2014	08/22/2014	
CHLL-SB100-0-6"	1408233-17	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB101-0-6"	1408233-18	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB102-0-6"	1408233-19	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB103-0-6"	1408233-20	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB104-0-6"	1408233-21	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB105-0-6"	1408233-22	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB106-0-6"	1408233-23	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB137-0-6"	1408233-24	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB138-0-6"	1408233-25	Soil/Sediment	08/20/2014	08/22/2014	
CHLL-SB139-0-6"	1408233-26	Soil/Sediment	08/20/2014	08/22/2014	



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Notes and Definitions

Y21	Reporting Limits (RL) raised due to matrix interference.
Y20	Reporting Limits (RL) raised due to matrix.
Y17	Probable petroleum product(s) present.
X3	Spike recovery is not applicable due to large target analyte concentration in the source sample.
T	Reported value is less than the reporting limit (RL). Result is estimated.
JA	Result is estimated due to multiple Aroclors present.
A12	Result is estimated due to inter-replicate sample analysis RSD > 10%.
A06	Result is estimated due to high continuing calibration standard criteria failure.
A03	Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.
ND	Indicates compound analyzed for but not detected
RL	Reporting Limit
NA	Not Applicable
dry	Sample results reported on a dry weight basis



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Client ID: CHLL-SB65-3"-9"

Lab ID: 1408233-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	67	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	T
11096-82-5	Aroclor 1260	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			54.0 %	30-150		09/03/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			55.1 %	30-150		09/03/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	94.3	0.1	%	1	08/25/14	B4H2511	2540 B	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB71 6-12"

Lab ID: 1408233-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
Surrogate: Decachlorobiphenyl		53.5 %	30-150			09/03/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene		62.9 %	30-150			09/03/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	88.5	0.1	%	1	08/25/14	B4H2511	2540 B	



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ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB72 3-9"

Lab ID: 1408233-03

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	93	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	JA, T
11096-82-5	Aroclor 1260	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	69	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	JA, T
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			54.6 %	30-150		09/03/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			61.3 %	30-150		09/03/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	90.2	0.1	%	1	08/25/14	B4H2511	2540 B	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB73 3-9"

Lab ID: 1408233-04

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
Surrogate: Decachlorobiphenyl		47.2 %		30-150		09/04/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene		66.0 %		30-150		09/04/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	93.7	0.1	%	1	08/25/14	B4H2511	2540 B	



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ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB135 0-6"

Lab ID: 1408233-05

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	82.5	0.1	%	1	08/25/14	B4H2511	2540 B	
57-12-5	Total Cyanide	0.62	0.12	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	7.7	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	64	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	3700	100	mg/kg dry	1000	09/05/14	B4H2701	6020/200.8	
7439-92-1	Lead	22	1.0	mg/kg dry	10	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	260	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	



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ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB136 0-6"

Lab ID: 1408233-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	74.2	0.1	%	1	08/25/14	B4H2511	2540 B	
57-12-5	Total Cyanide	0.20	0.13	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	4.1	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	49	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	560	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7439-92-1	Lead	60	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	230	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	



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ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB129 0-6"

Lab ID: 1408233-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	90.9	0.1	%	1	08/25/14	B4H2511	2540 B	
57-12-5	Total Cyanide	ND	0.11	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	1.2	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	29	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	110	1.0	mg/kg dry	10	09/08/14	B4H2701	6020/200.8	
7439-92-1	Lead	12	1.0	mg/kg dry	10	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	140	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	



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ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB128 0-6"

Lab ID: 1408233-08

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	90.2	0.1	%	1	08/25/14	B4H2511	2540 B	
57-12-5	Total Cyanide	ND	0.11	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	1.4	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	24	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	170	1.0	mg/kg dry	10	09/08/14	B4H2701	6020/200.8	
7439-92-1	Lead	11	1.0	mg/kg dry	10	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	150	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	



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ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-DM01

Lab ID: 1408233-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Semivolatiles									See note Y17, Y20
91-57-6	2-Methylnaphthalene	ND	600	ug/kg dry	1	09/09/14	B4H2718	8270	
83-32-9	Acenaphthene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
208-96-8	Acenaphthylene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
120-12-7	Anthracene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
56-55-3	Benz[a]anthracene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
50-32-8	Benzo[a]pyrene	ND	480	ug/kg dry	1	09/09/14	B4H2718	8270	
205-99-2	Benzo[b]fluoranthene	ND	480	ug/kg dry	1	09/09/14	B4H2718	8270	
191-24-2	Benzo[g,h,i]perylene	ND	480	ug/kg dry	1	09/09/14	B4H2718	8270	
207-08-9	Benzo[k]fluoranthene	ND	480	ug/kg dry	1	09/09/14	B4H2718	8270	
218-01-9	Chrysene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
53-70-3	Dibenz[a,h]anthracene	ND	480	ug/kg dry	1	09/09/14	B4H2718	8270	
206-44-0	Fluoranthene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
86-73-7	Fluorene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	480	ug/kg dry	1	09/09/14	B4H2718	8270	
91-20-3	Naphthalene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
85-01-8	Phenanthrene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
129-00-0	Pyrene	ND	240	ug/kg dry	1	09/09/14	B4H2718	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			63.2 %	32.9-115		09/09/14	B4H2718	8270	
<i>Surrogate: Nitrobenzene-d5</i>			59.9 %	31.8-115		09/09/14	B4H2718	8270	
<i>Surrogate: p-Terphenyl-d14</i>			74.7 %	38.5-115		09/09/14	B4H2718	8270	
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	470	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	JA
11096-82-5	Aroclor 1260	170	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	JA
37324-23-5	Aroclor 1262	ND	180	ug/kg dry	1	09/03/14	B4H2807	8081/8082	Y21
11100-14-4	Aroclor 1268	ND	120	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			47.6 %	30-150		09/03/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			72.3 %	30-150		09/03/14	B4H2807	8081/8082	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-DM01

Lab ID: 1408233-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	83.9	0.1	%	1	08/25/14	B4H2511	2540 B	
57-12-5	Total Cyanide	ND	0.12	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	
Inorganics-Metals									
7429-90-5	Aluminium	460	10	mg/kg dry	100	09/05/14	B4H2701	6020/200.8	
7440-36-0	Antimony	1900	30	mg/kg dry	1000	09/09/14	B4I0202	6020/200.8	
7440-38-2	Arsenic	51	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	10000	1000	mg/kg dry	10000	09/08/14	B4H2701	6020/200.8	
7440-43-9	Cadmium	50	20	mg/kg dry	1000	09/08/14	B4H2701	6020/200.8	A12
7440-47-3	Chromium	32	2.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-48-4	Cobalt	11	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	10000	100	mg/kg dry	1000	09/08/14	B4H2701	6020/200.8	
7439-89-6	Iron	160000	50	mg/kg dry	100	09/10/14	B4H2701	6010/200.7	
7439-92-1	Lead	230000	1000	mg/kg dry	10000	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	500	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7439-97-6	Mercury	1.1	0.06	mg/kg dry	1	08/28/14	B4H2614	7471/245.5	
7440-02-0	Nickel	140	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7782-49-2	Selenium	8.1	0.2	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-22-4	Silver	370	10	mg/kg dry	100	09/12/14	B4I1102	6020/200.8	
7440-66-6	Zinc	2200	100	mg/kg dry	1000	09/08/14	B4H2701	6020/200.8	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-DM02

Lab ID: 1408233-10

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-Semivolatiles									See note Y17, Y20
91-57-6	2-Methylnaphthalene	ND	570	ug/kg dry	1	09/09/14	B4H2718	8270	
83-32-9	Acenaphthene	ND	230	ug/kg dry	1	09/09/14	B4H2718	8270	
208-96-8	Acenaphthylene	ND	230	ug/kg dry	1	09/09/14	B4H2718	8270	
120-12-7	Anthracene	ND	230	ug/kg dry	1	09/09/14	B4H2718	8270	
56-55-3	Benz[a]anthracene	350	230	ug/kg dry	1	09/09/14	B4H2718	8270	
50-32-8	Benzo[a]pyrene	ND	450	ug/kg dry	1	09/09/14	B4H2718	8270	
205-99-2	Benzo[b]fluoranthene	560	450	ug/kg dry	1	09/09/14	B4H2718	8270	
191-24-2	Benzo[g,h,i]perylene	ND	450	ug/kg dry	1	09/09/14	B4H2718	8270	
207-08-9	Benzo[k]fluoranthene	ND	450	ug/kg dry	1	09/09/14	B4H2718	8270	
218-01-9	Chrysene	460	230	ug/kg dry	1	09/09/14	B4H2718	8270	
53-70-3	Dibenz[a,h]anthracene	ND	450	ug/kg dry	1	09/09/14	B4H2718	8270	
206-44-0	Fluoranthene	810	230	ug/kg dry	1	09/09/14	B4H2718	8270	
86-73-7	Fluorene	ND	230	ug/kg dry	1	09/09/14	B4H2718	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	450	ug/kg dry	1	09/09/14	B4H2718	8270	
91-20-3	Naphthalene	ND	230	ug/kg dry	1	09/09/14	B4H2718	8270	
85-01-8	Phenanthrene	570	230	ug/kg dry	1	09/09/14	B4H2718	8270	
129-00-0	Pyrene	670	230	ug/kg dry	1	09/09/14	B4H2718	8270	
Surrogate: 2-Fluorobiphenyl			65.3 %	32.9-115		09/09/14	B4H2718	8270	
Surrogate: Nitrobenzene-d5			60.4 %	31.8-115		09/09/14	B4H2718	8270	
Surrogate: p-Terphenyl-d14			74.6 %	38.5-115		09/09/14	B4H2718	8270	
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	200	ug/kg dry	1	09/03/14	B4H2807	8081/8082	Y21
11097-69-1	Aroclor 1254	400	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	JA
11096-82-5	Aroclor 1260	ND	530	ug/kg dry	1	09/03/14	B4H2807	8081/8082	Y21
37324-23-5	Aroclor 1262	520	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	JA
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
Surrogate: Decachlorobiphenyl			57.9 %	30-150		09/03/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene			72.5 %	30-150		09/03/14	B4H2807	8081/8082	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-DM02

Lab ID: 1408233-10

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	88.1	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.11	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	
Inorganics-Metals									
7429-90-5	Aluminium	5500	10	mg/kg dry	100	09/05/14	B4H2701	6020/200.8	
7440-36-0	Antimony	590	30	mg/kg dry	1000	09/09/14	B4I0202	6020/200.8	
7440-38-2	Arsenic	65	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	3800	1000	mg/kg dry	10000	09/08/14	B4H2701	6020/200.8	
7440-43-9	Cadmium	14	2.0	mg/kg dry	100	09/05/14	B4H2701	6020/200.8	
7440-47-3	Chromium	47	2.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-48-4	Cobalt	9.9	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	23000	100	mg/kg dry	1000	09/08/14	B4H2701	6020/200.8	
7439-89-6	Iron	67000	50	mg/kg dry	100	09/10/14	B4H2701	6010/200.7	
7439-92-1	Lead	110000	1000	mg/kg dry	10000	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	350	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7439-97-6	Mercury	0.6	0.06	mg/kg dry	1	08/28/14	B4H2615	7471/245.5	
7440-02-0	Nickel	91	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7782-49-2	Selenium	5.4	0.2	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-22-4	Silver	34	1.0	mg/kg dry	100	09/05/14	B4H2701	6020/200.8	
7440-66-6	Zinc	3000	100	mg/kg dry	1000	09/08/14	B4H2701	6020/200.8	



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TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB140-0-6"

Lab ID: 1408233-11

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	66.0	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.15	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	
Inorganics-Metals									
7440-38-2	Arsenic	5.8	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	79	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-50-8	Copper	1200	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7439-92-1	Lead	230	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	190	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	



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Client ID: CHLL-SB141-0-6"

Lab ID: 1408233-12

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	59.1	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.17	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	10	0.5	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	
7440-39-3	Barium	200	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7440-50-8	Copper	2300	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7439-92-1	Lead	90	10	mg/kg dry	100	09/08/14	B4H2701	6020/200.8	
7439-96-5	Manganese	400	1.0	mg/kg dry	10	09/05/14	B4H2701	6020/200.8	



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Client ID: CHLL-SB110-0-6"

Lab ID: 1408233-13

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	90.8	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.11	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	
Inorganics-Metals									
7440-38-2	Arsenic	0.8	0.5	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7440-39-3	Barium	17	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7440-50-8	Copper	65	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7439-92-1	Lead	3.3	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7439-96-5	Manganese	98	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	



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Client ID: CHLL-SB109-0-6"

Lab ID: 1408233-14

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	91.5	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.11	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	9.2	0.5	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7440-39-3	Barium	43	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7440-50-8	Copper	3600	100	mg/kg dry	1000	09/10/14	B4I0201	6020/200.8	
7439-92-1	Lead	170	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	
7439-96-5	Manganese	380	1.0	mg/kg dry	10	09/09/14	B4I0201	6020/200.8	



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Client ID: CHLL-SB69-0-6"

Lab ID: 1408233-15

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	150	ug/kg dry	1	09/04/14	B4H2807	8081/8082	Y21
11097-69-1	Aroclor 1254	360	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	JA
11096-82-5	Aroclor 1260	ND	240	ug/kg dry	1	09/04/14	B4H2807	8081/8082	Y21
37324-23-5	Aroclor 1262	240	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	JA
11100-14-4	Aroclor 1268	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			68.6 %	30-150		09/04/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			72.4 %	30-150		09/04/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	86.8	0.1	%	1	08/25/14	B4H2512	2540 B	



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TEL: (517) 335-9800
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Client ID: CHLL-SB74R-0-6"

Lab ID: 1408233-16

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	280	ug/kg dry	1	09/04/14	B4H2807	8081/8082	Y21
11097-69-1	Aroclor 1254	510	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	JA
11096-82-5	Aroclor 1260	ND	320	ug/kg dry	1	09/04/14	B4H2807	8081/8082	Y21
37324-23-5	Aroclor 1262	310	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	JA
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			57.1 %	30-150		09/04/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			65.3 %	30-150		09/04/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	78.8	0.1	%	1	08/25/14	B4H2512	2540 B	



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Client ID: CHLL-SB100-0-6"

Lab ID: 1408233-17

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	44	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	T
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			56.6 %	30-150		09/11/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			64.8 %	30-150		09/11/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	87.4	0.1	%	1	08/25/14	B4H2512	2540 B	



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Client ID: CHLL-SB101-0-6"

Lab ID: 1408233-18

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			51.0 %	30-150		09/11/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			60.0 %	30-150		09/11/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	74.5	0.1	%	1	08/25/14	B4H2512	2540 B	



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TEL: (517) 335-9800
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Client ID: CHLL-SB102-0-6"

Lab ID: 1408233-19

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			60.2 %		30-150	09/11/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			64.5 %		30-150	09/11/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	83.6	0.1	%	1	08/25/14	B4H2512	2540 B	



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Client ID: CHLL-SB103-0-6"

Lab ID: 1408233-20

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	120	ug/kg dry	1	09/04/14	B4H2807	8081/8082	
Surrogate: Decachlorobiphenyl		68.6 %		30-150		09/04/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene		78.5 %		30-150		09/04/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	80.3	0.1	%	1	08/25/14	B4H2512	2540 B	



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Client ID: CHLL-SB104-0-6"

Lab ID: 1408233-21

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	94	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	T
11100-14-4	Aroclor 1268	ND	170	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			52.5 %	30-150		09/11/14	B4H2807	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			59.4 %	30-150		09/11/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	60.6	0.1	%	1	08/25/14	B4H2512	2540 B	



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Client ID: CHLL-SB105-0-6"

Lab ID: 1408233-22

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	120	ug/kg dry	1	09/11/14	B4H2807	8081/8082	
Surrogate: Decachlorobiphenyl		63.6 %		30-150		09/11/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene		67.4 %		30-150		09/11/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	82.2	0.1	%	1	08/25/14	B4H2512	2540 B	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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Client ID: CHLL-SB106-0-6"

Lab ID: 1408233-23

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs as Aroclors									
12674-11-2	Aroclor 1016	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11104-28-2	Aroclor 1221	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11141-16-5	Aroclor 1232	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
53469-21-9	Aroclor 1242	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
12672-29-6	Aroclor 1248	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11097-69-1	Aroclor 1254	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11096-82-5	Aroclor 1260	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
37324-23-5	Aroclor 1262	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
11100-14-4	Aroclor 1268	ND	110	ug/kg dry	1	09/03/14	B4H2807	8081/8082	
Surrogate: Decachlorobiphenyl		59.3 %	30-150			09/03/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene		61.9 %	30-150			09/03/14	B4H2807	8081/8082	
Inorganics-General Chemistry									
TS	% Total Solids	88.8	0.1	%	1	08/25/14	B4H2512	2540 B	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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Client ID: CHLL-SB137-0-6"

Lab ID: 1408233-24

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	75.1	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.13	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	18	5.0	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7440-39-3	Barium	48	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7440-50-8	Copper	330	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7439-92-1	Lead	42	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7439-96-5	Manganese	150	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB138-0-6"

Lab ID: 1408233-25

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
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Inorganics-General Chemistry

TS	% Total Solids	83.5	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.12	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	

Inorganics-Metals

7440-38-2	Arsenic	92	5.0	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7440-39-3	Barium	160	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7440-50-8	Copper	570	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7439-92-1	Lead	39	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7439-96-5	Manganese	40	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Client ID: CHLL-SB139-0-6"

Lab ID: 1408233-26

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	84.2	0.1	%	1	08/25/14	B4H2512	2540 B	
57-12-5	Total Cyanide	ND	0.12	mg/kg dry	1	08/27/14	B4H2517	ASTM D 7511-09	
Inorganics-Metals									
7440-38-2	Arsenic	9.3	5.0	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7440-39-3	Barium	77	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7440-50-8	Copper	1200	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7439-92-1	Lead	85	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	
7439-96-5	Manganese	110	10	mg/kg dry	100	09/04/14	B4I0208	6020/200.8	

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Page 1 of 3

ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET

Lab Work Order Number

Project Name

Matrix

1408233

Abandoned Mining Waste- Torch Lake PCB

SOIL/SEDIMENT

Site Code/Project Number

AY

CC Email 1 to send additional reports to

Project TAT Days

Sample Collector

31000098

14

shireyb

Keranen & Liebau

Dept-Division-District

Index

CC Email 2 to send additional reports to

Project Due Date

Sample Collector Phone

RRD-PSS-GSU

94251

j.binkley@westonsolutions.com

906 337-0359

State Project Manager

PCA

CC Email 3 to send additional reports to

Accept Analysis hold time codes: Yes/No

Contract Firm

Jeff Pincumbe

30708

Keranena C michigan.gov

No

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

pincumbej

1000000

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

517-335-6418

04

906 523 5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL- SB 65 3'-9"	8/19/14	1430	1	
2	02 CHLL- SB 71 6-12"		1535	1	
3	03 CHLL- SB 72 3-9"		1520	1	
4	04 CHLL- SB 73 3-9"		1510	1	
5	05 CHLL- SB 135 0-6"		1700	1	
6	06 CHLL- SB 136 0-6"		1710	1	
7	07 CHLL- SB 129 0-6"		1720	1	
8	08 CHLL- SB 128 0-6"		1730	1	
9	09 CHLL- DM01	8/20/14	0955	1	
10	10 CHLL- DM02	8/20/14	1000	1	

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acids Volatiles - Full list 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 OS - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library Search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO/ORO 1 2 3 4 5 6 7 8 9 10	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10	GS - General Chemistry Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Amy Keranen DE&R	JEFF PINCUMBE	8/21/14 11a
	Signature: [Signature]	[Signature]	
	Print Name & Org. JEFF PINCUMBE	Melissa Smith	8/22/14 0950
	Signature: [Signature]	[Signature]	
	Print Name & Org. [Signature]		
	Signature: [Signature]		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Page 2 of 3

ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET

Lab Work Order Number

Project Name

Matrix

1408233

Abandoned Mining Waste- Torch Lake PCB

SOIL/SEDIMENT

Site Code/Project Number

AY

CC Email 1 to send additional reports to

Project TAT Days

Sample Collector

31000098

14

shireyb

Dept-Division-District

Inst

CC Email 2 to send additional reports to

Project Due Date

Sample Collector Phone

RRD-PSS-GSU

44251

j.binkley@westonsolutions.com

State Project Manager

PCA

CC Email 3 to send additional reports to

Contract Firm

Jeff Pincumbe

30708

Keranena@michigan.gov

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Accept Analysis hold time codes: Yes/No

Contract Firm Primary Contact

pincumbej

100081

NO

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

517-335-6418

14

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHLL- SB140-0-6"	8/20/14	1418	1	
2	CHLL- SB141-0-6"	8/20/14	1455	1	
3	CHLL- SB110-0-6"	8/20/14	1530	1	
4	CHLL- SB109-0-6"	8/20/14	1535	1	
5	CHLL- SB69-0-6"	8/21/14		1	
6	CHLL- SB74R-0-6"	8/21/14		1	
7	CHLL-				
8	CHLL-				
9	CHLL-				
10	CHLL-				

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acidic Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 OS - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library Search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO / ORO 1 2 3 4 5 6 7 8 9 10	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Bc,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10	GS - General Chemistry Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Amy Keran	JEFF PINCUMBE	8/21/14 11a
	Signature: [Signature]	[Signature]	
	Print Name & Org. JEFF PINCUMBE	Mike [Signature]	8/22/14 0950
	Signature: [Signature]	[Signature]	
	Print Name & Org. [Signature]		
	Signature: [Signature]		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Page 3 of 3

ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET

Lab Work Order Number 1408233	Project Name Abandoned Mining Waste- Torch Lake PCB	Matrix SOIL/SEDIMENT
Site Code/Project Number 31000098	AY 14	CC Email 1 to send additional reports to shireyb
Dept./Division-District RRD-PSS-GSU	Index 44251	CC Email 2 to send additional reports to G. Binkley @ westonsolutions.com
State Project Manager Jeff Pincumbe	PCA 3070 B	CC Email 3 to send additional reports to Kieranena @ michigan.gov
State Project Manager Email pincumbej	Project 100081	Overflow Lab Choice 1 No
State Project Manager Phone 517-335-6418	Phase 14	Overflow Lab Choice 2 No
		Contract Firm Western Solutions
		Contract Firm Primary Contact Jeff Binkley
		Primary Contact Phone 906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHLL- SB100-0-6"	8/20/14	1035	1	
2	CHLL- SB101-0-6"		1040	1	
3	CHLL- SB102-0-6"		0930	1	
4	CHLL- SB103-0-6"		0855	1	
5	CHLL- SB104-0-6"		1015	1	
6	CHLL- SB105-0-6"		1005	1	
7	CHLL- SB106-0-6"		0950	1	
8	CHLL- SB137-0-6"		1430	1	
9	CHLL- SB138-0-6"		1422	1	
10	CHLL- SB139-0-6"		1400	1	

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acidic Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 OS - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library Search - SemVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO /ORO 1 2 3 4 5 6 7 8 9 10	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Bi,Cd,Cr,Cu,Fe,Pb,Mn,Mg,Mo,Ni,Se,Ag,Ti,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10	GS - General Chemistry Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Amy Kerana	JEFF PINCUMBE	8/21/14
	Signature: <i>[Signature]</i>	<i>[Signature]</i>	
	Print Name & Org. JEFF PINCUMBE	Heather Smith	8/22/14 0950
	Signature: <i>[Signature]</i>	<i>[Signature]</i>	
	Print Name & Org.		
	Signature:		

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-43288-1

Client Project/Site: Abandoned Mining Waste-Torch Lake

For:

Michigan Dept of Environmental Quality

Constitution Hall

525 W. Allegan Street

Lansing, Michigan 48909

Attn: Amy Keranen



Authorized for release by:

10/28/2014 5:49:27 PM

Kris Brooks, Project Manager II

(330)966-9790

kris.brooks@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Detection Summary	8
Client Sample Results	9
Surrogate Summary	10
QC Sample Results	11
QC Association Summary	16
Lab Chronicle	18
Certification Summary	19
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Definitions/Glossary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Job ID: 240-43288-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Michigan Dept of Environmental Quality

Project: Abandoned Mining Waste-Torch Lake

Report Number: 240-43288-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The sample was received on 10/18/2014 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8° C.

TCLP VOLATILE ORGANIC COMPOUNDS (GCMS)

Sample CHLL-DRUMWC-101514 (240-43288-1) was analyzed for TCLP volatile organic compounds (GCMS) in accordance with EPA SW-846 Methods 1311/8260B. The samples were leached on 10/21/2014 and analyzed on 10/22/2014.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP METALS (ICP)

Sample CHLL-DRUMWC-101514 (240-43288-1) was analyzed for TCLP metals (ICP) in accordance with EPA SW-846 Methods 1311/6010B. The samples were leached on 10/21/2014, prepared on 10/22/2014 and analyzed on 10/23/2014.

Barium and Chromium were detected in method blank LB 240-152646/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Case Narrative

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Job ID: 240-43288-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Lead failed the recovery criteria low for the MS of sample CHLL-DRUMWC-101514MS (240-43288-1) in batch 240-152967.

Refer to the QC report for details.

Sample CHLL-DRUMWC-101514 (240-43288-1)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP MERCURY

Sample CHLL-DRUMWC-101514 (240-43288-1) was analyzed for TCLP mercury in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 10/21/2014, prepared on 10/22/2014 and analyzed on 10/25/2014.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE

Sample CHLL-DRUMWC-101514 (240-43288-1) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 10/22/2014.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFIDE

Sample CHLL-DRUMWC-101514 (240-43288-1) was analyzed for sulfide in accordance with EPA SW-846 Method 9034. The samples were prepared and analyzed on 10/22/2014.

Sulfide failed the recovery criteria low for the MS/MSD of sample CHLL-DRUMWC-101514MS/MSD (240-43288-1) in batch 240-152784. Refer to the QC report for details.

The matrix spike/matrix spike duplicate (MS/MSD) recoveries for batch 152784 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Sample CHLL-DRUMWC-101514 (240-43288-1) was analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 10/21/2014.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
6010B	Metals (ICP)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CAN
Moisture	Percent Moisture	EPA	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-43288-1	CHLL-DRUMWC-101514	Solid	10/15/14 15:50	10/18/14 09:30

Detection Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Client Sample ID: CHLL-DRUMWC-101514

Lab Sample ID: 240-43288-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0076	J	0.50	0.0029	mg/L	1		6010B	TCLP
Barium	27	B	10	0.10	mg/L	100		6010B	TCLP
Cadmium	0.070	J	0.10	0.00014	mg/L	1		6010B	TCLP
Chromium	0.0018	J B	0.50	0.00055	mg/L	1		6010B	TCLP
Lead	800		50	0.19	mg/L	100		6010B	TCLP
Selenium	0.0077	J	0.25	0.0040	mg/L	1		6010B	TCLP
Silver	0.0036	J	0.50	0.00092	mg/L	1		6010B	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Client Sample ID: CHLL-DRUMWC-101514

Lab Sample ID: 240-43288-1

Date Collected: 10/15/14 15:50

Matrix: Solid

Date Received: 10/18/14 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.0095	mg/L			10/22/14 18:12	1
1,2-Dichloroethane	ND		0.025	0.011	mg/L			10/22/14 18:12	1
2-Butanone (MEK)	ND		0.25	0.029	mg/L			10/22/14 18:12	1
Benzene	ND		0.025	0.0065	mg/L			10/22/14 18:12	1
Carbon tetrachloride	ND		0.025	0.0065	mg/L			10/22/14 18:12	1
Chlorobenzene	ND		0.025	0.0075	mg/L			10/22/14 18:12	1
Chloroform	ND		0.025	0.0080	mg/L			10/22/14 18:12	1
Tetrachloroethene	ND		0.025	0.015	mg/L			10/22/14 18:12	1
Trichloroethene	ND		0.025	0.0085	mg/L			10/22/14 18:12	1
Vinyl chloride	ND		0.025	0.011	mg/L			10/22/14 18:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 121		10/22/14 18:12	1
4-Bromofluorobenzene (Surr)	78		70 - 124		10/22/14 18:12	1
Toluene-d8 (Surr)	86		80 - 120		10/22/14 18:12	1
Dibromofluoromethane (Surr)	89		80 - 128		10/22/14 18:12	1

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0076	J	0.50	0.0029	mg/L		10/22/14 10:06	10/23/14 12:03	1
Barium	27	B	10	0.10	mg/L		10/22/14 10:06	10/23/14 15:54	100
Cadmium	0.070	J	0.10	0.00014	mg/L		10/22/14 10:06	10/23/14 12:03	1
Chromium	0.0018	J B	0.50	0.00055	mg/L		10/22/14 10:06	10/23/14 12:03	1
Lead	800		50	0.19	mg/L		10/22/14 10:06	10/23/14 15:54	100
Selenium	0.0077	J	0.25	0.0040	mg/L		10/22/14 10:06	10/23/14 12:03	1
Silver	0.0036	J	0.50	0.00092	mg/L		10/22/14 10:06	10/23/14 12:03	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.000090	mg/L		10/22/14 10:12	10/25/14 11:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.60	0.36	mg/Kg	☼	10/22/14 11:11	10/22/14 13:39	1
Sulfide	ND		36	27	mg/Kg	☼	10/22/14 07:53	10/22/14 07:53	1
Percent Solids	83		0.10	0.10	%			10/21/14 09:17	1
Percent Moisture	17		0.10	0.10	%			10/21/14 09:17	1

TestAmerica Canton

Surrogate Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	12DCE (80-121)	BFB (70-124)	TOL (80-120)	DBFM (80-128)				
LCS 240-152831/8	Lab Control Sample	93	84	92	90				
Surrogate Legend									
12DCE = 1,2-Dichloroethane-d4 (Surr)									
BFB = 4-Bromofluorobenzene (Surr)									
TOL = Toluene-d8 (Surr)									
DBFM = Dibromofluoromethane (Surr)									

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	12DCE (80-121)	BFB (70-124)	TOL (80-120)	DBFM (80-128)				
240-43288-1	CHLL-DRUMWC-101514	92	78	86	89				
LB 240-152648/1-A MB	Method Blank	96	81	88	92				
Surrogate Legend									
12DCE = 1,2-Dichloroethane-d4 (Surr)									
BFB = 4-Bromofluorobenzene (Surr)									
TOL = Toluene-d8 (Surr)									
DBFM = Dibromofluoromethane (Surr)									

QC Sample Results

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 240-152831/8

Matrix: Solid

Analysis Batch: 152831

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.00	0.994		mg/L		99	71 - 133
1,2-Dichloroethane	1.00	1.06		mg/L		106	80 - 120
2-Butanone (MEK)	2.00	1.84		mg/L		92	49 - 120
Benzene	1.00	1.08		mg/L		108	80 - 120
Carbon tetrachloride	1.00	0.899		mg/L		90	54 - 122
Chlorobenzene	1.00	0.984		mg/L		98	80 - 120
Chloroform	1.00	1.05		mg/L		105	80 - 123
Tetrachloroethene	1.00	0.959		mg/L		96	79 - 134
Trichloroethene	1.00	1.08		mg/L		108	78 - 130
Vinyl chloride	1.00	0.900		mg/L		90	56 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		80 - 121
4-Bromofluorobenzene (Surr)	84		70 - 124
Toluene-d8 (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	90		80 - 128

Lab Sample ID: LB 240-152648/1-A MB

Matrix: Solid

Analysis Batch: 152831

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.025	0.0095	mg/L			10/22/14 17:27	1
1,2-Dichloroethane	ND		0.025	0.011	mg/L			10/22/14 17:27	1
2-Butanone (MEK)	ND		0.25	0.029	mg/L			10/22/14 17:27	1
Benzene	ND		0.025	0.0065	mg/L			10/22/14 17:27	1
Carbon tetrachloride	ND		0.025	0.0065	mg/L			10/22/14 17:27	1
Chlorobenzene	ND		0.025	0.0075	mg/L			10/22/14 17:27	1
Chloroform	ND		0.025	0.0080	mg/L			10/22/14 17:27	1
Tetrachloroethene	ND		0.025	0.015	mg/L			10/22/14 17:27	1
Trichloroethene	ND		0.025	0.0085	mg/L			10/22/14 17:27	1
Vinyl chloride	ND		0.025	0.011	mg/L			10/22/14 17:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 121		10/22/14 17:27	1
4-Bromofluorobenzene (Surr)	81		70 - 124		10/22/14 17:27	1
Toluene-d8 (Surr)	88		80 - 120		10/22/14 17:27	1
Dibromofluoromethane (Surr)	92		80 - 128		10/22/14 17:27	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-152752/2-A

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152752

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0029	mg/L		10/22/14 10:06	10/23/14 11:47	1

TestAmerica Canton

QC Sample Results

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 240-152752/2-A

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152752

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.10	0.0010	mg/L		10/22/14 10:06	10/23/14 11:47	1
Cadmium	ND		0.10	0.00014	mg/L		10/22/14 10:06	10/23/14 11:47	1
Chromium	ND		0.50	0.00055	mg/L		10/22/14 10:06	10/23/14 11:47	1
Lead	ND		0.50	0.0019	mg/L		10/22/14 10:06	10/23/14 11:47	1
Selenium	ND		0.25	0.0040	mg/L		10/22/14 10:06	10/23/14 11:47	1
Silver	ND		0.50	0.00092	mg/L		10/22/14 10:06	10/23/14 11:47	1

Lab Sample ID: LCS 240-152752/3-A

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 152752

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.18		mg/L		109	50 - 150
Barium	2.00	1.98		mg/L		99	50 - 150
Cadmium	0.0500	0.0526	J	mg/L		105	50 - 150
Chromium	0.200	0.200	J	mg/L		100	50 - 150
Lead	0.500	0.450	J	mg/L		90	50 - 150
Selenium	2.00	2.27		mg/L		113	50 - 150
Silver	0.0500	0.0581	J	mg/L		116	50 - 150

Lab Sample ID: LB 240-152646/1-B

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 152752

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.0029	mg/L		10/22/14 10:06	10/23/14 11:43	1
Barium	0.0275	J	0.10	0.0010	mg/L		10/22/14 10:06	10/23/14 11:43	1
Cadmium	ND		0.10	0.00014	mg/L		10/22/14 10:06	10/23/14 11:43	1
Chromium	0.00173	J	0.50	0.00055	mg/L		10/22/14 10:06	10/23/14 11:43	1
Lead	ND		0.50	0.0019	mg/L		10/22/14 10:06	10/23/14 11:43	1
Selenium	ND		0.25	0.0040	mg/L		10/22/14 10:06	10/23/14 11:43	1
Silver	ND		0.50	0.00092	mg/L		10/22/14 10:06	10/23/14 11:43	1

Lab Sample ID: 240-43288-1 MS

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: TCLP

Prep Batch: 152752

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0076	J	5.00	5.16		mg/L		103	50 - 150
Cadmium	0.070	J	1.00	1.06		mg/L		99	50 - 150
Chromium	0.0018	J B	5.00	4.92		mg/L		98	50 - 150
Selenium	0.0077	J	1.00	1.04	J	mg/L		103	50 - 150
Silver	0.0036	J	1.00	1.02	J	mg/L		101	50 - 150

TestAmerica Canton

QC Sample Results

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 240-43288-1 MS

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: TCLP

Prep Batch: 152752

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	27	B	50.0	78.0		mg/L		103	50 - 150
Lead	800		5.00	797	4	mg/L		-133	50 - 150

Lab Sample ID: 240-43288-1 MSD

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: TCLP

Prep Batch: 152752

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0076	J	5.00	5.14		mg/L		103	50 - 150	0	20
Cadmium	0.070	J	1.00	1.06		mg/L		99	50 - 150	0	20
Chromium	0.0018	J B	5.00	4.93		mg/L		99	50 - 150	0	20
Selenium	0.0077	J	1.00	1.04	J	mg/L		104	50 - 150	0	20
Silver	0.0036	J	1.00	1.02	J	mg/L		101	50 - 150	0	20

Lab Sample ID: 240-43288-1 MSD

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: TCLP

Prep Batch: 152752

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	27	B	50.0	78.0		mg/L		103	50 - 150	0	20
Lead	800		5.00	809	4	mg/L		116	50 - 150	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-152755/2-A

Matrix: Solid

Analysis Batch: 153429

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152755

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.000090	mg/L		10/22/14 10:12	10/25/14 11:42	1

Lab Sample ID: LCS 240-152755/3-A

Matrix: Solid

Analysis Batch: 153429

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 152755

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00498		mg/L		100	50 - 150

Lab Sample ID: LB 240-152646/1-C

Matrix: Solid

Analysis Batch: 153429

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 152755

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.000090	mg/L		10/22/14 10:12	10/25/14 11:40	1

TestAmerica Canton

QC Sample Results

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 240-43288-1 MS

Matrix: Solid

Analysis Batch: 153429

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: TCLP

Prep Batch: 152755

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00500	0.00504		mg/L		101	50 - 150

Lab Sample ID: 240-43288-1 MSD

Matrix: Solid

Analysis Batch: 153429

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: TCLP

Prep Batch: 152755

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00498		mg/L		100	50 - 150	1	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-152769/1-A

Matrix: Solid

Analysis Batch: 152835

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152769

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.48	0.29	mg/Kg		10/22/14 11:11	10/22/14 13:34	1

Lab Sample ID: LCS 240-152769/2-A

Matrix: Solid

Analysis Batch: 152835

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 152769

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	9.03	8.36		mg/Kg		93	68 - 123

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-152692/8-A

Matrix: Solid

Analysis Batch: 152784

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 152692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		30	22	mg/Kg		10/22/14 07:53	10/22/14 07:53	1

Lab Sample ID: LCS 240-152692/9-A

Matrix: Solid

Analysis Batch: 152784

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 152692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	85.3	74.7		mg/Kg		88	70 - 130

Lab Sample ID: 240-43288-1 MS

Matrix: Solid

Analysis Batch: 152784

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: Total/NA

Prep Batch: 152692

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND		103	ND	F1	mg/Kg	☼	0	10 - 154

TestAmerica Canton

QC Sample Results

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 240-43288-1 MSD

Matrix: Solid

Analysis Batch: 152784

Client Sample ID: CHLL-DRUMWC-101514

Prep Type: Total/NA

Prep Batch: 152692

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		102	ND	F1	mg/Kg	✱	0	10 - 154	NC	20

QC Association Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

GC/MS VOA

Leach Batch: 152648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	1311	
LB 240-152648/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 152831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	8260B	152648
LB 240-152648/1-A MB	Method Blank	TCLP	Solid	8260B	152648
LCS 240-152831/8	Lab Control Sample	Total/NA	Solid	8260B	

Metals

Leach Batch: 152646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	1311	
240-43288-1 MS	CHLL-DRUMWC-101514	TCLP	Solid	1311	
240-43288-1 MSD	CHLL-DRUMWC-101514	TCLP	Solid	1311	
LB 240-152646/1-B	Method Blank	TCLP	Solid	1311	
LB 240-152646/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 152752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	3010A	152646
240-43288-1 MS	CHLL-DRUMWC-101514	TCLP	Solid	3010A	152646
240-43288-1 MSD	CHLL-DRUMWC-101514	TCLP	Solid	3010A	152646
LB 240-152646/1-B	Method Blank	TCLP	Solid	3010A	152646
LCS 240-152752/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-152752/2-A	Method Blank	Total/NA	Solid	3010A	

Prep Batch: 152755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	7470A	152646
240-43288-1 MS	CHLL-DRUMWC-101514	TCLP	Solid	7470A	152646
240-43288-1 MSD	CHLL-DRUMWC-101514	TCLP	Solid	7470A	152646
LB 240-152646/1-C	Method Blank	TCLP	Solid	7470A	152646
LCS 240-152755/3-A	Lab Control Sample	Total/NA	Solid	7470A	
MB 240-152755/2-A	Method Blank	Total/NA	Solid	7470A	

Analysis Batch: 152967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	6010B	152752
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	6010B	152752
240-43288-1 MS	CHLL-DRUMWC-101514	TCLP	Solid	6010B	152752
240-43288-1 MS	CHLL-DRUMWC-101514	TCLP	Solid	6010B	152752
240-43288-1 MSD	CHLL-DRUMWC-101514	TCLP	Solid	6010B	152752
240-43288-1 MSD	CHLL-DRUMWC-101514	TCLP	Solid	6010B	152752
LB 240-152646/1-B	Method Blank	TCLP	Solid	6010B	152752
LCS 240-152752/3-A	Lab Control Sample	Total/NA	Solid	6010B	152752
MB 240-152752/2-A	Method Blank	Total/NA	Solid	6010B	152752

TestAmerica Canton

QC Association Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Metals (Continued)

Analysis Batch: 153429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	TCLP	Solid	7470A	152755
240-43288-1 MS	CHLL-DRUMWC-101514	TCLP	Solid	7470A	152755
240-43288-1 MSD	CHLL-DRUMWC-101514	TCLP	Solid	7470A	152755
LB 240-152646/1-C	Method Blank	TCLP	Solid	7470A	152755
LCS 240-152755/3-A	Lab Control Sample	Total/NA	Solid	7470A	152755
MB 240-152755/2-A	Method Blank	Total/NA	Solid	7470A	152755

General Chemistry

Analysis Batch: 152517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	Total/NA	Solid	Moisture	

Prep Batch: 152692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	Total/NA	Solid	9030B	
240-43288-1 MS	CHLL-DRUMWC-101514	Total/NA	Solid	9030B	
240-43288-1 MSD	CHLL-DRUMWC-101514	Total/NA	Solid	9030B	
LCS 240-152692/9-A	Lab Control Sample	Total/NA	Solid	9030B	
MB 240-152692/8-A	Method Blank	Total/NA	Solid	9030B	

Prep Batch: 152769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	Total/NA	Solid	9012A	
LCS 240-152769/2-A	Lab Control Sample	Total/NA	Solid	9012A	
MB 240-152769/1-A	Method Blank	Total/NA	Solid	9012A	

Analysis Batch: 152784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	Total/NA	Solid	9034	152692
240-43288-1 MS	CHLL-DRUMWC-101514	Total/NA	Solid	9034	152692
240-43288-1 MSD	CHLL-DRUMWC-101514	Total/NA	Solid	9034	152692
LCS 240-152692/9-A	Lab Control Sample	Total/NA	Solid	9034	152692
MB 240-152692/8-A	Method Blank	Total/NA	Solid	9034	152692

Analysis Batch: 152835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-43288-1	CHLL-DRUMWC-101514	Total/NA	Solid	9012A	152769
LCS 240-152769/2-A	Lab Control Sample	Total/NA	Solid	9012A	152769
MB 240-152769/1-A	Method Blank	Total/NA	Solid	9012A	152769

Lab Chronicle

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Client Sample ID: CHLL-DRUMWC-101514

Lab Sample ID: 240-43288-1

Date Collected: 10/15/14 15:50

Matrix: Solid

Date Received: 10/18/14 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			152648	10/21/14 17:20	DRJ	TAL CAN
TCLP	Analysis	8260B		1	152831	10/22/14 18:12	TJL1	TAL CAN
TCLP	Leach	1311			152646	10/21/14 16:00	DRJ	TAL CAN
TCLP	Prep	3010A			152752	10/22/14 10:06	WAL	TAL CAN
TCLP	Analysis	6010B		1	152967	10/23/14 12:03	ADS	TAL CAN
TCLP	Leach	1311			152646	10/21/14 16:00	DRJ	TAL CAN
TCLP	Prep	3010A			152752	10/22/14 10:06	WAL	TAL CAN
TCLP	Analysis	6010B		100	152967	10/23/14 15:54	ADS	TAL CAN
TCLP	Leach	1311			152646	10/21/14 16:00	DRJ	TAL CAN
TCLP	Prep	7470A			152755	10/22/14 10:12	WAL	TAL CAN
TCLP	Analysis	7470A		1	153429	10/25/14 11:48	AMM2	TAL CAN
Total/NA	Prep	9012A			152769	10/22/14 11:11	SEM	TAL CAN
Total/NA	Analysis	9012A		1	152835	10/22/14 13:39	SEM	TAL CAN
Total/NA	Analysis	9034		1	152784	10/22/14 07:53	BLW	TAL CAN
Total/NA	Prep	9030B			152692	10/22/14 07:53	BLW	TAL CAN
Total/NA	Analysis	Moisture		1	152517	10/21/14 09:17	SEM	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Michigan Dept of Environmental Quality
Project/Site: Abandoned Mining Waste-Torch Lake

TestAmerica Job ID: 240-43288-1

Laboratory: TestAmerica Canton

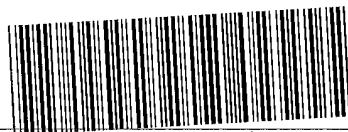
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-15
Connecticut	State Program	1	PH-0590	12-31-14
Florida	NELAP	4	E87225	06-30-15
Georgia	State Program	4	N/A	06-30-15
Illinois	NELAP	5	200004	07-31-15
Kansas	NELAP	7	E-10336	01-31-15
Kentucky (UST)	State Program	4	58	06-30-15
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-14
Nevada	State Program	9	OH-000482008A	07-31-15
New Jersey	NELAP	2	OH001	06-30-15
New York	NELAP	2	10975	03-31-15
Ohio VAP	State Program	5	CL0024	10-31-15
Pennsylvania	NELAP	3	68-00340	08-31-15
Texas	NELAP	6		08-31-15
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-15
Washington	State Program	10	C971	01-12-15
West Virginia DEP	State Program	3	210	12-31-14
Wisconsin	State Program	5	999518190	08-31-15

* Certification renewal pending - certification considered valid.

TestAmerica Canton

**CHAIN OF CUSTODY
AND
RECEIVING DOCUMENTS**



240-43288 Chain of Custody



3.8

Michigan Department of Environmental Quality
Laboratory Services Section
Analysis Request Sheet

10F3

Lab Work Order Number 1440132	Project Name ABANDONED MINING WASTES - TORCH LAKE NS SITE	Matrix SOIL/SEDIMENT
Site Code/Project Number 31 0000 98	AY 13	CC Email 1 j.binkley@WESTON SOLUTIONS.COM
Dept./Division/District DEQ-RPD-UP	Index 44251	CC Email 2
State Project Manager AMY KERANEN	PCA 30872	CC Email 3
State Project Manager Email KERANENA@	Project 456990	Overflow Lab Choice 1 Test America
State Project Manager Phone 900-337-0389	Phase 00	Overflow Lab Choice 2
		Accept Analysis hold time codes No
		Sample Collector DLIEBAU
		Sample Collector Phone 900-370-0524
		Contract Firm WESTON SOLUTIONS
		Contract Firm Primary Contact JEFF BINKLEY
		Primary Contact Phone 900-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHL-SS01-101514	10/15/14	1401	1802	
2	02 CHL-SS02-101514		1413	1	
3	03 CHL-SS03-101514		1346	1	
4	04 CHL-SS04-101514		1430	2802 140ML	
5	05 CHL-SS05-101514		1445	1	
6	06 CHL-SS06-101514		1450	1	
7	07 CHL-SS07-101514		1517	1	
8	08 CHL-SS08-101514			DL	
9	09 CHL-SS09-101514			DL	
10	10 CHL-DRUMWC-101514		1550		WASTE CHARACTERIZATION

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acids Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMA only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GHO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Bi,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10	GS - General Chemistry Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

OS - Pesticides, PCBs
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
Pesticides only 1 2 3 4 5 6 7 8 9 10
PCBs only 1 2 3 4 5 6 7 8 9 10
Toxaphene 1 2 3 4 5 6 7 8 9 10

BNA - Base Neutral Acids
BNAs 1 2 3 4 5 6 7 8 9 10
PNAs only 1 2 3 4 5 6 7 8 9 10
DNs only 1 2 3 4 5 6 7 8 9 10

Organic Specialty Requests
Library search - Volatiles 1 2 3 4 5 6 7 8 9 10
Library search - SemiVol 1 2 3 4 5 6 7 8 9 10
Finger Print 1 2 3 4 5 6 7 8 9 10
DRO / ORO 1 2 3 4 5 6 7 8 9 10

TCLP VOCs (10)
TCLP METALS (10)
Sulfide - reactivity
Cyanide - reactivity

Chain of Custody	Relinquished by WESTON SOLUTIONS	Received By	Date / Time
	Print Name & Org. DANIEL UEBAN 10/16/14	FEDEX	
	Signature: [Signature]	806 7 3845 7134	
	Print Name & Org. [Signature]	Jordan Handley DEQ	10/17/14
Print Name & Org. Melissa Smith	Gary Schaefer		
Signature: [Signature]	[Signature]		

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 43286

Canton Facility

Client Michigan Department of env. quality Site NameCooler unpacked by: J. MacArthurCooler Received on 10-18-14Opened on 10-18-14FedEx: 1st Grd ☒ Exp ☐ UPS ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐TestAmerica Cooler # Foam Box ☒ Client Cooler ☐ Box ☐ Other ☐Packing material used: ☒ Bubble Wrap ☐ Foam ☐ Plastic Bag ☐ None ☐ Other ☐COOLANT: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Water ☐ None

1. Cooler temperature upon receipt

IR GUN# A (CF +2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °CIR GUN# 4 (CF -2 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °CIR GUN# 5 (CF 0 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °CIR GUN# 8 (CF 0 °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.8 °C☐ See Multiple
Cooler Form2. Were custody seals on the outside of the cooler(s)? If Yes Quantity Yes ☒ No ☐-Were custody seals on the outside of the cooler(s) signed & dated? Yes ☒ No ☐-Were custody seals on the bottle(s)? Yes ☒ No ☐3. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐4. Did custody papers accompany the sample(s)? Yes ☒ No ☐5. Were the custody papers relinquished & signed in the appropriate place? Yes ☒ No ☐6. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐7. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐8. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐9. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐10. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐11. Were VOAs on the COC? Yes ☒ No ☐12. Were air bubbles >6 mm in any VOA vials? Yes ☒ No ☐13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐pH Strip Lot# HC412469Contacted PM Date by via Verbal Voice Mail OtherConcerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.Sample(s) were received in a broken container.Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.Time preserved: Preservative(s) added/Lot number(s):

STATE OF MICHIGAN
Department of Technology, Management and Budget
State Facilities Administration
3111 W. St. Joseph Street
Lansing, Michigan 48917

Date Issued: 16 August 2016
Index No(s): NA
File No: NA
Department: MDEQ-RRD
Project Name: Abandoned Mining
Wastes Torch Lake Non-Superfund Site

Subject: Clarification to Bid Table

Bid Opening Date: 18 August 2016
5:00 pm EDT

ADDENDUM NO. 2

TO: All Bidders

SUBJECT: Clarification to the Bid Table for Area Wide Abandoned Container Removal Interim Response

INTENT: This Addendum No. 2 is issued to clarify the Bid Table by answering a question posed by one of the Bidders. This Addendum No. 2 consists of one page and no attachments.

Item 1 – Answer to Question:

Question: On the Bid Table with the pay items 1-16 if there is no quantity for Pay Items 8,9,10,11,12, and 14 all these would be 0, is this correct?

Answer: If there is not a quantity listed for a Pay Item the subtotal for that Pay Item at the location without a quantity would be \$0.00. We do want a Project-Wide unit rate for each Pay Item in the top row, including Pay Items 8, 9, 10, 11, and 12 in the event containers with those characteristics are encountered. Note Pay Item 14 has a quantity of one for the Tamarack Stamp Mill Complex.

ACKNOWLEDGEMENT: This Addendum must be acknowledged by the bidder in the space provided at the bottom of the Bid Table for submission of a valid bid. The changes and information shall become part of the contract documents.

APPENDIX D

REMOVED ABANDONED CONTAINER INVENTORY



ABANDONED CONTAINER REMOVAL INVENTORY

Table 1
Abandoned Container Removal Inventory
Torch Lake Backwater Area
C&H Lake Linden Operations
Houghton County, Michigan

Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Waste Characterization				
											Hazardous Waste	Non-Hazardous Waste	TSCA Waste	Carcass/RCRA Empty Drum	
Abandoned Containers - Traprock Dump															
1	CHLL-BA-CONTAINER-01	10/6/2014	012-055-038-00	NA	88° 24' 1.90" W	47° 11' 47.10" N	White, approximately 3-gallon, plastic	Approximately 1/4 full, contained used oil which was solidified	Yes	No		X			

Table 2
Abandoned Container Removal Inventory
Hubbell Processing Area
C&H Lake Linden Operations
Houghton County, Michigan

Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Waste Characterization				
											Hazardous Waste	Non-Hazardous Waste	TSCA Waste	Carcass/RCRA Empty Drum	
Abandoned Containers - Hubbell Coal Dock															
1	CHLL-HPA-DM01	8/20/2014	014-307-001-25	1408233	88° 25' 9.94" W	47° 10' 38.87" N	Weathered, Yellowish gray granular drum contents, Half-full	Grab waste sample from Degraded Abandoned Drum	No	No	X				
2	CHLL-HPA-DM02	8/20/2014	014-307-001-25	1408233	88° 25' 9.94" W	47° 10' 38.87" N	Weathered, Brownish gray granular drum contents, Half-full	Grab waste sample from Degraded Abandoned Drum	No	No	X				
3	CHLL-HPA-DRUM-03	10/6/2014	014-307-001-25	NA	88° 25' 2.67" W	47° 10' 50.23" N	One drum laying on its side, appears to be empty. Small crushed metal container nearby.	Soil sample CHLL-SS07-101514 was collected from the vicinity of location DRUM-03 during targeted inspection activities.	Yes	Yes				X	
4	CHLL-HPA-DRUM-04A	10/6/2014	014-307-001-25	NA	88° 25' 9.35" W	47° 10' 43.92" N	Conditions ranged from intact to carcasses on the ground surface, protruding from, and buried within the hillside. Drums were in varying states of deterioration.	The cache of buried drums at the Hubbell Coal Dock was initially labeled as the CHLL-HPA-DRUM-04 location, with subsequent sub-letters assigned as drums were removed and characterized.	Yes	No	X				
5-10	CHLL-HPA-DRUM-04B		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
11	CHLL-HPA-DRUM-04C		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
12-29	CHLL-HPA-DRUM-04D		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No	X				
30-32	CHLL-HPA-DRUM-04E		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
33-40	CHLL-HPA-DRUM-04F		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
41	CHLL-HPA-DRUM-04G		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
42	CHLL-HPA-DRUM-04H		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
43	CHLL-HPA-DRUM-04I		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X			
44-62	CHLL-HPA-DRUM-04-Carcass		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			No	Yes				X	
63	CHLL-HPA-DRUM-05	10/6/2014	014-307-001-25	NA	88° 25' 10.04" W	47° 10' 38.50" N	Rusted, deteriorating 55 gallon drum, contents are hardened black material.		No	No		X			
64	CHLL-HPA-DRUM-06		014-307-001-25	NA	88° 25' 9.30" W	47° 10' 38.56" N	Hardened drum contents	Hardened drum contents similar to DRUM-05	No	No		X			
65	CHLL-HPA-DRUM-07	7/27/2016	014-307-001-25	NA	88° 25' 5.82" W	47° 10' 48.43" N	Crushed drum	On hillside beneath a fallen utility pole	No	Yes				X	
66	CHLL-HPA-DRUM-08	7/27/2016	014-307-001-25	NA	88° 25' 10.01" W	47° 10' 42.93" N	Rusted drum remnants		No	Yes				X	
67	CHLL-HPA-DRUM-09	7/27/2016	014-307-001-25	NA	88° 25' 12.40" W	47° 10' 43.08" N	Rusted crushed drum		No	Yes				X	
Abandoned Containers - Mineral Building															
1	CHLL-HPA-DRUM-10	Spring/Summer 2016	014-307-001-75	NA	88° 25' 23.98" W	47° 10' 36.73" N	Drum carcass		No	Yes				X	
2	CHLL-HPA-DRUM-11	Spring/Summer 2016	014-307-001-75	NA	88° 25' 18.41" W	47° 10' 38.39" N	Crushed drum	Contained metal parts	No	No				X	
3	CHLL-HPA-DRUM-12	Spring/Summer 2016	014-307-001-75	NA	88° 25' 17.37" W	47° 10' 38.21" N	Crushed drum	Had leaked black tarry material	No	No	X				
4	CHLL-HPA-DRUM-13	Spring/Summer 2016	014-307-001-75	NA	88° 25' 13.88" W	47° 10' 36.39" N	Crushed blue poly drum	Partially melted	No	Yes				X	
5	CHLL-HPA-DRUM-14	Spring/Summer 2016	014-307-001-75	NA	88° 25' 13.47" W	47° 10' 35.95" N	Drum carcass		No	Yes				X	
6	CHLL-HPA-DRUM-15	Spring/Summer 2016	014-307-001-75	NA	88° 25' 13.68" W	47° 10' 35.38" N	Empty steel drum		Yes	Yes				X	
7	CHLL-HPA-DRUM-16	Spring/Summer 2016	014-307-001-75	NA	88° 25' 11.64" W	47° 10' 37.86" N	Crushed drum	Partially buried	No	Yes				X	
8	CHLL-HPA-DRUM-17	Spring/Summer 2016	014-307-001-75	NA	88° 25' 11.40" W	47° 10' 38.20" N	Drum carcass		No	Yes				X	
9	CHLL-HPA-DRUM-18	Spring/Summer 2016	014-307-001-75	NA	88° 25' 11.33" W	47° 10' 38.15" N	Drum carcass		No	No	X				
10	CHLL-HPA-DRUM-19	Spring/Summer 2016	014-307-001-75	NA	88° 25' 10.97" W	47° 10' 38.28" N	Black poly drum	In the drainage ditch	Yes	Yes				X	
11	CHLL-HPA-DRUM-20	Spring/Summer 2016	014-307-001-75	NA	88° 25' 12.62" W	47° 10' 36.06" N	Crushed drum		No	Yes				X	
12	CHLL-HPA-DRUM-21	8/10/2016	014-307-001-75	NA	88° 25' 13.19" W	47° 10' 35.80" N	Black poly drum	Partially buried	Yes	Yes				X	
13	CHLL-HPA-DRUM-22	8/10/2016	014-307-001-75	NA	88° 25' 14.70" W	47° 10' 35.94" N	Drum carcass		No	Yes				X	
14	CHLL-HPA-DRUM-23	8/10/2016	014-307-001-75	NA	88° 25' 14.70" W	47° 10' 35.94" N	Drum carcass		No	Yes				X	
15	CHLL-HPA-DRUM-24	8/10/2016	014-307-001-75	NA	88° 25' 14.70" W	47° 10' 35.94" N	Drum carcass		No	Yes				X	
16	CHLL-HPA-DRUM-25	8/10/2016	014-307-001-75	NA	88° 25' 14.70" W	47° 10' 35.94" N	Drum carcass		No	Yes				X	

Table 4
Abandoned Container Removal Inventory
Tamarack Sands Area
C&H Tamarack City Operations
Houghton County, Michigan

Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Waste Characterization				
											Hazardous Waste	Non-Hazardous Waste	TSCA Waste	Carcass/RCRA Empty Drum	
Abandoned Containers - Historic Municipal Dump															
1	CHTC-TS-DM01	5/28/2015	NA	NA	NA	NA	Possible drum protruding from the water.	Item was found to be a washing machine tub, which was removed and recycled.	NA	NA					NA
Abandoned Containers - Near M-26 Hillside and Treatment Ponds															
1	CHTC-TS-DM02	Spring 2016	NA	NA	88° 26' 42.68" W	47° 9' 37.91" N	Partially buried steel 55-gallon drum	Along hillside between M-26 and treatment lagoons.	Yes	No		X			
2	CHTC-TS-DM03	Spring 2016	NA	NA	88° 26' 42.90" W	47° 9' 37.92" N	Partially buried steel 55-gallon drum	Along hillside between M-26 and treatment lagoons.	Yes	Yes					X
3	CHTC-TS-DM04	Spring 2016	NA	NA	88° 26' 40.78" W	47° 9' 38.70" N	Partially buried steel carcass	Along hillside between M-26 and treatment lagoons.	No	Yes					X
4	CHTC-TS-DM05	Spring 2016	NA	NA	88° 26' 40.52" W	47° 9' 38.79" N	Partially buried steel carcass	Along hillside between M-26 and treatment lagoons.	No	Yes					X
5	CHTC-TS-DM06	Spring 2016	NA	NA	88° 26' 43.23" W	47° 9' 37.72" N	Partially buried steel 55-gallon drum	Along hillside between M-26 and treatment lagoons.	No	Yes					X
6	CHTC-TS-DM07	Spring 2016	NA	NA	88° 26' 37.70" W	47° 9' 41.23" N	Rusted steel carcass	Along hillside between M-26 and treatment lagoons.	No	Yes					X
7	CHTC-TS-DM08	Spring 2016	NA	NA	88° 26' 38.14" W	47° 9' 40.20" N	Rusted-through with contents	Along hillside between M-26 and treatment lagoons.	No	No		X			
8-10	CHTC-TS-DM09	Spring 2016	NA	NA	88° 26' 47.12" W	47° 9' 36.20" N	Three partially buried drums at edge of cap	Along hillside between M-26 and treatment lagoons.	No	No		X			

ABANDONED CONTAINER REMOVAL INVENTORY

Table 5
Abandoned Container Removal Inventory
Tamarack Processing Area
C&H Tamarack City Operations
Houghton County, Michigan

Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Waste Characterization				
											Hazardous Waste	Non-Hazardous Waste	TSCA Waste	Carcass/RCRA Empty Drum	
Abandoned Containers - Tamarack Reclamation Plant Complex															
1	CHTC-TP-DM02	5/28/2015	009-013-004-20	NA	88° 26' 41.28" W	47° 9' 52.69" N	Rusted, crushed drum carcass	Obscured by vegetation on the hillside below/east of Amygdaloid Street.	No	Yes					X
2	CHTC-TP-DM03	5/28/2015	009-013-004-20	NA	88° 26' 36.24" W	47° 9' 54.10" N	Rusted, partially crushed, open and damaged, 55-gallon drum, lying on its side.	The drum is labeled "Dowfroth 250, manufactured by Dow Chemical Company".	No	Yes					X
3	CHTC-TP-DM04	5/28/2015	009-013-004-20	NA	88° 26' 36.09" W	47° 9' 53.98" N	Rusted, yellow, partially crushed, open and damaged, half-filled with building debris and tarry material, 55-gallon drum, standing vertically.	A black 5-gallon container is lying on its side next to the drum, labeled "SuperTech R&O Hydraulic Oil".	Yes	No	X				
4	CHTC-TP-DM05	5/28/2015	009-013-004-20	1508214	88° 26' 37.13" W	47° 9' 53.08" N	Rusted, highly-weathered and degraded, crushed, 55-gallon drum.	Grayish brown, rust fragments and granular material appear to be present on the interior of the drum. Sample CHTC-DM02 was collected on 8-20-15.	No	No		X			
5	CHTC-TP-DM06	5/28/2015	009-013-004-20	NA	88° 26' 33.88" W	47° 9' 54.70" N	Black, rusted, partially crushed drum lying on its side.	Appears empty, partial label, indicates that contents may have been hydraulic oil.	Yes	Yes					X
6	CHTC-TP-DM07	5/28/2015	009-013-004-20	NA	88° 26' 32.48" W	47° 9' 56.15" N	Rusted, empty drum, crushed, damaged	Lying in a wooded area.	No	Yes					X
7	CHTC-TP-DM08	5/28/2015	009-013-004-20	NA	88° 26' 31.65" W	47° 9' 55.91" N	Rusted, empty drum, crushed, damaged	Partially obscured by vegetation.	No	Yes					X
8	CHTC-TP-DM09	5/28/2015	009-013-004-20	NA	88° 26' 31.73" W	47° 9' 55.28" N	Bluish-green, rusted, partially crushed drum	Lying on its side. Does not appear to be empty. No obvious labeling on the drum.	Yes	No	X				
9	CHTC-TP-DM10	5/28/2015	009-013-004-20	NA	88° 26' 36.78" W	47° 9' 51.10" N	Rusted, empty drum, crushed, damaged	Partially buried and obscured by vegetation. Located in a wet, marshy area along the southern fence line of the property.	Yes	Yes					X
10	CHTC-TP-DM12	5/28/2015	009-013-004-20	NA	88° 26' 31.30" W	47° 9' 55.82" N	Crush steel drum		No	Yes					X
11	CHTC-TP-DM13	5/28/2015	009-013-004-20	NA	88° 26' 34.65" W	47° 9' 54.40" N	55-gallon blue poly drum		Yes	Yes					X
12	CHTC-TP-DM14	5/28/2015	009-013-004-20	NA	88° 26' 33.94" W	47° 9' 53.73" N	55-gallon white poly drum		Yes	Yes					X
13	CHTC-TP-DM15	8/10/2016	009-013-004-20	NA	88° 26' 41.40" W	47° 9' 52.66" N	5-gallon bucket with lid	Contained used oil, solidified for disposal	Yes	No		X			
14	CHTC-TP-DM16	9/23/2016	009-013-004-20	NA	88° 26' 37.13" W	47° 9' 53.08" N	Crushed, rusted carcass next to CHTC-TP-DM05		No	Yes					X
15	CHTC-TP-DM17	9/23/2016	009-013-004-20	NA	88° 26' 35.85" W	47° 9' 48.68" N	Crushed, partially buried yellow drum		No	Yes					X
Abandoned Containers - Tamarack Stamp Mill Complex															
1-7	CHTC-TP-DM11	5/28/2015	009-013-004-50	1508214	88° 26' 40.52" W	47° 9' 50.16" N	Seven rusted drum carcasses, piled, crushed, and damaged. Removed 6 drums of contents for disposal along with the carcasses.	In a trench in the former stamp mill foundation. Wooded area midway up the hill between the warehouse and Junction Road. Samples CHTC-DM03 and CHTC-DM04 were collected of drum contents on 8-20-15. Surficial soil samples CHTC-SS-09 and CHTC-SS-10 were collected of adjacent to the drums on 8-20-15.	No	No		X			X

APPENDIX E

Waste Management Records

Provided on Compact Disk



5611 W. HEMLOCK STREET
MILWAUKEE, WI 53223

WS Number: _____

Approval #: _____

Badger Disposal of WI., Inc.

(414) 760-9175 1-866-271-0961 WID988580056

A. Generator Name: MI DEPT. of ENVIRONMENTAL QUALITY

Address: 52634 HIGHWAY M-26

City, State, Zip: HUBBELL, MI 49934

Contact: AMY KERANEN

Telephone: 9063370389

Ext. _____

FAX #: _____

Bill to: UP ENVIRONMENTAL SERVICES, INC.

Billing Address: P.O. BOX 127

City, State, Zip: BARK RIVER, MI 49807

Contact: RICK RIEDY

Phone Number: 9064669900

FAX #: 9064662641

EPA ID: MIK193755066

SIC Code: _____

This profile sheet was completed using: ☒ General Knowledge ☒ Analysis (attached) ☐ MSDS ☐ Both

B. WASTE DESCRIPTION AND GENERAL CHARACTERISTICS

Name of Waste: UNKNOWN WASTES

Process Generating Waste: ABANDONED CONTAINER REMOVAL

Color: BROWN Odor: ☒ None ☐ Mild ☐ Strong Layers ☐ Single Layer ☐ Double Layer ☐ Multi-Layer

Free Phases: ☐ Liquid _____ % ☐ Powder _____ % ☒ Solid 100 % ☐ Sludge _____ % ☐ Debris _____ %

☐ Filter cake _____ % ☐ Metal Filings _____ % ☐ Granules _____ % ☐ Soil _____ % Aerosol ☐ yes ☐ no Containers? ☐ yes ☐ no

C. RCRA AND DOT INFORMATION

Is this a USEPA Hazardous Waste? ☒ Yes ☐ No Please list the USEPA Hazardous waste codes: D008

Is this a DOT Hazardous Material? ☒ Yes ☐ No Anticipated Annual Volume: 165 / Units: GAL One time shipment ☒ yes ☐ no

Is this Universal Waste? ☐ yes ☒ no Is this PCB Waste? ☐ yes ☒ no If yes PBC concentration: _____ ppm

Proper Shipping Name: HAZARDOUS WASTE, SOLID, n.o.s.

Hazardous Class #: 9

PG #: III

UN/NA #: 3077

Additional Description: _____

Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum

Container Type: STEEL

Size: 85

D. SPECIAL HANDLING INSTRUCTIONS

If Special handling techniques are required, specify: _____

Treatment: _____

Is a representative sample provided? ☐ Yes ☐ No

E. METALS (Indicate in parts per million [ppm] if this waste contains any of the following using): ☒ TCLP ☐ Generator Knowledge ☐ TOTAL

Metal	Less than	or Actual	Metal	Less than	or Actual	Metal	Less than	or Actual
Arsenic	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____	Mercury	<input checked="" type="checkbox"/> <0.2 <input type="checkbox"/> <20	_____	Nickel	<input type="checkbox"/> <5 <input type="checkbox"/> <134	_____
Barium	<input checked="" type="checkbox"/> <100	_____	Selenium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100	_____	Thallium	<input type="checkbox"/> <5 <input type="checkbox"/> <130	_____
Cadmium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100	_____	Silver	<input checked="" type="checkbox"/> <5	_____	Zinc	<input type="checkbox"/> <5	_____
Chromium	<input checked="" type="checkbox"/> <5	_____	Chromium-Hex	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____			
Lead combined Ave	<input checked="" type="checkbox"/> <5 <input checked="" type="checkbox"/> <500	_____	Copper	<input checked="" type="checkbox"/> <5	_____			

F. PHYSICAL/CHEMICAL PROPERTIES

Specific Gravity: ☐ <0.8 ☐ 0.8-1.0 ☐ 1.0-1.2 ☐ 1.2-1.4 ☐ 1.4-1.7 ☒ >1.7 Actual: _____

Total Suspended Solids: ☐ 0.5 ☐ 0.5-2.0 ☐ 2.0-5.0 ☐ 5.0-20 ☐ >20 Actual: _____

pH: ☐ <2 ☐ 2-6 ☒ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ >12.5 Actual: _____

BTU's: ☐ <1 ☐ 1-4 ☐ 4-8 ☐ 8-12 ☐ 12-16 Actual: _____

Flash Point Degree F: ☐ <73°F ☐ 73-140°F ☐ >140-200°F ☒ >200°F Actual: _____

Sulfur (WT): ☒ <0.5 ☐ 0.5-2.0 ☐ 2-5 ☐ >5.0 Actual: _____

G. HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS

Reactivity: ☒ None ☐ Explosive ☐ Pyrophoric ☐ Shock Sensitive ☐ Water Reactive ☐ Etiological ☐ Radioactive ☐ Acutely Hazardous Waste

Viscosity: ☐ Low ☐ Medium ☒ High Are TC Codes present? ☒ Yes ☐ No (If yes, please list in USEPA Waste Code Section).

Halogens: ☐ _____ % Chlorine ☐ _____ % Fluorine ☐ _____ % Bromine ☐ _____ % Iodine

Cyanides (ppm) _____ PCB's (ppm) <0.185 AVG Pesticides (ppm) _____ Sulfides (ppm) _____ Phenolics (ppm) _____

H. CHEMICAL COMPOSITION (MUST TOTAL 100%)

SEE ATTACHED LAB RESULTS L862134-01, L862134-02, L862134-03, L862134-04, L862134-07, L862134-08	100%		%		%
	%		%		%
	%		%		%
	%		%		%

I hereby certify that all information submitted in this and all attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. The Generator further recognizes that for reasons of efficiency and speed in processing it is desirable to name Badger Disposal of WI., Inc. as Generator's agent for disposal of waste. Accordingly Generator specifically authorizes office and/or employees of Badger Disposal of WI., Inc. to sign forms and/or contract in respect to waste disposal utilizing only information and matters that appear on the Badger Disposal "master sheet" above. In this respect, Badger Disposal of WI., Inc. is to in no manner change or alter the data on the above master sheet. The Generator specifically acknowledges that it has carefully reviewed the above master sheet data and information. With the above limitations, Generator further consents and directs that the officer and/or employee of Badger Disposal sign the name of the undersigned agent of Generator to any and all such forms and/or contracts respecting processing and disposal of Generator's waste.

Amy Keranen, MDEQ
SIGNATURE OF GENERATOR'S OFFICER AND/OR AGENT

state proj. mgr.
TITLE

10/19/16
DATE

U.P. Environmental Services, Inc.

Sample Delivery Group: L862134
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste-Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-18 L862134-01 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 16:30

Received date/time
09/27/16 09:00

¹Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 14:36	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

²Tc

³Ss

⁴Cn

CHLL-HPA-DRUM-18 L862134-02 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 16:30

Received date/time
09/27/16 09:00

⁵Sr

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:42	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:21	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:03	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 20:37	10/04/16 20:37	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:43	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

⁶Qc

⁷Gl

⁸Al

⁹Sc

CHLL-HPA-DM-01 L862134-03 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 17:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 14:50	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DM-01 L862134-04 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 17:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:45	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:24	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:27	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 20:57	10/04/16 20:57	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:44	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

CHLL-HRA-DRUM-05/06 L862134-05 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 17:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	15	09/28/16 21:40	09/30/16 15:17	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862134

DATE/TIME:

10/05/16 14:03

PAGE:

3 of 40

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HRA-DRUM-05/06 L862134-06 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 17:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:47	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:32	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:50	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 22:31	10/04/16 22:31	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:53	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG912997	1	10/04/16 12:15	10/04/16 12:15	MAJ

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

CHLL-HPA-DM-02 L862134-07 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 18:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 15:03	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DM-02 L862134-08 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 18:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:50	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:35	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 18:13	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 22:51	10/04/16 22:51	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:54	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

CHLL-HPA-DRUM-12 L862134-09 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 10:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	15	09/28/16 21:40	09/30/16 15:31	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DRUM-12 L862134-10 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 10:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:52	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:38	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862134

DATE/TIME:

10/05/16 14:03

PAGE:

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CHLL-HPA-DRUM-12 L862134-10 Waste

Collected by
Chris GendronCollected date/time
09/21/16 10:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 18:37	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 23:11	10/04/16 23:11	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:56	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Sample Handling and Receiving

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862134-01	CHLL-HPA-DRUM-18	9095B
L862134-03	CHLL-HPA-DM-01	9095B
L862134-05	CHLL-HRA-DRUM-05/06	9095B
L862134-07	CHLL-HPA-DM-02	9095B
L862134-09	CHLL-HPA-DRUM-12	9095B

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862134-02	CHLL-HPA-DRUM-18	9045D
L862134-04	CHLL-HPA-DM-01	9045D
L862134-06	CHLL-HRA-DRUM-05/06	9045D
L862134-08	CHLL-HPA-DM-02	9045D
L862134-10	CHLL-HPA-DRUM-12	9045D

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	84.3		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	3.11		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862134-01 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1254	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 14:36	WG912210
(S) Decachlorobiphenyl	89.8		10.0-143		09/30/2016 14:36	WG912210
(S) Tetrachloro-m-xylene	101		29.2-144		09/30/2016 14:36	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.84		9/27/2016 10:38:49 PM	WG911845
Final pH	5.44		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:43	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.66		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-02 WG913869: 6.66 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:42	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:21	WG912283
Barium	0.0978		0.0500	100	1	09/30/2016 18:21	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:21	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:21	WG912283
Lead	14.9		0.0500	5	1	09/30/2016 18:21	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:21	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:21	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 20:37	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 20:37	WG912711



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:37	WG912711
2-Butanone (MEK)	ND	J3	0.500	200	1	10/04/2016 20:37	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:37	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 20:37	WG912711
(S) Toluene-d8	105		90.0-115	114		10/04/2016 20:37	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 20:37	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 20:37	WG912711
(S) 4-Bromofluorobenzene	93.2		80.1-120	128		10/04/2016 20:37	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:03	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:03	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:03	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:03	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:03	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:03	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:03	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:03	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:03	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:03	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:03	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:03	WG912639
(S) 2-Fluorophenol	23.4		10.0-77.9	87		10/03/2016 17:03	WG912639
(S) Phenol-d5	10.5		5.00-70.1	67		10/03/2016 17:03	WG912639
(S) Nitrobenzene-d5	50.6		21.8-123	120		10/03/2016 17:03	WG912639
(S) 2-Fluorobiphenyl	64.6		29.5-131	122		10/03/2016 17:03	WG912639
(S) 2,4,6-Tribromophenol	65.2		11.2-130	148		10/03/2016 17:03	WG912639
(S) p-Terphenyl-d14	68.3		29.3-137	149		10/03/2016 17:03	WG912639



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	90.5		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	3.55		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862134-03 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1254	0.185		0.0170	1	09/30/2016 14:50	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 14:50	WG912210
(S) Decachlorobiphenyl	99.4		10.0-143		09/30/2016 14:50	WG912210
(S) Tetrachloro-m-xylene	109		29.2-144		09/30/2016 14:50	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.87		9/27/2016 10:38:49 PM	WG911845
Final pH	5.13		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J6	0.250	1	10/03/2016 14:44	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.05		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-04 WG913869: 7.05 at 20.1c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:45	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:24	WG912283
Barium	30.7		0.0500	100	1	09/30/2016 18:24	WG912283
Cadmium	0.0358		0.0200	1	1	09/30/2016 18:24	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:24	WG912283
Lead	850		0.0500	5	1	09/30/2016 18:24	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:24	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:24	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 20:57	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 20:57	WG912711



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 20:57	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 20:57	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 20:57	WG912711
(S) Dibromofluoromethane	99.4		79.0-121	125		10/04/2016 20:57	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 20:57	WG912711
(S) 4-Bromofluorobenzene	93.5		80.1-120	128		10/04/2016 20:57	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:27	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:27	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:27	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:27	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:27	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:27	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:27	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:27	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:27	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:27	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:27	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:27	WG912639
(S) 2-Fluorophenol	13.5		10.0-77.9	87		10/03/2016 17:27	WG912639
(S) Phenol-d5	6.33		5.00-70.1	67		10/03/2016 17:27	WG912639
(S) Nitrobenzene-d5	38.5		21.8-123	120		10/03/2016 17:27	WG912639
(S) 2-Fluorobiphenyl	52.9		29.5-131	122		10/03/2016 17:27	WG912639
(S) 2,4,6-Tribromophenol	63.6		11.2-130	148		10/03/2016 17:27	WG912639
(S) p-Terphenyl-d14	68.5		29.3-137	149		10/03/2016 17:27	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	99.7		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	0.796		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-05 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1221	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1232	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1242	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1248	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1254	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1260	ND		0.255	15	09/30/2016 15:17	WG912210
(S) Decachlorobiphenyl	72.0		10.0-143		09/30/2016 15:17	WG912210
(S) Tetrachloro-m-xylene	87.3		29.2-144		09/30/2016 15:17	WG912210

9 Sc

Sample Narrative:

8082 L862134-05 WG912210: Dilution due to sample volume



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.14		9/27/2016 10:38:49 PM	WG911845
Final pH	4.79		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:53	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.67		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-06 WG913869: 6.67 at 20.1c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	10/04/2016 12:15	WG912997

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:47	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:32	WG912283
Barium	0.300		0.0500	100	1	09/30/2016 18:32	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:32	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:32	WG912283
Lead	1.64		0.0500	5	1	09/30/2016 18:32	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:32	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:32	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 22:31	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 22:31	WG912711



Collected date/time: 09/21/16 17:30

L862134

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 22:31	WG912711
2-Butanone (MEK)	ND	J3	0.500	200	1	10/04/2016 22:31	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 22:31	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 22:31	WG912711
(S) Toluene-d8	106		90.0-115	114		10/04/2016 22:31	WG912711
(S) Dibromofluoromethane	100		79.0-121	125		10/04/2016 22:31	WG912711
(S) a,a,a-Trifluorotoluene	107		90.4-116	114		10/04/2016 22:31	WG912711
(S) 4-Bromofluorobenzene	96.9		80.1-120	128		10/04/2016 22:31	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:50	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:50	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:50	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:50	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:50	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:50	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:50	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:50	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:50	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:50	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:50	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:50	WG912639
(S) 2-Fluorophenol	40.5		10.0-77.9	87		10/03/2016 17:50	WG912639
(S) Phenol-d5	25.7		5.00-70.1	67		10/03/2016 17:50	WG912639
(S) Nitrobenzene-d5	49.8		21.8-123	120		10/03/2016 17:50	WG912639
(S) 2-Fluorobiphenyl	68.1		29.5-131	122		10/03/2016 17:50	WG912639
(S) 2,4,6-Tribromophenol	72.9		11.2-130	148		10/03/2016 17:50	WG912639
(S) p-Terphenyl-d14	69.6		29.3-137	149		10/03/2016 17:50	WG912639



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	87.6		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	2.41		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862134-07 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1254	0.0404		0.0170	1	09/30/2016 15:03	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 15:03	WG912210
(S) Decachlorobiphenyl	82.5		10.0-143		09/30/2016 15:03	WG912210
(S) Tetrachloro-m-xylene	94.9		29.2-144		09/30/2016 15:03	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.55		9/27/2016 10:38:49 PM	WG911845
Final pH	5.14		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:54	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.95		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-08 WG913869: 6.95 at 19.9c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:50	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:35	WG912283
Barium	27.6		0.0500	100	1	09/30/2016 18:35	WG912283
Cadmium	0.0583		0.0200	1	1	09/30/2016 18:35	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:35	WG912283
Lead	506		0.0500	5	1	09/30/2016 18:35	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:35	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:35	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 22:51	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 22:51	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 22:51	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 22:51	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 22:51	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 22:51	WG912711
(S) Toluene-d8	105		90.0-115	114		10/04/2016 22:51	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 22:51	WG912711
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		10/04/2016 22:51	WG912711
(S) 4-Bromofluorobenzene	99.4		80.1-120	128		10/04/2016 22:51	WG912711

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 18:13	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 18:13	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 18:13	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 18:13	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 18:13	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 18:13	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 18:13	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 18:13	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 18:13	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 18:13	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 18:13	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 18:13	WG912639
(S) 2-Fluorophenol	15.1		10.0-77.9	87		10/03/2016 18:13	WG912639
(S) Phenol-d5	6.87		5.00-70.1	67		10/03/2016 18:13	WG912639
(S) Nitrobenzene-d5	38.8		21.8-123	120		10/03/2016 18:13	WG912639
(S) 2-Fluorobiphenyl	54.9		29.5-131	122		10/03/2016 18:13	WG912639
(S) 2,4,6-Tribromophenol	61.6		11.2-130	148		10/03/2016 18:13	WG912639
(S) p-Terphenyl-d14	69.3		29.3-137	149		10/03/2016 18:13	WG912639

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.2		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.01		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-09 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1221	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1232	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1242	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1248	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1254	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1260	ND		0.255	15	09/30/2016 15:31	WG912210
(S) Decachlorobiphenyl	69.3		10.0-143		09/30/2016 15:31	WG912210
(S) Tetrachloro-m-xylene	86.7		29.2-144		09/30/2016 15:31	WG912210

9 Sc

Sample Narrative:

8082 L862134-09 WG912210: Dilution due to sample volume



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.25		9/27/2016 10:38:49 PM	WG911845
Final pH	4.83		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:56	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.34		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-10 WG913869: 6.34 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:52	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:38	WG912283
Barium	0.208		0.0500	100	1	09/30/2016 18:38	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:38	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:38	WG912283
Lead	6.20		0.0500	5	1	09/30/2016 18:38	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:38	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:38	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 23:11	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 23:11	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 23:11	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 23:11	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 23:11	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 23:11	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 23:11	WG912711
(S) Dibromofluoromethane	102		79.0-121	125		10/04/2016 23:11	WG912711
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		10/04/2016 23:11	WG912711
(S) 4-Bromofluorobenzene	97.6		80.1-120	128		10/04/2016 23:11	WG912711

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 18:37	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 18:37	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 18:37	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 18:37	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 18:37	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 18:37	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 18:37	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 18:37	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 18:37	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 18:37	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 18:37	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 18:37	WG912639
(S) 2-Fluorophenol	36.3		10.0-77.9	87		10/03/2016 18:37	WG912639
(S) Phenol-d5	24.8		5.00-70.1	67		10/03/2016 18:37	WG912639
(S) Nitrobenzene-d5	50.4		21.8-123	120		10/03/2016 18:37	WG912639
(S) 2-Fluorobiphenyl	67.0		29.5-131	122		10/03/2016 18:37	WG912639
(S) 2,4,6-Tribromophenol	76.3		11.2-130	148		10/03/2016 18:37	WG912639
(S) p-Terphenyl-d14	67.8		29.3-137	149		10/03/2016 18:37	WG912639

⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3167449-1 09/30/16 12:56

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00130			

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L862124-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862124-03 09/30/16 12:56 • (DUP) R3167449-3 09/30/16 12:56

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	83.7	83.3	1	0.426		5

Laboratory Control Sample (LCS)

(LCS) R3167449-2 09/30/16 12:56

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) WG912345-4 09/29/16 19:00

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 09/29/16 19:00 • (DUP) WG912345-1 09/29/16 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG912345-2 09/29/16 19:00 • (LCSD) WG912345-3 09/29/16 19:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	109	103	109	103	70.0-130			5.66	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 09/29/16 01:53 • (DUP) WG911788-3 09/29/16 01:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

L862252-18 Original Sample (OS) • Duplicate (DUP)

(OS) L862252-18 09/29/16 01:53 • (DUP) WG911788-4 09/29/16 01:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911788-1 09/29/16 01:53 • (LCSD) WG911788-2 09/29/16 01:53

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	82.8	82.8	101	101	93.0-107			0.000	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



L862543-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862543-01 10/04/16 12:15 • (DUP) WG912997-1 10/04/16 12:15

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	79.6	79.9	1	0.351		10

L862604-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862604-02 10/04/16 12:15 • (DUP) WG912997-4 10/04/16 12:15

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	145	145	1	0.124		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG912997-2 10/04/16 12:15 • (LCSD) WG912997-3 10/04/16 12:15

Analyte	Spike Amount Deg. F	LCS Result Deg. F	LCSD Result Deg. F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ignitability	82.0	83.1	82.7	101	101	93.0-107			0.483	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20



Method Blank (MB)

(MB) R3167391-3 09/30/16 14:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	105			90.0-115
(S) Dibromofluoromethane	102			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	99.5			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167391-1 09/30/16 11:03 • (LCSD) R3167391-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L862165-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862165-08 10/05/16 00:31 • (MS) R3168218-1 10/05/16 00:51 • (MSD) R3168218-2 10/05/16 01:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	0.803	0.846	64.2	67.6	1	58.6-133			5.17	20
Carbon tetrachloride	1.25	ND	0.761	0.805	60.9	64.4	1	60.6-139			5.72	20
Chlorobenzene	1.25	ND	0.952	1.03	76.2	82.4	1	70.1-130			7.85	20
Chloroform	1.25	ND	0.866	0.907	69.2	72.6	1	66.1-133			4.71	20
1,2-Dichloroethane	1.25	ND	0.815	0.819	65.2	65.5	1	60.7-132			0.520	20
1,1-Dichloroethene	1.25	ND	0.885	0.907	70.8	72.6	1	48.8-144			2.47	20
2-Butanone (MEK)	6.25	ND	3.23	3.01	51.6	48.2	1	45.0-156			6.81	20.8
Tetrachloroethene	1.25	ND	0.861	0.942	68.9	75.3	1	57.4-141			8.97	20
Trichloroethene	1.25	ND	0.870	0.925	69.6	74.0	1	48.9-148			6.14	20
Vinyl chloride	1.25	ND	0.712	0.796	57.0	63.7	1	44.3-143			11.1	20
(S) Toluene-d8					105	106		90.0-115				
(S) Dibromofluoromethane					99.8	99.8		79.0-121				
(S) a,a,a-Trifluorotoluene					104	104		90.4-116				
(S) 4-Bromofluorobenzene					96.1	101		80.1-120				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167087-1 09/29/16 08:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	114			29.2-144

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167087-2 09/29/16 08:53 • (LCSD) R3167087-3 09/29/16 09:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.188	0.190	113	114	46.5-120			0.620	27
PCB 1016	0.167	0.182	0.183	109	109	46.3-117			0.190	27.5
(S) Decachlorobiphenyl				110	106	10.0-143				
(S) Tetrachloro-m-xylene				118	113	29.2-144				

L862049-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862049-01 09/29/16 09:34 • (MS) R3167087-4 09/29/16 09:48 • (MSD) R3167087-5 09/29/16 10:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	ND	0.188	0.181	113	109	1	24.6-127			3.83	20
PCB 1016	0.167	ND	0.180	0.176	108	106	1	23.9-147			2.20	25.8
(S) Decachlorobiphenyl					105	96.4		10.0-143				
(S) Tetrachloro-m-xylene					112	109		29.2-144				



Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

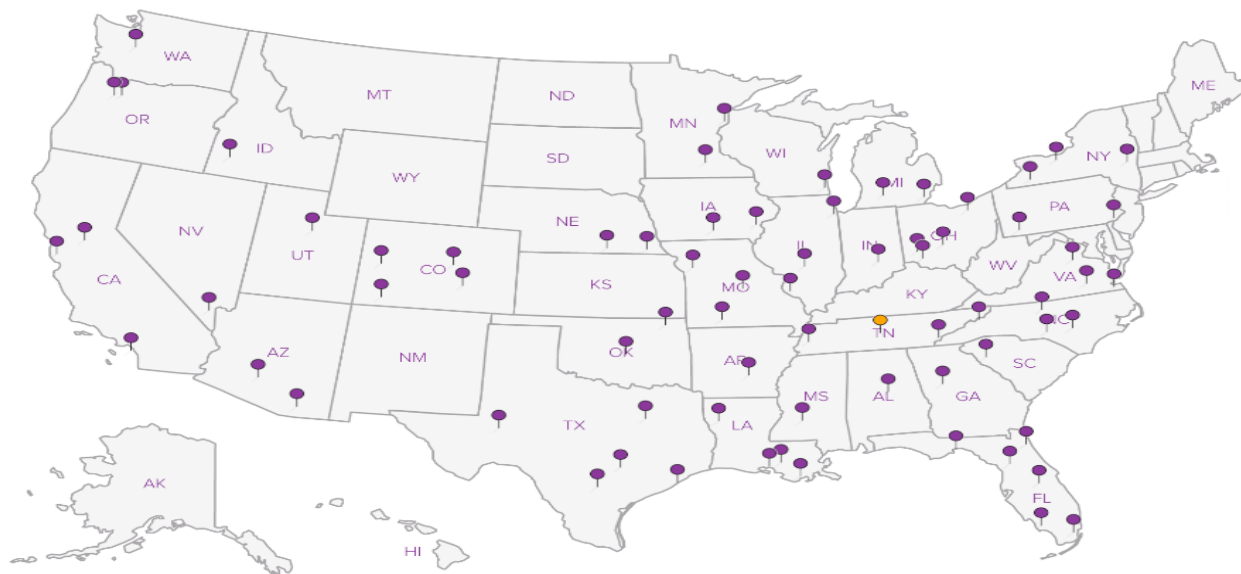
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form				
Client:	UPEN/BRMI	SDG#	862134	
Cooler Received/Opened On:	9-27-14	Temperature Upon Receipt:	3.1 °C	
Received By: Michael Witherspoon				
Signature: <i>MWit</i>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				<input checked="" type="checkbox"/>
Were custody papers properly filled out?			<input checked="" type="checkbox"/>	
Did all bottles arrive in good condition?		<input checked="" type="checkbox"/>		
Were correct bottles used for the analyses requested?		<input checked="" type="checkbox"/>		
Was sufficient amount of sample sent in each bottle?		<input checked="" type="checkbox"/>		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				<input checked="" type="checkbox"/>
If applicable, was an observable VOA headspace present?				<input checked="" type="checkbox"/>
Non Conformance Generated. (If yes see attached NCF)				

5611 W. HEMLOCK STREET
MILWAUKEE, WI 53223

WS Number: _____
Approval #: _____

Badger Disposal of WI, Inc.

(414) 760-9175 1-866-271-0961 WID988580056

A. Generator Name: MI DEPT. of ENVIRONMENTAL QUALITY
Address: 52634 HIGHWAY M-26

Bill to: UP ENVIRONMENTAL SERVICES
Billing Address: P.O. BOX 127

City, State, Zip: HUBBELL, MI 49934

City, State, Zip: BARK RIVER, MI 49807

Contact: AMY KERANEN

Contact: RICK RIEDY

Telephone: 9063370389 Ext. _____ FAX #: _____

Phone Number: 9064669900 FAX #: 9064662641

EPA ID: MIK193755066 SIC Code: _____ This profile sheet was completed using: ☒ General Knowledge ☒ Analysis (attached) ☐ MSDS ☐ Both

B. WASTE DESCRIPTION AND GENERAL CHARACTERISTICS

Name of Waste: UNKNOWN WASTES

Process Generating Waste: ABANDONED CONTAINER REMOVAL

Color: BLACK Odor: ☒ None ☐ Mild ☐ Strong Layers ☒ Single Layer ☐ Double Layer ☐ Multi-Layer
Free Phases: ☐ Liquid _____ % ☐ Powder _____ % ☐ Solid _____ % ☒ Sludge 100 % ☐ Debris _____ %
☐ Filter cake _____ % ☐ Metal Filings _____ % ☐ Granules _____ % ☐ Soil _____ % Aerosol ☐ yes ☐ no Containers? ☐ yes ☐ no

C. RCRA AND DOT INFORMATION

Is this a USEPA Hazardous Waste? ☒ Yes ☐ No Please list the USEPA Hazardous waste codes: D001, D008
Is this a DOT Hazardous Material? ☒ Yes ☐ No Anticipated Annual Volume: 55 / Units: GAL One time shipment ☒ yes ☐ no
Is this Universal Waste? ☐ yes ☒ no Is this PCB Waste? ☐ yes ☒ no If yes PCB concentration: _____ ppm

Proper Shipping Name: HAZARDOUS WASTE, SOLID, H.O.S.

Hazardous Class #: 9 PG #: III UN/NA #: 3077 Additional Description: _____
Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum Container Type: 85 Size: GAL

D. SPECIAL HANDLING INSTRUCTIONS

If Special handling techniques are required, specify: _____

Treatment: _____ Is a representative sample provided? ☐ Yes ☒ No

E. METALS (Indicate in parts per million [ppm] if this waste contains any of the following using: ☒ TCLP ☒ Generator Knowledge ☐ TOTAL

Metal	Less than	or Actual	Metal	Less than	or Actual	Metal	Less than	or Actual
Arsenic	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500		Mercury	<input checked="" type="checkbox"/> <0.2 <input type="checkbox"/> <20		Nickel	<input type="checkbox"/> <5 <input type="checkbox"/> <134	
Barium	<input checked="" type="checkbox"/> <100		Selenium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100		Thallium	<input type="checkbox"/> <5 <input type="checkbox"/> <130	
Cadmium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100		Silver	<input checked="" type="checkbox"/> <5		Zinc	<input type="checkbox"/> <5	
Chromium	<input checked="" type="checkbox"/> <5		Chromium-Hex	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500				
Lead	<input type="checkbox"/> <5 <input checked="" type="checkbox"/> <500	46.4	Copper	<input type="checkbox"/> <5				

F. PHYSICAL/CHEMICAL PROPERTIES

Specific Gravity: ☐ <0.8 ☐ 0.8-1.0 ☐ 1.0-1.2 ☐ 1.2-1.4 ☒ 1.4-1.7 ☐ >1.7 Actual: _____
Total Suspended Solids: ☐ 0.5 ☐ 0.5-2.0 ☐ 2.0-5.0 ☐ 5.0-20 ☐ >20 Actual: _____
pH: ☐ <2 ☐ 2-6 ☐ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ >12.5 Actual: 6.92
BTU's: ☐ <1 ☐ 1-4 ☐ 4-8 ☐ 8-12 ☐ 12-16 Actual: _____
Flash Point Degree F: ☐ <73°F ☐ 73-140°F ☐ >140-200°F ☐ >200°F Actual: 122 DEG F
Sulfur (WT): ☒ <0.5 ☐ 0.5-2.0 ☐ 2-5 ☐ >5.0 Actual: _____

G. HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS

Reactivity: ☒ None ☐ Explosive ☐ Pyrophoric ☐ Shock Sensitive ☐ Water Reactive ☐ Etiological ☐ Radioactive ☐ Acutely Hazardous Waste
Viscosity: ☐ Low ☐ Medium ☒ High Are TC Codes present? ☒ Yes ☐ No (If yes, please list in USEPA Waste Code Section).
Halogens: ☐ _____ % Chlorine ☐ _____ % Fluorine ☐ _____ % Bromine ☐ _____ % Iodine
Cyanides (ppm) _____ PCB's (ppm) _____ Pesticides: (ppm) _____ Sulfides: (ppm) _____ Phenolics: (ppm) _____

H. CHEMICAL COMPOSITION (MUST TOTAL 100%)

SEE ATTACHED LAB RESULTS FOR SAMPLE CHLL-HPA-DRUM- 04A-SAMPLE RESULTS-01 & 02	%		%		%
	%		%		%
	%		%		%
	%		%		%

I hereby certify that all information submitted in this and all attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. The Generator further recognizes that for reasons of efficiency and speed in processing it is desirable to name Badger Disposal of WI, Inc. as Generator's agent for disposal of waste. Accordingly Generator specifically authorizes office and/or employees of Badger Disposal of WI, Inc. to sign forms and/or contract in respect to waste disposal utilizing only information and matters that appear on the Badger Disposal "master sheet" above. In this respect, Badger Disposal of WI, Inc. is to in no manner change or alter the data on the above master sheet. The Generator specifically acknowledges that it has carefully reviewed the above master sheet data and information. With the above limitations, Generator further consents and directs that the officer and/or employee of Badger Disposal sign the name of the undersigned agent of Generator to any and all such forms and/or contracts respecting processing and disposal of Generator's waste.

SIGNATURE OF GENERATOR'S OFFICER AND/OR AGENT

TITLE

DATE

U.P. Environmental Services, Inc.

Sample Delivery Group: L861336
Samples Received: 09/22/2016
Project Number: UPENVBRMI-DRUMS
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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⁵Sr: Sample Results	6
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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04A L861336-01 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 17:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911074	3	09/26/16 15:51	09/27/16 13:53	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC

¹ Cp

² Tc

³ Ss

CHLL-HPA-DRUM-04A L861336-02 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 17:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 07:59	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:45	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 16:40	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 16:38	09/26/16 16:38	BMB
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:41	DR
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04B L861336-03 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 17:30

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911074	3	09/26/16 15:51	09/27/16 14:06	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC

CHLL-HPA-DRUM-04B L861336-04 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 17:30

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:14	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:48	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 17:04	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 16:59	09/26/16 16:59	BMB
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:42	DR
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method 9095B	WG913968	1	10/05/16 09:55	10/05/16 10:00	KK
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

CHLL-HPA-DRUM-04C L861336-05 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 18:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG912356	50	09/29/16 14:02	09/30/16 17:50	JNS

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

UPENVBRMI-DRUMS

SDG:

L861336

DATE/TIME:

10/05/16 14:03

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04C L861336-06 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 18:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:28	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:56	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 21:45	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 17:19	09/26/16 17:19	BMB
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:12	ASK
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

CHLL-HPA-DRUM-04D L861336-07 GW

Collected by
Chris Gendron

Collected date/time
09/20/16 11:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911870	1	09/28/16 08:46	09/30/16 15:09	JNS

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04D L861336-08 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 11:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:07	NJB
Metals (ICP) by Method 6010B	WG911605	10	09/27/16 08:11	09/28/16 08:14	CCE
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 16:40	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 13:57	09/26/16 13:57	BMB
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:13	ASK
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

UPENVBRMI-DRUMS

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10/05/16 14:03

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All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Case Narrative: Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-24-16

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L861336-02	CHLL-HPA-DRUM-04A	9045D
L861336-04	CHLL-HPA-DRUM-04B	9045D
L861336-06	CHLL-HPA-DRUM-04C	9045D
L861336-08	CHLL-HPA-DRUM-04D	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L861336-02	CHLL-HPA-DRUM-04A	9095B

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.47		1	09/30/2016 14:20	WG912583

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1221	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1232	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1242	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1248	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1254	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1260	ND		0.0510	3	09/27/2016 13:53	WG911074
(S) Decachlorobiphenyl	69.7		10.0-143		09/27/2016 13:53	WG911074
(S) Tetrachloro-m-xylene	64.3		29.2-144		09/27/2016 13:53	WG911074

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:41	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.92		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-02 WG910581: 6.92 at 19.0c

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L861336-02 WG912590: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	122		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 07:59	WG912087

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:45	WG911605
Barium	1.07		0.0500	100	1	09/27/2016 23:45	WG911605
Cadmium	0.0210		0.0200	1	1	09/27/2016 23:45	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:45	WG911605
Lead	46.4		0.0500	5	1	09/27/2016 23:45	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:45	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:45	WG911605

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 16:38	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 16:38	WG911243
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 16:38	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 16:38	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 16:38	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 16:38	WG911243
(S) Toluene-d8	105		90.0-115	114		09/26/2016 16:38	WG911243
(S) Dibromofluoromethane	99.8		79.0-121	125		09/26/2016 16:38	WG911243
(S) a,a,a-Trifluorotoluene	98.8		90.4-116	114		09/26/2016 16:38	WG911243
(S) 4-Bromofluorobenzene	102		80.1-120	128		09/26/2016 16:38	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 16:40	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 16:40	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 16:40	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 16:40	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 16:40	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 16:40	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 16:40	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 16:40	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 16:40	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 16:40	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 16:40	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 16:40	WG911865
(S) 2-Fluorophenol	25.1		10.0-77.9	87		09/28/2016 16:40	WG911865
(S) Phenol-d5	16.0		5.00-70.1	67		09/28/2016 16:40	WG911865
(S) Nitrobenzene-d5	55.4		21.8-123	120		09/28/2016 16:40	WG911865
(S) 2-Fluorobiphenyl	69.2		29.5-131	122		09/28/2016 16:40	WG911865
(S) 2,4,6-Tribromophenol	58.3		11.2-130	148		09/28/2016 16:40	WG911865
(S) p-Terphenyl-d14	82.1		29.3-137	149		09/28/2016 16:40	WG911865



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.13		1	09/30/2016 14:20	WG912583

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1221	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1232	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1242	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1248	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1254	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1260	ND		0.0510	3	09/27/2016 14:06	WG911074
(S) Decachlorobiphenyl	41.0		10.0-143		09/27/2016 14:06	WG911074
(S) Tetrachloro-m-xylene	41.3		29.2-144		09/27/2016 14:06	WG911074

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:42	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.01		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-04 WG910581: 7.01 at 18.7c

Wet Chemistry by Method 9095B

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	10/05/2016 10:00	WG913968

Sample Narrative:

9095B L861336-04 WG913968: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:14	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:48	WG911605
Barium	ND		0.0500	100	1	09/27/2016 23:48	WG911605
Cadmium	ND		0.0200	1	1	09/27/2016 23:48	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:48	WG911605
Lead	ND		0.0500	5	1	09/27/2016 23:48	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:48	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:48	WG911605

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 16:59	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 16:59	WG911243
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 16:59	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 16:59	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 16:59	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 16:59	WG911243
(S) Toluene-d8	107		90.0-115	114		09/26/2016 16:59	WG911243
(S) Dibromofluoromethane	105		79.0-121	125		09/26/2016 16:59	WG911243
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		09/26/2016 16:59	WG911243
(S) 4-Bromofluorobenzene	101		80.1-120	128		09/26/2016 16:59	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 17:04	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 17:04	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 17:04	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 17:04	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 17:04	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 17:04	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 17:04	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 17:04	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 17:04	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 17:04	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 17:04	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 17:04	WG911865
(S) 2-Fluorophenol	27.5		10.0-77.9	87		09/28/2016 17:04	WG911865
(S) Phenol-d5	17.9		5.00-70.1	67		09/28/2016 17:04	WG911865
(S) Nitrobenzene-d5	58.4		21.8-123	120		09/28/2016 17:04	WG911865
(S) 2-Fluorobiphenyl	67.8		29.5-131	122		09/28/2016 17:04	WG911865
(S) 2,4,6-Tribromophenol	58.7		11.2-130	148		09/28/2016 17:04	WG911865
(S) p-Terphenyl-d14	76.0		29.3-137	149		09/28/2016 17:04	WG911865



Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	ND	<u>J4</u>	50.0	50	09/30/2016 17:50	WG912356
PCB 1221	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1232	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1242	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1248	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1254	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1260	ND		50.0	50	09/30/2016 17:50	WG912356
(S) Decachlorobiphenyl	93.9	<u>J7</u>	60.0-140		09/30/2016 17:50	WG912356
(S) Tetrachloro-m-xylene	75.5	<u>J7</u>	60.0-140		09/30/2016 17:50	WG912356

Sample Narrative:

8082M L861336-05 WG912356: Dilution due to matrix

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J4	0.250	1	09/27/2016 14:12	WG910790

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.50		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-06 WG910581: 6.50 at 18.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:28	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:56	WG911605
Barium	2.20		0.0500	100	1	09/27/2016 23:56	WG911605
Cadmium	ND		0.0200	1	1	09/27/2016 23:56	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:56	WG911605
Lead	ND		0.0500	5	1	09/27/2016 23:56	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:56	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:56	WG911605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 17:19	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 17:19	WG911243

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 17:19	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 17:19	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 17:19	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 17:19	WG911243
(S) Toluene-d8	105		90.0-115	114		09/26/2016 17:19	WG911243
(S) Dibromofluoromethane	103		79.0-121	125		09/26/2016 17:19	WG911243
(S) a,a,a-Trifluorotoluene	99.9		90.4-116	114		09/26/2016 17:19	WG911243
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/26/2016 17:19	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 21:45	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 21:45	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 21:45	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 21:45	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 21:45	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 21:45	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 21:45	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 21:45	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 21:45	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 21:45	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 21:45	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 21:45	WG911865
(S) 2-Fluorophenol	19.7		10.0-77.9	87		09/28/2016 21:45	WG911865
(S) Phenol-d5	13.9		5.00-70.1	67		09/28/2016 21:45	WG911865
(S) Nitrobenzene-d5	42.1		21.8-123	120		09/28/2016 21:45	WG911865
(S) 2-Fluorobiphenyl	58.1		29.5-131	122		09/28/2016 21:45	WG911865
(S) 2,4,6-Tribromophenol	47.8		11.2-130	148		09/28/2016 21:45	WG911865
(S) p-Terphenyl-d14	79.2		29.3-137	149		09/28/2016 21:45	WG911865

7 Gl

8 Al

9 Sc



Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1221	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1232	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1242	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1248	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1254	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1260	ND		0.000500	1	09/30/2016 15:09	WG911870
(S) Decachlorobiphenyl	44.7		10.0-156		09/30/2016 15:09	WG911870
(S) Tetrachloro-m-xylene	73.7		13.9-137		09/30/2016 15:09	WG911870

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	n/a		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J4	0.250	1	09/27/2016 14:13	WG910790

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	12.3		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-08 WG910581: 12.34 at 18.4c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:07	WG912087

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	1.27		1.00	5	10	09/28/2016 08:14	WG911605
Barium	0.938		0.500	100	10	09/28/2016 08:14	WG911605
Cadmium	0.209		0.200	1	10	09/28/2016 08:14	WG911605
Chromium	ND		1.00	5	10	09/28/2016 08:14	WG911605
Lead	12.4		0.500	5	10	09/28/2016 08:14	WG911605
Selenium	1.43		1.00	1	10	09/28/2016 08:14	WG911605
Silver	ND		0.500	5	10	09/28/2016 08:14	WG911605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 13:57	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 13:57	WG911243

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 13:57	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 13:57	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 13:57	WG911243
Trichloroethene	ND	<u>J5</u>	0.0500	0.50	1	09/26/2016 13:57	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 13:57	WG911243
(S) Toluene-d8	108		90.0-115	114		09/26/2016 13:57	WG911243
(S) Dibromofluoromethane	102		79.0-121	125		09/26/2016 13:57	WG911243
(S) a,a,a-Trifluorotoluene	98.8		90.4-116	114		09/26/2016 13:57	WG911243
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/26/2016 13:57	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 16:40	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 16:40	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 16:40	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 16:40	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 16:40	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 16:40	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 16:40	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 16:40	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 16:40	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 16:40	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 16:40	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 16:40	WG912639
(S) 2-Fluorophenol	33.4		10.0-77.9	87		10/03/2016 16:40	WG912639
(S) Phenol-d5	21.4		5.00-70.1	67		10/03/2016 16:40	WG912639
(S) Nitrobenzene-d5	49.1		21.8-123	120		10/03/2016 16:40	WG912639
(S) 2-Fluorobiphenyl	64.5		29.5-131	122		10/03/2016 16:40	WG912639
(S) 2,4,6-Tribromophenol	42.7		11.2-130	148		10/03/2016 16:40	WG912639
(S) p-Terphenyl-d14	67.3		29.3-137	149		10/03/2016 16:40	WG912639

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3166419-1 09/27/16 14:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L861447-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861447-01 09/27/16 14:14 • (DUP) R3166419-4 09/27/16 14:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166419-2 09/27/16 14:07 • (LCSD) R3166419-3 09/27/16 14:08

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	52.0	85.5	107	177	50.0-150		J3 J4	49.0	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) WG910791-1 09/27/16 02:08

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L861447-05 Original Sample (OS) • Duplicate (DUP)

(OS) L861447-05 09/27/16 02:08 • (DUP) WG910791-4 09/27/16 02:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910791-2 09/27/16 02:08 • (LCSD) WG910791-3 09/27/16 02:08

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	72.4	78.4	72.4	78.4	70.0-130			7.96	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L860076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L860076-01 09/28/16 09:12 • (DUP) WG910581-3 09/28/16 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	3.38	3.40	1	0.590		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L861673-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861673-02 09/28/16 09:12 • (DUP) WG910581-4 09/28/16 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	4.51	4.55	1	0.883		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910581-1 09/28/16 09:12 • (LCSD) WG910581-2 09/28/16 09:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.07	6.07	99.3	99.3	98.4-102			0.000	1

L863242-01 Original Sample (OS) • Duplicate (DUP)

(OS) L863242-01 10/05/16 10:00 • (DUP) WG913968-1 10/05/16 10:00

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L861336-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861336-02 09/26/16 13:00 • (DUP) WG910619-1 09/26/16 13:00

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	122	124	1	1.63		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910619-2 09/26/16 13:00 • (LCSD) WG910619-3 09/26/16 13:00

Analyte	Spike Amount Deg. F	LCS Result Deg. F	LCSD Result Deg. F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ignitability	82.0	82.9	83.9	101	102	93.0-107			1.20	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167239-1 09/30/16 07:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167239-2 09/30/16 07:54 • (LCSD) R3167239-3 09/30/16 07:57

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0314	0.0321	105	107	80-120			2	20

L861336-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-02 09/30/16 07:59 • (MS) R3167239-4 09/30/16 08:02 • (MSD) R3167239-5 09/30/16 08:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0330	0.0313	110	104	1	75-125			5	20

L861336-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-08 09/30/16 08:07 • (MS) R3167239-6 09/30/16 08:09 • (MSD) R3167239-7 09/30/16 08:12

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0316	0.0330	105	110	1	75-125			4	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3166532-1 09/27/16 23:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166532-2 09/27/16 23:27 • (LCSD) R3166532-3 09/27/16 23:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.02	9.00	90	90	80-120			0	20
Barium	10.0	9.24	9.27	92	93	80-120			0	20
Cadmium	10.0	9.04	9.00	90	90	80-120			0	20
Chromium	10.0	8.98	8.91	90	89	80-120			1	20
Lead	10.0	9.06	9.02	91	90	80-120			0	20
Selenium	10.0	9.04	9.09	90	91	80-120			1	20
Silver	10.0	8.95	8.91	89	89	80-120			0	20

L861649-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861649-01 09/27/16 23:32 • (MS) R3166532-5 09/27/16 23:37 • (MSD) R3166532-6 09/27/16 23:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.56	9.51	96	95	1	75-125			1	20
Barium	10.0	0.158	9.38	9.32	92	92	1	75-125			1	20
Cadmium	10.0	0.0201	9.40	9.33	94	93	1	75-125			1	20
Chromium	10.0	ND	8.99	8.93	90	89	1	75-125			1	20
Lead	10.0	ND	9.24	9.18	92	92	1	75-125			1	20
Selenium	10.0	ND	9.78	9.76	98	98	1	75-125			0	20
Silver	10.0	ND	9.29	9.23	93	92	1	75-125			1	20



[L861336-02,04,06,08](#)

L861336-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-08 09/28/16 08:14 • (MS) R3166613-1 09/28/16 08:17 • (MSD) R3166613-2 09/28/16 08:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Arsenic	1.00	1.27	10.7	10.3	94	91	10	75-125			4	20
Barium	1.00	0.938	10.0	9.59	91	86	10	75-125			4	20
Cadmium	1.00	0.209	9.21	8.88	90	87	10	75-125			4	20
Chromium	1.00	ND	8.95	8.58	90	86	10	75-125			4	20
Lead	1.00	12.4	21.9	21.1	95	87	10	75-125			3	20
Selenium	1.00	1.43	10.6	10.3	92	89	10	75-125			3	20
Silver	1.00	ND	8.88	8.53	89	85	10	75-125			4	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3166244-3 09/26/16 08:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	109			90.0-115
(S) Dibromofluoromethane	113			79.0-121
(S) a,a,a-Trifluorotoluene	99.0			90.4-116
(S) 4-Bromofluorobenzene	101			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166244-1 09/26/16 00:58 • (LCSD) R3166244-2 09/26/16 01:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0293	0.0295	117	118	73.0-122			0.670	20
Carbon tetrachloride	0.0250	0.0252	0.0265	101	106	70.9-129			4.80	20
Chlorobenzene	0.0250	0.0242	0.0250	96.9	100	79.7-122			3.25	20
Chloroform	0.0250	0.0280	0.0289	112	116	73.2-125			3.28	20
1,2-Dichloroethane	0.0250	0.0261	0.0271	104	108	65.3-126			3.88	20
1,1-Dichloroethene	0.0250	0.0284	0.0298	114	119	60.6-133			4.91	20
2-Butanone (MEK)	0.125	0.108	0.111	86.7	88.7	46.4-155			2.32	20
Tetrachloroethene	0.0250	0.0222	0.0226	88.9	90.4	73.5-130			1.63	20
Trichloroethene	0.0250	0.0249	0.0247	99.8	98.9	79.5-121			0.920	20
Vinyl chloride	0.0250	0.0311	0.0319	124	128	61.5-134			2.58	20
(S) Toluene-d8				110	110	90.0-115				
(S) Dibromofluoromethane				111	114	79.0-121				
(S) a,a,a-Trifluorotoluene				98.7	99.1	90.4-116				
(S) 4-Bromofluorobenzene				99.3	100	80.1-120				



L861336-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L861336-08 09/26/16 13:57 • (MS) R3166244-4 09/26/16 10:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.24	98.9	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.15	91.8	1	60.6-139	
Chlorobenzene	1.25	ND	1.13	90.2	1	70.1-130	
Chloroform	1.25	ND	1.26	101	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.18	94.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.25	99.8	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.44	87.0	1	45.0-156	
Tetrachloroethene	1.25	ND	0.964	77.2	1	57.4-141	
Trichloroethene	1.25	ND	1.98	158	1	48.9-148	J5
Vinyl chloride	1.25	ND	1.26	100	1	44.3-143	
(S) Toluene-d8				109		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				97.2		90.4-116	
(S) 4-Bromofluorobenzene				100		80.1-120	

L861354-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861354-06 09/26/16 13:37 • (MS) R3166244-6 09/26/16 10:41 • (MSD) R3166244-7 09/26/16 11:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.25	1.24	99.8	99.2	1	58.6-133			0.630	20
Carbon tetrachloride	1.25	ND	1.13	1.12	90.8	89.7	1	60.6-139			1.18	20
Chlorobenzene	1.25	ND	1.17	1.17	93.3	93.3	1	70.1-130			0.0300	20
Chloroform	1.25	ND	1.25	1.27	100	102	1	66.1-133			1.61	20
1,2-Dichloroethane	1.25	ND	1.16	1.15	92.8	92.4	1	60.7-132			0.470	20
1,1-Dichloroethene	1.25	ND	1.20	1.18	95.7	94.4	1	48.8-144			1.37	20
2-Butanone (MEK)	6.25	ND	4.99	5.22	79.9	83.5	1	45.0-156			4.45	20.8
Tetrachloroethene	1.25	ND	1.01	0.987	80.9	79.0	1	57.4-141			2.37	20
Trichloroethene	1.25	ND	1.11	1.07	88.9	85.8	1	48.9-148			3.57	20
Vinyl chloride	1.25	ND	1.16	1.17	92.7	93.3	1	44.3-143			0.640	20
(S) Toluene-d8					107	108		90.0-115				
(S) Dibromofluoromethane					109	110		79.0-121				
(S) a,a,a-Trifluorotoluene					97.8	98.9		90.4-116				
(S) 4-Bromofluorobenzene					97.3	100		80.1-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3166403-1 09/27/16 10:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	74.3			10.0-143
(S) Tetrachloro-m-xylene	75.2			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166403-2 09/27/16 10:35 • (LCSD) R3166403-3 09/27/16 10:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.115	0.107	68.8	64.1	46.5-120			7.09	27
PCB 1016	0.167	0.110	0.103	66.0	61.9	46.3-117			6.44	27.5
(S) Decachlorobiphenyl				84.5	84.1	10.0-143				
(S) Tetrachloro-m-xylene				86.7	86.0	29.2-144				

L861698-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861698-07 09/27/16 21:34 • (MS) R3166403-4 09/27/16 21:47 • (MSD) R3166403-5 09/27/16 21:59

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.200	U	0.0818	0.0903	40.9	45.2	1	24.6-127			9.88	20
PCB 1016	0.200	U	0.157	0.150	78.3	75.0	1	23.9-147			4.28	25.8
(S) Decachlorobiphenyl					39.3	38.5		10.0-143				
(S) Tetrachloro-m-xylene					74.0	68.7		29.2-144				



Method Blank (MB)

(MB) R3167488-1 09/30/16 14:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
PCB 1260	U		0.000120	0.000500
PCB 1016	U		0.000100	0.000500
PCB 1221	U		0.0000730	0.000500
PCB 1232	U		0.0000420	0.000500
PCB 1242	U		0.0000470	0.000500
PCB 1248	U		0.0000860	0.000500
PCB 1254	U		0.0000470	0.000500
(S) Decachlorobiphenyl	66.8			10.0-156
(S) Tetrachloro-m-xylene	73.7			13.9-137

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167488-2 09/30/16 14:41 • (LCSD) R3167488-3 09/30/16 14:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.00250	0.00211	0.00238	84.3	95.1	47.7-149			12.1	28.8
PCB 1016	0.00250	0.00217	0.00222	86.7	88.8	24.7-128			2.36	34.9
(S) Decachlorobiphenyl				66.3	64.7	10.0-156				
(S) Tetrachloro-m-xylene				72.6	73.0	13.9-137				



Method Blank (MB)

(MB) R3167484-1 09/30/16 16:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	98.3			60.0-140
(S) Tetrachloro-m-xylene	113			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167484-2 09/30/16 17:09 • (LCSD) R3167484-3 09/30/16 17:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.540	0.489	108	97.7	60.0-140			10.1	20
PCB 1016	0.500	0.833	0.702	167	140	60.0-140	J4		17.1	20
(S) Decachlorobiphenyl				101	88.9	60.0-140				
(S) Tetrachloro-m-xylene				113	95.8	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3166768-3 09/28/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	50.8			21.8-123
(S) 2-Fluorobiphenyl	64.3			29.5-131
(S) p-Terphenyl-d14	71.6			29.3-137
(S) Phenol-d5	18.1			5.00-70.1
(S) 2-Fluorophenol	27.6			10.0-77.9
(S) 2,4,6-Tribromophenol	56.4			11.2-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0294	0.0282	58.8	56.3	21.0-89.4			4.24	32.6
2,4-Dinitrotoluene	0.0500	0.0410	0.0421	81.9	84.3	31.2-105			2.82	22
Hexachlorobenzene	0.0500	0.0383	0.0394	76.6	78.7	38.5-116			2.75	20.1
Hexachloro-1,3-butadiene	0.0500	0.0315	0.0308	63.0	61.6	16.1-104			2.36	31.2
Hexachloroethane	0.0500	0.0278	0.0266	55.7	53.2	16.5-89.8			4.47	30.7
Nitrobenzene	0.0500	0.0326	0.0321	65.3	64.3	31.4-106			1.54	25.7
Pyridine	0.0500	0.0180	0.0187	36.0	37.3	13.5-58.9			3.69	32.5
2-Methylphenol	0.0500	0.0241	0.0238	48.1	47.5	26.4-86.9			1.30	26.5
3&4-Methyl Phenol	0.0500	0.0249	0.0253	49.7	50.6	27.9-92.0			1.71	27
Pentachlorophenol	0.0500	0.0244	0.0283	48.8	56.6	10.0-97.4			14.9	35.1
2,4,5-Trichlorophenol	0.0500	0.0400	0.0410	79.9	82.0	34.9-112			2.60	23.9
2,4,6-Trichlorophenol	0.0500	0.0365	0.0378	73.0	75.7	29.8-107			3.55	24.1
(S) Nitrobenzene-d5				62.9	61.9	21.8-123				
(S) 2-Fluorobiphenyl				74.7	73.4	29.5-131				
(S) p-Terphenyl-d14				79.4	80.8	29.3-137				



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

[L861336-02,04,06](#)

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
(S) Phenol-d5				20.6	20.3	5.00-70.1				
(S) 2-Fluorophenol				28.6	30.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				75.8	78.4	11.2-130				

L861650-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861650-02 09/28/16 18:38 • (MS) R3166768-4 09/28/16 19:01 • (MSD) R3166768-5 09/28/16 19:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.147	0.294	29.3	58.9	1	14.0-104		J3	66.9	36.4
2,4-Dinitrotoluene	0.500	ND	0.433	0.419	86.6	83.8	1	16.2-135			3.23	20.6
Hexachlorobenzene	0.500	ND	0.389	0.375	77.8	75.1	1	31.9-135			3.53	20
Hexachloro-1,3-butadiene	0.500	ND	0.175	0.309	35.0	61.8	1	15.7-109		J3	55.4	37.6
Hexachloroethane	0.500	ND	0.136	0.277	27.2	55.5	1	10.4-105		J3	68.3	40
Nitrobenzene	0.500	ND	0.189	0.329	37.7	65.9	1	23.1-121		J3	54.3	29
Pyridine	0.500	ND	0.101	0.188	20.2	37.7	1	10.0-77.8		J3	60.6	38.8
2-Methylphenol	0.500	ND	0.155	0.265	31.0	53.0	1	10.0-133		J3	52.4	40
3&4-Methyl Phenol	0.500	ND	0.179	0.274	35.9	54.7	1	17.4-100		J3	41.5	27.7
Pentachlorophenol	0.500	ND	0.152	0.266	30.3	53.2	1	10.0-108		J3	54.8	40
2,4,5-Trichlorophenol	0.500	ND	0.298	0.390	59.6	77.9	1	30.6-120			26.6	33.8
2,4,6-Trichlorophenol	0.500	ND	0.189	0.334	37.7	66.8	1	19.1-114		J3	55.7	29.9
(S) Nitrobenzene-d5					36.7	63.3		21.8-123				
(S) 2-Fluorobiphenyl					61.7	74.2		29.5-131				
(S) p-Terphenyl-d14					84.5	77.5		29.3-137				
(S) Phenol-d5					12.8	24.3		5.00-70.1				
(S) 2-Fluorophenol					12.7	34.1		10.0-77.9				
(S) 2,4,6-Tribromophenol					58.4	72.3		11.2-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

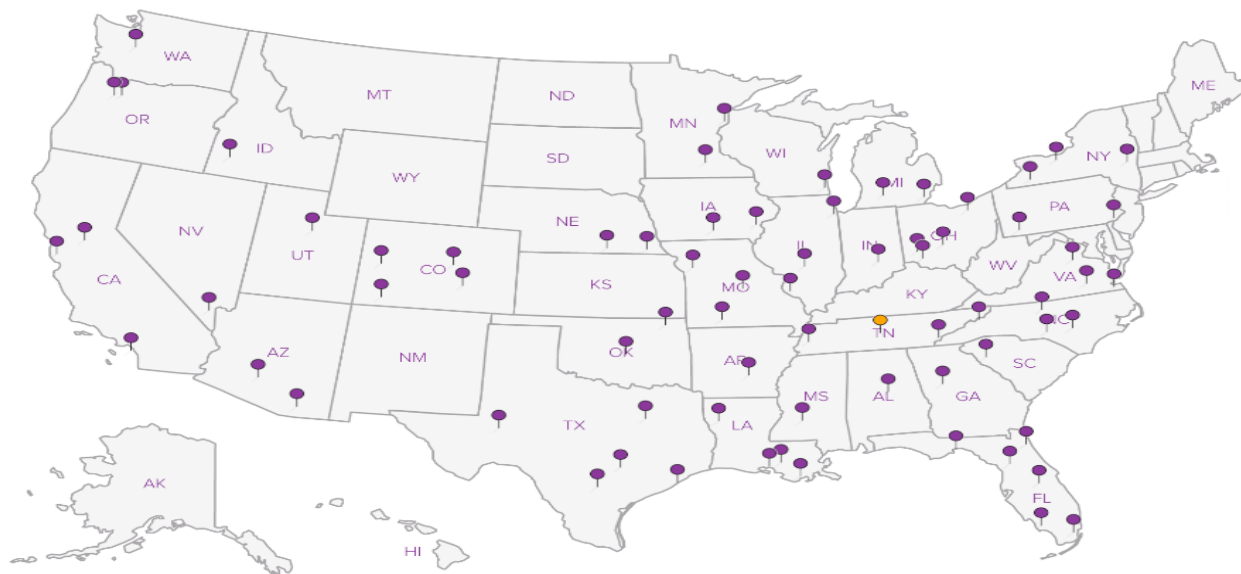
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
U.P. Environmental Services, Inc
P.O. Box 127
Bark River, MI 49807
906-466-9900

Billing Information:

SAME

Report to:
Rick Reidy

Email To:
rick@upenvironmental.com

Project Description:
Abandon Mining Waste - Torch Lake

City/State Collected:
Hyrbell, MI

Phone: 906-466-9900
Fax: 906-466-2641

Client Project #
UPENVBRMI-DRUMS

Collected by (print):
Chris Gendron

Site/Facility ID #

Collected by (signature):

Rush? (Lab MUST Be Notified)
Same Day200%
Next Day100%
Two Day50%
Three Day25%

Immediately Packed on Ice N Y

Date Results Needed
Email? No Yes
FAX? No Yes

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

No. of Cntrs

PH

Reactive Cyanide

PCB's

Reactive Sulfide

Flashpoint

TCLP w/o Pest/Herb

CHL-HPA-DRUM-04A	Grab	OT	N/A	9/20/16	5:00pm	6	X		X	X	X	X						
CHL-HPA-DRUM-04B	Grab	OT	N/A	9/20/16	5:30pm	6	X		X	X	X	X						
CHL-HPA-DRUM-04C	Grab	OT	N/A	9/20/16	6:00pm	87	X	X	X	X	X	X						
CHL-HPA-DRUM-04D	Comp	OT	N/A	9/21/16	11:00am	87	X	Y	X	X	X	X						

Rem./Contaminant

Sample # (lab only)

Chain of Custody

Page 1 of 1

ESC

LABS

YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L861336
F172

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

PH Temp

Flow Other

Hold #

Remarks:

Relinquished by: (Signature)

Date: 9/21/16

Time: 12:00

Received by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐

Condition: (lab use only)
MAY

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: 2-8 °C

Bottles Received: 24

Seal Intact: Y N NA

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)
Chris W. Dean

Date: 9-22-16

Time: 0900

pH Checked: NCF:



L·A·B S·C·I·E·N·C·E·S

YOUR LAB OF CHOICE

Cooler Receipt Form

Client:	UPENUBKMI	SDG#	L861334
Cooler Received/Opened On:	9-22-16	Temperature Upon Receipt:	2.8 °C
Received By:	Greg Dearmon		
Signature:			
Receipt Check List			
	Yes	No	N/A
Were custody seals on outside of cooler and intact?			/
Were custody papers properly filled out?	/		
Did all bottles arrive in good condition?	/		
Were correct bottles used for the analyses requested?	/		
Was sufficient amount of sample sent in each bottle?	/		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			/
If applicable, was an observable VOA headspace present?			/
Non Conformance Generated. (If yes see attached NCF)			

Badger Disposal of WI., Inc.

5611 W. HEMLOCK STREET
MILWAUKEE, WI 53223

WS Number: _____
Approval #: _____

(414) 760-9175 1-866-271-0961 WID988580056

A. Generator Name: MI DEPT. of ENVIRONMENTAL QUALITY

Address: 52634 HIGHWAY M-26

City, State, Zip: HUBBELL, MI 49934

Contact: AMY KERANEN

Telephone: 9063370389

Ext. _____

FAX #: _____

Bill to: UP ENVIRONMENTAL SERVICES, INC.

Billing Address: P.O. BOX 127

City, State, Zip: BARK RIVER, MI. 49807

Contact: RICK RIEDY

Phone Number: 9064669900

FAX #: 9064662641

EPA ID: MIK193755066

SIC Code: _____

This profile sheet was completed using: ☒ General Knowledge ☒ Analysis (attached) ☐ MSDS ☐ Both

B. WASTE DESCRIPTION AND GENERAL CHARACTERISTICS

Name of Waste: UNKNOWN WATERY WHITE SUBSTANCE

Process Generating Waste: ABANDONED CONTAINER REMOVAL

Color: WHITE Odor: ☒ None ☐ Mild ☐ Strong Layers ☒ Single Layer ☐ Double Layer ☐ Multi-Layer

Free Phases: ☒ Liquid 10-50 % ☐ Powder _____ % ☒ Solid 50-90 % ☐ Sludge 20 % ☐ Debris _____ %

☐ Filter cake _____ % ☐ Metal Filings _____ % ☐ Granules _____ % ☐ Soil _____ % Aerosol ☐ yes ☐ no Containers? ☐ yes ☐ no

C. RCRA AND DOT INFORMATION

Is this a USEPA Hazardous Waste? ☒ Yes ☐ No Please list the USEPA Hazardous waste codes: D008, D010

Is this a DOT Hazardous Material? ☒ Yes ☐ No Anticipated Annual Volume: 990 / Units: GALS One time shipment ☒ yes ☐ no

Is this Universal Waste? ☐ yes ☒ no Is this PCB Waste? ☐ yes ☒ no If yes PBC concentration: _____ ppm

Proper Shipping Name: HAZARDOUS WASTE, LIQUIDS, n.o.s.

Hazardous Class #: 9

PG #: III

UN/NA #: 3082

Additional Description: _____

Method of Shipment: ☐ Bulk Liquid

☐ Bulk Solid

☒ Drum

Container Type: STEEL

Size: 85 GAL

D. SPECIAL HANDLING INSTRUCTIONS

If special handling techniques are required, specify: _____

Treatment: _____

Is a representative sample provided? ☐ Yes ☒ No

E. METALS (Indicate in parts per million [ppm] if this waste contains any of the following using): ☒ TCLP

☐ Generator Knowledge

☐ TOTAL

Metal	Less than	or Actual	Metal	Less than	or Actual	Metal	Less than	or Actual
Arsenic	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____	Mercury	<input checked="" type="checkbox"/> <0.2 <input type="checkbox"/> <20	_____	Nickel	<input type="checkbox"/> <5 <input type="checkbox"/> <134	_____
Barium	<input checked="" type="checkbox"/> <100	_____	Selenium	<input type="checkbox"/> <1 <input checked="" type="checkbox"/> <100	<u>1.43</u>	Thallium	<input type="checkbox"/> <5 <input type="checkbox"/> <130	_____
Cadmium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100	_____	Silver	<input checked="" type="checkbox"/> <5	_____	Zinc	<input type="checkbox"/> <5	_____
Chromium	<input checked="" type="checkbox"/> <5	_____	Chromium-Hex	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____			
Lead	<input type="checkbox"/> <5 <input checked="" type="checkbox"/> <500	<u>12-4</u>	Copper	<input type="checkbox"/> <5	_____			

F. PHYSICAL/CHEMICAL PROPERTIES

Specific Gravity: ☐ <0.8 ☐ 0.8-1.0 ☒ 1.0-1.2 ☐ 1.2-1.4 ☐ 1.4-1.7 ☐ >1.7 Actual: _____

Total Suspended Solids: ☐ 0.5 ☐ 0.5-2.0 ☐ 2.0-5.0 ☐ 5.0-20 ☐ >20 Actual: _____

pH: ☐ <2 ☐ 2-6 ☐ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ >12.5 Actual: 12.3

BTU's: ☐ <1 ☐ 1-4 ☐ 4-8 ☐ 8-12 ☐ 12-16 Actual: _____

Flash Point Degree F: ☐ <73°F ☐ 73-140°F ☐ >140-200°F ☒ >200°F Actual: _____

Sulfur (WT): ☒ <0.5 ☐ 0.5-2.0 ☐ 2-5 ☐ >5.0 Actual: _____

G. HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS

Reactivity: ☒ None ☐ Explosive ☐ Pyrophoric ☐ Shock Sensitive ☐ Water Reactive ☐ Etiological ☐ Radioactive ☐ Acutely Hazardous Waste

Viscosity: ☐ Low ☒ Medium ☐ High Are TC Codes present? ☒ Yes ☐ No (If yes, please list in USEPA Waste Code Section).

Halogens: ☐ _____ % Chlorine ☐ _____ % Fluorine ☐ _____ % Bromine ☐ _____ % Iodine

Cyanides (ppm) _____ PCB's (ppm) _____ Pesticides (ppm) _____ Sulfides (ppm) _____ Phenolics (ppm) _____

H. CHEMICAL COMPOSITION (MUST TOTAL 100%)

SEE ATTACHED LAB RESULTS FOR SAMPLE CHLL-HPA-DRUM- O4D--L861336-07 and L861336-08	_____ %	_____ %	_____ %	_____ %
_____	_____ %	_____ %	_____ %	_____ %
_____	_____ %	_____ %	_____ %	_____ %
_____	_____ %	_____ %	_____ %	_____ %

I hereby certify that all information submitted in this and all attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. The Generator further recognizes that for reasons of efficiency and speed in processing it is desirable to name Badger Disposal of WI., Inc. as Generator's agent for disposal of waste. Accordingly Generator specifically authorizes office and/or employees of Badger Disposal of WI., Inc. to sign forms and/or contract in respect to waste disposal utilizing only information and matters that appear on the Badger Disposal "master sheet" above. In this respect, Badger Disposal of WI., Inc. is to in no manner change or alter the data on the above master sheet. The Generator specifically acknowledges that it has carefully reviewed the above master sheet data and information. With the above limitations, Generator further consents and directs that the officer and/or employee of Badger Disposal sign the name of the undersigned agent of Generator to any and all such forms and/or contracts respecting processing and disposal of Generator's waste.

SIGNATURE OF GENERATOR'S OFFICER AND/OR AGENT

TITLE

DATE

U.P. Environmental Services, Inc.

Sample Delivery Group: L861336
Samples Received: 09/22/2016
Project Number: UPENVBRMI-DRUMS
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04A L861336-01 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 17:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911074	3	09/26/16 15:51	09/27/16 13:53	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC

¹ Cp

² Tc

³ Ss

CHLL-HPA-DRUM-04A L861336-02 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 17:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 07:59	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:45	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 16:40	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 16:38	09/26/16 16:38	BMB
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:41	DR
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04B L861336-03 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 17:30

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911074	3	09/26/16 15:51	09/27/16 14:06	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC

CHLL-HPA-DRUM-04B L861336-04 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 17:30

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:14	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:48	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 17:04	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 16:59	09/26/16 16:59	BMB
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:42	DR
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method 9095B	WG913968	1	10/05/16 09:55	10/05/16 10:00	KK
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

CHLL-HPA-DRUM-04C L861336-05 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 18:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG912356	50	09/29/16 14:02	09/30/16 17:50	JNS

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

UPENVBRMI-DRUMS

SDG:

L861336

DATE/TIME:

10/05/16 14:03

PAGE:

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04C L861336-06 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 18:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:28	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:56	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 21:45	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 17:19	09/26/16 17:19	BMB
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:12	ASK
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04D L861336-07 GW

Collected by
Chris Gendron

Collected date/time
09/20/16 11:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911870	1	09/28/16 08:46	09/30/16 15:09	JNS

CHLL-HPA-DRUM-04D L861336-08 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 11:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:07	NJB
Metals (ICP) by Method 6010B	WG911605	10	09/27/16 08:11	09/28/16 08:14	CCE
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 16:40	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 13:57	09/26/16 13:57	BMB
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:13	ASK
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

UPENVBRMI-DRUMS

SDG:

L861336

DATE/TIME:

10/05/16 14:03

PAGE:

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All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Case Narrative: Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-24-16

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L861336-02	CHLL-HPA-DRUM-04A	9045D
L861336-04	CHLL-HPA-DRUM-04B	9045D
L861336-06	CHLL-HPA-DRUM-04C	9045D
L861336-08	CHLL-HPA-DRUM-04D	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L861336-02	CHLL-HPA-DRUM-04A	9095B

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.47		1	09/30/2016 14:20	WG912583

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1221	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1232	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1242	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1248	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1254	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1260	ND		0.0510	3	09/27/2016 13:53	WG911074
(S) Decachlorobiphenyl	69.7		10.0-143		09/27/2016 13:53	WG911074
(S) Tetrachloro-m-xylene	64.3		29.2-144		09/27/2016 13:53	WG911074

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:41	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.92		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-02 WG910581: 6.92 at 19.0c

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L861336-02 WG912590: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	122		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 07:59	WG912087

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:45	WG911605
Barium	1.07		0.0500	100	1	09/27/2016 23:45	WG911605
Cadmium	0.0210		0.0200	1	1	09/27/2016 23:45	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:45	WG911605
Lead	46.4		0.0500	5	1	09/27/2016 23:45	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:45	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:45	WG911605

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 16:38	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 16:38	WG911243
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 16:38	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 16:38	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 16:38	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 16:38	WG911243
(S) Toluene-d8	105		90.0-115	114		09/26/2016 16:38	WG911243
(S) Dibromofluoromethane	99.8		79.0-121	125		09/26/2016 16:38	WG911243
(S) a,a,a-Trifluorotoluene	98.8		90.4-116	114		09/26/2016 16:38	WG911243
(S) 4-Bromofluorobenzene	102		80.1-120	128		09/26/2016 16:38	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 16:40	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 16:40	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 16:40	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 16:40	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 16:40	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 16:40	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 16:40	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 16:40	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 16:40	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 16:40	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 16:40	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 16:40	WG911865
(S) 2-Fluorophenol	25.1		10.0-77.9	87		09/28/2016 16:40	WG911865
(S) Phenol-d5	16.0		5.00-70.1	67		09/28/2016 16:40	WG911865
(S) Nitrobenzene-d5	55.4		21.8-123	120		09/28/2016 16:40	WG911865
(S) 2-Fluorobiphenyl	69.2		29.5-131	122		09/28/2016 16:40	WG911865
(S) 2,4,6-Tribromophenol	58.3		11.2-130	148		09/28/2016 16:40	WG911865
(S) p-Terphenyl-d14	82.1		29.3-137	149		09/28/2016 16:40	WG911865



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.13		1	09/30/2016 14:20	WG912583

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1221	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1232	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1242	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1248	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1254	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1260	ND		0.0510	3	09/27/2016 14:06	WG911074
(S) Decachlorobiphenyl	41.0		10.0-143		09/27/2016 14:06	WG911074
(S) Tetrachloro-m-xylene	41.3		29.2-144		09/27/2016 14:06	WG911074

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:42	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.01		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-04 WG910581: 7.01 at 18.7c

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	10/05/2016 10:00	WG913968

Sample Narrative:

9095B L861336-04 WG913968: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:14	WG912087

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:48	WG911605
Barium	ND		0.0500	100	1	09/27/2016 23:48	WG911605
Cadmium	ND		0.0200	1	1	09/27/2016 23:48	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:48	WG911605
Lead	ND		0.0500	5	1	09/27/2016 23:48	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:48	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:48	WG911605

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 16:59	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 16:59	WG911243
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 16:59	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 16:59	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 16:59	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 16:59	WG911243
(S) Toluene-d8	107		90.0-115	114		09/26/2016 16:59	WG911243
(S) Dibromofluoromethane	105		79.0-121	125		09/26/2016 16:59	WG911243
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		09/26/2016 16:59	WG911243
(S) 4-Bromofluorobenzene	101		80.1-120	128		09/26/2016 16:59	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 17:04	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 17:04	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 17:04	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 17:04	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 17:04	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 17:04	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 17:04	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 17:04	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 17:04	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 17:04	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 17:04	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 17:04	WG911865
(S) 2-Fluorophenol	27.5		10.0-77.9	87		09/28/2016 17:04	WG911865
(S) Phenol-d5	17.9		5.00-70.1	67		09/28/2016 17:04	WG911865
(S) Nitrobenzene-d5	58.4		21.8-123	120		09/28/2016 17:04	WG911865
(S) 2-Fluorobiphenyl	67.8		29.5-131	122		09/28/2016 17:04	WG911865
(S) 2,4,6-Tribromophenol	58.7		11.2-130	148		09/28/2016 17:04	WG911865
(S) p-Terphenyl-d14	76.0		29.3-137	149		09/28/2016 17:04	WG911865



Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	ND	<u>J4</u>	50.0	50	09/30/2016 17:50	WG912356
PCB 1221	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1232	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1242	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1248	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1254	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1260	ND		50.0	50	09/30/2016 17:50	WG912356
(S) Decachlorobiphenyl	93.9	<u>J7</u>	60.0-140		09/30/2016 17:50	WG912356
(S) Tetrachloro-m-xylene	75.5	<u>J7</u>	60.0-140		09/30/2016 17:50	WG912356

Sample Narrative:

8082M L861336-05 WG912356: Dilution due to matrix

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J4	0.250	1	09/27/2016 14:12	WG910790

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.50		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-06 WG910581: 6.50 at 18.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:28	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:56	WG911605
Barium	2.20		0.0500	100	1	09/27/2016 23:56	WG911605
Cadmium	ND		0.0200	1	1	09/27/2016 23:56	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:56	WG911605
Lead	ND		0.0500	5	1	09/27/2016 23:56	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:56	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:56	WG911605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 17:19	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 17:19	WG911243

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 17:19	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 17:19	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 17:19	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 17:19	WG911243
(S) Toluene-d8	105		90.0-115	114		09/26/2016 17:19	WG911243
(S) Dibromofluoromethane	103		79.0-121	125		09/26/2016 17:19	WG911243
(S) a,a,a-Trifluorotoluene	99.9		90.4-116	114		09/26/2016 17:19	WG911243
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/26/2016 17:19	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 21:45	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 21:45	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 21:45	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 21:45	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 21:45	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 21:45	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 21:45	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 21:45	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 21:45	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 21:45	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 21:45	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 21:45	WG911865
(S) 2-Fluorophenol	19.7		10.0-77.9	87		09/28/2016 21:45	WG911865
(S) Phenol-d5	13.9		5.00-70.1	67		09/28/2016 21:45	WG911865
(S) Nitrobenzene-d5	42.1		21.8-123	120		09/28/2016 21:45	WG911865
(S) 2-Fluorobiphenyl	58.1		29.5-131	122		09/28/2016 21:45	WG911865
(S) 2,4,6-Tribromophenol	47.8		11.2-130	148		09/28/2016 21:45	WG911865
(S) p-Terphenyl-d14	79.2		29.3-137	149		09/28/2016 21:45	WG911865

7 Gl

8 Al

9 Sc



Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1221	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1232	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1242	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1248	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1254	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1260	ND		0.000500	1	09/30/2016 15:09	WG911870
(S) Decachlorobiphenyl	44.7		10.0-156		09/30/2016 15:09	WG911870
(S) Tetrachloro-m-xylene	73.7		13.9-137		09/30/2016 15:09	WG911870

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	n/a		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J4	0.250	1	09/27/2016 14:13	WG910790

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	12.3		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-08 WG910581: 12.34 at 18.4c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:07	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	1.27		1.00	5	10	09/28/2016 08:14	WG911605
Barium	0.938		0.500	100	10	09/28/2016 08:14	WG911605
Cadmium	0.209		0.200	1	10	09/28/2016 08:14	WG911605
Chromium	ND		1.00	5	10	09/28/2016 08:14	WG911605
Lead	12.4		0.500	5	10	09/28/2016 08:14	WG911605
Selenium	1.43		1.00	1	10	09/28/2016 08:14	WG911605
Silver	ND		0.500	5	10	09/28/2016 08:14	WG911605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 13:57	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 13:57	WG911243

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 13:57	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 13:57	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 13:57	WG911243
Trichloroethene	ND	<u>J5</u>	0.0500	0.50	1	09/26/2016 13:57	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 13:57	WG911243
(S) Toluene-d8	108		90.0-115	114		09/26/2016 13:57	WG911243
(S) Dibromofluoromethane	102		79.0-121	125		09/26/2016 13:57	WG911243
(S) a,a,a-Trifluorotoluene	98.8		90.4-116	114		09/26/2016 13:57	WG911243
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/26/2016 13:57	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 16:40	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 16:40	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 16:40	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 16:40	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 16:40	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 16:40	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 16:40	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 16:40	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 16:40	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 16:40	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 16:40	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 16:40	WG912639
(S) 2-Fluorophenol	33.4		10.0-77.9	87		10/03/2016 16:40	WG912639
(S) Phenol-d5	21.4		5.00-70.1	67		10/03/2016 16:40	WG912639
(S) Nitrobenzene-d5	49.1		21.8-123	120		10/03/2016 16:40	WG912639
(S) 2-Fluorobiphenyl	64.5		29.5-131	122		10/03/2016 16:40	WG912639
(S) 2,4,6-Tribromophenol	42.7		11.2-130	148		10/03/2016 16:40	WG912639
(S) p-Terphenyl-d14	67.3		29.3-137	149		10/03/2016 16:40	WG912639

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3166419-1 09/27/16 14:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L861447-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861447-01 09/27/16 14:14 • (DUP) R3166419-4 09/27/16 14:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166419-2 09/27/16 14:07 • (LCSD) R3166419-3 09/27/16 14:08

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	52.0	85.5	107	177	50.0-150		J3 J4	49.0	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) WG910791-1 09/27/16 02:08

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L861447-05 Original Sample (OS) • Duplicate (DUP)

(OS) L861447-05 09/27/16 02:08 • (DUP) WG910791-4 09/27/16 02:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910791-2 09/27/16 02:08 • (LCSD) WG910791-3 09/27/16 02:08

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	72.4	78.4	72.4	78.4	70.0-130			7.96	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L860076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L860076-01 09/28/16 09:12 • (DUP) WG910581-3 09/28/16 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	3.38	3.40	1	0.590		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L861673-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861673-02 09/28/16 09:12 • (DUP) WG910581-4 09/28/16 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	4.51	4.55	1	0.883		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910581-1 09/28/16 09:12 • (LCSD) WG910581-2 09/28/16 09:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.07	6.07	99.3	99.3	98.4-102			0.000	1

L863242-01 Original Sample (OS) • Duplicate (DUP)

(OS) L863242-01 10/05/16 10:00 • (DUP) WG913968-1 10/05/16 10:00

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L861336-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861336-02 09/26/16 13:00 • (DUP) WG910619-1 09/26/16 13:00

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	122	124	1	1.63		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910619-2 09/26/16 13:00 • (LCSD) WG910619-3 09/26/16 13:00

Analyte	Spike Amount Deg. F	LCS Result Deg. F	LCSD Result Deg. F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ignitability	82.0	82.9	83.9	101	102	93.0-107			1.20	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167239-1 09/30/16 07:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167239-2 09/30/16 07:54 • (LCSD) R3167239-3 09/30/16 07:57

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0314	0.0321	105	107	80-120			2	20

L861336-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-02 09/30/16 07:59 • (MS) R3167239-4 09/30/16 08:02 • (MSD) R3167239-5 09/30/16 08:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0330	0.0313	110	104	1	75-125			5	20

L861336-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-08 09/30/16 08:07 • (MS) R3167239-6 09/30/16 08:09 • (MSD) R3167239-7 09/30/16 08:12

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0316	0.0330	105	110	1	75-125			4	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3166532-1 09/27/16 23:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166532-2 09/27/16 23:27 • (LCSD) R3166532-3 09/27/16 23:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.02	9.00	90	90	80-120			0	20
Barium	10.0	9.24	9.27	92	93	80-120			0	20
Cadmium	10.0	9.04	9.00	90	90	80-120			0	20
Chromium	10.0	8.98	8.91	90	89	80-120			1	20
Lead	10.0	9.06	9.02	91	90	80-120			0	20
Selenium	10.0	9.04	9.09	90	91	80-120			1	20
Silver	10.0	8.95	8.91	89	89	80-120			0	20

L861649-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861649-01 09/27/16 23:32 • (MS) R3166532-5 09/27/16 23:37 • (MSD) R3166532-6 09/27/16 23:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.56	9.51	96	95	1	75-125			1	20
Barium	10.0	0.158	9.38	9.32	92	92	1	75-125			1	20
Cadmium	10.0	0.0201	9.40	9.33	94	93	1	75-125			1	20
Chromium	10.0	ND	8.99	8.93	90	89	1	75-125			1	20
Lead	10.0	ND	9.24	9.18	92	92	1	75-125			1	20
Selenium	10.0	ND	9.78	9.76	98	98	1	75-125			0	20
Silver	10.0	ND	9.29	9.23	93	92	1	75-125			1	20



[L861336-02,04,06,08](#)

L861336-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-08 09/28/16 08:14 • (MS) R3166613-1 09/28/16 08:17 • (MSD) R3166613-2 09/28/16 08:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Arsenic	1.00	1.27	10.7	10.3	94	91	10	75-125			4	20
Barium	1.00	0.938	10.0	9.59	91	86	10	75-125			4	20
Cadmium	1.00	0.209	9.21	8.88	90	87	10	75-125			4	20
Chromium	1.00	ND	8.95	8.58	90	86	10	75-125			4	20
Lead	1.00	12.4	21.9	21.1	95	87	10	75-125			3	20
Selenium	1.00	1.43	10.6	10.3	92	89	10	75-125			3	20
Silver	1.00	ND	8.88	8.53	89	85	10	75-125			4	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3166244-3 09/26/16 08:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	109			90.0-115
(S) Dibromofluoromethane	113			79.0-121
(S) a,a,a-Trifluorotoluene	99.0			90.4-116
(S) 4-Bromofluorobenzene	101			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166244-1 09/26/16 00:58 • (LCSD) R3166244-2 09/26/16 01:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0293	0.0295	117	118	73.0-122			0.670	20
Carbon tetrachloride	0.0250	0.0252	0.0265	101	106	70.9-129			4.80	20
Chlorobenzene	0.0250	0.0242	0.0250	96.9	100	79.7-122			3.25	20
Chloroform	0.0250	0.0280	0.0289	112	116	73.2-125			3.28	20
1,2-Dichloroethane	0.0250	0.0261	0.0271	104	108	65.3-126			3.88	20
1,1-Dichloroethene	0.0250	0.0284	0.0298	114	119	60.6-133			4.91	20
2-Butanone (MEK)	0.125	0.108	0.111	86.7	88.7	46.4-155			2.32	20
Tetrachloroethene	0.0250	0.0222	0.0226	88.9	90.4	73.5-130			1.63	20
Trichloroethene	0.0250	0.0249	0.0247	99.8	98.9	79.5-121			0.920	20
Vinyl chloride	0.0250	0.0311	0.0319	124	128	61.5-134			2.58	20
(S) Toluene-d8				110	110	90.0-115				
(S) Dibromofluoromethane				111	114	79.0-121				
(S) a,a,a-Trifluorotoluene				98.7	99.1	90.4-116				
(S) 4-Bromofluorobenzene				99.3	100	80.1-120				



L861336-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L861336-08 09/26/16 13:57 • (MS) R3166244-4 09/26/16 10:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.24	98.9	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.15	91.8	1	60.6-139	
Chlorobenzene	1.25	ND	1.13	90.2	1	70.1-130	
Chloroform	1.25	ND	1.26	101	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.18	94.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.25	99.8	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.44	87.0	1	45.0-156	
Tetrachloroethene	1.25	ND	0.964	77.2	1	57.4-141	
Trichloroethene	1.25	ND	1.98	158	1	48.9-148	J5
Vinyl chloride	1.25	ND	1.26	100	1	44.3-143	
(S) Toluene-d8				109		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				97.2		90.4-116	
(S) 4-Bromofluorobenzene				100		80.1-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L861354-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861354-06 09/26/16 13:37 • (MS) R3166244-6 09/26/16 10:41 • (MSD) R3166244-7 09/26/16 11:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.25	1.24	99.8	99.2	1	58.6-133			0.630	20
Carbon tetrachloride	1.25	ND	1.13	1.12	90.8	89.7	1	60.6-139			1.18	20
Chlorobenzene	1.25	ND	1.17	1.17	93.3	93.3	1	70.1-130			0.0300	20
Chloroform	1.25	ND	1.25	1.27	100	102	1	66.1-133			1.61	20
1,2-Dichloroethane	1.25	ND	1.16	1.15	92.8	92.4	1	60.7-132			0.470	20
1,1-Dichloroethene	1.25	ND	1.20	1.18	95.7	94.4	1	48.8-144			1.37	20
2-Butanone (MEK)	6.25	ND	4.99	5.22	79.9	83.5	1	45.0-156			4.45	20.8
Tetrachloroethene	1.25	ND	1.01	0.987	80.9	79.0	1	57.4-141			2.37	20
Trichloroethene	1.25	ND	1.11	1.07	88.9	85.8	1	48.9-148			3.57	20
Vinyl chloride	1.25	ND	1.16	1.17	92.7	93.3	1	44.3-143			0.640	20
(S) Toluene-d8					107	108		90.0-115				
(S) Dibromofluoromethane					109	110		79.0-121				
(S) a,a,a-Trifluorotoluene					97.8	98.9		90.4-116				
(S) 4-Bromofluorobenzene					97.3	100		80.1-120				



Method Blank (MB)

(MB) R3166403-1 09/27/16 10:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	74.3			10.0-143
(S) Tetrachloro-m-xylene	75.2			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166403-2 09/27/16 10:35 • (LCSD) R3166403-3 09/27/16 10:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.115	0.107	68.8	64.1	46.5-120			7.09	27
PCB 1016	0.167	0.110	0.103	66.0	61.9	46.3-117			6.44	27.5
(S) Decachlorobiphenyl				84.5	84.1	10.0-143				
(S) Tetrachloro-m-xylene				86.7	86.0	29.2-144				

L861698-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861698-07 09/27/16 21:34 • (MS) R3166403-4 09/27/16 21:47 • (MSD) R3166403-5 09/27/16 21:59

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.200	U	0.0818	0.0903	40.9	45.2	1	24.6-127			9.88	20
PCB 1016	0.200	U	0.157	0.150	78.3	75.0	1	23.9-147			4.28	25.8
(S) Decachlorobiphenyl					39.3	38.5		10.0-143				
(S) Tetrachloro-m-xylene					74.0	68.7		29.2-144				



Method Blank (MB)

(MB) R3167488-1 09/30/16 14:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
PCB 1260	U		0.000120	0.000500
PCB 1016	U		0.000100	0.000500
PCB 1221	U		0.0000730	0.000500
PCB 1232	U		0.0000420	0.000500
PCB 1242	U		0.0000470	0.000500
PCB 1248	U		0.0000860	0.000500
PCB 1254	U		0.0000470	0.000500
(S) Decachlorobiphenyl	66.8			10.0-156
(S) Tetrachloro-m-xylene	73.7			13.9-137

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167488-2 09/30/16 14:41 • (LCSD) R3167488-3 09/30/16 14:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.00250	0.00211	0.00238	84.3	95.1	47.7-149			12.1	28.8
PCB 1016	0.00250	0.00217	0.00222	86.7	88.8	24.7-128			2.36	34.9
(S) Decachlorobiphenyl				66.3	64.7	10.0-156				
(S) Tetrachloro-m-xylene				72.6	73.0	13.9-137				

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167484-1 09/30/16 16:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	98.3			60.0-140
(S) Tetrachloro-m-xylene	113			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167484-2 09/30/16 17:09 • (LCSD) R3167484-3 09/30/16 17:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.540	0.489	108	97.7	60.0-140			10.1	20
PCB 1016	0.500	0.833	0.702	167	140	60.0-140	J4		17.1	20
(S) Decachlorobiphenyl				101	88.9	60.0-140				
(S) Tetrachloro-m-xylene				113	95.8	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3166768-3 09/28/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	50.8			21.8-123
(S) 2-Fluorobiphenyl	64.3			29.5-131
(S) p-Terphenyl-d14	71.6			29.3-137
(S) Phenol-d5	18.1			5.00-70.1
(S) 2-Fluorophenol	27.6			10.0-77.9
(S) 2,4,6-Tribromophenol	56.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0294	0.0282	58.8	56.3	21.0-89.4			4.24	32.6
2,4-Dinitrotoluene	0.0500	0.0410	0.0421	81.9	84.3	31.2-105			2.82	22
Hexachlorobenzene	0.0500	0.0383	0.0394	76.6	78.7	38.5-116			2.75	20.1
Hexachloro-1,3-butadiene	0.0500	0.0315	0.0308	63.0	61.6	16.1-104			2.36	31.2
Hexachloroethane	0.0500	0.0278	0.0266	55.7	53.2	16.5-89.8			4.47	30.7
Nitrobenzene	0.0500	0.0326	0.0321	65.3	64.3	31.4-106			1.54	25.7
Pyridine	0.0500	0.0180	0.0187	36.0	37.3	13.5-58.9			3.69	32.5
2-Methylphenol	0.0500	0.0241	0.0238	48.1	47.5	26.4-86.9			1.30	26.5
3&4-Methyl Phenol	0.0500	0.0249	0.0253	49.7	50.6	27.9-92.0			1.71	27
Pentachlorophenol	0.0500	0.0244	0.0283	48.8	56.6	10.0-97.4			14.9	35.1
2,4,5-Trichlorophenol	0.0500	0.0400	0.0410	79.9	82.0	34.9-112			2.60	23.9
2,4,6-Trichlorophenol	0.0500	0.0365	0.0378	73.0	75.7	29.8-107			3.55	24.1
(S) Nitrobenzene-d5				62.9	61.9	21.8-123				
(S) 2-Fluorobiphenyl				74.7	73.4	29.5-131				
(S) p-Terphenyl-d14				79.4	80.8	29.3-137				



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

[L861336-02,04,06](#)

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
(S) Phenol-d5				20.6	20.3	5.00-70.1				
(S) 2-Fluorophenol				28.6	30.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				75.8	78.4	11.2-130				

L861650-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861650-02 09/28/16 18:38 • (MS) R3166768-4 09/28/16 19:01 • (MSD) R3166768-5 09/28/16 19:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.147	0.294	29.3	58.9	1	14.0-104		J3	66.9	36.4
2,4-Dinitrotoluene	0.500	ND	0.433	0.419	86.6	83.8	1	16.2-135			3.23	20.6
Hexachlorobenzene	0.500	ND	0.389	0.375	77.8	75.1	1	31.9-135			3.53	20
Hexachloro-1,3-butadiene	0.500	ND	0.175	0.309	35.0	61.8	1	15.7-109		J3	55.4	37.6
Hexachloroethane	0.500	ND	0.136	0.277	27.2	55.5	1	10.4-105		J3	68.3	40
Nitrobenzene	0.500	ND	0.189	0.329	37.7	65.9	1	23.1-121		J3	54.3	29
Pyridine	0.500	ND	0.101	0.188	20.2	37.7	1	10.0-77.8		J3	60.6	38.8
2-Methylphenol	0.500	ND	0.155	0.265	31.0	53.0	1	10.0-133		J3	52.4	40
3&4-Methyl Phenol	0.500	ND	0.179	0.274	35.9	54.7	1	17.4-100		J3	41.5	27.7
Pentachlorophenol	0.500	ND	0.152	0.266	30.3	53.2	1	10.0-108		J3	54.8	40
2,4,5-Trichlorophenol	0.500	ND	0.298	0.390	59.6	77.9	1	30.6-120			26.6	33.8
2,4,6-Trichlorophenol	0.500	ND	0.189	0.334	37.7	66.8	1	19.1-114		J3	55.7	29.9
(S) Nitrobenzene-d5					36.7	63.3		21.8-123				
(S) 2-Fluorobiphenyl					61.7	74.2		29.5-131				
(S) p-Terphenyl-d14					84.5	77.5		29.3-137				
(S) Phenol-d5					12.8	24.3		5.00-70.1				
(S) 2-Fluorophenol					12.7	34.1		10.0-77.9				
(S) 2,4,6-Tribromophenol					58.4	72.3		11.2-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

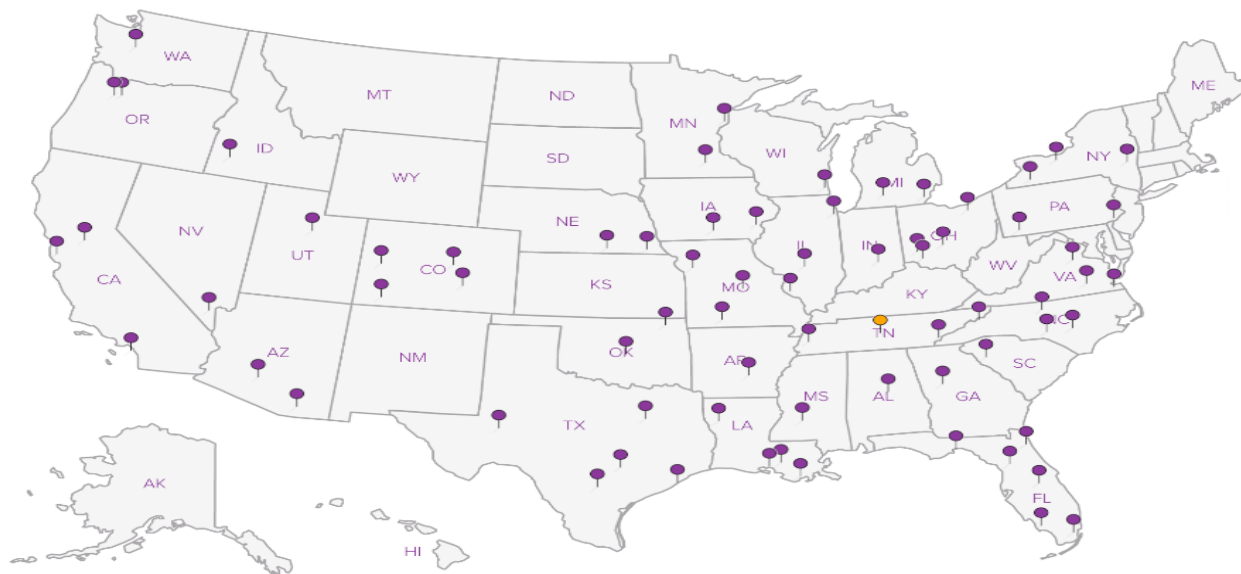
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
U.P. Environmental Services, Inc
P.O. Box 127
Bark River, MI 49807
906-466-9900

Billing Information:

SAME

Report to:
Rick Reidy

Email To:
rick@upenvironmental.com

Project Description:
Abandon Mining Waste - Torch Lake

City/State Collected:
Hyrbell, MI

Phone: 906-466-9900
Fax: 906-466-2641

Client Project #
UPENVBRMI-DRUMS

Collected by (print):
Chris Gendron

Site/Facility ID #

Collected by (signature):

Rush? (Lab MUST Be Notified)
Same Day200%
Next Day100%
Two Day50%
Three Day25%

Immediately Packed on Ice N Y

Date Results Needed
Email? No Yes
FAX? No Yes

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

No. of Cntrs

PH

Reactive Cyanide

PCB's

Reactive Sulfide

Flashpoint

TCLP w/o Pest/Herb

CHL-HPA-DRUM-04A	Grab	OT	N/A	9/20/16	5:00pm	6	X		X	X	X	X						
CHL-HPA-DRUM-04B	Grab	OT	N/A	9/20/16	5:30pm	6	X		X	X	X	X						
CHL-HPA-DRUM-04C	Grab	OT	N/A	9/20/16	6:00pm	87	X	X	X	X	X	X						
CHL-HPA-DRUM-04D	Comp	OT	N/A	9/21/16	11:00am	87	X	Y	X	X	X	X						

Rem./Contaminant

Sample # (lab only)

Chain of Custody

Page 1 of 1

ESC

LABS • SERVICES • EQUIPMENT

YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L861336
F172

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

PH Temp

Flow Other

Hold #

Remarks:

Relinquished by: (Signature)

Date: 9/21/16

Time: 12:00

Received by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐

Condition: (lab use only)
MAY

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: 2-8 °C

Bottles Received: 24

Seal Intact: Y N NA

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)
Chris W. Dean

Date: 9-22-16

Time: 0900

pH Checked: NCF:



L·A·B S·C·I·E·N·C·E·S

YOUR LAB OF CHOICE

Cooler Receipt Form

Client:	UPENVBKMI	SDG#	L861334
Cooler Received/Opened On:	9-22-16	Temperature Upon Receipt:	2.8 °C
Received By:	Greg Dearmon		
Signature:			
Receipt Check List			
	Yes	No	N/A
Were custody seals on outside of cooler and intact?			/
Were custody papers properly filled out?	/		
Did all bottles arrive in good condition?	/		
Were correct bottles used for the analyses requested?	/		
Was sufficient amount of sample sent in each bottle?	/		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			/
If applicable, was an observable VOA headspace present?			/
Non Conformance Generated. (If yes see attached NCF)			

Badger Disposal of WI., Inc.

5611 W. HEMLOCK STREET
MILWAUKEE, WI 53223

(414) 760-9175 1-866-271-0961 WID988580056

WS Number: _____
Approval #: _____

A. Generator Name: MI DEPT. of ENVIRONMENTAL QUALITY
Address: 52634 HIGHWAY M-26

City, State, Zip: HUBBELL, MI 49934

Contact: AMY KERANEN

Telephone: 9063370389 Ext. _____ FAX #: _____

EPA ID: MIK193755066 SIC Code: _____

Bill to: UP ENVIRONMENTAL SERVICES, INC.

Billing Address: P.O. BOX 127

City, State, Zip: BARK RIVER, MI 49807

Contact: RICK RIEDY

Phone Number: 9064669900 FAX #: 9064662641

This profile sheet was completed using: ☒ General Knowledge ☒ Analysis (attached) ☐ MSDS ☐ Both

B. WASTE DESCRIPTION AND GENERAL CHARACTERISTICS

Name of Waste: UNKNOWN WASTE

Process Generating Waste: ABANDONED CONTAINER REMOVAL

Color: BROWN Odor: ☒ None ☐ Mild ☐ Strong Layers: ☒ Single Layer ☐ Double Layer ☐ Multi-Layer
Free Phases: ☐ Liquid 10 % ☐ Powder % ☐ Solid 90 % ☐ Sludge % ☐ Debris %
☐ Filter cake % ☐ Metal Filings % ☐ Granules % ☐ Soil % Aerosol ☐ yes ☐ no Containers? ☐ yes ☐ no

C. RCRA AND DOT INFORMATION

Is this a USEPA Hazardous Waste? ☒ Yes ☐ No Please list the USEPA Hazardous waste codes: D008
Is this a DOT Hazardous Material? ☒ Yes ☐ No Anticipated Annual Volume: 110 / Units: GAL One time shipment ☒ yes ☐ no
Is this Universal Waste? ☐ yes ☒ no Is this PCB Waste? ☐ yes ☒ no If yes PCB concentration: _____ ppm

Proper Shipping Name: HAZARDOUS WASTE, LIQUID, n.o.s.

Hazardous Class #: 9 PG #: III UN/NA #: 3082 Additional Description: _____
Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum Container Type: DRUM Size: 85

D. SPECIAL HANDLING INSTRUCTIONS

If Special handling techniques are required, specify: _____

Treatment: _____ Is a representative sample provided? ☐ Yes ☒ No

E. METALS (Indicate in parts per million [ppm] if this waste contains any of the following using): ☒ TCLP ☐ Generator Knowledge ☐ TOTAL

Metal	Less than	or Actual	Metal	Less than	or Actual	Metal	Less than	or Actual
Arsenic	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500		Mercury	<input checked="" type="checkbox"/> <0.2 <input type="checkbox"/> <20		Nickel	<input type="checkbox"/> <5 <input type="checkbox"/> <134	
Barium	<input checked="" type="checkbox"/> <100		Selenium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100		Thallium	<input type="checkbox"/> <5 <input type="checkbox"/> <130	
Cadmium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100		Silver	<input checked="" type="checkbox"/> <5		Zinc	<input type="checkbox"/> <5	
Chromium	<input checked="" type="checkbox"/> <5		Chromium-Hex	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500				
Lead	<input type="checkbox"/> <5 <input checked="" type="checkbox"/> <500		Copper	<input type="checkbox"/> <5				

F. PHYSICAL/CHEMICAL PROPERTIES

Specific Gravity: ☐ <0.8 ☒ 0.8-1.0 ☐ 1.0-1.2 ☐ 1.2-1.4 ☐ 1.4-1.7 ☐ >1.7 Actual: _____
Total Suspended Solids: ☐ 0.5 ☐ 0.5-2.0 ☐ 2.0-5.0 ☐ 5.0-20 ☐ >20 Actual: _____
pH: ☐ <2 ☐ 2-6 ☒ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ >12.5 Actual: 6.59 and 6.34
BTU's: ☐ <1 ☐ 1-4 ☐ 4-8 ☐ 8-12 ☐ 12-16 Actual: _____
Flash Point Degree F: ☐ <73°F ☐ 73-140°F ☐ >140-200°F ☒ >200°F Actual: _____
Sulfur (WT): ☒ <0.5 % ☐ 0.5-2.0 ☐ 2-5 ☐ >5.0 Actual: _____

G. HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS

Reactivity: ☒ None ☐ Explosive ☐ Pyrophoric ☐ Shock Sensitive ☐ Water Reactive ☐ Etiological ☐ Radioactive ☐ Acutely Hazardous Waste
Viscosity: ☐ Low ☒ Medium ☐ High Are TC Codes present? ☒ Yes ☐ No (If yes, please list in USEPA Waste Code Section).
Halogens: ☐ % Chlorine ☐ % Fluorine ☐ % Bromine ☐ % Iodine
Cyanides (ppm) _____ PCB's (ppm) _____ Pesticides (ppm) _____ Sulfides (ppm) _____ Phenolics (ppm) _____

H. CHEMICAL COMPOSITION (MUST TOTAL 100%)

SEE ATTACHED LAB RESULTS FOR SAMPLE CHTC-TP-DM04—L862154-05 and L862154-06 and CHLL-HPA-DRUM 12—L862134-09 and L862134-10	100%		%		%
	%		%		%
	%		%		%
	%		%		%

I hereby certify that all information submitted in this and all attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. The Generator further recognizes that for reasons of efficiency and speed in processing it is desirable to name Badger Disposal of WI., Inc. as Generator's agent for disposal of waste. Accordingly Generator specifically authorizes office and/or employees of Badger Disposal of WI., Inc. to sign forms and/or contract in respect to waste disposal utilizing only information and matters that appear on the Badger Disposal "master sheet" above. In this respect, Badger Disposal of WI., Inc. is to in no manner change or alter the data on the above master sheet. The Generator specifically acknowledges that it has carefully reviewed the above master sheet data and information. With the above limitations, Generator further consents and directs that the officer and/or employee of Badger Disposal sign the name of the undersigned agent of Generator to any and all such forms and/or contracts respecting processing and disposal of Generator's waste.

Amy Keranen, MDEQ

State of WI. MDEQ

10/19/16

U.P. Environmental Services, Inc.

Sample Delivery Group: L862154
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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CHTC-TP-DM09 L862154-01 Solid

Collected by
Chris GendronCollected date/time
09/23/16 11:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG913943	1	10/04/16 22:53	10/05/16 15:52	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

CHTC-TP-DM09 L862154-02 Waste

Collected by
Chris GendronCollected date/time
09/23/16 11:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:57	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:43	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 19:23	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	20	09/30/16 16:39	09/30/16 16:39	HJF
Wet Chemistry by Method 9012 B	WG913176	3	10/03/16 12:22	10/03/16 15:04	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TS-DM09 L862154-03 Solid

Collected by
Chris GendronCollected date/time
09/23/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:20	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM09 L862154-04 Waste

Collected by
Chris GendronCollected date/time
09/23/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:07	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:46	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 19:46	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	10/05/16 02:51	10/05/16 02:51	LRL
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TP-DM04 L862154-05 Solid

Collected by
Chris GendronCollected date/time
09/23/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:34	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC



CHTC-TP-DM04 L862154-06 Waste

Collected by
Chris GendronCollected date/time
09/23/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:10	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:49	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:10	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 17:20	09/30/16 17:20	HJF
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

CHTC-TS-DM02 L862154-07 Solid

Collected by
Chris GendronCollected date/time
09/23/16 10:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 17:45	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM02 L862154-08 Waste

Collected by
Chris GendronCollected date/time
09/23/16 10:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:13	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:52	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:33	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 17:40	09/30/16 17:40	HJF
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Several samples L862154-02,06 are solvents. Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-30-16

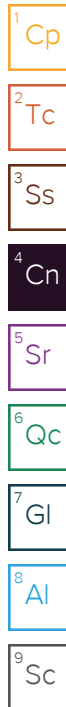
Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862154-02	CHTC-TP-DM09	9045D
L862154-04	CHTC-TS-DM09	9045D
L862154-06	CHTC-TP-DM04	9045D
L862154-08	CHTC-TS-DM02	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862154-02	CHTC-TP-DM09	D93/1010A





Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.899		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-01 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1221	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1232	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1242	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1248	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1254	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1260	ND		1.00	1	10/05/2016 15:52	WG913943
(S) Decachlorobiphenyl	84.2		60.0-140		10/05/2016 15:52	WG913943
(S) Tetrachloro-m-xylene	124		60.0-140		10/05/2016 15:52	WG913943

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	3.52		9/27/2016 10:38:49 PM	WG911845
Final pH	4.72		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.750	3	10/03/2016 15:04	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.36		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-02 WG913869: 3.36 at 20.2c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	81.9		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:57	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:43	WG912283
Barium	ND		0.0500	100	1	09/30/2016 18:43	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:43	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:43	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:43	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:43	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:43	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	13.3		1.00	0.50	20	09/30/2016 16:39	WG912888
Carbon tetrachloride	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
Chlorobenzene	ND		1.00	100	20	09/30/2016 16:39	WG912888
Chloroform	ND		5.00	6	20	09/30/2016 16:39	WG912888

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
1,1-Dichloroethene	ND		1.00	0.70	20	09/30/2016 16:39	WG912888
2-Butanone (MEK)	ND	J3	10.0	200	20	09/30/2016 16:39	WG912888
Tetrachloroethene	ND		1.00	0.70	20	09/30/2016 16:39	WG912888
Trichloroethene	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
Vinyl chloride	ND		1.00	0.20	20	09/30/2016 16:39	WG912888
(S) Toluene-d8	104		90.0-115	114		09/30/2016 16:39	WG912888
(S) Dibromofluoromethane	99.4		79.0-121	125		09/30/2016 16:39	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 16:39	WG912888
(S) 4-Bromofluorobenzene	103		80.1-120	128		09/30/2016 16:39	WG912888

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 19:23	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 19:23	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 19:23	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 19:23	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 19:23	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 19:23	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 19:23	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 19:23	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 19:23	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 19:23	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 19:23	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 19:23	WG912639
(S) 2-Fluorophenol	46.1		10.0-77.9	87		10/03/2016 19:23	WG912639
(S) Phenol-d5	153	J1	5.00-70.1	67		10/03/2016 19:23	WG912639
(S) Nitrobenzene-d5	48.7		21.8-123	120		10/03/2016 19:23	WG912639
(S) 2-Fluorobiphenyl	48.6		29.5-131	122		10/03/2016 19:23	WG912639
(S) 2,4,6-Tribromophenol	80.7		11.2-130	148		10/03/2016 19:23	WG912639
(S) p-Terphenyl-d14	68.4		29.3-137	149		10/03/2016 19:23	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.7		1	09/29/2016 14:33	WG912486

¹ Cp² Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.65		1	09/30/2016 14:20	WG912583

³ Ss⁴ Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

⁵ Sr⁶ Qc

Sample Narrative:

9095B L862154-03 WG912590: Contains No Free Liquid

⁷ Gl⁸ Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:20	WG912211
(S) Decachlorobiphenyl	99.3		10.0-143		10/05/2016 01:20	WG912211
(S) Tetrachloro-m-xylene	101		29.2-144		10/05/2016 01:20	WG912211

⁹ Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.22		9/27/2016 10:38:49 PM	WG911845
Final pH	4.96		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.07		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-04 WG913869: 7.07 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:07	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:46	WG912283
Barium	0.0787		0.0500	100	1	09/30/2016 18:46	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:46	WG912283
Chromium	0.227		0.100	5	1	09/30/2016 18:46	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:46	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:46	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:46	WG912283

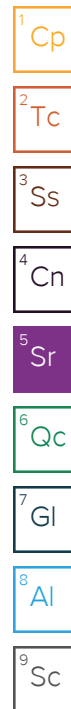
Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Chlorobenzene	ND		0.0500	100	1	10/05/2016 02:51	WG912888
Chloroform	ND		0.250	6	1	10/05/2016 02:51	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	10/05/2016 02:51	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	10/05/2016 02:51	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	10/05/2016 02:51	WG912888
Trichloroethene	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Vinyl chloride	ND		0.0500	0.20	1	10/05/2016 02:51	WG912888
(S) Toluene-d8	98.6		90.0-115	114		10/05/2016 02:51	WG912888
(S) Dibromofluoromethane	82.5		79.0-121	125		10/05/2016 02:51	WG912888
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		10/05/2016 02:51	WG912888
(S) 4-Bromofluorobenzene	98.0		80.1-120	128		10/05/2016 02:51	WG912888



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 19:46	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 19:46	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 19:46	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 19:46	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 19:46	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 19:46	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 19:46	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 19:46	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 19:46	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 19:46	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 19:46	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 19:46	WG912639
(S) 2-Fluorophenol	17.0		10.0-77.9	87		10/03/2016 19:46	WG912639
(S) Phenol-d5	8.08		5.00-70.1	67		10/03/2016 19:46	WG912639
(S) Nitrobenzene-d5	52.8		21.8-123	120		10/03/2016 19:46	WG912639
(S) 2-Fluorobiphenyl	61.8		29.5-131	122		10/03/2016 19:46	WG912639
(S) 2,4,6-Tribromophenol	75.3		11.2-130	148		10/03/2016 19:46	WG912639
(S) p-Terphenyl-d14	66.1		29.3-137	149		10/03/2016 19:46	WG912639





Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.894		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-05 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:34	WG912211
(S) Decachlorobiphenyl	73.3		10.0-143		10/05/2016 01:34	WG912211
(S) Tetrachloro-m-xylene	69.3		29.2-144		10/05/2016 01:34	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	n/a		9/27/2016 10:38:49 PM	WG911845
Final pH	n/a		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.59		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-06 WG913869: 6.59 at 20.7c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:10	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:49	WG912283
Barium	0.208		0.0500	100	1	09/30/2016 18:49	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:49	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:49	WG912283
Lead	15.1		0.0500	5	1	09/30/2016 18:49	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:49	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:49	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 17:20	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 17:20	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 17:20	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 17:20	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 17:20	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 17:20	WG912888
(S) Toluene-d8	104		90.0-115	114		09/30/2016 17:20	WG912888
(S) Dibromofluoromethane	102		79.0-121	125		09/30/2016 17:20	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 17:20	WG912888
(S) 4-Bromofluorobenzene	98.8		80.1-120	128		09/30/2016 17:20	WG912888



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:10	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:10	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:10	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:10	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:10	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:10	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:10	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:10	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:10	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:10	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:10	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:10	WG912639
(S) 2-Fluorophenol	36.4		10.0-77.9	87		10/03/2016 20:10	WG912639
(S) Phenol-d5	24.9		5.00-70.1	67		10/03/2016 20:10	WG912639
(S) Nitrobenzene-d5	48.0		21.8-123	120		10/03/2016 20:10	WG912639
(S) 2-Fluorobiphenyl	65.2		29.5-131	122		10/03/2016 20:10	WG912639
(S) 2,4,6-Tribromophenol	77.3		11.2-130	148		10/03/2016 20:10	WG912639
(S) p-Terphenyl-d14	69.2		29.3-137	149		10/03/2016 20:10	WG912639

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.0		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	2.04		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862154-07 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1254	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 17:45	WG912211
(S) Decachlorobiphenyl	70.0		10.0-143		10/04/2016 17:45	WG912211
(S) Tetrachloro-m-xylene	98.9		29.2-144		10/04/2016 17:45	WG912211

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.68		9/27/2016 10:38:49 PM	WG911845
Final pH	5.17		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.30		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-08 WG913869: 7.30 at 20.5c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

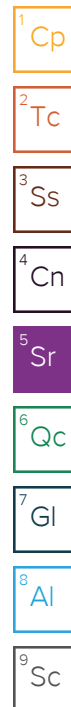
Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:13	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:52	WG912283
Barium	0.239		0.0500	100	1	09/30/2016 18:52	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:52	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:52	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:52	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:52	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:52	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

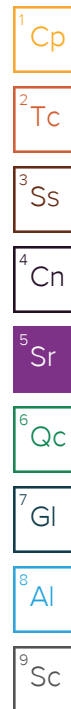
Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 17:40	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 17:40	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 17:40	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 17:40	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 17:40	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 17:40	WG912888
(S) Toluene-d8	103		90.0-115	114		09/30/2016 17:40	WG912888
(S) Dibromofluoromethane	98.8		79.0-121	125		09/30/2016 17:40	WG912888
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		09/30/2016 17:40	WG912888
(S) 4-Bromofluorobenzene	99.4		80.1-120	128		09/30/2016 17:40	WG912888





Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:33	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:33	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:33	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:33	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:33	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:33	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:33	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:33	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:33	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:33	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:33	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:33	WG912639
(S) 2-Fluorophenol	34.1		10.0-77.9	87		10/03/2016 20:33	WG912639
(S) Phenol-d5	23.1		5.00-70.1	67		10/03/2016 20:33	WG912639
(S) Nitrobenzene-d5	48.0		21.8-123	120		10/03/2016 20:33	WG912639
(S) 2-Fluorobiphenyl	61.1		29.5-131	122		10/03/2016 20:33	WG912639
(S) 2,4,6-Tribromophenol	69.7		11.2-130	148		10/03/2016 20:33	WG912639
(S) p-Terphenyl-d14	68.2		29.3-137	149		10/03/2016 20:33	WG912639



Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 14:20 • (DUP) WG912583-1 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.65	1.65	1	0.438		20

L862165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-01 09/30/16 14:20 • (DUP) WG912583-2 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.62	1.57	1	2.96		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 13:55 • (DUP) WG912590-1 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05 09/30/16 13:55 • (DUP) WG912590-2 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20



L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L862222-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911949-2 09/30/16 14:15 • (LCSD) WG911949-3 09/30/16 14:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93.0-107			0.245	20



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20



Method Blank (MB)

(MB) R3167331-3 09/30/16 12:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	103			90.0-115
(S) Dibromofluoromethane	100			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	96.2			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167331-1 09/30/16 11:03 • (LCSD) R3167331-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30/16 15:59 • (MS) R3167331-4 09/30/16 13:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.15	91.8	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.07	85.6	1	60.6-139	
Chlorobenzene	1.25	ND	1.23	98.8	1	70.1-130	
Chloroform	1.25	ND	1.16	92.5	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.13	90.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.40	112	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.13	82.0	1	45.0-156	
Tetrachloroethene	1.25	ND	1.28	102	1	57.4-141	
Trichloroethene	1.25	ND	1.23	98.0	1	48.9-148	
Vinyl chloride	1.25	ND	1.27	101	1	44.3-143	
(S) Toluene-d8				104		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				102		90.4-116	
(S) 4-Bromofluorobenzene				97.7		80.1-120	

L862143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.23	1.24	98.5	99.4	1	58.6-133			0.970	20
Carbon tetrachloride	1.25	ND	1.17	1.14	93.3	91.4	1	60.6-139			2.08	20
Chlorobenzene	1.25	ND	1.33	1.36	106	109	1	70.1-130			1.98	20
Chloroform	1.25	ND	1.21	1.22	96.9	97.2	1	66.1-133			0.380	20
1,2-Dichloroethane	1.25	ND	1.16	1.17	92.7	93.9	1	60.7-132			1.30	20
1,1-Dichloroethene	1.25	ND	1.47	1.47	118	117	1	48.8-144			0.430	20
2-Butanone (MEK)	6.25	ND	3.14	3.16	50.2	50.5	1	45.0-156			0.620	20.8
Tetrachloroethene	1.25	ND	1.36	1.38	109	111	1	57.4-141			1.53	20
Trichloroethene	1.25	ND	1.28	1.29	102	103	1	48.9-148			1.30	20
Vinyl chloride	1.25	ND	1.42	1.42	113	113	1	44.3-143			0.150	20
(S) Toluene-d8					104	104		90.0-115				
(S) Dibromofluoromethane					101	100		79.0-121				
(S) a,a,a-Trifluorotoluene					104	103		90.4-116				
(S) 4-Bromofluorobenzene					98.9	102		80.1-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3167926-1 10/04/16 08:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.00494	0.0170
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	102			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167926-2 10/04/16 09:01 • (LCSD) R3167926-3 10/04/16 09:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.189	0.192	113	115	46.5-120			1.80	27
PCB 1016	0.167	0.174	0.178	104	107	46.3-117			2.24	27.5
(S) Decachlorobiphenyl				113	110	10.0-143				
(S) Tetrachloro-m-xylene				110	108	29.2-144				

L862158-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862158-01 10/04/16 16:36 • (MS) R3167926-4 10/04/16 16:50 • (MSD) R3167926-5 10/04/16 17:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.181	ND	0.218	0.222	120	123	1	24.6-127			2.18	20
PCB 1016	0.181	ND	0.218	0.220	121	122	1	23.9-147			0.730	25.8
(S) Decachlorobiphenyl					113	116		10.0-143				
(S) Tetrachloro-m-xylene					115	115		29.2-144				



Method Blank (MB)

(MB) R3168428-1 10/05/16 15:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	97.0			60.0-140
(S) Tetrachloro-m-xylene	114			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168428-2 10/05/16 15:24 • (LCSD) R3168428-3 10/05/16 15:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.620	0.561	124	112	60.0-140			10.0	20
PCB 1016	0.500	0.628	0.600	126	120	60.0-140			4.45	20
(S) Decachlorobiphenyl				103	99.3	60.0-140				
(S) Tetrachloro-m-xylene				117	111	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

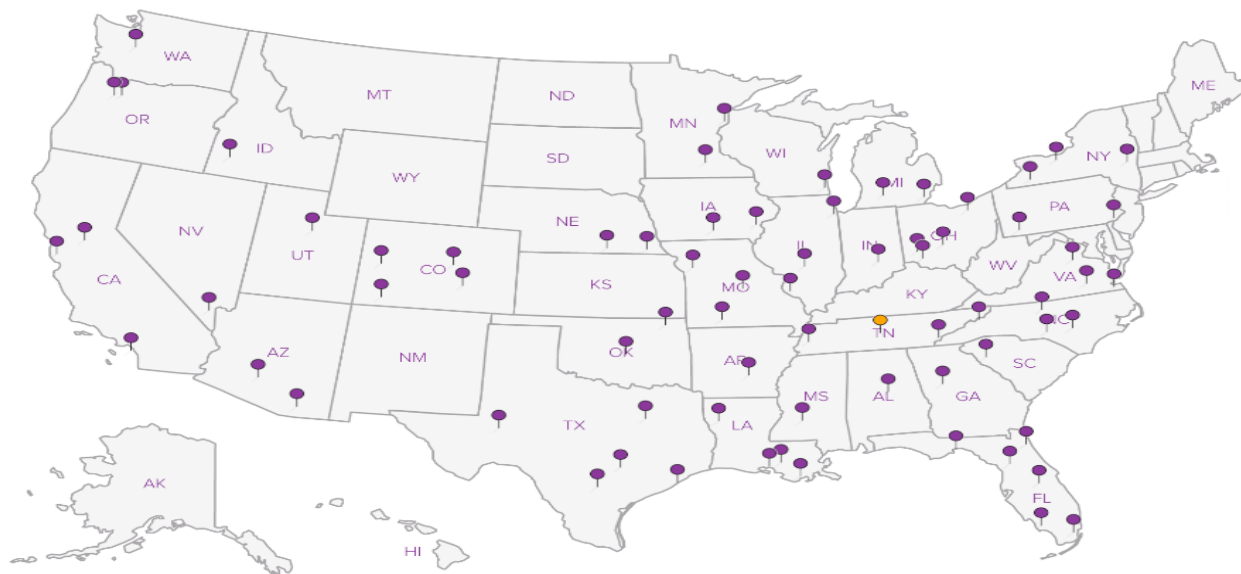
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form

Client: <u>UPENN BRMI</u>	SDG#	<u>6862/54</u>		
Cooler Received/Opened On: <u>9/27/16</u>	Temperature Upon Receipt:	<u>3.2</u> °c		
Received By: <u>Richard Hughes</u>				
Signature: <u>[Signature]</u>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				/
Were custody papers properly filled out?		/		
Did all bottles arrive in good condition?		/		
Were correct bottles used for the analyses requested?		/		
Was sufficient amount of sample sent in each bottle?				/
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				/
If applicable, was an observable VOA headspace present?				/
Non Conformance Generated. (If yes see attached NCF)				

U.P. Environmental Services, Inc.

Sample Delivery Group: L862134
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste-Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-18 L862134-01 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 16:30

Received date/time
09/27/16 09:00

¹Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 14:36	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

²Tc

³Ss

⁴Cn

CHLL-HPA-DRUM-18 L862134-02 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 16:30

Received date/time
09/27/16 09:00

⁵Sr

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:42	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:21	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:03	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 20:37	10/04/16 20:37	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:43	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

⁶Qc

⁷Gl

⁸Al

⁹Sc

CHLL-HPA-DM-01 L862134-03 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 17:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 14:50	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DM-01 L862134-04 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 17:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:45	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:24	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:27	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 20:57	10/04/16 20:57	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:44	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

CHLL-HRA-DRUM-05/06 L862134-05 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 17:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	15	09/28/16 21:40	09/30/16 15:17	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862134

DATE/TIME:

10/05/16 14:03

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HRA-DRUM-05/06 L862134-06 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 17:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:47	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:32	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:50	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 22:31	10/04/16 22:31	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:53	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG912997	1	10/04/16 12:15	10/04/16 12:15	MAJ

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DM-02 L862134-07 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 18:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 15:03	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DM-02 L862134-08 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 18:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:50	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:35	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 18:13	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 22:51	10/04/16 22:51	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:54	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

CHLL-HPA-DRUM-12 L862134-09 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 10:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	15	09/28/16 21:40	09/30/16 15:31	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DRUM-12 L862134-10 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 10:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:52	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:38	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN

ACCOUNT:

U.P. Environmental Services, Inc.

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CHLL-HPA-DRUM-12 L862134-10 Waste

Collected by
Chris GendronCollected date/time
09/21/16 10:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 18:37	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 23:11	10/04/16 23:11	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:56	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Sample Handling and Receiving

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862134-01	CHLL-HPA-DRUM-18	9095B
L862134-03	CHLL-HPA-DM-01	9095B
L862134-05	CHLL-HRA-DRUM-05/06	9095B
L862134-07	CHLL-HPA-DM-02	9095B
L862134-09	CHLL-HPA-DRUM-12	9095B

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862134-02	CHLL-HPA-DRUM-18	9045D
L862134-04	CHLL-HPA-DM-01	9045D
L862134-06	CHLL-HRA-DRUM-05/06	9045D
L862134-08	CHLL-HPA-DM-02	9045D
L862134-10	CHLL-HPA-DRUM-12	9045D

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	84.3		1	09/30/2016 12:56	WG912484

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	3.11		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862134-01 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1254	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 14:36	WG912210
(S) Decachlorobiphenyl	89.8		10.0-143		09/30/2016 14:36	WG912210
(S) Tetrachloro-m-xylene	101		29.2-144		09/30/2016 14:36	WG912210



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.84		9/27/2016 10:38:49 PM	WG911845
Final pH	5.44		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:43	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.66		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-02 WG913869: 6.66 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:42	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:21	WG912283
Barium	0.0978		0.0500	100	1	09/30/2016 18:21	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:21	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:21	WG912283
Lead	14.9		0.0500	5	1	09/30/2016 18:21	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:21	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:21	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 20:37	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 20:37	WG912711



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:37	WG912711
2-Butanone (MEK)	ND	J3	0.500	200	1	10/04/2016 20:37	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:37	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 20:37	WG912711
(S) Toluene-d8	105		90.0-115	114		10/04/2016 20:37	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 20:37	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 20:37	WG912711
(S) 4-Bromofluorobenzene	93.2		80.1-120	128		10/04/2016 20:37	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:03	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:03	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:03	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:03	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:03	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:03	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:03	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:03	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:03	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:03	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:03	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:03	WG912639
(S) 2-Fluorophenol	23.4		10.0-77.9	87		10/03/2016 17:03	WG912639
(S) Phenol-d5	10.5		5.00-70.1	67		10/03/2016 17:03	WG912639
(S) Nitrobenzene-d5	50.6		21.8-123	120		10/03/2016 17:03	WG912639
(S) 2-Fluorobiphenyl	64.6		29.5-131	122		10/03/2016 17:03	WG912639
(S) 2,4,6-Tribromophenol	65.2		11.2-130	148		10/03/2016 17:03	WG912639
(S) p-Terphenyl-d14	68.3		29.3-137	149		10/03/2016 17:03	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	90.5		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	3.55		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-03 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1254	0.185		0.0170	1	09/30/2016 14:50	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 14:50	WG912210
(S) Decachlorobiphenyl	99.4		10.0-143		09/30/2016 14:50	WG912210
(S) Tetrachloro-m-xylene	109		29.2-144		09/30/2016 14:50	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.87		9/27/2016 10:38:49 PM	WG911845
Final pH	5.13		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J6	0.250	1	10/03/2016 14:44	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.05		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-04 WG913869: 7.05 at 20.1c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:45	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:24	WG912283
Barium	30.7		0.0500	100	1	09/30/2016 18:24	WG912283
Cadmium	0.0358		0.0200	1	1	09/30/2016 18:24	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:24	WG912283
Lead	850		0.0500	5	1	09/30/2016 18:24	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:24	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:24	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 20:57	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 20:57	WG912711

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 20:57	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 20:57	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 20:57	WG912711
(S) Dibromofluoromethane	99.4		79.0-121	125		10/04/2016 20:57	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 20:57	WG912711
(S) 4-Bromofluorobenzene	93.5		80.1-120	128		10/04/2016 20:57	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:27	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:27	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:27	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:27	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:27	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:27	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:27	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:27	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:27	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:27	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:27	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:27	WG912639
(S) 2-Fluorophenol	13.5		10.0-77.9	87		10/03/2016 17:27	WG912639
(S) Phenol-d5	6.33		5.00-70.1	67		10/03/2016 17:27	WG912639
(S) Nitrobenzene-d5	38.5		21.8-123	120		10/03/2016 17:27	WG912639
(S) 2-Fluorobiphenyl	52.9		29.5-131	122		10/03/2016 17:27	WG912639
(S) 2,4,6-Tribromophenol	63.6		11.2-130	148		10/03/2016 17:27	WG912639
(S) p-Terphenyl-d14	68.5		29.3-137	149		10/03/2016 17:27	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	99.7		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	0.796		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-05 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1221	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1232	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1242	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1248	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1254	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1260	ND		0.255	15	09/30/2016 15:17	WG912210
(S) Decachlorobiphenyl	72.0		10.0-143		09/30/2016 15:17	WG912210
(S) Tetrachloro-m-xylene	87.3		29.2-144		09/30/2016 15:17	WG912210

9 Sc

Sample Narrative:

8082 L862134-05 WG912210: Dilution due to sample volume



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.14		9/27/2016 10:38:49 PM	WG911845
Final pH	4.79		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:53	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.67		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-06 WG913869: 6.67 at 20.1c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	10/04/2016 12:15	WG912997

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:47	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:32	WG912283
Barium	0.300		0.0500	100	1	09/30/2016 18:32	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:32	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:32	WG912283
Lead	1.64		0.0500	5	1	09/30/2016 18:32	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:32	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:32	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 22:31	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 22:31	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Collected date/time: 09/21/16 17:30

L862134

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 22:31	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 22:31	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 22:31	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 22:31	WG912711
(S) Toluene-d8	106		90.0-115	114		10/04/2016 22:31	WG912711
(S) Dibromofluoromethane	100		79.0-121	125		10/04/2016 22:31	WG912711
(S) a,a,a-Trifluorotoluene	107		90.4-116	114		10/04/2016 22:31	WG912711
(S) 4-Bromofluorobenzene	96.9		80.1-120	128		10/04/2016 22:31	WG912711

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:50	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:50	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:50	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:50	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:50	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:50	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:50	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:50	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:50	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:50	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:50	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:50	WG912639
(S) 2-Fluorophenol	40.5		10.0-77.9	87		10/03/2016 17:50	WG912639
(S) Phenol-d5	25.7		5.00-70.1	67		10/03/2016 17:50	WG912639
(S) Nitrobenzene-d5	49.8		21.8-123	120		10/03/2016 17:50	WG912639
(S) 2-Fluorobiphenyl	68.1		29.5-131	122		10/03/2016 17:50	WG912639
(S) 2,4,6-Tribromophenol	72.9		11.2-130	148		10/03/2016 17:50	WG912639
(S) p-Terphenyl-d14	69.6		29.3-137	149		10/03/2016 17:50	WG912639

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	87.6		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	2.41		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-07 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1254	0.0404		0.0170	1	09/30/2016 15:03	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 15:03	WG912210
(S) Decachlorobiphenyl	82.5		10.0-143		09/30/2016 15:03	WG912210
(S) Tetrachloro-m-xylene	94.9		29.2-144		09/30/2016 15:03	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.55		9/27/2016 10:38:49 PM	WG911845
Final pH	5.14		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:54	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.95		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-08 WG913869: 6.95 at 19.9c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:50	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:35	WG912283
Barium	27.6		0.0500	100	1	09/30/2016 18:35	WG912283
Cadmium	0.0583		0.0200	1	1	09/30/2016 18:35	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:35	WG912283
Lead	506		0.0500	5	1	09/30/2016 18:35	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:35	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:35	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 22:51	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 22:51	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 22:51	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 22:51	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 22:51	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 22:51	WG912711
(S) Toluene-d8	105		90.0-115	114		10/04/2016 22:51	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 22:51	WG912711
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		10/04/2016 22:51	WG912711
(S) 4-Bromofluorobenzene	99.4		80.1-120	128		10/04/2016 22:51	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 18:13	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 18:13	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 18:13	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 18:13	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 18:13	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 18:13	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 18:13	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 18:13	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 18:13	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 18:13	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 18:13	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 18:13	WG912639
(S) 2-Fluorophenol	15.1		10.0-77.9	87		10/03/2016 18:13	WG912639
(S) Phenol-d5	6.87		5.00-70.1	67		10/03/2016 18:13	WG912639
(S) Nitrobenzene-d5	38.8		21.8-123	120		10/03/2016 18:13	WG912639
(S) 2-Fluorobiphenyl	54.9		29.5-131	122		10/03/2016 18:13	WG912639
(S) 2,4,6-Tribromophenol	61.6		11.2-130	148		10/03/2016 18:13	WG912639
(S) p-Terphenyl-d14	69.3		29.3-137	149		10/03/2016 18:13	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.2		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.01		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862134-09 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1221	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1232	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1242	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1248	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1254	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1260	ND		0.255	15	09/30/2016 15:31	WG912210
(S) Decachlorobiphenyl	69.3		10.0-143		09/30/2016 15:31	WG912210
(S) Tetrachloro-m-xylene	86.7		29.2-144		09/30/2016 15:31	WG912210

9 Sc

Sample Narrative:

8082 L862134-09 WG912210: Dilution due to sample volume



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.25		9/27/2016 10:38:49 PM	WG911845
Final pH	4.83		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:56	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.34		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-10 WG913869: 6.34 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:52	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:38	WG912283
Barium	0.208		0.0500	100	1	09/30/2016 18:38	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:38	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:38	WG912283
Lead	6.20		0.0500	5	1	09/30/2016 18:38	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:38	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:38	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 23:11	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 23:11	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 23:11	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 23:11	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 23:11	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 23:11	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 23:11	WG912711
(S) Dibromofluoromethane	102		79.0-121	125		10/04/2016 23:11	WG912711
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		10/04/2016 23:11	WG912711
(S) 4-Bromofluorobenzene	97.6		80.1-120	128		10/04/2016 23:11	WG912711

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 18:37	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 18:37	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 18:37	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 18:37	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 18:37	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 18:37	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 18:37	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 18:37	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 18:37	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 18:37	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 18:37	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 18:37	WG912639
(S) 2-Fluorophenol	36.3		10.0-77.9	87		10/03/2016 18:37	WG912639
(S) Phenol-d5	24.8		5.00-70.1	67		10/03/2016 18:37	WG912639
(S) Nitrobenzene-d5	50.4		21.8-123	120		10/03/2016 18:37	WG912639
(S) 2-Fluorobiphenyl	67.0		29.5-131	122		10/03/2016 18:37	WG912639
(S) 2,4,6-Tribromophenol	76.3		11.2-130	148		10/03/2016 18:37	WG912639
(S) p-Terphenyl-d14	67.8		29.3-137	149		10/03/2016 18:37	WG912639

⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3167449-1 09/30/16 12:56

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00130			

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L862124-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862124-03 09/30/16 12:56 • (DUP) R3167449-3 09/30/16 12:56

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	83.7	83.3	1	0.426		5

Laboratory Control Sample (LCS)

(LCS) R3167449-2 09/30/16 12:56

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) WG912345-4 09/29/16 19:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 09/29/16 19:00 • (DUP) WG912345-1 09/29/16 19:00

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG912345-2 09/29/16 19:00 • (LCSD) WG912345-3 09/29/16 19:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulfide	100	109	103	109	103	70.0-130			5.66	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 09/29/16 01:53 • (DUP) WG911788-3 09/29/16 01:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

L862252-18 Original Sample (OS) • Duplicate (DUP)

(OS) L862252-18 09/29/16 01:53 • (DUP) WG911788-4 09/29/16 01:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911788-1 09/29/16 01:53 • (LCSD) WG911788-2 09/29/16 01:53

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	82.8	82.8	101	101	93.0-107			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862543-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862543-01 10/04/16 12:15 • (DUP) WG912997-1 10/04/16 12:15

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	79.6	79.9	1	0.351		10

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L862604-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862604-02 10/04/16 12:15 • (DUP) WG912997-4 10/04/16 12:15

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	145	145	1	0.124		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG912997-2 10/04/16 12:15 • (LCSD) WG912997-3 10/04/16 12:15

Analyte	Spike Amount Deg. F	LCS Result Deg. F	LCSD Result Deg. F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ignitability	82.0	83.1	82.7	101	101	93.0-107			0.483	20

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20



Method Blank (MB)

(MB) R3167391-3 09/30/16 14:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	105			90.0-115
(S) Dibromofluoromethane	102			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	99.5			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167391-1 09/30/16 11:03 • (LCSD) R3167391-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L862165-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862165-08 10/05/16 00:31 • (MS) R3168218-1 10/05/16 00:51 • (MSD) R3168218-2 10/05/16 01:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	0.803	0.846	64.2	67.6	1	58.6-133			5.17	20
Carbon tetrachloride	1.25	ND	0.761	0.805	60.9	64.4	1	60.6-139			5.72	20
Chlorobenzene	1.25	ND	0.952	1.03	76.2	82.4	1	70.1-130			7.85	20
Chloroform	1.25	ND	0.866	0.907	69.2	72.6	1	66.1-133			4.71	20
1,2-Dichloroethane	1.25	ND	0.815	0.819	65.2	65.5	1	60.7-132			0.520	20
1,1-Dichloroethene	1.25	ND	0.885	0.907	70.8	72.6	1	48.8-144			2.47	20
2-Butanone (MEK)	6.25	ND	3.23	3.01	51.6	48.2	1	45.0-156			6.81	20.8
Tetrachloroethene	1.25	ND	0.861	0.942	68.9	75.3	1	57.4-141			8.97	20
Trichloroethene	1.25	ND	0.870	0.925	69.6	74.0	1	48.9-148			6.14	20
Vinyl chloride	1.25	ND	0.712	0.796	57.0	63.7	1	44.3-143			11.1	20
(S) Toluene-d8					105	106		90.0-115				
(S) Dibromofluoromethane					99.8	99.8		79.0-121				
(S) a,a,a-Trifluorotoluene					104	104		90.4-116				
(S) 4-Bromofluorobenzene					96.1	101		80.1-120				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167087-1 09/29/16 08:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	114			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167087-2 09/29/16 08:53 • (LCSD) R3167087-3 09/29/16 09:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.188	0.190	113	114	46.5-120			0.620	27
PCB 1016	0.167	0.182	0.183	109	109	46.3-117			0.190	27.5
(S) Decachlorobiphenyl				110	106	10.0-143				
(S) Tetrachloro-m-xylene				118	113	29.2-144				

L862049-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862049-01 09/29/16 09:34 • (MS) R3167087-4 09/29/16 09:48 • (MSD) R3167087-5 09/29/16 10:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	ND	0.188	0.181	113	109	1	24.6-127			3.83	20
PCB 1016	0.167	ND	0.180	0.176	108	106	1	23.9-147			2.20	25.8
(S) Decachlorobiphenyl					105	96.4		10.0-143				
(S) Tetrachloro-m-xylene					112	109		29.2-144				



Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

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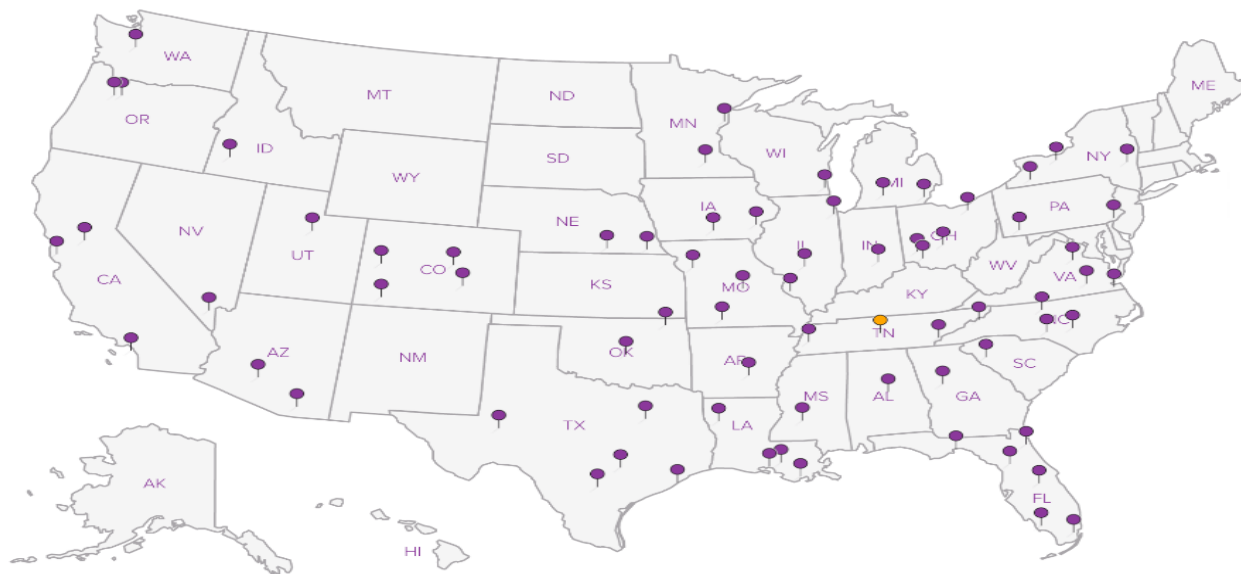
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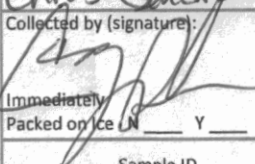
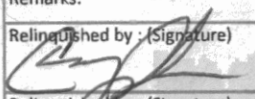
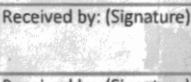

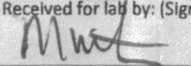
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Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address: UP Environmental Services, Inc P.O. Box 127 Back River, MA 01907				Billing Information: Same				Analysis / Container / Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> TCLP w/o Pers/Herb Reactive Cyanide Reactive Sulfide pH Flashpoint PCB's </div> <div></div> </div>										Chain of Custody Page <u> </u> of <u> </u>  YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859  L# 862134 1085 Acctnum: Template: Prelogin: TSR: PB: Shipped Via: <div style="display: flex; justify-content: space-between;"> Rem./Contaminant Sample # (lab only) </div>																																																																																																																																																																																			
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CHLL-HPA-DRUM-05/06	Grab	OT		9/21/16	5:30p	6	X											X	X	X	X	X		05/06																																																																																																																																																																													
CHLL-HPA-DM-02	Grab	OT		9/21/16	6:00p	6	X											X	X	X	X	X		07/03																																																																																																																																																																													
CHLL-HPA-DRUM-12	Grab	OT		9/26/16	10:00A	2	X											X	X	Y	Y	X		09/10																																																																																																																																																																													
* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____														MW 9-27-16 pH _____ Temp _____		7066 8113 3046																																																																																																																																																																																					
Remarks:														Flow _____ Other _____		Hold #																																																																																																																																																																																					
Relinquished by: (Signature) 				Date: 9/26/16		Time: 4:30p		Received by: (Signature) 				Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____				Condition: (lab use only) Gms 																																																																																																																																																																																					
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)				Temp: °C Bottles Received: 3.1 26				COC Seal Intact: <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> NA																																																																																																																																																																																					
Relinquished by: (Signature)				Date:		Time:		Received for lab by: (Signature) 				Date: 9-27-16 Time: 9w				pH Checked: NCF:																																																																																																																																																																																					



Cooler Receipt Form				
Client:	UPEN/BRMI	SDG#	862134	
Cooler Received/Opened On:	9-27-14	Temperature Upon Receipt:	3.1 °C	
Received By: Michael Witherspoon				
Signature: <i>MWit</i>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				<input checked="" type="checkbox"/>
Were custody papers properly filled out?			<input checked="" type="checkbox"/>	
Did all bottles arrive in good condition?		<input checked="" type="checkbox"/>		
Were correct bottles used for the analyses requested?		<input checked="" type="checkbox"/>		
Was sufficient amount of sample sent in each bottle?		<input checked="" type="checkbox"/>		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				<input checked="" type="checkbox"/>
If applicable, was an observable VOA headspace present?				<input checked="" type="checkbox"/>
Non Conformance Generated. (If yes see attached NCF)				

Badger Disposal of WI., Inc.

5611 W. HEMLOCK STREET
MILWAUKEE, WI 53223

WS Number: _____
Approval #: _____

(414) 760-9175 1-866-271-0961 WID988580056

A. Generator Name: MI DEPT. of ENVIRONMENTAL QUALITY
Address: 52634 HIGHWAY M-26

Bill to: UP ENVIRONMENTAL SERVICES, INC.
Billing Address: P.O. BOX 127

City, State, Zip: HUBBELL, MI 49934

City, State, Zip: BARK RIVER, MI 49807

Contact: AMY KERANEN

Contact: RICK RIEDY

Telephone: 9063370389 Ext. _____ FAX #: _____

Phone Number: 9064669900

FAX #: _____

EPA ID: MIK193755066

SIC Code: _____

This profile sheet was completed using: ☒ General Knowledge ☒ Analysis (attached) ☐ MSDS ☐ Both

B. WASTE DESCRIPTION AND GENERAL CHARACTERISTICS

Name of Waste: UNKNOWN WASTES (GASOLINE)

Process Generating Waste: ABANDONED CONTAINER REMOVAL

Color: BROWN Odor: GAS ☐ None ☐ Mild ☐ Strong Layers ☒ Single Layer ☐ Double Layer ☐ Multi-Layer
Free Phases: ☐ Liquid 100 % ☐ Powder _____ % ☐ Solid _____ % ☐ Sludge _____ % ☐ Debris _____ %
☐ Filter cake _____ % ☐ Metal Filings _____ % ☐ Granules _____ % ☐ Soil _____ % Aerosol ☐ yes ☐ no Containers? ☐ yes ☐ no

C. RCRA AND DOT INFORMATION

Is this a USEPA Hazardous Waste? ☒ Yes ☐ No Please list the USEPA Hazardous waste codes: D001, D018

Is this a DOT Hazardous Material? ☒ Yes ☐ No Anticipated Annual Volume: 55 / Units: GAL One time shipment ☒ yes ☐ no

Is this Universal Waste? ☐ yes ☒ no Is this PCB Waste? ☐ yes ☒ no If yes PBC concentration: _____ ppm

Proper Shipping Name: FLAMMABLE LIQUIDS, n.o.s.

Hazardous Class #: 3 PG #: 1 UN/NA #: 1993 Additional Description: _____

Method of Shipment: ☐ Bulk Liquid ☐ Bulk Solid ☒ Drum Container Type: DRUM Size: 85

D. SPECIAL HANDLING INSTRUCTIONS

If Special handling techniques are required, specify: _____

Treatment: _____ Is a representative sample provided? ☐ Yes ☒ No

E. METALS (Indicate in parts per million [ppm] if this waste contains any of the following using): ☐ TCLP ☐ Generator Knowledge ☐ TOTAL

Metal	Less than	or Actual	Metal	Less than	or Actual	Metal	Less than	or Actual
Arsenic	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____	Mercury	<input checked="" type="checkbox"/> <0.2 <input type="checkbox"/> <20	_____	Nickel	<input type="checkbox"/> <5 <input type="checkbox"/> <134	_____
Barium	<input checked="" type="checkbox"/> <100	_____	Selenium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100	_____	Thallium	<input type="checkbox"/> <5 <input type="checkbox"/> <130	_____
Cadmium	<input checked="" type="checkbox"/> <1 <input type="checkbox"/> <100	_____	Silver	<input checked="" type="checkbox"/> <5	_____	Zinc	<input type="checkbox"/> <5	_____
Chromium	<input checked="" type="checkbox"/> <5	_____	Chromium-Hex	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____			
Lead	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> <500	_____	Copper	<input type="checkbox"/> <5	_____			

F. PHYSICAL/CHEMICAL PROPERTIES

Specific Gravity: ☐ <0.8 ☒ 0.8-1.0 ☐ 1.0-1.2 ☐ 1.2-1.4 ☐ 1.4-1.7 ☐ >1.7 Actual: _____

Total Suspended Solids: ☐ 0.5 ☐ 0.5-2.0 ☐ 2.0-5.0 ☐ 5.0-20 ☐ >20 Actual: _____

pH: ☐ <2 ☐ 2-6 ☐ 6-8 ☐ 8-10 ☐ 10-12.5 ☐ >12.5 Actual: 3.36

BTU's: ☐ <1 ☐ 1-4 ☐ 4-8 ☐ 8-12 ☒ 12-16 Actual: _____

Flash Point Degree F: ☐ <73°F ☐ 73-140°F ☐ >140-200°F ☐ >200°F Actual: 81.9

Sulfur (WT): ☒ <0.5 ☐ 0.5-2.0 ☐ 2-5 ☐ >5.0 Actual: _____

G. HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS

Reactivity: ☒ None ☐ Explosive ☐ Pyrophoric ☐ Shock Sensitive ☐ Water Reactive ☐ Etiological ☐ Radioactive ☐ Acutely Hazardous Waste

Viscosity: ☒ Low ☐ Medium ☐ High Are TC Codes present? ☒ Yes ☐ No (If yes, please list in USEPA Waste Code Section).

Halogens: ☐ _____ % Chlorine ☐ _____ % Fluorine ☐ _____ % Bromine ☐ _____ % Iodine

Cyanides (ppm) _____ PCB's (ppm) _____ Pesticides (ppm) _____ Sulfides (ppm) _____ Phenolics (ppm) _____

H. CHEMICAL COMPOSITION (MUST TOTAL 100%)

SEE ATTACHED LAB RESULTS FOR SAMPLE CHTC-TP-DM09-- L862154-01 and L862154-02	%		%		%
	%		%		%
	%		%		%
	%		%		%

I hereby certify that all information submitted in this and all attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. The Generator further recognizes that for reasons of efficiency and speed in processing it is desirable to name Badger Disposal of WI., Inc. as Generator's agent for disposal of waste. Accordingly Generator specifically authorizes office and/or employees of Badger Disposal of WI., Inc. to sign forms and/or contract in respect to waste disposal utilizing only information and matters that appear on the Badger Disposal "master sheet" above. In this respect, Badger Disposal of WI., Inc. is to in no manner change or alter the data on the above master sheet. The Generator specifically acknowledges that it has carefully reviewed the above master sheet data and information. With the above limitations, Generator further consents and directs that the officer and/or employee of Badger Disposal sign the name of the undersigned agent of Generator to any and all such forms and/or contracts respecting processing and disposal of Generator's waste.

SIGNATURE OF GENERATOR'S OFFICER AND/OR AGENT

TITLE

DATE

U.P. Environmental Services, Inc.

Sample Delivery Group: L862154
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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²Tc: Table of Contents	2
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⁴Cn: Case Narrative	5
⁵Sr: Sample Results	6
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CHTC-TS-DM09 L862154-03	9
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CHTC-TS-DM02 L862154-07	15
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⁶Qc: Quality Control Summary	18
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⁸Al: Accreditations & Locations	34
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CHTC-TP-DM09 L862154-01 Solid

Collected by
Chris GendronCollected date/time
09/23/16 11:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG913943	1	10/04/16 22:53	10/05/16 15:52	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

CHTC-TP-DM09 L862154-02 Waste

Collected by
Chris GendronCollected date/time
09/23/16 11:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:57	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:43	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 19:23	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	20	09/30/16 16:39	09/30/16 16:39	HJF
Wet Chemistry by Method 9012 B	WG913176	3	10/03/16 12:22	10/03/16 15:04	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TS-DM09 L862154-03 Solid

Collected by
Chris GendronCollected date/time
09/23/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:20	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM09 L862154-04 Waste

Collected by
Chris GendronCollected date/time
09/23/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:07	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:46	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 19:46	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	10/05/16 02:51	10/05/16 02:51	LRL
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TP-DM04 L862154-05 Solid

Collected by
Chris GendronCollected date/time
09/23/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:34	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC



CHTC-TP-DM04 L862154-06 Waste

Collected by
Chris GendronCollected date/time
09/23/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:10	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:49	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:10	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 17:20	09/30/16 17:20	HJF
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

CHTC-TS-DM02 L862154-07 Solid

Collected by
Chris GendronCollected date/time
09/23/16 10:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 17:45	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM02 L862154-08 Waste

Collected by
Chris GendronCollected date/time
09/23/16 10:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:13	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:52	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:33	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 17:40	09/30/16 17:40	HJF
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Several samples L862154-02,06 are solvents. Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-30-16

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862154-02	CHTC-TP-DM09	9045D
L862154-04	CHTC-TS-DM09	9045D
L862154-06	CHTC-TP-DM04	9045D
L862154-08	CHTC-TS-DM02	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862154-02	CHTC-TP-DM09	D93/1010A

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.899		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-01 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1221	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1232	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1242	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1248	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1254	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1260	ND		1.00	1	10/05/2016 15:52	WG913943
(S) Decachlorobiphenyl	84.2		60.0-140		10/05/2016 15:52	WG913943
(S) Tetrachloro-m-xylene	124		60.0-140		10/05/2016 15:52	WG913943

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	3.52		9/27/2016 10:38:49 PM	WG911845
Final pH	4.72		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.750	3	10/03/2016 15:04	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.36		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-02 WG913869: 3.36 at 20.2c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	81.9		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:57	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:43	WG912283
Barium	ND		0.0500	100	1	09/30/2016 18:43	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:43	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:43	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:43	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:43	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:43	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	13.3		1.00	0.50	20	09/30/2016 16:39	WG912888
Carbon tetrachloride	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
Chlorobenzene	ND		1.00	100	20	09/30/2016 16:39	WG912888
Chloroform	ND		5.00	6	20	09/30/2016 16:39	WG912888

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
1,1-Dichloroethene	ND		1.00	0.70	20	09/30/2016 16:39	WG912888
2-Butanone (MEK)	ND	J3	10.0	200	20	09/30/2016 16:39	WG912888
Tetrachloroethene	ND		1.00	0.70	20	09/30/2016 16:39	WG912888
Trichloroethene	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
Vinyl chloride	ND		1.00	0.20	20	09/30/2016 16:39	WG912888
(S) Toluene-d8	104		90.0-115	114		09/30/2016 16:39	WG912888
(S) Dibromofluoromethane	99.4		79.0-121	125		09/30/2016 16:39	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 16:39	WG912888
(S) 4-Bromofluorobenzene	103		80.1-120	128		09/30/2016 16:39	WG912888

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 19:23	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 19:23	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 19:23	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 19:23	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 19:23	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 19:23	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 19:23	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 19:23	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 19:23	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 19:23	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 19:23	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 19:23	WG912639
(S) 2-Fluorophenol	46.1		10.0-77.9	87		10/03/2016 19:23	WG912639
(S) Phenol-d5	153	J1	5.00-70.1	67		10/03/2016 19:23	WG912639
(S) Nitrobenzene-d5	48.7		21.8-123	120		10/03/2016 19:23	WG912639
(S) 2-Fluorobiphenyl	48.6		29.5-131	122		10/03/2016 19:23	WG912639
(S) 2,4,6-Tribromophenol	80.7		11.2-130	148		10/03/2016 19:23	WG912639
(S) p-Terphenyl-d14	68.4		29.3-137	149		10/03/2016 19:23	WG912639

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.7		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.65		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-03 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:20	WG912211
(S) Decachlorobiphenyl	99.3		10.0-143		10/05/2016 01:20	WG912211
(S) Tetrachloro-m-xylene	101		29.2-144		10/05/2016 01:20	WG912211



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.22		9/27/2016 10:38:49 PM	WG911845
Final pH	4.96		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.07		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-04 WG913869: 7.07 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:07	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:46	WG912283
Barium	0.0787		0.0500	100	1	09/30/2016 18:46	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:46	WG912283
Chromium	0.227		0.100	5	1	09/30/2016 18:46	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:46	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:46	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:46	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Chlorobenzene	ND		0.0500	100	1	10/05/2016 02:51	WG912888
Chloroform	ND		0.250	6	1	10/05/2016 02:51	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	10/05/2016 02:51	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	10/05/2016 02:51	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	10/05/2016 02:51	WG912888
Trichloroethene	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Vinyl chloride	ND		0.0500	0.20	1	10/05/2016 02:51	WG912888
(S) Toluene-d8	98.6		90.0-115	114		10/05/2016 02:51	WG912888
(S) Dibromofluoromethane	82.5		79.0-121	125		10/05/2016 02:51	WG912888
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		10/05/2016 02:51	WG912888
(S) 4-Bromofluorobenzene	98.0		80.1-120	128		10/05/2016 02:51	WG912888



Collected date/time: 09/23/16 14:00

L862154

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 19:46	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 19:46	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 19:46	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 19:46	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 19:46	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 19:46	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 19:46	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 19:46	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 19:46	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 19:46	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 19:46	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 19:46	WG912639
(S) 2-Fluorophenol	17.0		10.0-77.9	87		10/03/2016 19:46	WG912639
(S) Phenol-d5	8.08		5.00-70.1	67		10/03/2016 19:46	WG912639
(S) Nitrobenzene-d5	52.8		21.8-123	120		10/03/2016 19:46	WG912639
(S) 2-Fluorobiphenyl	61.8		29.5-131	122		10/03/2016 19:46	WG912639
(S) 2,4,6-Tribromophenol	75.3		11.2-130	148		10/03/2016 19:46	WG912639
(S) p-Terphenyl-d14	66.1		29.3-137	149		10/03/2016 19:46	WG912639

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.894		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-05 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:34	WG912211
(S) Decachlorobiphenyl	73.3		10.0-143		10/05/2016 01:34	WG912211
(S) Tetrachloro-m-xylene	69.3		29.2-144		10/05/2016 01:34	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	n/a		9/27/2016 10:38:49 PM	WG911845
Final pH	n/a		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.59		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-06 WG913869: 6.59 at 20.7c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:10	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:49	WG912283
Barium	0.208		0.0500	100	1	09/30/2016 18:49	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:49	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:49	WG912283
Lead	15.1		0.0500	5	1	09/30/2016 18:49	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:49	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:49	WG912283

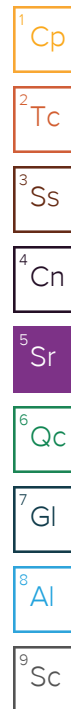
Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 17:20	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 17:20	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 17:20	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 17:20	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 17:20	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 17:20	WG912888
(S) Toluene-d8	104		90.0-115	114		09/30/2016 17:20	WG912888
(S) Dibromofluoromethane	102		79.0-121	125		09/30/2016 17:20	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 17:20	WG912888
(S) 4-Bromofluorobenzene	98.8		80.1-120	128		09/30/2016 17:20	WG912888



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:10	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:10	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:10	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:10	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:10	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:10	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:10	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:10	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:10	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:10	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:10	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:10	WG912639
(S) 2-Fluorophenol	36.4		10.0-77.9	87		10/03/2016 20:10	WG912639
(S) Phenol-d5	24.9		5.00-70.1	67		10/03/2016 20:10	WG912639
(S) Nitrobenzene-d5	48.0		21.8-123	120		10/03/2016 20:10	WG912639
(S) 2-Fluorobiphenyl	65.2		29.5-131	122		10/03/2016 20:10	WG912639
(S) 2,4,6-Tribromophenol	77.3		11.2-130	148		10/03/2016 20:10	WG912639
(S) p-Terphenyl-d14	69.2		29.3-137	149		10/03/2016 20:10	WG912639





Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.0		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-07 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1254	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 17:45	WG912211
(S) Decachlorobiphenyl	70.0		10.0-143		10/04/2016 17:45	WG912211
(S) Tetrachloro-m-xylene	98.9		29.2-144		10/04/2016 17:45	WG912211



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.68		9/27/2016 10:38:49 PM	WG911845
Final pH	5.17		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.30		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-08 WG913869: 7.30 at 20.5c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

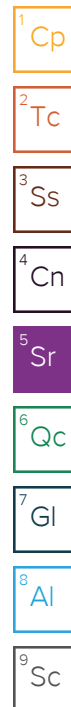
Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:13	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:52	WG912283
Barium	0.239		0.0500	100	1	09/30/2016 18:52	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:52	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:52	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:52	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:52	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:52	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 17:40	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 17:40	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 17:40	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 17:40	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 17:40	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 17:40	WG912888
(S) Toluene-d8	103		90.0-115	114		09/30/2016 17:40	WG912888
(S) Dibromofluoromethane	98.8		79.0-121	125		09/30/2016 17:40	WG912888
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		09/30/2016 17:40	WG912888
(S) 4-Bromofluorobenzene	99.4		80.1-120	128		09/30/2016 17:40	WG912888





Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:33	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:33	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:33	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:33	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:33	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:33	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:33	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:33	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:33	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:33	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:33	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:33	WG912639
(S) 2-Fluorophenol	34.1		10.0-77.9	87		10/03/2016 20:33	WG912639
(S) Phenol-d5	23.1		5.00-70.1	67		10/03/2016 20:33	WG912639
(S) Nitrobenzene-d5	48.0		21.8-123	120		10/03/2016 20:33	WG912639
(S) 2-Fluorobiphenyl	61.1		29.5-131	122		10/03/2016 20:33	WG912639
(S) 2,4,6-Tribromophenol	69.7		11.2-130	148		10/03/2016 20:33	WG912639
(S) p-Terphenyl-d14	68.2		29.3-137	149		10/03/2016 20:33	WG912639

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 14:20 • (DUP) WG912583-1 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.65	1.65	1	0.438		20

L862165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-01 09/30/16 14:20 • (DUP) WG912583-2 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.62	1.57	1	2.96		20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 13:55 • (DUP) WG912590-1 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05 09/30/16 13:55 • (DUP) WG912590-2 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20



L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L862222-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911949-2 09/30/16 14:15 • (LCSD) WG911949-3 09/30/16 14:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93.0-107			0.245	20



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20



Method Blank (MB)

(MB) R3167331-3 09/30/16 12:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	103			90.0-115
(S) Dibromofluoromethane	100			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	96.2			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167331-1 09/30/16 11:03 • (LCSD) R3167331-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30/16 15:59 • (MS) R3167331-4 09/30/16 13:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.15	91.8	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.07	85.6	1	60.6-139	
Chlorobenzene	1.25	ND	1.23	98.8	1	70.1-130	
Chloroform	1.25	ND	1.16	92.5	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.13	90.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.40	112	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.13	82.0	1	45.0-156	
Tetrachloroethene	1.25	ND	1.28	102	1	57.4-141	
Trichloroethene	1.25	ND	1.23	98.0	1	48.9-148	
Vinyl chloride	1.25	ND	1.27	101	1	44.3-143	
(S) Toluene-d8				104		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				102		90.4-116	
(S) 4-Bromofluorobenzene				97.7		80.1-120	

L862143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.23	1.24	98.5	99.4	1	58.6-133			0.970	20
Carbon tetrachloride	1.25	ND	1.17	1.14	93.3	91.4	1	60.6-139			2.08	20
Chlorobenzene	1.25	ND	1.33	1.36	106	109	1	70.1-130			1.98	20
Chloroform	1.25	ND	1.21	1.22	96.9	97.2	1	66.1-133			0.380	20
1,2-Dichloroethane	1.25	ND	1.16	1.17	92.7	93.9	1	60.7-132			1.30	20
1,1-Dichloroethene	1.25	ND	1.47	1.47	118	117	1	48.8-144			0.430	20
2-Butanone (MEK)	6.25	ND	3.14	3.16	50.2	50.5	1	45.0-156			0.620	20.8
Tetrachloroethene	1.25	ND	1.36	1.38	109	111	1	57.4-141			1.53	20
Trichloroethene	1.25	ND	1.28	1.29	102	103	1	48.9-148			1.30	20
Vinyl chloride	1.25	ND	1.42	1.42	113	113	1	44.3-143			0.150	20
(S) Toluene-d8					104	104		90.0-115				
(S) Dibromofluoromethane					101	100		79.0-121				
(S) a,a,a-Trifluorotoluene					104	103		90.4-116				
(S) 4-Bromofluorobenzene					98.9	102		80.1-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3167926-1 10/04/16 08:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.00494	0.0170
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	102			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167926-2 10/04/16 09:01 • (LCSD) R3167926-3 10/04/16 09:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.189	0.192	113	115	46.5-120			1.80	27
PCB 1016	0.167	0.174	0.178	104	107	46.3-117			2.24	27.5
(S) Decachlorobiphenyl				113	110	10.0-143				
(S) Tetrachloro-m-xylene				110	108	29.2-144				

L862158-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862158-01 10/04/16 16:36 • (MS) R3167926-4 10/04/16 16:50 • (MSD) R3167926-5 10/04/16 17:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.181	ND	0.218	0.222	120	123	1	24.6-127			2.18	20
PCB 1016	0.181	ND	0.218	0.220	121	122	1	23.9-147			0.730	25.8
(S) Decachlorobiphenyl					113	116		10.0-143				
(S) Tetrachloro-m-xylene					115	115		29.2-144				



Method Blank (MB)

(MB) R3168428-1 10/05/16 15:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	97.0			60.0-140
(S) Tetrachloro-m-xylene	114			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168428-2 10/05/16 15:24 • (LCSD) R3168428-3 10/05/16 15:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.620	0.561	124	112	60.0-140			10.0	20
PCB 1016	0.500	0.628	0.600	126	120	60.0-140			4.45	20
(S) Decachlorobiphenyl				103	99.3	60.0-140				
(S) Tetrachloro-m-xylene				117	111	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

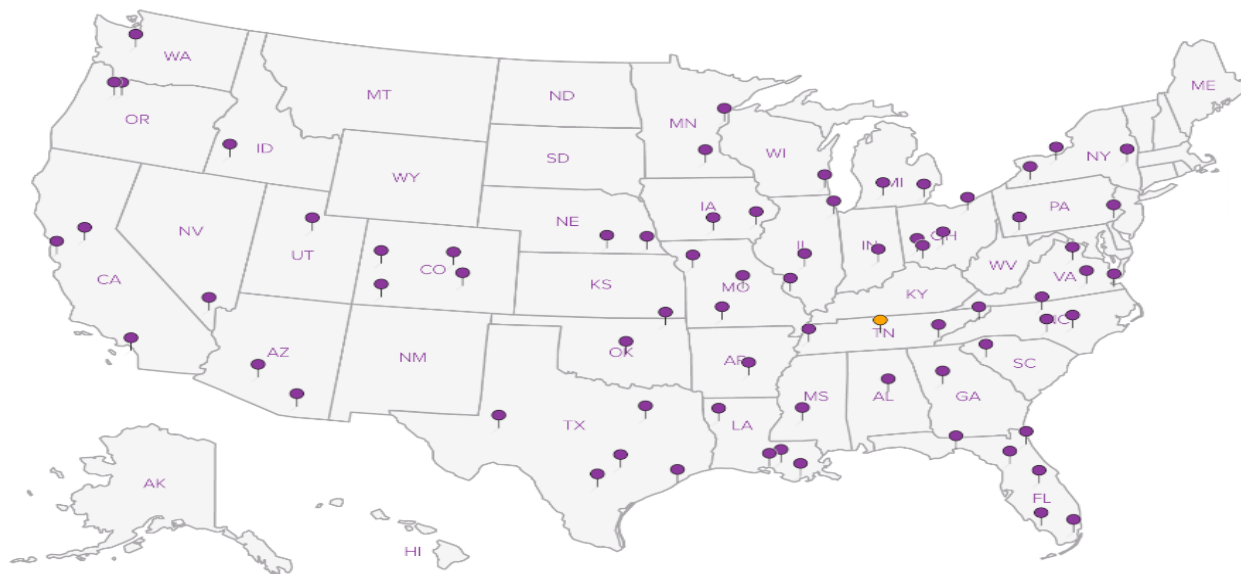
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form

Client: <u>UPENN BRMI</u>	SDG#	<u>6862/54</u>		
Cooler Received/Opened On: <u>9/27/16</u>	Temperature Upon Receipt:	<u>3.2</u> °c		
Received By: <u>Richard Hughes</u>				
Signature: <u>[Signature]</u>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				/
Were custody papers properly filled out?		/		
Did all bottles arrive in good condition?		/		
Were correct bottles used for the analyses requested?		/		
Was sufficient amount of sample sent in each bottle?				/
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				/
If applicable, was an observable VOA headspace present?				/
Non Conformance Generated. (If yes see attached NCF)				

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066		2. Page 1 of 1		3. Emergency Response Phone 800-652-5573		4. Manifest Tracking Number 014216865 JJK				
		5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913 Generator's Phone: 906-337-0389						Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934				
6. Transporter 1 Company Name U. P. Environmental Services, Inc.		U.S. EPA ID Number MID985635846										
7. Transporter 2 Company Name		U.S. EPA ID Number										
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223 Facility's Phone: 866-271-0961		U.S. EPA ID Number WID988580056										
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))				10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1.	NA 3077, Hazardous Waste, Solid, n.o.s. (lead), 9, III				DM			P	D008		
	2.											
	3.											
	4.											
14. Special Handling Instructions and Additional Information Approval #: WS046959-CT ERG #: 171												
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.												
Generator's/Officer's Printed/Typed Name						Signature		Month		Day Year		
TRANSPORTER INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____											
	17. Transporter Acknowledgment of Receipt of Materials											
	Transporter 1 Printed/Typed Name						Signature		Month		Day Year	
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name						Signature		Month		Day Year	
	18. Discrepancy											
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____											
18b. Alternate Facility (or Generator)						U.S. EPA ID Number						
Facility's Phone: _____												
18c. Signature of Alternate Facility (or Generator)						Signature		Month		Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)												
1.		2.		3.		4.						
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a												
Printed/Typed Name						Signature		Month		Day Year		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066	2. Page 1 of 1	3. Emergency Response Phone 800-652-5573	4. Manifest Tracking Number 014216866 JJK				
		5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quilty 55195 US 41, Calumet, MI 49913 Generator's Phone: 906-337-0389		Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934					
6. Transporter 1 Company Name U. P. Environmental Services, XXXX Inc.		U.S. EPA ID Number WID988580056 MID985635846							
7. Transporter 2 Company Name		U.S. EPA ID Number							
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223 Facility's Phone: 866-271-0961		U.S. EPA ID Number WID988580056							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1.	NA 3082, Hazardous Waste, Liquid, n.o.s. (lead, selenium), 9, III.	DM			G	D008 D010		
	2.								
	3.								
	4.								
14. Special Handling Instructions and Additional Information Approval #: WS046958-CT ERG #: 171									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offeor's Printed/Typed Name		Signature				Month	Day	Year	
TRANSPORTER INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: _____ Date leaving U.S.: _____						
	Transporter signature (for exports only):								
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials								
	Transporter 1 Printed/Typed Name	Signature				Month	Day	Year	
DESIGNATED FACILITY	Transporter 2 Printed/Typed Name		Signature				Month	Day	Year
	18. Discrepancy								
18a. Discrepancy Indication Space		<input type="checkbox"/> Quantity	<input type="checkbox"/> Type	<input type="checkbox"/> Residue	<input type="checkbox"/> Partial Rejection	<input type="checkbox"/> Full Rejection			
		Manifest Reference Number: _____							
18b. Alternate Facility (or Generator)		U.S. EPA ID Number							
Facility's Phone:									
18c. Signature of Alternate Facility (or Generator)						Month	Day	Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1.		2.		3.		4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a									
Printed/Typed Name		Signature				Month	Day	Year	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066		2. Page 1 of 1		3. Emergency Response Phone 800-652-5573		4. Manifest Tracking Number 014216863 JJK			
		5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913 Generator's Phone: 906-337-0389						Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934			
6. Transporter 1 Company Name U. P. Environmental Services, Inc.		7. Transporter 2 Company Name						U.S. EPA ID Number MID985635846			
								U.S. EPA ID Number			
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223 Facility's Phone: 866-271-0961		U.S. EPA ID Number WID988580056									
9a. HM		9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) 1. NA 3082, Hazardous Waste, Liquid, n.o.s. (lead), 9, III		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes D008			
				No. Type DM							
2.											
3.											
4.											
14. Special Handling Instructions and Additional Information Approval #: WS046961-CI ERG #: 171											
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.											
Generator's/Offeror's Printed/Typed Name					Signature			Month Day Year			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____											
17. Transporter Acknowledgment of Receipt of Materials											
Transporter 1 Printed/Typed Name					Signature			Month Day Year			
Transporter 2 Printed/Typed Name					Signature			Month Day Year			
18. Discrepancy											
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____											
18b. Alternate Facility (or Generator) U.S. EPA ID Number _____ Facility's Phone: _____											
18c. Signature of Alternate Facility (or Generator)								Month Day Year			
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
1.		2.		3.		4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
Printed/Typed Name					Signature			Month Day Year			

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066		2. Page 1 of 1		3. Emergency Response Phone 800-652-5573		4. Manifest Tracking Number 014216864 JJK				
		5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913		Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934								
Generator's Phone: 906-337-0389												
6. Transporter 1 Company Name U. P. Environmental Services, Inc.								U.S. EPA ID Number MID985635846				
7. Transporter 2 Company Name								U.S. EPA ID Number				
8. Designated Facility Name and Site Address Badger Disposal, Inc. Disposal of WI, Inc. 5611 W. Hemlock St. Milwaukee, WI 53223								U.S. EPA ID Number WID988580056				
Facility's Phone: 866-271-0961												
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))				10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
						No.	Type					
	1.	UN 1993, Waste Flammable Liquids, n.o.s. (Gasoline), 3, II.					DM		G	D001	D018	
	2.											
	3.											
	4.											
14. Special Handling Instructions and Additional Information Approval #: WS046960-FNP ERG #: 128												
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.												
Generator's/Offeror's Printed/Typed Name						Signature			Month Day Year			
TRANSPORTER INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____											
	17. Transporter Acknowledgment of Receipt of Materials											
TRANSPORTER	Transporter 1 Printed/Typed Name						Signature			Month Day Year		
	Transporter 2 Printed/Typed Name						Signature			Month Day Year		
DESIGNATED FACILITY	18. Discrepancy											
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection											
	Manifest Reference Number: _____											
	18b. Alternate Facility (or Generator) U.S. EPA ID Number _____											
	Facility's Phone: _____											
	18c. Signature of Alternate Facility (or Generator)									Month Day Year		
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
	1.		2.		3.		4.					
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
	Printed/Typed Name						Signature			Month Day Year		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066	2. Page 1 of 1	3. Emergency Response Phone 800-652-5573	4. Manifest Tracking Number 014216870 JJK			
5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913				Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934				
Generator's Phone: 906-337-0389								
6. Transporter 1 Company Name U. P. Environmental Services, Inc.				U.S. EPA ID Number MID985635846				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223				U.S. EPA ID Number WID988580056				
Facility's Phone: 866-271-0961								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
1.	NA 3077, Hazardous Waste, Solid, n.o.s. (lead), 9, III		DM		P	D008		
2.								
3.								
4.								
14. Special Handling Instructions and Additional Information Approval #: W5046956 ERG #: 171								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offeror's Printed/Typed Name				Signature		Month	Day	Year
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name				Signature		Month	Day	Year
Transporter 2 Printed/Typed Name				Signature		Month	Day	Year
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
Manifest Reference Number: _____								
18b. Alternate Facility (or Generator)						U.S. EPA ID Number		
Facility's Phone: _____								
18c. Signature of Alternate Facility (or Generator)						Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1.	2.	3.	4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a								
Printed/Typed Name				Signature		Month	Day	Year

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066	2. Page 1 of 1	3. Emergency Response Phone 800-652-5573	4. Manifest Tracking Number 014216866 JJK		
5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quilty 55195 US 41, Calumet, MI 49913 Generator's Phone: 906-337-0389				Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934			
6. Transporter 1 Company Name U. P. Environmental Services, INXX Inc.				U.S. EPA ID Number MIK193755066 MID985635846			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Menlock St., Milwaukee, WI 53223 Facility's Phone: 856-271-0961				U.S. EPA ID Number WID982580056			
GENERATOR	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.	NA 3082, Hazardous Waste, Liquid, n.o.s. (lead, selenium), 9, III.	018	DM	990	G	D008 D010
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information Approval #: WS046958-CI ERG #: 171 L 261 226-07, 68 (12) 04D							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offoror's Printed/Typed Name Amy K... Signature C. K... Month Day Year 11 1 2006							
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
	17. Transporter Acknowledgment of Receipt of Materials						
TRANSPORTER	Transporter 1 Printed/Typed Name Neil Lucas				Signature Neil Lucas		Month Day Year 11 2 06
	Transporter 2 Printed/Typed Name				Signature		Month Day Year
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number:						
	18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
	Facility's Phone:				18c. Signature of Alternate Facility (or Generator)		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.		2.		3.		4.	
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name GIVEN BRAATEN				Signature Given Braaten		Month Day Year 11 8 16	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MLK193755066	2. Page 1 of 1	3. Emergency Response Phone 800-633-8253	4. Manifest Tracking Number 014216865 JJK		
5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913				Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934			
Generator's Phone: 906-337-0389							
6. Transporter 1 Company Name U. P. Environmental Services, Inc.				U.S. EPA ID Number MTD985635846			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223				U.S. EPA ID Number WTD988530056			
Facility's Phone: 866-271-0961							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type				
1	NA 3077, Hazardous Waste, Solid, n.o.s. (lead), 9, III	003	DM	0750	P	D005	
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information Approval #: WS046959-CI ERG #: 171 L 86 8134 - 1, 2 (1) L 86 8134 - 3, 4 (1) L 86 8134 - 5, 6 (1)							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Amey Kevane				Signature <i>Amey Kevane</i>		Month Day Year 11 1 2016	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Nail Larson				Signature <i>Nail Larson</i>		Month Day Year 11 1 16	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number:							
18b. Alternate Facility (or Generator)				U.S. EPA ID Number			
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)						Month Day Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.		2.		3.		4.	
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name SWIN BRANTEN				Signature <i>SWIN BRANTEN</i>		Month Day Year 11 8 16	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MTK192755066	2. Page 1 of 1	3. Emergency Response Phone 800-633-8253 300-652-5572	4. Manifest Tracking Number 014216864 JJK			
5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913 Generator's Phone: 906-337-0389				Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934				
6. Transporter 1 Company Name U. P. Environmental Services, Inc.				U.S. EPA ID Number MTD985635846				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Badger Waste Management & Recycling Disposal of WI, Inc. 5611 W. Henlock St. Milwaukee, WI 53223 Facility's Phone: 866-271-0961				U.S. EPA ID Number WTD988530056				
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
1.	UN 1993, Waste Flammable Liquids, n.o.s. (Gasoline), 3, II.			001 IM 0025		G		0001 0018
2.								
3.								
4.								
14. Special Handling Instructions and Additional Information Approval #: WS046960-FNP ERG #: 128								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offor's Printed/Typed Name John K. Kucera				Signature John K. Kucera		Month 11	Day 1	Year 2006
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name Neil L. Liscan				Signature Neil L. Liscan		Month 11	Day 1	Year 2006
Transporter 2 Printed/Typed Name				Signature		Month	Day	Year
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
Manifest Reference Number: _____								
18b. Alternate Facility (or Generator)						U.S. EPA ID Number		
Facility's Phone: _____								
18c. Signature of Alternate Facility (or Generator)						Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1.	2.	3.	4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name OWEN BRANTEN				Signature Owen Branten		Month 11	Day 8	Year 2006

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066	2. Page 1 of 1	3. Emergency Response Phone 800-652-5573	4. Manifest Tracking Number 014216870 JJK			
5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913 Generator's Phone: 906-337-0389			Generator's Site Address (if different than mailing address) 52634 Highway M-26 Hubbell, MI 49934					
6. Transporter 1 Company Name U. P. Environmental Services, Inc.				U.S. EPA ID Number MTD985635846				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Radger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223 Facility's Phone: 866-271-0961				U.S. EPA ID Number WTD988530056				
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
				No.	Type			
	1. HA 3077, Hazardous Waste, Solid, n.o.s. (lead), 9, III			001	DM	250	P	D008 D001
	2.							
	3.							
4.								
14. Special Handling Instructions and Additional Information Approval #: W5046956 ERG #: 171 L 901 356 01 002 (HA) (1)								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offor's Printed/Typed Name Dany K. Kanan				Signature Dany K. Kanan		Month Day Year 11 1 2016		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name N. L. L...				Signature N. L. L...		Month Day Year 11 2 16		
Transporter 2 Printed/Typed Name				Signature		Month Day Year		
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
Manifest Reference Number:								
18b. Alternate Facility (or Generator)				U.S. EPA ID Number				
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator)						Month Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1.		2.		3.		4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name GIVE N BRAATEN				Signature GIVE N BRAATEN		Month Day Year 11 8 16		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MIK193755066	2. Page 1 of 1	3. Emergency Response Phone 800-652-5573	4. Manifest Tracking Number 014216863 JJK		
5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, MI 49913				Generator's Site Address (if different than mailing address) 52634 Highway M-25 Hubbell, MI 49934			
Generator's Phone: 906-337-0339							
6. Transporter 1 Company Name U. P. Environmental Services, Inc.				U.S. EPA ID Number MTD985635846			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address Badger Disposal of WI, Inc. 5611 W. Hemlock St., Milwaukee, WI 53223				U.S. EPA ID Number WID98580056			
Facility's Phone: 366-271-0961							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
			No.	Type			
	1.	NA 3082, Hazardous Waste, Liquid, n.o.s. (lead), 9, III	002	DM	0100 6500	G	0008
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information Approval #: WSO46961-GT ERC #: 171 L862104 (1) L862104 (1)							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Dr. Kervan Mize				Signature <i>[Signature]</i>		Month Day Year 11 1 2016	
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____						
	17. Transporter Acknowledgment of Receipt of Materials						
TRANSPORTER	Transporter 1 Printed/Typed Name Neil L...				Signature <i>[Signature]</i>		Month Day Year 11 2 16
	Transporter 2 Printed/Typed Name				Signature		Month Day Year
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number: _____						
	18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
	Facility's Phone: _____						
	18c. Signature of Alternate Facility (or Generator)						Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
	1.	2.	3.	4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
	Printed/Typed Name GIVEN BRAATEN				Signature <i>[Signature]</i>		Month Day Year 11 8 16

1116 Royce Road (Ripley) Hancock, MI 49930
Ph: 906/482-1380 and 482-2650

Ph: 906/482-1380 and 482-2650
U.P. Environmental

9/23/16

GROSS

TABLE

NET

36

TOTAL

Thank You!

-GREENLEE PRINTING - CALUMET, MI 49813 25651-AO

B-2

1116 Royce Road (Ripley) Hancock, MI 49930
Ph: 906/482-1320 and 482-2650

U.S. Environmental

4-21-2016

GROSS

TARE

NET

35

TOTAL

Thank You!

GREENLEE PRINTING - CALUMET, MI 49913 25651-AO

B-2

**PO BOX 127
BARK RIVER, MICHIGAN 49807
(906) 466-9908 or 800-624-6086
1 1/2 % Interest After 30 Days**

C PRODUCT 610 All claims and returned goods must be accompanied by this bill.

Thank You



Requested Facility: K & W LANDFILL ☐ Unsure Profile Number: _____
☐ Multiple Generator Locations (Attach Locations) ☐ Request Certificate of Disposal ☐ Renewal? Original Profile Number: _____

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

1. Generator Name: MI Dept. of Environmental Quality
2. Site Address: 52634 Highway M-26
(City, State, ZIP) Hubbell, MI 49934
3. County: Houghton
4. Contact Name: Amy Keranen
5. Email: keranena@michigan.gov
6. Phone: 906-337-0389 7. Fax: _____
8. Generator EPA ID: MIK193755086 ☐ N/A
9. State ID: _____ ☐ N/A

C. MATERIAL INFORMATION

1. Common Name: UNKNOWN SLUDGE
Describe Process Generating Material: ☐ See Attached
ABANDONED CONTAINER REMOVAL
2. Material Composition and Contaminants: ☐ See Attached

1. SLUDGE/SOLIDS	100
2.	
3.	
4.	

Total comp. must be equal to or greater than 100% ≥100%
3. State Waste Codes: _____ ☒ N/A
4. Color: BROWN
5. Physical State at 70°F: ☒ Solid ☐ Liquid ☐ Other: _____
6. Free Liquid Range Percentage: _____ to _____ ☒ N/A
7. pH: _____ to _____ ☒ N/A
8. Strong Odor: ☐ Yes ☒ No Describe: _____
9. Flash Point: ☐ <140°F ☐ 140°-199°F ☐ ≥200° ☒ N/A

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

1. Analytical attached ☒ Yes
Please identify applicable samples and/or lab reports:
See Attached List that identifies the 33 drums refer to Analytical data attached.
2. Other information attached (such as MSDS)? ☐ Yes

G. GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)

By signing this EZ Profile™ form, I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of this material, and that all relevant information necessary for proper material characterization and to identify known and suspected hazards has been provided. Any analytical data attached was derived from a sample that is representative as defined in 40 CFR 261 - Appendix 1 or by using an equivalent method. All changes occurring in the character of the material (i.e., changes in the process or new analytical) will be identified by the Generator and be disclosed to Waste Management prior to providing the material to Waste Management.

If I am an agent signing on behalf of the Generator, I have confirmed with the Generator that information contained in this Profile is accurate and complete.

Name (Print): Amy Keranen Date: 10/19/16
Title: Environmental Quality Analyst
Company: MDEQ

B. BILLING INFORMATION☐ SAME AS GENERATOR

1. Billing Name: UP ENVIRONMENTAL SERVICES, INC.
2. Billing Address: P.O. BOX 127
(City, State, ZIP) BARK RIVER, MI 49807
3. Contact Name: RICK RIEDY
4. Email: rick@upenvironmental.com
5. Phone: 906-466-9900 6. Fax: 906-466-2641
7. WM Hauled? ☐ Yes ☒ No
8. P.O. Number: _____
9. Payment Method: ☒ Credit Account ☐ Cash ☐ Credit Card

D. REGULATORY INFORMATION

1. EPA Hazardous Waste? ☐ Yes* ☒ No
Code: _____
2. State Hazardous Waste? ☐ Yes ☒ No
Code: _____
3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? ☐ Yes* ☒ No
4. Contains Underlying Hazardous Constituents? ☐ Yes* ☒ No
5. From an industry regulated under Benzene NESHAP? ☐ Yes* ☒ No
6. Facility remediation subject to 40 CFR 63 GGGGG? ☐ Yes* ☒ No
7. CERCLA or State-mandated clean-up? ☐ Yes* ☒ No
8. NRC or State-regulated radioactive or NORM waste? ☐ Yes* ☒ No
*If Yes, see Addendum (page 2) for additional questions and space.
9. Contains PCBs? → If Yes, answer a, b and c. ☒ Yes ☐ No
a. Regulated by 40 CFR 761? ☐ Yes ☒ No
b. Remediation under 40 CFR 761.61 (a)? ☐ Yes ☒ No
c. Were PCB imported into the US? ☐ Yes ☒ No
10. Regulated and/or Untreated Medical/Infectious Waste? ☐ Yes ☒ No
11. Contains Asbestos? ☐ Yes ☒ No
→ If Yes: ☐ Non-Friable ☐ Non-Friable - Regulated ☐ Friable

F. SHIPPING AND DOT INFORMATION

1. ☒ One-Time Event ☐ Repeat Event/Ongoing Business
2. Estimated Quantity/Unit of Measure: 33
☐ Tons ☐ Yards ☒ Drums ☐ Gallons ☐ Other: _____
3. Container Type and Size: Steel 55 gallon drums
4. USDOT Proper Shipping Name: ☒ N/A

Certification Signature

Generator---Michigan Department of Environmental Quality

Site Address---52634 Highway M-26

Hubbell, MI 49934

Generator ID#: MIK193755066

Non-Hazardous Drums

Entire Sample Group---L86222	14 drums
Entire Sample Group---L862165	8 drums
Sample---CHLL-HPA-DRUM-04B---Sample Group L861336	6 drums
Sample---CHILL-HPA-DRUM-04C---Sample Group L861336	1 drum
Sample---CHTC-TS-DM09---Sample Group L862154	2 drums
Sample---CHTC-TS-DM02---Sample Group L862154	1 drum
Sample---CHLL-HRA-DRUM---05/06---Sample Group L862134	1 drum
Total	33 drums

U.P. Environmental Services, Inc.

Sample Delivery Group: L862222
Samples Received: 09/27/2016
Project Number:
Description: Abandon mining Waste - Torch Lane

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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CHLL-HPA-DRUM-04E L862222-01 Solid

Collected by
Chris GendronCollected date/time
09/22/16 12:00Received date/time
09/27/16 09:00¹ Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG913943	1	10/04/16 22:53	10/05/16 16:06	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

² Tc³ Ss

CHLL-HPA-DRUM-04E L862222-02 Waste

Collected by
Chris GendronCollected date/time
09/22/16 12:00Received date/time
09/27/16 09:00⁴ Cn

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912747	1	09/30/16 08:20	09/30/16 11:59	NJB
Metals (ICP) by Method 6010B	WG912678	1	09/29/16 18:09	09/29/16 23:22	ST
Preparation by Method 1311	WG912294	1	09/28/16 21:15	09/28/16 21:15	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	5	10/03/16 07:34	10/03/16 23:18	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 18:20	09/30/16 18:20	HJF
Wet Chemistry by Method 9012 B	WG911946	1	09/28/16 11:40	09/28/16 14:44	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

CHLL-HPA-DRUM-04F L862222-03 Solid

Collected by
Chris GendronCollected date/time
09/22/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:06	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DRUM-04F L862222-04 Waste

Collected by
Chris GendronCollected date/time
09/22/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912748	1	09/30/16 09:21	09/30/16 14:50	NJB
Metals (ICP) by Method 6010B	WG912679	1	09/29/16 18:08	09/30/16 15:33	ST
Preparation by Method 1311	WG912294	1	09/28/16 21:15	09/28/16 21:15	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 22:07	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 18:41	09/30/16 18:41	HJF
Wet Chemistry by Method 9012 B	WG911946	6	09/28/16 11:40	09/28/16 14:45	DR
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHLL-HPA-DRUM-04G L862222-05 Solid

Collected by
Chris GendronCollected date/time
09/22/16 14:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 00:52	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04G L862222-06 Waste

Collected by
Chris Gendron

Collected date/time
09/22/16 14:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912747	1	09/30/16 08:20	09/30/16 12:02	NJB
Metals (ICP) by Method 6010B	WG912678	1	09/29/16 18:09	09/29/16 23:30	ST
Preparation by Method 1311	WG912294	1	09/28/16 21:15	09/28/16 21:15	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	5	10/03/16 07:34	10/03/16 23:42	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 19:01	09/30/16 19:01	HJF
Wet Chemistry by Method 9012 B	WG911946	1	09/28/16 11:40	09/28/16 14:34	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

CHLL-HPA-DRUM-04H L862222-07 Solid

Collected by
Chris Gendron

Collected date/time
09/22/16 15:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	5	10/03/16 02:18	10/05/16 00:25	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04H L862222-08 Waste

Collected by
Chris Gendron

Collected date/time
09/22/16 15:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912747	1	09/30/16 08:20	09/30/16 12:04	NJB
Metals (ICP) by Method 6010B	WG912678	1	09/29/16 18:09	09/29/16 23:33	ST
Preparation by Method 1311	WG912294	1	09/28/16 21:15	09/28/16 21:15	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 22:31	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 19:21	09/30/16 19:21	HJF
Wet Chemistry by Method 9012 B	WG911946	1	09/28/16 11:40	09/28/16 14:46	DR
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHLL-HPA-DRUM-04I L862222-09 Solid

Collected by
Chris Gendron

Collected date/time
09/22/16 14:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	5	10/03/16 02:18	10/05/16 00:38	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DRUM-04I L862222-10 Waste

Collected by
Chris Gendron

Collected date/time
09/22/16 14:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912747	1	09/30/16 08:20	09/30/16 12:07	NJB
Metals (ICP) by Method 6010B	WG912678	1	09/29/16 18:09	09/29/16 23:36	ST
Preparation by Method 1311	WG912294	1	09/28/16 21:15	09/28/16 21:15	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 22:55	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 19:41	09/30/16 19:41	HJF

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862222

DATE/TIME:

10/06/16 09:32

PAGE:

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CHLL-HPA-DRUM-04I L862222-10 Waste

Collected by
Chris GendronCollected date/time
09/22/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	¹ Cp
Wet Chemistry by Method 9012 B	WG911946	1	09/28/16 11:40	09/28/16 14:49	DR	² Tc
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL	³ Ss
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ	⁴ Cn
						⁵ Sr
						⁶ Qc
						⁷ Gl
						⁸ Al
						⁹ Sc



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Please note that several samples are solvents. L862222-02,06 Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-29-16

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862222-02	CHLL-HPA-DRUM-04E	9045D
L862222-04	CHLL-HPA-DRUM-04F	9045D
L862222-06	CHLL-HPA-DRUM-04G	9045D
L862222-08	CHLL-HPA-DRUM-04H	9045D
L862222-10	CHLL-HPA-DRUM-04I	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862222-03	CHLL-HPA-DRUM-04F	9095B
L862222-07	CHLL-HPA-DRUM-04H	9095B
L862222-09	CHLL-HPA-DRUM-04I	9095B

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.00		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862222-01 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		1.00	1	10/05/2016 16:06	WG913943
PCB 1221	ND		1.00	1	10/05/2016 16:06	WG913943
PCB 1232	ND		1.00	1	10/05/2016 16:06	WG913943
PCB 1242	ND		1.00	1	10/05/2016 16:06	WG913943
PCB 1248	ND		1.00	1	10/05/2016 16:06	WG913943
PCB 1254	ND		1.00	1	10/05/2016 16:06	WG913943
PCB 1260	ND		1.00	1	10/05/2016 16:06	WG913943
(S) Decachlorobiphenyl	76.9		60.0-140		10/05/2016 16:06	WG913943
(S) Tetrachloro-m-xylene	79.8		60.0-140		10/05/2016 16:06	WG913943

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/28/2016 9:15:21 PM	WG912294
Initial pH	n/a		9/28/2016 9:15:21 PM	WG912294
Final pH	n/a		9/28/2016 9:15:21 PM	WG912294

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	09/28/2016 14:44	WG911946

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.90		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862222-02 WG913869: 7.90 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:59	WG912747

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/29/2016 23:22	WG912678
Barium	ND		0.0500	100	1	09/29/2016 23:22	WG912678
Cadmium	ND		0.0200	1	1	09/29/2016 23:22	WG912678
Chromium	ND		0.100	5	1	09/29/2016 23:22	WG912678
Lead	ND		0.0500	5	1	09/29/2016 23:22	WG912678
Selenium	ND		0.100	1	1	09/29/2016 23:22	WG912678
Silver	ND		0.0500	5	1	09/29/2016 23:22	WG912678

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 18:20	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 18:20	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 18:20	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 18:20	WG912888

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 18:20	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 18:20	WG912888
2-Butanone (MEK)	0.550	J3	0.500	200	1	09/30/2016 18:20	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 18:20	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 18:20	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 18:20	WG912888
(S) Toluene-d8	105		90.0-115	114		09/30/2016 18:20	WG912888
(S) Dibromofluoromethane	101		79.0-121	125		09/30/2016 18:20	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 18:20	WG912888
(S) 4-Bromofluorobenzene	104		80.1-120	128		09/30/2016 18:20	WG912888

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.500	7.50	5	10/03/2016 23:18	WG912639
2,4-Dinitrotoluene	ND		0.500	0.13	5	10/03/2016 23:18	WG912639
Hexachlorobenzene	ND		0.500	0.13	5	10/03/2016 23:18	WG912639
Hexachloro-1,3-butadiene	ND		0.500	0.50	5	10/03/2016 23:18	WG912639
Hexachloroethane	ND		0.500	3	5	10/03/2016 23:18	WG912639
Nitrobenzene	ND		0.500	2	5	10/03/2016 23:18	WG912639
Pyridine	ND		0.500	5	5	10/03/2016 23:18	WG912639
3&4-Methyl Phenol	ND		0.500	400	5	10/03/2016 23:18	WG912639
2-Methylphenol	ND		0.500	200	5	10/03/2016 23:18	WG912639
Pentachlorophenol	ND		0.500	100	5	10/03/2016 23:18	WG912639
2,4,5-Trichlorophenol	ND		0.500	400	5	10/03/2016 23:18	WG912639
2,4,6-Trichlorophenol	ND		0.500	2	5	10/03/2016 23:18	WG912639
(S) 2-Fluorophenol	39.7		10.0-77.9	87		10/03/2016 23:18	WG912639
(S) Phenol-d5	27.0		5.00-70.1	67		10/03/2016 23:18	WG912639
(S) Nitrobenzene-d5	65.5		21.8-123	120		10/03/2016 23:18	WG912639
(S) 2-Fluorobiphenyl	71.6		29.5-131	122		10/03/2016 23:18	WG912639
(S) 2,4,6-Tribromophenol	75.4		11.2-130	148		10/03/2016 23:18	WG912639
(S) p-Terphenyl-d14	66.6		29.3-137	149		10/03/2016 23:18	WG912639

Sample Narrative:

8270C L862222-02 WG912639: Dilution due to matrix



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.59		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862222-03 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.255	15	10/05/2016 01:06	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:06	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:06	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:06	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:06	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:06	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:06	WG912211
(S) Decachlorobiphenyl	95.3		10.0-143		10/05/2016 01:06	WG912211
(S) Tetrachloro-m-xylene	94.0		29.2-144		10/05/2016 01:06	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	2		9/28/2016 9:15:21 PM	WG912294
Initial pH	8.07		9/28/2016 9:15:21 PM	WG912294
Final pH	7.26		9/28/2016 9:15:21 PM	WG912294

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		1.50	6	09/28/2016 14:45	WG911946

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.28		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862222-04 WG913869: 8.28 at 19.8c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 14:50	WG912748

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 15:33	WG912679
Barium	ND		0.0500	100	1	09/30/2016 15:33	WG912679
Cadmium	ND		0.0200	1	1	09/30/2016 15:33	WG912679
Chromium	ND		0.100	5	1	09/30/2016 15:33	WG912679
Lead	ND		0.0500	5	1	09/30/2016 15:33	WG912679
Selenium	ND		0.100	1	1	09/30/2016 15:33	WG912679
Silver	ND		0.0500	5	1	09/30/2016 15:33	WG912679

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 18:41	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 18:41	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 18:41	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 18:41	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 18:41	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 18:41	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 18:41	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 18:41	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 18:41	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 18:41	WG912888

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Toluene-d8	104		90.0-115	114		09/30/2016 18:41	WG912888
(S) Dibromofluoromethane	99.3		79.0-121	125		09/30/2016 18:41	WG912888
(S) a,a,a-Trifluorotoluene	104		90.4-116	114		09/30/2016 18:41	WG912888
(S) 4-Bromofluorobenzene	98.2		80.1-120	128		09/30/2016 18:41	WG912888

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 22:07	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 22:07	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 22:07	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 22:07	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 22:07	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 22:07	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 22:07	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 22:07	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 22:07	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 22:07	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 22:07	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 22:07	WG912639
(S) 2-Fluorophenol	33.6		10.0-77.9	87		10/03/2016 22:07	WG912639
(S) Phenol-d5	22.3		5.00-70.1	67		10/03/2016 22:07	WG912639
(S) Nitrobenzene-d5	50.6		21.8-123	120		10/03/2016 22:07	WG912639
(S) 2-Fluorobiphenyl	66.4		29.5-131	122		10/03/2016 22:07	WG912639
(S) 2,4,6-Tribromophenol	61.4		11.2-130	148		10/03/2016 22:07	WG912639
(S) p-Terphenyl-d14	65.4		29.3-137	149		10/03/2016 22:07	WG912639

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.924		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862222-05 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.255	15	10/05/2016 00:52	WG912211
PCB 1221	ND		0.255	15	10/05/2016 00:52	WG912211
PCB 1232	ND		0.255	15	10/05/2016 00:52	WG912211
PCB 1242	ND		0.255	15	10/05/2016 00:52	WG912211
PCB 1248	ND		0.255	15	10/05/2016 00:52	WG912211
PCB 1254	ND		0.255	15	10/05/2016 00:52	WG912211
PCB 1260	ND		0.255	15	10/05/2016 00:52	WG912211
(S) Decachlorobiphenyl	94.7		10.0-143		10/05/2016 00:52	WG912211
(S) Tetrachloro-m-xylene	78.7		29.2-144		10/05/2016 00:52	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/28/2016 9:15:21 PM	WG912294
Initial pH	6.24		9/28/2016 9:15:21 PM	WG912294
Final pH	4.92		9/28/2016 9:15:21 PM	WG912294

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	09/28/2016 14:34	WG911946

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	5.26		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862222-06 WG913869: 5.26 at 20.5c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 12:02	WG912747

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/29/2016 23:30	WG912678
Barium	ND		0.0500	100	1	09/29/2016 23:30	WG912678
Cadmium	ND		0.0200	1	1	09/29/2016 23:30	WG912678
Chromium	ND		0.100	5	1	09/29/2016 23:30	WG912678
Lead	ND		0.0500	5	1	09/29/2016 23:30	WG912678
Selenium	ND		0.100	1	1	09/29/2016 23:30	WG912678
Silver	ND		0.0500	5	1	09/29/2016 23:30	WG912678

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 19:01	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 19:01	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 19:01	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 19:01	WG912888

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 19:01	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 19:01	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 19:01	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 19:01	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 19:01	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 19:01	WG912888
(S) Toluene-d8	105		90.0-115	114		09/30/2016 19:01	WG912888
(S) Dibromofluoromethane	99.8		79.0-121	125		09/30/2016 19:01	WG912888
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		09/30/2016 19:01	WG912888
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/30/2016 19:01	WG912888

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.500	7.50	5	10/03/2016 23:42	WG912639
2,4-Dinitrotoluene	ND		0.500	0.13	5	10/03/2016 23:42	WG912639
Hexachlorobenzene	ND		0.500	0.13	5	10/03/2016 23:42	WG912639
Hexachloro-1,3-butadiene	ND		0.500	0.50	5	10/03/2016 23:42	WG912639
Hexachloroethane	ND		0.500	3	5	10/03/2016 23:42	WG912639
Nitrobenzene	ND		0.500	2	5	10/03/2016 23:42	WG912639
Pyridine	ND		0.500	5	5	10/03/2016 23:42	WG912639
3&4-Methyl Phenol	ND		0.500	400	5	10/03/2016 23:42	WG912639
2-Methylphenol	ND		0.500	200	5	10/03/2016 23:42	WG912639
Pentachlorophenol	ND		0.500	100	5	10/03/2016 23:42	WG912639
2,4,5-Trichlorophenol	ND		0.500	400	5	10/03/2016 23:42	WG912639
2,4,6-Trichlorophenol	ND		0.500	2	5	10/03/2016 23:42	WG912639
(S) 2-Fluorophenol	43.6		10.0-77.9	87		10/03/2016 23:42	WG912639
(S) Phenol-d5	30.1		5.00-70.1	67		10/03/2016 23:42	WG912639
(S) Nitrobenzene-d5	46.7		21.8-123	120		10/03/2016 23:42	WG912639
(S) 2-Fluorobiphenyl	60.6		29.5-131	122		10/03/2016 23:42	WG912639
(S) 2,4,6-Tribromophenol	42.6		11.2-130	148		10/03/2016 23:42	WG912639
(S) p-Terphenyl-d14	54.3		29.3-137	149		10/03/2016 23:42	WG912639

7 Gl

8 Al

9 Sc

Sample Narrative:

8270C L862222-06 WG912639: Dilution due to matrix



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.04		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862222-07 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0850	5	10/05/2016 00:25	WG912211
PCB 1221	ND		0.0850	5	10/05/2016 00:25	WG912211
PCB 1232	ND		0.0850	5	10/05/2016 00:25	WG912211
PCB 1242	ND		0.0850	5	10/05/2016 00:25	WG912211
PCB 1248	ND		0.0850	5	10/05/2016 00:25	WG912211
PCB 1254	ND		0.0850	5	10/05/2016 00:25	WG912211
PCB 1260	ND		0.0850	5	10/05/2016 00:25	WG912211
(S) Decachlorobiphenyl	61.6		10.0-143		10/05/2016 00:25	WG912211
(S) Tetrachloro-m-xylene	56.6		29.2-144		10/05/2016 00:25	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/28/2016 9:15:21 PM	WG912294
Initial pH	5.72		9/28/2016 9:15:21 PM	WG912294
Final pH	4.89		9/28/2016 9:15:21 PM	WG912294

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	09/28/2016 14:46	WG911946

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.86		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862222-08 WG913869: 7.86 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

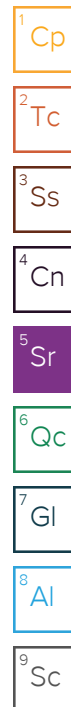
Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 12:04	WG912747

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/29/2016 23:33	WG912678
Barium	ND		0.0500	100	1	09/29/2016 23:33	WG912678
Cadmium	ND		0.0200	1	1	09/29/2016 23:33	WG912678
Chromium	ND		0.100	5	1	09/29/2016 23:33	WG912678
Lead	ND		0.0500	5	1	09/29/2016 23:33	WG912678
Selenium	ND		0.100	1	1	09/29/2016 23:33	WG912678
Silver	ND		0.0500	5	1	09/29/2016 23:33	WG912678

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 19:21	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 19:21	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 19:21	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 19:21	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 19:21	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 19:21	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 19:21	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 19:21	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 19:21	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 19:21	WG912888





Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Toluene-d8	105		90.0-115	114		09/30/2016 19:21	WG912888
(S) Dibromofluoromethane	99.1		79.0-121	125		09/30/2016 19:21	WG912888
(S) a,a,a-Trifluorotoluene	104		90.4-116	114		09/30/2016 19:21	WG912888
(S) 4-Bromofluorobenzene	99.9		80.1-120	128		09/30/2016 19:21	WG912888

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 22:31	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 22:31	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 22:31	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 22:31	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 22:31	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 22:31	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 22:31	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 22:31	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 22:31	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 22:31	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 22:31	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 22:31	WG912639
(S) 2-Fluorophenol	41.7		10.0-77.9	87		10/03/2016 22:31	WG912639
(S) Phenol-d5	29.9		5.00-70.1	67		10/03/2016 22:31	WG912639
(S) Nitrobenzene-d5	59.1		21.8-123	120		10/03/2016 22:31	WG912639
(S) 2-Fluorobiphenyl	72.4		29.5-131	122		10/03/2016 22:31	WG912639
(S) 2,4,6-Tribromophenol	80.3		11.2-130	148		10/03/2016 22:31	WG912639
(S) p-Terphenyl-d14	74.6		29.3-137	149		10/03/2016 22:31	WG912639

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862222-09 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0850	5	10/05/2016 00:38	WG912211
PCB 1221	ND		0.0850	5	10/05/2016 00:38	WG912211
PCB 1232	ND		0.0850	5	10/05/2016 00:38	WG912211
PCB 1242	ND		0.0850	5	10/05/2016 00:38	WG912211
PCB 1248	ND		0.0850	5	10/05/2016 00:38	WG912211
PCB 1254	ND		0.0850	5	10/05/2016 00:38	WG912211
PCB 1260	ND		0.0850	5	10/05/2016 00:38	WG912211
(S) Decachlorobiphenyl	87.4		10.0-143		10/05/2016 00:38	WG912211
(S) Tetrachloro-m-xylene	97.0		29.2-144		10/05/2016 00:38	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/28/2016 9:15:21 PM	WG912294
Initial pH	7.82		9/28/2016 9:15:21 PM	WG912294
Final pH	5.10		9/28/2016 9:15:21 PM	WG912294

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	09/28/2016 14:49	WG911946

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.37		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862222-10 WG913869: 7.37 at 20.5c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 12:07	WG912747

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/29/2016 23:36	WG912678
Barium	0.390		0.0500	100	1	09/29/2016 23:36	WG912678
Cadmium	ND		0.0200	1	1	09/29/2016 23:36	WG912678
Chromium	ND		0.100	5	1	09/29/2016 23:36	WG912678
Lead	ND		0.0500	5	1	09/29/2016 23:36	WG912678
Selenium	ND		0.100	1	1	09/29/2016 23:36	WG912678
Silver	ND		0.0500	5	1	09/29/2016 23:36	WG912678

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 19:41	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 19:41	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 19:41	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 19:41	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 19:41	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 19:41	WG912888

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Toluene-d8	106		90.0-115	114		09/30/2016 19:41	WG912888
(S) Dibromofluoromethane	101		79.0-121	125		09/30/2016 19:41	WG912888
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		09/30/2016 19:41	WG912888
(S) 4-Bromofluorobenzene	98.0		80.1-120	128		09/30/2016 19:41	WG912888

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 22:55	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 22:55	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 22:55	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 22:55	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 22:55	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 22:55	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 22:55	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 22:55	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 22:55	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 22:55	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 22:55	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 22:55	WG912639
(S) 2-Fluorophenol	17.8		10.0-77.9	87		10/03/2016 22:55	WG912639
(S) Phenol-d5	7.73		5.00-70.1	67		10/03/2016 22:55	WG912639
(S) Nitrobenzene-d5	38.1		21.8-123	120		10/03/2016 22:55	WG912639
(S) 2-Fluorobiphenyl	53.4		29.5-131	122		10/03/2016 22:55	WG912639
(S) 2,4,6-Tribromophenol	65.5		11.2-130	148		10/03/2016 22:55	WG912639
(S) p-Terphenyl-d14	65.8		29.3-137	149		10/03/2016 22:55	WG912639

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Method Blank (MB)

(MB) R3166718-3 09/28/16 14:26

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862222-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-06 09/28/16 14:34 • (DUP) R3166718-4 09/28/16 14:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862222-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-10 09/28/16 14:49 • (DUP) R3166718-9 09/28/16 14:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166718-5 09/28/16 14:38 • (LCSD) R3166718-6 09/28/16 14:39

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	41.5	44.7	86.0	92.0	50.0-150			7.00	20

L861656-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861656-01 09/28/16 14:40 • (MS) R3166718-7 09/28/16 14:41 • (MSD) R3166718-8 09/28/16 14:42

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	3.23	3.12	95.0	92.0	1	75.0-125			4.00	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

L862222-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911949-2 09/30/16 14:15 • (LCSD) WG911949-3 09/30/16 14:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93.0-107			0.245	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167322-1 09/30/16 11:44

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167322-2 09/30/16 11:46 • (LCSD) R3167322-3 09/30/16 11:49

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0303	0.0309	101	103	80-120			2	20

L862165-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862165-04 09/30/16 11:51 • (MS) R3167322-4 09/30/16 11:54 • (MSD) R3167322-5 09/30/16 11:57

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0303	0.0309	101	103	1	75-125			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167410-1 09/30/16 14:43

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167410-2 09/30/16 14:45 • (LCSD) R3167410-3 09/30/16 14:48

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0274	0.0270	91	90	80-120			1	20

L862222-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862222-04 09/30/16 14:50 • (MS) R3167410-4 09/30/16 14:53 • (MSD) R3167410-5 09/30/16 15:01

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0270	0.0282	90	94	1	75-125			4	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3167131-2 09/29/16 22:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	0.0567	J	0.0333	0.100
Silver	U		0.0167	0.0500

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167131-3 09/29/16 22:59 • (LCSD) R3167131-7 09/30/16 00:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.10	8.98	91	90	80-120			1	20
Barium	10.0	9.27	9.20	93	92	80-120			1	20
Cadmium	10.0	9.09	8.99	91	90	80-120			1	20
Chromium	10.0	8.99	8.95	90	90	80-120			0	20
Lead	10.0	9.09	9.08	91	91	80-120			0	20
Selenium	10.0	9.19	9.02	92	90	80-120			2	20
Silver	10.0	8.85	8.87	89	89	80-120			0	20

L862492-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862492-02 09/29/16 23:05 • (MS) R3167131-5 09/29/16 23:10 • (MSD) R3167131-6 09/29/16 23:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.77	9.67	98	97	1	75-125			1	20
Barium	10.0	0.220	9.38	9.26	92	90	1	75-125			1	20
Cadmium	10.0	ND	9.48	9.39	95	94	1	75-125			1	20
Chromium	10.0	ND	8.96	8.91	90	89	1	75-125			1	20
Lead	10.0	3.72	13.0	12.7	93	90	1	75-125			2	20
Selenium	10.0	ND	10.0	9.85	100	98	1	75-125			2	20
Silver	10.0	ND	9.35	9.20	93	92	1	75-125			2	20



Method Blank (MB)

(MB) R3167428-1 09/30/16 15:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167428-2 09/30/16 15:28 • (LCSD) R3167428-3 09/30/16 15:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.13	9.31	91	93	80-120			2	20
Barium	10.0	9.37	9.49	94	95	80-120			1	20
Cadmium	10.0	9.27	9.39	93	94	80-120			1	20
Chromium	10.0	8.88	8.99	89	90	80-120			1	20
Lead	10.0	9.05	9.23	90	92	80-120			2	20
Selenium	10.0	9.39	9.51	94	95	80-120			1	20
Silver	10.0	9.44	9.52	94	95	80-120			1	20

L862222-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862222-04 09/30/16 15:33 • (MS) R3167428-5 09/30/16 15:38 • (MSD) R3167428-6 09/30/16 15:42

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	10.1	10.1	101	101	1	75-125			0	20
Barium	10.0	ND	9.09	9.12	91	91	1	75-125			0	20
Cadmium	10.0	ND	10.0	10.0	100	100	1	75-125			0	20
Chromium	10.0	ND	8.59	8.76	86	88	1	75-125			2	20
Lead	10.0	ND	9.34	9.39	93	94	1	75-125			1	20
Selenium	10.0	ND	10.6	10.6	106	106	1	75-125			0	20
Silver	10.0	ND	10.3	10.5	103	105	1	75-125			2	20



Method Blank (MB)

(MB) R3167331-3 09/30/16 12:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	103			90.0-115
(S) Dibromofluoromethane	100			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	96.2			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167331-1 09/30/16 11:03 • (LCSD) R3167331-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30/16 15:59 • (MS) R3167331-4 09/30/16 13:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.15	91.8	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.07	85.6	1	60.6-139	
Chlorobenzene	1.25	ND	1.23	98.8	1	70.1-130	
Chloroform	1.25	ND	1.16	92.5	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.13	90.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.40	112	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.13	82.0	1	45.0-156	
Tetrachloroethene	1.25	ND	1.28	102	1	57.4-141	
Trichloroethene	1.25	ND	1.23	98.0	1	48.9-148	
Vinyl chloride	1.25	ND	1.27	101	1	44.3-143	
(S) Toluene-d8				104		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				102		90.4-116	
(S) 4-Bromofluorobenzene				97.7		80.1-120	

L862143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.23	1.24	98.5	99.4	1	58.6-133			0.970	20
Carbon tetrachloride	1.25	ND	1.17	1.14	93.3	91.4	1	60.6-139			2.08	20
Chlorobenzene	1.25	ND	1.33	1.36	106	109	1	70.1-130			1.98	20
Chloroform	1.25	ND	1.21	1.22	96.9	97.2	1	66.1-133			0.380	20
1,2-Dichloroethane	1.25	ND	1.16	1.17	92.7	93.9	1	60.7-132			1.30	20
1,1-Dichloroethene	1.25	ND	1.47	1.47	118	117	1	48.8-144			0.430	20
2-Butanone (MEK)	6.25	ND	3.14	3.16	50.2	50.5	1	45.0-156			0.620	20.8
Tetrachloroethene	1.25	ND	1.36	1.38	109	111	1	57.4-141			1.53	20
Trichloroethene	1.25	ND	1.28	1.29	102	103	1	48.9-148			1.30	20
Vinyl chloride	1.25	ND	1.42	1.42	113	113	1	44.3-143			0.150	20
(S) Toluene-d8					104	104		90.0-115				
(S) Dibromofluoromethane					101	100		79.0-121				
(S) a,a,a-Trifluorotoluene					104	103		90.4-116				
(S) 4-Bromofluorobenzene					98.9	102		80.1-120				

1
Cp

2
Tc

3
Ss

4
Cn

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Sr

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Qc

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Gl

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Al

9
Sc



Method Blank (MB)

(MB) R3167926-1 10/04/16 08:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.00494	0.0170
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	102			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167926-2 10/04/16 09:01 • (LCSD) R3167926-3 10/04/16 09:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.189	0.192	113	115	46.5-120			1.80	27
PCB 1016	0.167	0.174	0.178	104	107	46.3-117			2.24	27.5
(S) Decachlorobiphenyl				113	110	10.0-143				
(S) Tetrachloro-m-xylene				110	108	29.2-144				

L862158-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862158-01 10/04/16 16:36 • (MS) R3167926-4 10/04/16 16:50 • (MSD) R3167926-5 10/04/16 17:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.181	ND	0.218	0.222	120	123	1	24.6-127			2.18	20
PCB 1016	0.181	ND	0.218	0.220	121	122	1	23.9-147			0.730	25.8
(S) Decachlorobiphenyl					113	116		10.0-143				
(S) Tetrachloro-m-xylene					115	115		29.2-144				



Method Blank (MB)

(MB) R3168428-1 10/05/16 15:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	97.0			60.0-140
(S) Tetrachloro-m-xylene	114			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168428-2 10/05/16 15:24 • (LCSD) R3168428-3 10/05/16 15:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.620	0.561	124	112	60.0-140			10.0	20
PCB 1016	0.500	0.628	0.600	126	120	60.0-140			4.45	20
(S) Decachlorobiphenyl				103	99.3	60.0-140				
(S) Tetrachloro-m-xylene				117	111	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

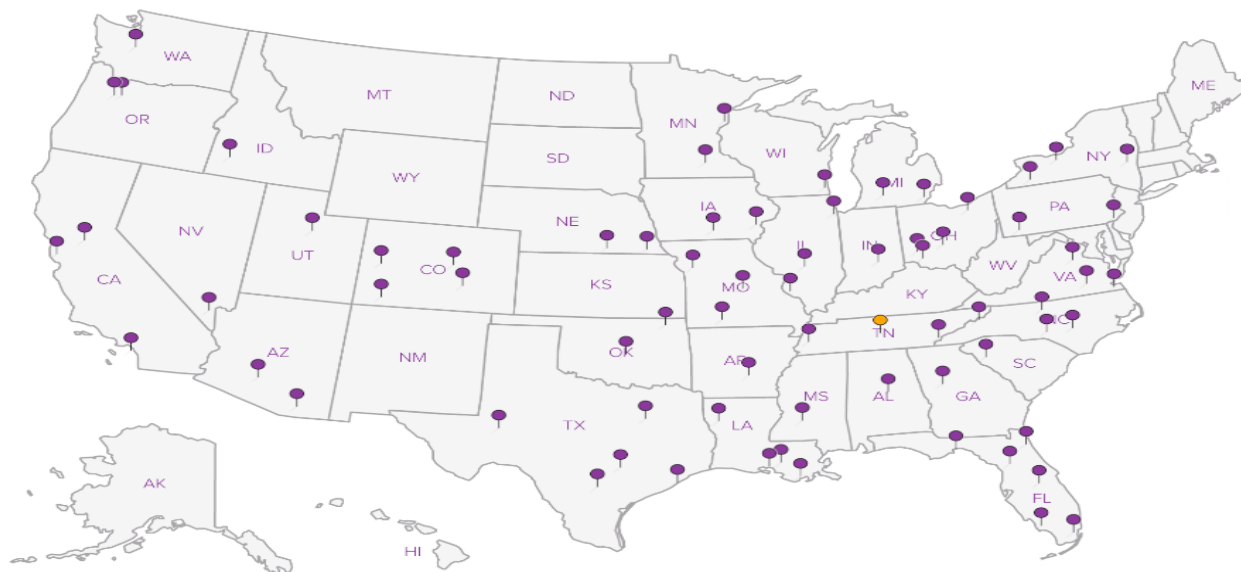
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form				
Client:	UPENVBRMZ	SDG#	L862222	
Cooler Received/Opened On:	9-27-16	Temperature Upon Receipt:	3.3 °c	
Received By: Michael Witherspoon				
Signature: <i>MW</i>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				✓
Were custody papers properly filled out?		✓		
Did all bottles arrive in good condition?		✓		
Were correct bottles used for the analyses requested?		✓		
Was sufficient amount of sample sent in each bottle?		✓		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)		✓		
If applicable, was an observable VOA headspace present?				✓
Non Conformance Generated. (If yes see attached NCF)				

U.P. Environmental Services, Inc.

Sample Delivery Group: L862165
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHTC-TP-DM05 L862165-01 Solid

Collected by
Chris Gendron

Collected date/time
09/23/16 09:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 17:59	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHTC-TP-DM05 L862165-02 Waste

Collected by
Chris Gendron

Collected date/time
09/23/16 09:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:20	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 19:06	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:57	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 23:31	10/04/16 23:31	LRL
Wet Chemistry by Method 9012 B	WG913176	3	10/03/16 12:22	10/03/16 15:05	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TP-DM11A L862165-03 Solid

Collected by
Chris Gendron

Collected date/time
09/23/16 09:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 18:12	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TP-DM11A L862165-04 Waste

Collected by
Chris Gendron

Collected date/time
09/23/16 09:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912747	1	09/30/16 08:20	09/30/16 11:51	NJB
Metals (ICP) by Method 6010B	WG912678	1	09/29/16 18:09	09/29/16 23:16	ST
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Preparation by Method 1311	WG912294	1	09/28/16 21:15	09/28/16 21:15	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG913504	1	10/03/16 20:09	10/04/16 15:49	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 23:51	10/04/16 23:51	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 15:06	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TP-DM11B L862165-05 Solid

Collected by
Chris Gendron

Collected date/time
09/23/16 09:35

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 18:26	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862165

DATE/TIME:

10/07/16 09:28

PAGE:

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHTC-TP-DM11B L862165-06 Waste

Collected by
Chris Gendron

Collected date/time
09/23/16 09:35

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:23	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 19:09	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 18:37	09/27/16 18:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 21:20	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/05/16 00:11	10/05/16 00:11	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:59	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHTC-TS-DM08 L862165-07 Solid

Collected by
Chris Gendron

Collected date/time
09/23/16 10:15

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 18:40	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM08 L862165-08 Waste

Collected by
Chris Gendron

Collected date/time
09/23/16 10:15

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:25	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 19:12	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 18:37	09/27/16 18:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 21:44	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/05/16 00:31	10/05/16 00:31	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 15:01	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862165

DATE/TIME:

10/07/16 09:28

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All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

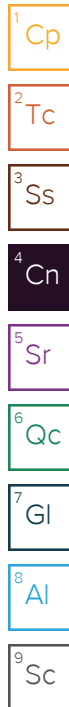
Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862165-02	CHTC-TP-DM05	9045D
L862165-04	CHTC-TP-DM11A	9045D
L862165-06	CHTC-TP-DM11B	9045D
L862165-08	CHTC-TS-DM08	9045D





Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	67.2		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.62		1	09/30/2016 14:20	WG912583

5 Sr

6 Qc

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

7 Gl

8 Al

Sample Narrative:

9095B L862165-01 WG912590: Contains No Free Liquid

9 Sc

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0170	1	10/04/2016 17:59	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 17:59	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 17:59	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 17:59	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 17:59	WG912211
PCB 1254	0.0466		0.0170	1	10/04/2016 17:59	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 17:59	WG912211
(S) Decachlorobiphenyl	69.0		10.0-143		10/04/2016 17:59	WG912211
(S) Tetrachloro-m-xylene	91.6		29.2-144		10/04/2016 17:59	WG912211



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.90		9/27/2016 10:38:49 PM	WG911845
Final pH	5.64		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.750	3	10/03/2016 15:05	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.09		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862165-02 WG913869: 7.09 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:20	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 19:06	WG912283
Barium	1.54		0.0500	100	1	09/30/2016 19:06	WG912283
Cadmium	0.0468		0.0200	1	1	09/30/2016 19:06	WG912283
Chromium	ND		0.100	5	1	09/30/2016 19:06	WG912283
Lead	0.186		0.0500	5	1	09/30/2016 19:06	WG912283
Selenium	ND		0.100	1	1	09/30/2016 19:06	WG912283
Silver	ND		0.0500	5	1	09/30/2016 19:06	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 23:31	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 23:31	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 23:31	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 23:31	WG912711



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 23:31	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 23:31	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 23:31	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 23:31	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 23:31	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 23:31	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 23:31	WG912711
(S) Dibromofluoromethane	102		79.0-121	125		10/04/2016 23:31	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 23:31	WG912711
(S) 4-Bromofluorobenzene	94.9		80.1-120	128		10/04/2016 23:31	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:57	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:57	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:57	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:57	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:57	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:57	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:57	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:57	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:57	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:57	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:57	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:57	WG912639
(S) 2-Fluorophenol	17.4		10.0-77.9	87		10/03/2016 20:57	WG912639
(S) Phenol-d5	8.08		5.00-70.1	67		10/03/2016 20:57	WG912639
(S) Nitrobenzene-d5	47.7		21.8-123	120		10/03/2016 20:57	WG912639
(S) 2-Fluorobiphenyl	62.8		29.5-131	122		10/03/2016 20:57	WG912639
(S) 2,4,6-Tribromophenol	67.1		11.2-130	148		10/03/2016 20:57	WG912639
(S) p-Terphenyl-d14	67.4		29.3-137	149		10/03/2016 20:57	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	81.5		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.94		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862165-03 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	10/04/2016 18:12	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 18:12	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 18:12	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 18:12	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 18:12	WG912211
PCB 1254	ND		0.0170	1	10/04/2016 18:12	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 18:12	WG912211
(S) Decachlorobiphenyl	64.3		10.0-143		10/04/2016 18:12	WG912211
(S) Tetrachloro-m-xylene	69.4		29.2-144		10/04/2016 18:12	WG912211

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/28/2016 9:15:21 PM	WG912294
Initial pH	7.85		9/28/2016 9:15:21 PM	WG912294
Final pH	5.90		9/28/2016 9:15:21 PM	WG912294

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 15:06	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.09		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862165-04 WG913869: 7.09 at 20.5c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:51	WG912747

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	0.433		0.100	5	1	09/29/2016 23:16	WG912678
Barium	3.02		0.0500	100	1	09/29/2016 23:16	WG912678
Cadmium	0.0202		0.0200	1	1	09/29/2016 23:16	WG912678
Chromium	ND		0.100	5	1	09/29/2016 23:16	WG912678
Lead	0.137		0.0500	5	1	09/29/2016 23:16	WG912678
Selenium	ND		0.100	1	1	09/29/2016 23:16	WG912678
Silver	ND		0.0500	5	1	09/29/2016 23:16	WG912678

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 23:51	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 23:51	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 23:51	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 23:51	WG912711

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 23:51	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 23:51	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 23:51	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 23:51	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 23:51	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 23:51	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 23:51	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 23:51	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 23:51	WG912711
(S) 4-Bromofluorobenzene	94.4		80.1-120	128		10/04/2016 23:51	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/04/2016 15:49	WG913504
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/04/2016 15:49	WG913504
Hexachlorobenzene	ND		0.100	0.13	1	10/04/2016 15:49	WG913504
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/04/2016 15:49	WG913504
Hexachloroethane	ND		0.100	3	1	10/04/2016 15:49	WG913504
Nitrobenzene	ND		0.100	2	1	10/04/2016 15:49	WG913504
Pyridine	ND		0.100	5	1	10/04/2016 15:49	WG913504
3&4-Methyl Phenol	ND		0.100	400	1	10/04/2016 15:49	WG913504
2-Methylphenol	ND		0.100	200	1	10/04/2016 15:49	WG913504
Pentachlorophenol	ND		0.100	100	1	10/04/2016 15:49	WG913504
2,4,5-Trichlorophenol	ND		0.100	400	1	10/04/2016 15:49	WG913504
2,4,6-Trichlorophenol	ND		0.100	2	1	10/04/2016 15:49	WG913504
(S) 2-Fluorophenol	53.1		10.0-77.9	87		10/04/2016 15:49	WG913504
(S) Phenol-d5	35.7		5.00-70.1	67		10/04/2016 15:49	WG913504
(S) Nitrobenzene-d5	59.2		21.8-123	120		10/04/2016 15:49	WG913504
(S) 2-Fluorobiphenyl	70.6		29.5-131	122		10/04/2016 15:49	WG913504
(S) 2,4,6-Tribromophenol	74.7		11.2-130	148		10/04/2016 15:49	WG913504
(S) p-Terphenyl-d14	73.6		29.3-137	149		10/04/2016 15:49	WG913504

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	87.8		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.74		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862165-05 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	10/04/2016 18:26	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 18:26	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 18:26	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 18:26	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 18:26	WG912211
PCB 1254	ND		0.0170	1	10/04/2016 18:26	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 18:26	WG912211
(S) Decachlorobiphenyl	57.5		10.0-143		10/04/2016 18:26	WG912211
(S) Tetrachloro-m-xylene	55.8		29.2-144		10/04/2016 18:26	WG912211

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 6:37:27 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.94		9/27/2016 10:38:49 PM	WG911845
Final pH	5.82		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	0.427	P1	0.250	1	10/03/2016 14:59	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.47		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862165-06 WG913869: 7.47 at 20.2c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:23	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	0.174		0.100	5	1	09/30/2016 19:09	WG912283
Barium	0.451		0.0500	100	1	09/30/2016 19:09	WG912283
Cadmium	0.0206		0.0200	1	1	09/30/2016 19:09	WG912283
Chromium	ND		0.100	5	1	09/30/2016 19:09	WG912283
Lead	0.109		0.0500	5	1	09/30/2016 19:09	WG912283
Selenium	ND		0.100	1	1	09/30/2016 19:09	WG912283
Silver	ND		0.0500	5	1	09/30/2016 19:09	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/05/2016 00:11	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/05/2016 00:11	WG912711
Chlorobenzene	ND		0.0500	100	1	10/05/2016 00:11	WG912711
Chloroform	ND		0.250	6	1	10/05/2016 00:11	WG912711



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/05/2016 00:11	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/05/2016 00:11	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/05/2016 00:11	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/05/2016 00:11	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/05/2016 00:11	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/05/2016 00:11	WG912711
(S) Toluene-d8	105		90.0-115	114		10/05/2016 00:11	WG912711
(S) Dibromofluoromethane	100		79.0-121	125		10/05/2016 00:11	WG912711
(S) a,a,a-Trifluorotoluene	107		90.4-116	114		10/05/2016 00:11	WG912711
(S) 4-Bromofluorobenzene	95.9		80.1-120	128		10/05/2016 00:11	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 21:20	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 21:20	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 21:20	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 21:20	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 21:20	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 21:20	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 21:20	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 21:20	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 21:20	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 21:20	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 21:20	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 21:20	WG912639
(S) 2-Fluorophenol	37.8		10.0-77.9	87		10/03/2016 21:20	WG912639
(S) Phenol-d5	24.2		5.00-70.1	67		10/03/2016 21:20	WG912639
(S) Nitrobenzene-d5	50.0		21.8-123	120		10/03/2016 21:20	WG912639
(S) 2-Fluorobiphenyl	64.1		29.5-131	122		10/03/2016 21:20	WG912639
(S) 2,4,6-Tribromophenol	76.6		11.2-130	148		10/03/2016 21:20	WG912639
(S) p-Terphenyl-d14	66.8		29.3-137	149		10/03/2016 21:20	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	92.6		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	g/cm3		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862165-07 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	10/04/2016 18:40	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 18:40	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 18:40	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 18:40	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 18:40	WG912211
PCB 1254	ND		0.0170	1	10/04/2016 18:40	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 18:40	WG912211
(S) Decachlorobiphenyl	68.1		10.0-143		10/04/2016 18:40	WG912211
(S) Tetrachloro-m-xylene	72.6		29.2-144		10/04/2016 18:40	WG912211

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 6:37:27 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	8.71		9/27/2016 10:38:49 PM	WG911845
Final pH	6.59		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	0.285		0.250	1	10/03/2016 15:01	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.25		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862165-08 WG913869: 7.25 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:25	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 19:12	WG912283
Barium	0.430		0.0500	100	1	09/30/2016 19:12	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 19:12	WG912283
Chromium	ND		0.100	5	1	09/30/2016 19:12	WG912283
Lead	ND		0.0500	5	1	09/30/2016 19:12	WG912283
Selenium	ND		0.100	1	1	09/30/2016 19:12	WG912283
Silver	ND		0.0500	5	1	09/30/2016 19:12	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/05/2016 00:31	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/05/2016 00:31	WG912711
Chlorobenzene	ND		0.0500	100	1	10/05/2016 00:31	WG912711
Chloroform	ND		0.250	6	1	10/05/2016 00:31	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/05/2016 00:31	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/05/2016 00:31	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/05/2016 00:31	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/05/2016 00:31	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/05/2016 00:31	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/05/2016 00:31	WG912711
(S) Toluene-d8	103		90.0-115	114		10/05/2016 00:31	WG912711
(S) Dibromofluoromethane	97.9		79.0-121	125		10/05/2016 00:31	WG912711
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		10/05/2016 00:31	WG912711
(S) 4-Bromofluorobenzene	96.4		80.1-120	128		10/05/2016 00:31	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 21:44	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 21:44	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 21:44	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 21:44	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 21:44	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 21:44	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 21:44	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 21:44	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 21:44	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 21:44	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 21:44	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 21:44	WG912639
(S) 2-Fluorophenol	24.9		10.0-77.9	87		10/03/2016 21:44	WG912639
(S) Phenol-d5	14.7		5.00-70.1	67		10/03/2016 21:44	WG912639
(S) Nitrobenzene-d5	50.6		21.8-123	120		10/03/2016 21:44	WG912639
(S) 2-Fluorobiphenyl	66.0		29.5-131	122		10/03/2016 21:44	WG912639
(S) 2,4,6-Tribromophenol	68.2		11.2-130	148		10/03/2016 21:44	WG912639
(S) p-Terphenyl-d14	71.1		29.3-137	149		10/03/2016 21:44	WG912639

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 14:20 • (DUP) WG912583-1 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.65	1.65	1	0.438		20

L862165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-01 09/30/16 14:20 • (DUP) WG912583-2 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.62	1.57	1	2.96		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 13:55 • (DUP) WG912590-1 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05 09/30/16 13:55 • (DUP) WG912590-2 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20



L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

L862222-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911949-2 09/30/16 14:15 • (LCSD) WG911949-3 09/30/16 14:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93.0-107			0.245	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167322-1 09/30/16 11:44

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167322-2 09/30/16 11:46 • (LCSD) R3167322-3 09/30/16 11:49

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0303	0.0309	101	103	80-120			2	20

L862165-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862165-04 09/30/16 11:51 • (MS) R3167322-4 09/30/16 11:54 • (MSD) R3167322-5 09/30/16 11:57

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0303	0.0309	101	103	1	75-125			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20



Method Blank (MB)

(MB) R3167131-2 09/29/16 22:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	0.0567	J	0.0333	0.100
Silver	U		0.0167	0.0500

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167131-3 09/29/16 22:59 • (LCSD) R3167131-7 09/30/16 00:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.10	8.98	91	90	80-120			1	20
Barium	10.0	9.27	9.20	93	92	80-120			1	20
Cadmium	10.0	9.09	8.99	91	90	80-120			1	20
Chromium	10.0	8.99	8.95	90	90	80-120			0	20
Lead	10.0	9.09	9.08	91	91	80-120			0	20
Selenium	10.0	9.19	9.02	92	90	80-120			2	20
Silver	10.0	8.85	8.87	89	89	80-120			0	20

L862492-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862492-02 09/29/16 23:05 • (MS) R3167131-5 09/29/16 23:10 • (MSD) R3167131-6 09/29/16 23:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.77	9.67	98	97	1	75-125			1	20
Barium	10.0	0.220	9.38	9.26	92	90	1	75-125			1	20
Cadmium	10.0	ND	9.48	9.39	95	94	1	75-125			1	20
Chromium	10.0	ND	8.96	8.91	90	89	1	75-125			1	20
Lead	10.0	3.72	13.0	12.7	93	90	1	75-125			2	20
Selenium	10.0	ND	10.0	9.85	100	98	1	75-125			2	20
Silver	10.0	ND	9.35	9.20	93	92	1	75-125			2	20



Method Blank (MB)

(MB) R3167391-3 09/30/16 14:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	105			90.0-115
(S) Dibromofluoromethane	102			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	99.5			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167391-1 09/30/16 11:03 • (LCSD) R3167391-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L862165-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862165-08 10/05/16 00:31 • (MS) R3168218-1 10/05/16 00:51 • (MSD) R3168218-2 10/05/16 01:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	0.803	0.846	64.2	67.6	1	58.6-133			5.17	20
Carbon tetrachloride	1.25	ND	0.761	0.805	60.9	64.4	1	60.6-139			5.72	20
Chlorobenzene	1.25	ND	0.952	1.03	76.2	82.4	1	70.1-130			7.85	20
Chloroform	1.25	ND	0.866	0.907	69.2	72.6	1	66.1-133			4.71	20
1,2-Dichloroethane	1.25	ND	0.815	0.819	65.2	65.5	1	60.7-132			0.520	20
1,1-Dichloroethene	1.25	ND	0.885	0.907	70.8	72.6	1	48.8-144			2.47	20
2-Butanone (MEK)	6.25	ND	3.23	3.01	51.6	48.2	1	45.0-156			6.81	20.8
Tetrachloroethene	1.25	ND	0.861	0.942	68.9	75.3	1	57.4-141			8.97	20
Trichloroethene	1.25	ND	0.870	0.925	69.6	74.0	1	48.9-148			6.14	20
Vinyl chloride	1.25	ND	0.712	0.796	57.0	63.7	1	44.3-143			11.1	20
(S) Toluene-d8					105	106		90.0-115				
(S) Dibromofluoromethane					99.8	99.8		79.0-121				
(S) a,a,a-Trifluorotoluene					104	104		90.4-116				
(S) 4-Bromofluorobenzene					96.1	101		80.1-120				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167926-1 10/04/16 08:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.00494	0.0170
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	102			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167926-2 10/04/16 09:01 • (LCSD) R3167926-3 10/04/16 09:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.189	0.192	113	115	46.5-120			1.80	27
PCB 1016	0.167	0.174	0.178	104	107	46.3-117			2.24	27.5
(S) Decachlorobiphenyl				113	110	10.0-143				
(S) Tetrachloro-m-xylene				110	108	29.2-144				

L862158-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862158-01 10/04/16 16:36 • (MS) R3167926-4 10/04/16 16:50 • (MSD) R3167926-5 10/04/16 17:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.181	ND	0.218	0.222	120	123	1	24.6-127			2.18	20
PCB 1016	0.181	ND	0.218	0.220	121	122	1	23.9-147			0.730	25.8
(S) Decachlorobiphenyl					113	116		10.0-143				
(S) Tetrachloro-m-xylene					115	115		29.2-144				



Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3168087-3 10/04/16 11:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	49.0			21.8-123
(S) 2-Fluorobiphenyl	60.9			29.5-131
(S) p-Terphenyl-d14	67.3			29.3-137
(S) Phenol-d5	30.7			5.00-70.1
(S) 2-Fluorophenol	43.3			10.0-77.9
(S) 2,4,6-Tribromophenol	69.6			11.2-130

1

Cp

2

Tc

3

Ss

4

Cn

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Sr

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Qc

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Gl

8

Al

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Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168087-1 10/04/16 10:21 • (LCSD) R3168087-2 10/04/16 10:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0278	0.0254	55.6	50.9	21.0-89.4			8.89	32.6
2,4-Dinitrotoluene	0.0500	0.0391	0.0399	78.2	79.8	31.2-105			2.00	22
Hexachlorobenzene	0.0500	0.0380	0.0387	75.9	77.5	38.5-116			1.99	20.1
Hexachloro-1,3-butadiene	0.0500	0.0350	0.0329	69.9	65.8	16.1-104			6.02	31.2
Hexachloroethane	0.0500	0.0271	0.0239	54.3	47.7	16.5-89.8			12.8	30.7
Nitrobenzene	0.0500	0.0286	0.0275	57.3	55.0	31.4-106			4.05	25.7
Pyridine	0.0500	0.0121	0.0108	24.2	21.6	13.5-58.9			11.4	32.5
2-Methylphenol	0.0500	0.0290	0.0261	58.0	52.1	26.4-86.9			10.6	26.5
3&4-Methyl Phenol	0.0500	0.0307	0.0295	61.4	58.9	27.9-92.0			4.12	27
Pentachlorophenol	0.0500	0.0256	0.0271	51.3	54.2	10.0-97.4			5.47	35.1
2,4,5-Trichlorophenol	0.0500	0.0388	0.0394	77.7	78.8	34.9-112			1.38	23.9
2,4,6-Trichlorophenol	0.0500	0.0373	0.0370	74.5	74.1	29.8-107			0.580	24.1
(S) Nitrobenzene-d5				57.9	57.3	21.8-123				
(S) 2-Fluorobiphenyl				71.6	71.5	29.5-131				
(S) p-Terphenyl-d14				70.3	70.3	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168087-1 10/04/16 10:21 • (LCSD) R3168087-2 10/04/16 10:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
(S) Phenol-d5				38.4	36.8	5.00-70.1				
(S) 2-Fluorophenol				52.2	44.0	10.0-77.9				
(S) 2,4,6-Tribromophenol				83.9	83.9	11.2-130				

L861691-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861691-01 10/04/16 16:13 • (MS) R3168087-4 10/04/16 16:36 • (MSD) R3168087-5 10/04/16 17:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.285	0.211	57.1	42.2	1	14.0-104			29.8	36.4
2,4-Dinitrotoluene	0.500	ND	0.420	0.380	84.0	76.0	1	16.2-135			9.94	20.6
Hexachlorobenzene	0.500	ND	0.392	0.350	78.4	70.1	1	31.9-135			11.2	20
Hexachloro-1,3-butadiene	0.500	ND	0.363	0.278	72.6	55.6	1	15.7-109			26.6	37.6
Hexachloroethane	0.500	ND	0.282	0.202	56.4	40.3	1	10.4-105			33.3	40
Nitrobenzene	0.500	ND	0.306	0.240	61.3	48.0	1	23.1-121			24.3	29
Pyridine	0.500	ND	0.137	0.0953	27.3	19.1	1	10.0-77.8			35.7	38.8
2-Methylphenol	0.500	ND	0.281	0.233	56.1	46.6	1	10.0-133			18.5	40
3&4-Methyl Phenol	0.500	ND	0.309	0.252	61.9	50.5	1	17.4-100			20.3	27.7
Pentachlorophenol	0.500	ND	0.301	0.284	60.2	56.8	1	10.0-108			5.78	40
2,4,5-Trichlorophenol	0.500	ND	0.402	0.356	80.4	71.1	1	30.6-120			12.2	33.8
2,4,6-Trichlorophenol	0.500	ND	0.373	0.338	74.6	67.5	1	19.1-114			9.97	29.9
(S) Nitrobenzene-d5					67.1	51.0		21.8-123				
(S) 2-Fluorobiphenyl					82.2	64.4		29.5-131				
(S) p-Terphenyl-d14					79.1	67.6		29.3-137				
(S) Phenol-d5					41.1	30.8		5.00-70.1				
(S) 2-Fluorophenol					47.4	35.7		10.0-77.9				
(S) 2,4,6-Tribromophenol					93.0	80.6		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

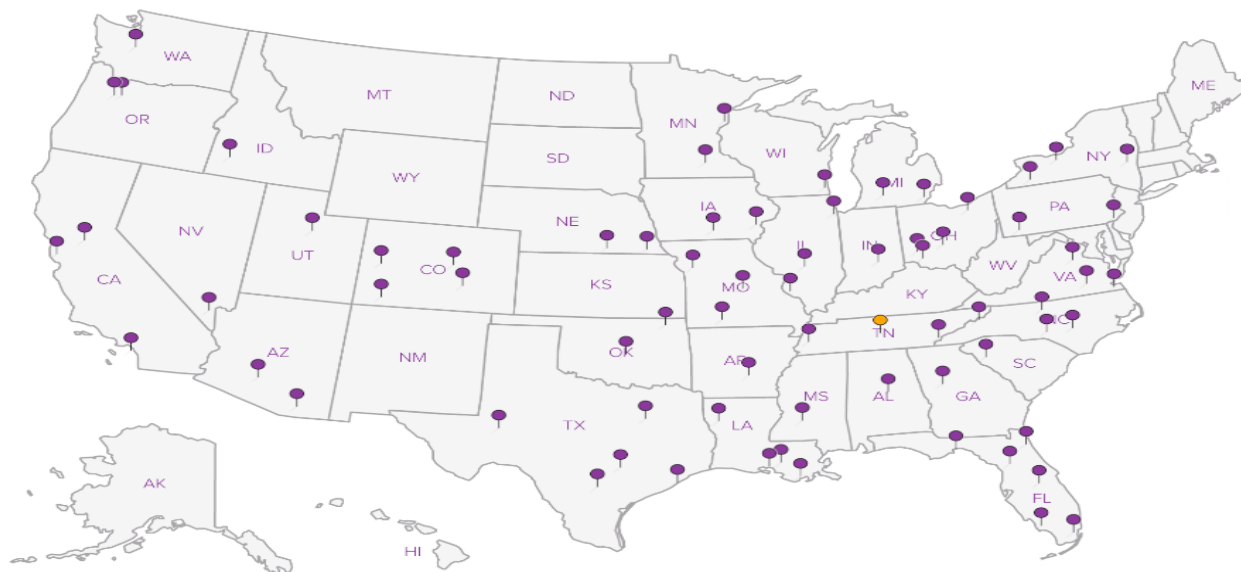
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form

Client: <u>UPENV BDM</u>	SDG#	<u>6862165</u>		
Cooler Received/Opened On: <u>9/27/16</u>	Temperature Upon Receipt:	<u>3.2</u>	°C	
Received By: Richard Hughes				
Signature: <u>[Signature]</u>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				—
Were custody papers properly filled out?		—		
Did all bottles arrive in good condition?		—		
Were correct bottles used for the analyses requested?		—		
Was sufficient amount of sample sent in each bottle?				—
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				—
If applicable, was an observable VOA headspace present?				—
Non Conformance Generated. (If yes see attached NCF)				

U.P. Environmental Services, Inc.

Sample Delivery Group: L861336
Samples Received: 09/22/2016
Project Number: UPENVBRMI-DRUMS
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04A L861336-01 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 17:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911074	3	09/26/16 15:51	09/27/16 13:53	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC

¹ Cp

² Tc

³ Ss

CHLL-HPA-DRUM-04A L861336-02 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 17:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 07:59	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:45	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 16:40	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 16:38	09/26/16 16:38	BMB
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:41	DR
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04B L861336-03 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 17:30

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911074	3	09/26/16 15:51	09/27/16 14:06	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC

CHLL-HPA-DRUM-04B L861336-04 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 17:30

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:14	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:48	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 17:04	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 16:59	09/26/16 16:59	BMB
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:42	DR
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method 9095B	WG913968	1	10/05/16 09:55	10/05/16 10:00	KK
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

CHLL-HPA-DRUM-04C L861336-05 Solid

Collected by
Chris Gendron

Collected date/time
09/20/16 18:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG912356	50	09/29/16 14:02	09/30/16 17:50	JNS

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

UPENVBRMI-DRUMS

SDG:

L861336

DATE/TIME:

10/05/16 14:03

PAGE:

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-04C L861336-06 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 18:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:28	NJB
Metals (ICP) by Method 6010B	WG911605	1	09/27/16 08:11	09/27/16 23:56	LTB
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG911865	1	09/27/16 18:30	09/28/16 21:45	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 17:19	09/26/16 17:19	BMB
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:12	ASK
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DRUM-04D L861336-07 GW

Collected by
Chris Gendron

Collected date/time
09/20/16 11:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG911870	1	09/28/16 08:46	09/30/16 15:09	JNS

CHLL-HPA-DRUM-04D L861336-08 Waste

Collected by
Chris Gendron

Collected date/time
09/20/16 11:00

Received date/time
09/22/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912087	1	09/28/16 15:09	09/30/16 08:07	NJB
Metals (ICP) by Method 6010B	WG911605	10	09/27/16 08:11	09/28/16 08:14	CCE
Preparation by Method 1311	WG910697	1	09/23/16 12:50	09/23/16 12:50	CHH
Preparation by Method 1311	WG911040	1	09/25/16 13:24	09/25/16 13:24	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 16:40	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG911243	1	09/26/16 13:57	09/26/16 13:57	BMB
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:13	ASK
Wet Chemistry by Method 9034-9030B	WG910791	1	09/26/16 18:00	09/27/16 02:08	JLJ
Wet Chemistry by Method 9045D	WG910581	1	09/28/16 09:12	09/28/16 09:12	JJL
Wet Chemistry by Method D93/1010A	WG910619	1	09/26/16 13:00	09/26/16 13:00	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

UPENVBRMI-DRUMS

SDG:

L861336

DATE/TIME:

10/05/16 14:03

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All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Case Narrative: Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-24-16

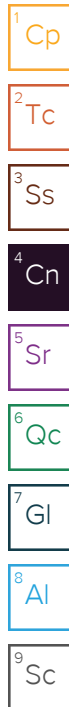
Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L861336-02	CHLL-HPA-DRUM-04A	9045D
L861336-04	CHLL-HPA-DRUM-04B	9045D
L861336-06	CHLL-HPA-DRUM-04C	9045D
L861336-08	CHLL-HPA-DRUM-04D	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L861336-02	CHLL-HPA-DRUM-04A	9095B





Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.47		1	09/30/2016 14:20	WG912583

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1221	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1232	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1242	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1248	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1254	ND		0.0510	3	09/27/2016 13:53	WG911074
PCB 1260	ND		0.0510	3	09/27/2016 13:53	WG911074
(S) Decachlorobiphenyl	69.7		10.0-143		09/27/2016 13:53	WG911074
(S) Tetrachloro-m-xylene	64.3		29.2-144		09/27/2016 13:53	WG911074

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:41	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.92		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-02 WG910581: 6.92 at 19.0c

Wet Chemistry by Method 9095B

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L861336-02 WG912590: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	122		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 07:59	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:45	WG911605
Barium	1.07		0.0500	100	1	09/27/2016 23:45	WG911605
Cadmium	0.0210		0.0200	1	1	09/27/2016 23:45	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:45	WG911605
Lead	46.4		0.0500	5	1	09/27/2016 23:45	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:45	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:45	WG911605

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 16:38	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 16:38	WG911243
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 16:38	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 16:38	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 16:38	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 16:38	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 16:38	WG911243
(S) Toluene-d8	105		90.0-115	114		09/26/2016 16:38	WG911243
(S) Dibromofluoromethane	99.8		79.0-121	125		09/26/2016 16:38	WG911243
(S) a,a,a-Trifluorotoluene	98.8		90.4-116	114		09/26/2016 16:38	WG911243
(S) 4-Bromofluorobenzene	102		80.1-120	128		09/26/2016 16:38	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 16:40	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 16:40	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 16:40	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 16:40	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 16:40	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 16:40	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 16:40	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 16:40	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 16:40	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 16:40	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 16:40	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 16:40	WG911865
(S) 2-Fluorophenol	25.1		10.0-77.9	87		09/28/2016 16:40	WG911865
(S) Phenol-d5	16.0		5.00-70.1	67		09/28/2016 16:40	WG911865
(S) Nitrobenzene-d5	55.4		21.8-123	120		09/28/2016 16:40	WG911865
(S) 2-Fluorobiphenyl	69.2		29.5-131	122		09/28/2016 16:40	WG911865
(S) 2,4,6-Tribromophenol	58.3		11.2-130	148		09/28/2016 16:40	WG911865
(S) p-Terphenyl-d14	82.1		29.3-137	149		09/28/2016 16:40	WG911865



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.13		1	09/30/2016 14:20	WG912583

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1221	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1232	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1242	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1248	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1254	ND		0.0510	3	09/27/2016 14:06	WG911074
PCB 1260	ND		0.0510	3	09/27/2016 14:06	WG911074
(S) Decachlorobiphenyl	41.0		10.0-143		09/27/2016 14:06	WG911074
(S) Tetrachloro-m-xylene	41.3		29.2-144		09/27/2016 14:06	WG911074

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:42	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.01		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-04 WG910581: 7.01 at 18.7c

Wet Chemistry by Method 9095B

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	10/05/2016 10:00	WG913968

Sample Narrative:

9095B L861336-04 WG913968: Contains No Free Liquid

Wet Chemistry by Method D93/1010A

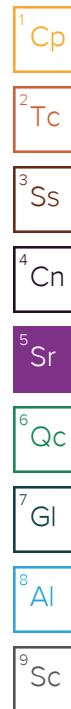
Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:14	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:48	WG911605
Barium	ND		0.0500	100	1	09/27/2016 23:48	WG911605
Cadmium	ND		0.0200	1	1	09/27/2016 23:48	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:48	WG911605
Lead	ND		0.0500	5	1	09/27/2016 23:48	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:48	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:48	WG911605





Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 16:59	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 16:59	WG911243
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 16:59	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 16:59	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 16:59	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 16:59	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 16:59	WG911243
(S) Toluene-d8	107		90.0-115	114		09/26/2016 16:59	WG911243
(S) Dibromofluoromethane	105		79.0-121	125		09/26/2016 16:59	WG911243
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		09/26/2016 16:59	WG911243
(S) 4-Bromofluorobenzene	101		80.1-120	128		09/26/2016 16:59	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 17:04	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 17:04	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 17:04	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 17:04	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 17:04	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 17:04	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 17:04	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 17:04	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 17:04	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 17:04	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 17:04	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 17:04	WG911865
(S) 2-Fluorophenol	27.5		10.0-77.9	87		09/28/2016 17:04	WG911865
(S) Phenol-d5	17.9		5.00-70.1	67		09/28/2016 17:04	WG911865
(S) Nitrobenzene-d5	58.4		21.8-123	120		09/28/2016 17:04	WG911865
(S) 2-Fluorobiphenyl	67.8		29.5-131	122		09/28/2016 17:04	WG911865
(S) 2,4,6-Tribromophenol	58.7		11.2-130	148		09/28/2016 17:04	WG911865
(S) p-Terphenyl-d14	76.0		29.3-137	149		09/28/2016 17:04	WG911865



Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	ND	<u>J4</u>	50.0	50	09/30/2016 17:50	WG912356
PCB 1221	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1232	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1242	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1248	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1254	ND		50.0	50	09/30/2016 17:50	WG912356
PCB 1260	ND		50.0	50	09/30/2016 17:50	WG912356
(S) Decachlorobiphenyl	93.9	<u>J7</u>	60.0-140		09/30/2016 17:50	WG912356
(S) Tetrachloro-m-xylene	75.5	<u>J7</u>	60.0-140		09/30/2016 17:50	WG912356

Sample Narrative:

8082M L861336-05 WG912356: Dilution due to matrix

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	1		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J4	0.250	1	09/27/2016 14:12	WG910790

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.50		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-06 WG910581: 6.50 at 18.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:28	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/27/2016 23:56	WG911605
Barium	2.20		0.0500	100	1	09/27/2016 23:56	WG911605
Cadmium	ND		0.0200	1	1	09/27/2016 23:56	WG911605
Chromium	ND		0.100	5	1	09/27/2016 23:56	WG911605
Lead	ND		0.0500	5	1	09/27/2016 23:56	WG911605
Selenium	ND		0.100	1	1	09/27/2016 23:56	WG911605
Silver	ND		0.0500	5	1	09/27/2016 23:56	WG911605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 17:19	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 17:19	WG911243

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 17:19	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 17:19	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 17:19	WG911243
Trichloroethene	ND		0.0500	0.50	1	09/26/2016 17:19	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 17:19	WG911243
(S) Toluene-d8	105		90.0-115	114		09/26/2016 17:19	WG911243
(S) Dibromofluoromethane	103		79.0-121	125		09/26/2016 17:19	WG911243
(S) a,a,a-Trifluorotoluene	99.9		90.4-116	114		09/26/2016 17:19	WG911243
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/26/2016 17:19	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	09/28/2016 21:45	WG911865
2,4-Dinitrotoluene	ND		0.100	0.13	1	09/28/2016 21:45	WG911865
Hexachlorobenzene	ND		0.100	0.13	1	09/28/2016 21:45	WG911865
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	09/28/2016 21:45	WG911865
Hexachloroethane	ND		0.100	3	1	09/28/2016 21:45	WG911865
Nitrobenzene	ND		0.100	2	1	09/28/2016 21:45	WG911865
Pyridine	ND		0.100	5	1	09/28/2016 21:45	WG911865
3&4-Methyl Phenol	ND		0.100	400	1	09/28/2016 21:45	WG911865
2-Methylphenol	ND		0.100	200	1	09/28/2016 21:45	WG911865
Pentachlorophenol	ND		0.100	100	1	09/28/2016 21:45	WG911865
2,4,5-Trichlorophenol	ND		0.100	400	1	09/28/2016 21:45	WG911865
2,4,6-Trichlorophenol	ND		0.100	2	1	09/28/2016 21:45	WG911865
(S) 2-Fluorophenol	19.7		10.0-77.9	87		09/28/2016 21:45	WG911865
(S) Phenol-d5	13.9		5.00-70.1	67		09/28/2016 21:45	WG911865
(S) Nitrobenzene-d5	42.1		21.8-123	120		09/28/2016 21:45	WG911865
(S) 2-Fluorobiphenyl	58.1		29.5-131	122		09/28/2016 21:45	WG911865
(S) 2,4,6-Tribromophenol	47.8		11.2-130	148		09/28/2016 21:45	WG911865
(S) p-Terphenyl-d14	79.2		29.3-137	149		09/28/2016 21:45	WG911865

7 Gl

8 Al

9 Sc



Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1221	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1232	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1242	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1248	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1254	ND		0.000500	1	09/30/2016 15:09	WG911870
PCB 1260	ND		0.000500	1	09/30/2016 15:09	WG911870
(S) Decachlorobiphenyl	44.7		10.0-156		09/30/2016 15:09	WG911870
(S) Tetrachloro-m-xylene	73.7		13.9-137		09/30/2016 15:09	WG911870

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/25/2016 1:24:19 PM	WG911040
TCLP ZHE Extraction	-		9/23/2016 12:50:13 PM	WG910697
Fluid	n/a		9/25/2016 1:24:19 PM	WG911040
Initial pH	n/a		9/25/2016 1:24:19 PM	WG911040
Final pH	n/a		9/25/2016 1:24:19 PM	WG911040

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J4	0.250	1	09/27/2016 14:13	WG910790

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	12.3		1	09/28/2016 09:12	WG910581

Sample Narrative:

9045D L861336-08 WG910581: 12.34 at 18.4c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 08:07	WG912087

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	1.27		1.00	5	10	09/28/2016 08:14	WG911605
Barium	0.938		0.500	100	10	09/28/2016 08:14	WG911605
Cadmium	0.209		0.200	1	10	09/28/2016 08:14	WG911605
Chromium	ND		1.00	5	10	09/28/2016 08:14	WG911605
Lead	12.4		0.500	5	10	09/28/2016 08:14	WG911605
Selenium	1.43		1.00	1	10	09/28/2016 08:14	WG911605
Silver	ND		0.500	5	10	09/28/2016 08:14	WG911605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
Carbon tetrachloride	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
Chlorobenzene	ND		0.0500	100	1	09/26/2016 13:57	WG911243
Chloroform	ND		0.250	6	1	09/26/2016 13:57	WG911243

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	09/26/2016 13:57	WG911243
1,1-Dichloroethene	ND		0.0500	0.70	1	09/26/2016 13:57	WG911243
2-Butanone (MEK)	ND		0.500	200	1	09/26/2016 13:57	WG911243
Tetrachloroethene	ND		0.0500	0.70	1	09/26/2016 13:57	WG911243
Trichloroethene	ND	<u>J5</u>	0.0500	0.50	1	09/26/2016 13:57	WG911243
Vinyl chloride	ND		0.0500	0.20	1	09/26/2016 13:57	WG911243
(S) Toluene-d8	108		90.0-115	114		09/26/2016 13:57	WG911243
(S) Dibromofluoromethane	102		79.0-121	125		09/26/2016 13:57	WG911243
(S) a,a,a-Trifluorotoluene	98.8		90.4-116	114		09/26/2016 13:57	WG911243
(S) 4-Bromofluorobenzene	100		80.1-120	128		09/26/2016 13:57	WG911243

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 16:40	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 16:40	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 16:40	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 16:40	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 16:40	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 16:40	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 16:40	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 16:40	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 16:40	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 16:40	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 16:40	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 16:40	WG912639
(S) 2-Fluorophenol	33.4		10.0-77.9	87		10/03/2016 16:40	WG912639
(S) Phenol-d5	21.4		5.00-70.1	67		10/03/2016 16:40	WG912639
(S) Nitrobenzene-d5	49.1		21.8-123	120		10/03/2016 16:40	WG912639
(S) 2-Fluorobiphenyl	64.5		29.5-131	122		10/03/2016 16:40	WG912639
(S) 2,4,6-Tribromophenol	42.7		11.2-130	148		10/03/2016 16:40	WG912639
(S) p-Terphenyl-d14	67.3		29.3-137	149		10/03/2016 16:40	WG912639

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3166419-1 09/27/16 14:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L861447-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861447-01 09/27/16 14:14 • (DUP) R3166419-4 09/27/16 14:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166419-2 09/27/16 14:07 • (LCSD) R3166419-3 09/27/16 14:08

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	52.0	85.5	107	177	50.0-150		J3 J4	49.0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

Method Blank (MB)

(MB) WG910791-1 09/27/16 02:08

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L861447-05 Original Sample (OS) • Duplicate (DUP)

(OS) L861447-05 09/27/16 02:08 • (DUP) WG910791-4 09/27/16 02:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910791-2 09/27/16 02:08 • (LCSD) WG910791-3 09/27/16 02:08

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	72.4	78.4	72.4	78.4	70.0-130			7.96	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L860076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L860076-01 09/28/16 09:12 • (DUP) WG910581-3 09/28/16 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	3.38	3.40	1	0.590		1

L861673-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861673-02 09/28/16 09:12 • (DUP) WG910581-4 09/28/16 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	4.51	4.55	1	0.883		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910581-1 09/28/16 09:12 • (LCSD) WG910581-2 09/28/16 09:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.07	6.07	99.3	99.3	98.4-102			0.000	1

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L863242-01 Original Sample (OS) • Duplicate (DUP)

(OS) L863242-01 10/05/16 10:00 • (DUP) WG913968-1 10/05/16 10:00

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L861336-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861336-02 09/26/16 13:00 • (DUP) WG910619-1 09/26/16 13:00

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	122	124	1	1.63		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG910619-2 09/26/16 13:00 • (LCSD) WG910619-3 09/26/16 13:00

Analyte	Spike Amount Deg. F	LCS Result Deg. F	LCSD Result Deg. F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ignitability	82.0	82.9	83.9	101	102	93.0-107			1.20	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167239-1 09/30/16 07:52

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167239-2 09/30/16 07:54 • (LCSD) R3167239-3 09/30/16 07:57

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0314	0.0321	105	107	80-120			2	20

L861336-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-02 09/30/16 07:59 • (MS) R3167239-4 09/30/16 08:02 • (MSD) R3167239-5 09/30/16 08:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0330	0.0313	110	104	1	75-125			5	20

L861336-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-08 09/30/16 08:07 • (MS) R3167239-6 09/30/16 08:09 • (MSD) R3167239-7 09/30/16 08:12

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0316	0.0330	105	110	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3166532-1 09/27/16 23:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166532-2 09/27/16 23:27 • (LCSD) R3166532-3 09/27/16 23:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.02	9.00	90	90	80-120			0	20
Barium	10.0	9.24	9.27	92	93	80-120			0	20
Cadmium	10.0	9.04	9.00	90	90	80-120			0	20
Chromium	10.0	8.98	8.91	90	89	80-120			1	20
Lead	10.0	9.06	9.02	91	90	80-120			0	20
Selenium	10.0	9.04	9.09	90	91	80-120			1	20
Silver	10.0	8.95	8.91	89	89	80-120			0	20

L861649-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861649-01 09/27/16 23:32 • (MS) R3166532-5 09/27/16 23:37 • (MSD) R3166532-6 09/27/16 23:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.56	9.51	96	95	1	75-125			1	20
Barium	10.0	0.158	9.38	9.32	92	92	1	75-125			1	20
Cadmium	10.0	0.0201	9.40	9.33	94	93	1	75-125			1	20
Chromium	10.0	ND	8.99	8.93	90	89	1	75-125			1	20
Lead	10.0	ND	9.24	9.18	92	92	1	75-125			1	20
Selenium	10.0	ND	9.78	9.76	98	98	1	75-125			0	20
Silver	10.0	ND	9.29	9.23	93	92	1	75-125			1	20



[L861336-02,04,06,08](#)

L861336-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861336-08 09/28/16 08:14 • (MS) R3166613-1 09/28/16 08:17 • (MSD) R3166613-2 09/28/16 08:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Arsenic	1.00	1.27	10.7	10.3	94	91	10	75-125			4	20
Barium	1.00	0.938	10.0	9.59	91	86	10	75-125			4	20
Cadmium	1.00	0.209	9.21	8.88	90	87	10	75-125			4	20
Chromium	1.00	ND	8.95	8.58	90	86	10	75-125			4	20
Lead	1.00	12.4	21.9	21.1	95	87	10	75-125			3	20
Selenium	1.00	1.43	10.6	10.3	92	89	10	75-125			3	20
Silver	1.00	ND	8.88	8.53	89	85	10	75-125			4	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3166244-3 09/26/16 08:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	109			90.0-115
(S) Dibromofluoromethane	113			79.0-121
(S) a,a,a-Trifluorotoluene	99.0			90.4-116
(S) 4-Bromofluorobenzene	101			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166244-1 09/26/16 00:58 • (LCSD) R3166244-2 09/26/16 01:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0293	0.0295	117	118	73.0-122			0.670	20
Carbon tetrachloride	0.0250	0.0252	0.0265	101	106	70.9-129			4.80	20
Chlorobenzene	0.0250	0.0242	0.0250	96.9	100	79.7-122			3.25	20
Chloroform	0.0250	0.0280	0.0289	112	116	73.2-125			3.28	20
1,2-Dichloroethane	0.0250	0.0261	0.0271	104	108	65.3-126			3.88	20
1,1-Dichloroethene	0.0250	0.0284	0.0298	114	119	60.6-133			4.91	20
2-Butanone (MEK)	0.125	0.108	0.111	86.7	88.7	46.4-155			2.32	20
Tetrachloroethene	0.0250	0.0222	0.0226	88.9	90.4	73.5-130			1.63	20
Trichloroethene	0.0250	0.0249	0.0247	99.8	98.9	79.5-121			0.920	20
Vinyl chloride	0.0250	0.0311	0.0319	124	128	61.5-134			2.58	20
(S) Toluene-d8				110	110	90.0-115				
(S) Dibromofluoromethane				111	114	79.0-121				
(S) a,a,a-Trifluorotoluene				98.7	99.1	90.4-116				
(S) 4-Bromofluorobenzene				99.3	100	80.1-120				



L861336-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L861336-08 09/26/16 13:57 • (MS) R3166244-4 09/26/16 10:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.24	98.9	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.15	91.8	1	60.6-139	
Chlorobenzene	1.25	ND	1.13	90.2	1	70.1-130	
Chloroform	1.25	ND	1.26	101	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.18	94.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.25	99.8	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.44	87.0	1	45.0-156	
Tetrachloroethene	1.25	ND	0.964	77.2	1	57.4-141	
Trichloroethene	1.25	ND	1.98	158	1	48.9-148	J5
Vinyl chloride	1.25	ND	1.26	100	1	44.3-143	
(S) Toluene-d8				109		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				97.2		90.4-116	
(S) 4-Bromofluorobenzene				100		80.1-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L861354-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861354-06 09/26/16 13:37 • (MS) R3166244-6 09/26/16 10:41 • (MSD) R3166244-7 09/26/16 11:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.25	1.24	99.8	99.2	1	58.6-133			0.630	20
Carbon tetrachloride	1.25	ND	1.13	1.12	90.8	89.7	1	60.6-139			1.18	20
Chlorobenzene	1.25	ND	1.17	1.17	93.3	93.3	1	70.1-130			0.0300	20
Chloroform	1.25	ND	1.25	1.27	100	102	1	66.1-133			1.61	20
1,2-Dichloroethane	1.25	ND	1.16	1.15	92.8	92.4	1	60.7-132			0.470	20
1,1-Dichloroethene	1.25	ND	1.20	1.18	95.7	94.4	1	48.8-144			1.37	20
2-Butanone (MEK)	6.25	ND	4.99	5.22	79.9	83.5	1	45.0-156			4.45	20.8
Tetrachloroethene	1.25	ND	1.01	0.987	80.9	79.0	1	57.4-141			2.37	20
Trichloroethene	1.25	ND	1.11	1.07	88.9	85.8	1	48.9-148			3.57	20
Vinyl chloride	1.25	ND	1.16	1.17	92.7	93.3	1	44.3-143			0.640	20
(S) Toluene-d8					107	108		90.0-115				
(S) Dibromofluoromethane					109	110		79.0-121				
(S) a,a,a-Trifluorotoluene					97.8	98.9		90.4-116				
(S) 4-Bromofluorobenzene					97.3	100		80.1-120				



Method Blank (MB)

(MB) R3166403-1 09/27/16 10:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	74.3			10.0-143
(S) Tetrachloro-m-xylene	75.2			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166403-2 09/27/16 10:35 • (LCSD) R3166403-3 09/27/16 10:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.115	0.107	68.8	64.1	46.5-120			7.09	27
PCB 1016	0.167	0.110	0.103	66.0	61.9	46.3-117			6.44	27.5
(S) Decachlorobiphenyl				84.5	84.1	10.0-143				
(S) Tetrachloro-m-xylene				86.7	86.0	29.2-144				

L861698-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861698-07 09/27/16 21:34 • (MS) R3166403-4 09/27/16 21:47 • (MSD) R3166403-5 09/27/16 21:59

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.200	U	0.0818	0.0903	40.9	45.2	1	24.6-127			9.88	20
PCB 1016	0.200	U	0.157	0.150	78.3	75.0	1	23.9-147			4.28	25.8
(S) Decachlorobiphenyl					39.3	38.5		10.0-143				
(S) Tetrachloro-m-xylene					74.0	68.7		29.2-144				



Method Blank (MB)

(MB) R3167488-1 09/30/16 14:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
PCB 1260	U		0.000120	0.000500
PCB 1016	U		0.000100	0.000500
PCB 1221	U		0.0000730	0.000500
PCB 1232	U		0.0000420	0.000500
PCB 1242	U		0.0000470	0.000500
PCB 1248	U		0.0000860	0.000500
PCB 1254	U		0.0000470	0.000500
(S) Decachlorobiphenyl	66.8			10.0-156
(S) Tetrachloro-m-xylene	73.7			13.9-137

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167488-2 09/30/16 14:41 • (LCSD) R3167488-3 09/30/16 14:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.00250	0.00211	0.00238	84.3	95.1	47.7-149			12.1	28.8
PCB 1016	0.00250	0.00217	0.00222	86.7	88.8	24.7-128			2.36	34.9
(S) Decachlorobiphenyl				66.3	64.7	10.0-156				
(S) Tetrachloro-m-xylene				72.6	73.0	13.9-137				

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167484-1 09/30/16 16:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	98.3			60.0-140
(S) Tetrachloro-m-xylene	113			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167484-2 09/30/16 17:09 • (LCSD) R3167484-3 09/30/16 17:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.540	0.489	108	97.7	60.0-140			10.1	20
PCB 1016	0.500	0.833	0.702	167	140	60.0-140	J4		17.1	20
(S) Decachlorobiphenyl				101	88.9	60.0-140				
(S) Tetrachloro-m-xylene				113	95.8	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3166768-3 09/28/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	50.8			21.8-123
(S) 2-Fluorobiphenyl	64.3			29.5-131
(S) p-Terphenyl-d14	71.6			29.3-137
(S) Phenol-d5	18.1			5.00-70.1
(S) 2-Fluorophenol	27.6			10.0-77.9
(S) 2,4,6-Tribromophenol	56.4			11.2-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0294	0.0282	58.8	56.3	21.0-89.4			4.24	32.6
2,4-Dinitrotoluene	0.0500	0.0410	0.0421	81.9	84.3	31.2-105			2.82	22
Hexachlorobenzene	0.0500	0.0383	0.0394	76.6	78.7	38.5-116			2.75	20.1
Hexachloro-1,3-butadiene	0.0500	0.0315	0.0308	63.0	61.6	16.1-104			2.36	31.2
Hexachloroethane	0.0500	0.0278	0.0266	55.7	53.2	16.5-89.8			4.47	30.7
Nitrobenzene	0.0500	0.0326	0.0321	65.3	64.3	31.4-106			1.54	25.7
Pyridine	0.0500	0.0180	0.0187	36.0	37.3	13.5-58.9			3.69	32.5
2-Methylphenol	0.0500	0.0241	0.0238	48.1	47.5	26.4-86.9			1.30	26.5
3&4-Methyl Phenol	0.0500	0.0249	0.0253	49.7	50.6	27.9-92.0			1.71	27
Pentachlorophenol	0.0500	0.0244	0.0283	48.8	56.6	10.0-97.4			14.9	35.1
2,4,5-Trichlorophenol	0.0500	0.0400	0.0410	79.9	82.0	34.9-112			2.60	23.9
2,4,6-Trichlorophenol	0.0500	0.0365	0.0378	73.0	75.7	29.8-107			3.55	24.1
(S) Nitrobenzene-d5				62.9	61.9	21.8-123				
(S) 2-Fluorobiphenyl				74.7	73.4	29.5-131				
(S) p-Terphenyl-d14				79.4	80.8	29.3-137				



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				20.6	20.3	5.00-70.1				
(S) 2-Fluorophenol				28.6	30.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				75.8	78.4	11.2-130				

L861650-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861650-02 09/28/16 18:38 • (MS) R3166768-4 09/28/16 19:01 • (MSD) R3166768-5 09/28/16 19:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.147	0.294	29.3	58.9	1	14.0-104		J3	66.9	36.4
2,4-Dinitrotoluene	0.500	ND	0.433	0.419	86.6	83.8	1	16.2-135			3.23	20.6
Hexachlorobenzene	0.500	ND	0.389	0.375	77.8	75.1	1	31.9-135			3.53	20
Hexachloro-1,3-butadiene	0.500	ND	0.175	0.309	35.0	61.8	1	15.7-109		J3	55.4	37.6
Hexachloroethane	0.500	ND	0.136	0.277	27.2	55.5	1	10.4-105		J3	68.3	40
Nitrobenzene	0.500	ND	0.189	0.329	37.7	65.9	1	23.1-121		J3	54.3	29
Pyridine	0.500	ND	0.101	0.188	20.2	37.7	1	10.0-77.8		J3	60.6	38.8
2-Methylphenol	0.500	ND	0.155	0.265	31.0	53.0	1	10.0-133		J3	52.4	40
3&4-Methyl Phenol	0.500	ND	0.179	0.274	35.9	54.7	1	17.4-100		J3	41.5	27.7
Pentachlorophenol	0.500	ND	0.152	0.266	30.3	53.2	1	10.0-108		J3	54.8	40
2,4,5-Trichlorophenol	0.500	ND	0.298	0.390	59.6	77.9	1	30.6-120			26.6	33.8
2,4,6-Trichlorophenol	0.500	ND	0.189	0.334	37.7	66.8	1	19.1-114		J3	55.7	29.9
(S) Nitrobenzene-d5					36.7	63.3		21.8-123				
(S) 2-Fluorobiphenyl					61.7	74.2		29.5-131				
(S) p-Terphenyl-d14					84.5	77.5		29.3-137				
(S) Phenol-d5					12.8	24.3		5.00-70.1				
(S) 2-Fluorophenol					12.7	34.1		10.0-77.9				
(S) 2,4,6-Tribromophenol					58.4	72.3		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

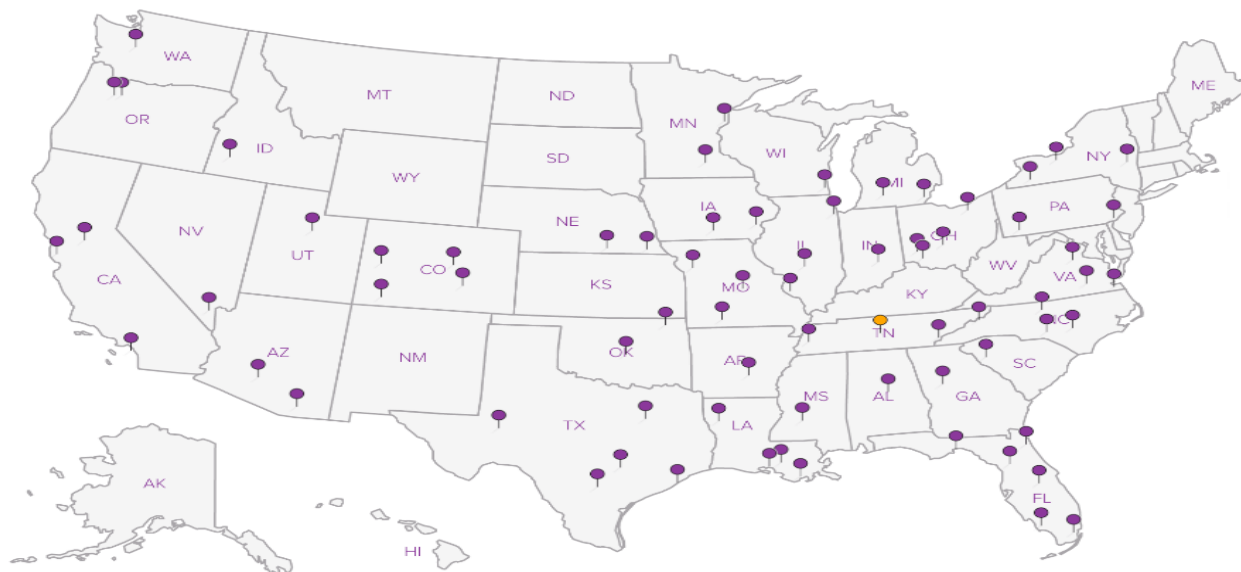
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		



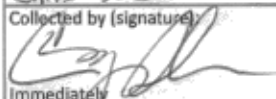
¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



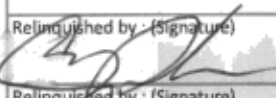
Standard overnight

Company Name/Address: U.P. Environmental Services, Inc P.O. Box 127 Bark River, MI 49807 906-466-9900				Billing Information: <div style="text-align: center; font-size: 1.2em;">same</div>				Analysis / Container / Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">pH</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Reactive Cyanide</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB's</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Reactive Sulfide</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Flashpoint</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TCCLP w/o Pest/Herb</div> </div>										Chain of Custody Page <u> </u> of <u> </u>  YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859  L# <u>L861336</u> <div style="border: 1px solid black; padding: 5px; font-weight: bold; font-size: 1.2em;">F172</div>	
Report to: Rick Reidy				Email To: ricke@upenvironmental.com															
Project Description: Abandon Mining Waste - Torch Lake				City/State Collected: Hybbsell, MI															
Phone: 906-466-9900 Fax: 906-466-2641		Client Project # UPENVBRMI-DRUMS		Lab Project #															
Collected by (print): Chris Gendron		Site/Facility ID #		P.O. #															
Collected by (signature): 		Rush? (Lab MUST Be Notified) Same Day200% Next Day100% Two Day50% Three Day25%		Date Results Needed Email? <input type="checkbox"/> No <input type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes		No. of Cntrs													
Immediately Packed on Ice N <input type="checkbox"/> Y <input type="checkbox"/>																			

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	pH	Reactive Cyanide	PCB's	Reactive Sulfide	Flashpoint	TCCLP w/o Pest/Herb	Rem./Contaminant	Sample # (lab only)
CHL-HPA-DRUM-04A	Grab	OT	N/A	9/20/16	5:00pm	6	X	X	X	X	X	X		-0102
CHL-HPA-DRUM-04B	Grab	OT	N/A	9/20/16	5:30pm	6	X	X	X	X	X	X		0304
CHL-HPA-DRUM-04C	Grab	OT	N/A	9/20/16	6:00pm	87	X	X	X	X	X	X		0506
CHL-HPA-DRUM-04D	Comp	OT	N/A	9/21/16	11:00am	87	X	X	X	X	X	X		0708

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks: _____

Relinquished by: (Signature) 

Relinquished by: (Signature) _____

Relinquished by: (Signature) _____


Date: 9/21/16 Time: 12:00

Date: _____ Time: _____

Date: _____ Time: _____

Received by: (Signature) _____

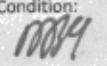
Received by: (Signature) _____


Received for lab by: (Signature) 

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 2-8 °C Bottles Received: 26 + more

Date: 9-22-16 Time: 1200

Condition: (lab use only) 

Seal Intact: Y ☒ N ☐ NA 

pH Checked: _____ NCF: _____



L·A·B S·C·I·E·N·C·E·S

YOUR LAB OF CHOICE

Cooler Receipt Form

Client:	UPENVBKMI	SDG#	L861334
Cooler Received/Opened On:	9-22-16	Temperature Upon Receipt:	2.8 °C
Received By:	Greg Dearmon		
Signature:			
Receipt Check List			
	Yes	No	N/A
Were custody seals on outside of cooler and intact?			/
Were custody papers properly filled out?	/		
Did all bottles arrive in good condition?	/		
Were correct bottles used for the analyses requested?	/		
Was sufficient amount of sample sent in each bottle?	/		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			/
If applicable, was an observable VOA headspace present?			/
Non Conformance Generated. (If yes see attached NCF)			

U.P. Environmental Services, Inc.

Sample Delivery Group: L862154
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste - Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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⁵Sr: Sample Results	6
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CHTC-TP-DM09 L862154-01 Solid

Collected by
Chris GendronCollected date/time
09/23/16 11:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082M	WG913943	1	10/04/16 22:53	10/05/16 15:52	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

CHTC-TP-DM09 L862154-02 Waste

Collected by
Chris GendronCollected date/time
09/23/16 11:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:57	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:43	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 19:23	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	20	09/30/16 16:39	09/30/16 16:39	HJF
Wet Chemistry by Method 9012 B	WG913176	3	10/03/16 12:22	10/03/16 15:04	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TS-DM09 L862154-03 Solid

Collected by
Chris GendronCollected date/time
09/23/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:20	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM09 L862154-04 Waste

Collected by
Chris GendronCollected date/time
09/23/16 14:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:07	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:46	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 19:46	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	10/05/16 02:51	10/05/16 02:51	LRL
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

CHTC-TP-DM04 L862154-05 Solid

Collected by
Chris GendronCollected date/time
09/23/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	15	10/03/16 02:18	10/05/16 01:34	JNS
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC



CHTC-TP-DM04 L862154-06 Waste

Collected by
Chris GendronCollected date/time
09/23/16 11:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:10	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:49	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:10	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 17:20	09/30/16 17:20	HJF
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

CHTC-TS-DM02 L862154-07 Solid

Collected by
Chris GendronCollected date/time
09/23/16 10:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912211	1	10/03/16 02:18	10/04/16 17:45	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHTC-TS-DM02 L862154-08 Waste

Collected by
Chris GendronCollected date/time
09/23/16 10:30Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:13	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:52	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG912360	1	09/29/16 10:36	09/29/16 10:36	BG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 20:33	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912888	1	09/30/16 17:40	09/30/16 17:40	HJF
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911949	1	09/30/16 14:15	09/30/16 14:15	MAJ



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Several samples L862154-02,06 are solvents. Due to sample matrix, standard ZHE container could not be used. A 500ml amber glass jar was used instead. Zero headspace cannot be guaranteed due to the sample matrix issues. JVH 9-30-16

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862154-02	CHTC-TP-DM09	9045D
L862154-04	CHTC-TS-DM09	9045D
L862154-06	CHTC-TP-DM04	9045D
L862154-08	CHTC-TS-DM02	9045D

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862154-02	CHTC-TP-DM09	D93/1010A

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.899		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-01 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082M

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1221	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1232	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1242	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1248	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1254	ND		1.00	1	10/05/2016 15:52	WG913943
PCB 1260	ND		1.00	1	10/05/2016 15:52	WG913943
(S) Decachlorobiphenyl	84.2		60.0-140		10/05/2016 15:52	WG913943
(S) Tetrachloro-m-xylene	124		60.0-140		10/05/2016 15:52	WG913943

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	3.52		9/27/2016 10:38:49 PM	WG911845
Final pH	4.72		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.750	3	10/03/2016 15:04	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.36		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-02 WG913869: 3.36 at 20.2c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	81.9		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:57	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:43	WG912283
Barium	ND		0.0500	100	1	09/30/2016 18:43	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:43	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:43	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:43	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:43	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:43	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	13.3		1.00	0.50	20	09/30/2016 16:39	WG912888
Carbon tetrachloride	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
Chlorobenzene	ND		1.00	100	20	09/30/2016 16:39	WG912888
Chloroform	ND		5.00	6	20	09/30/2016 16:39	WG912888

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
1,1-Dichloroethene	ND		1.00	0.70	20	09/30/2016 16:39	WG912888
2-Butanone (MEK)	ND	J3	10.0	200	20	09/30/2016 16:39	WG912888
Tetrachloroethene	ND		1.00	0.70	20	09/30/2016 16:39	WG912888
Trichloroethene	ND		1.00	0.50	20	09/30/2016 16:39	WG912888
Vinyl chloride	ND		1.00	0.20	20	09/30/2016 16:39	WG912888
(S) Toluene-d8	104		90.0-115	114		09/30/2016 16:39	WG912888
(S) Dibromofluoromethane	99.4		79.0-121	125		09/30/2016 16:39	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 16:39	WG912888
(S) 4-Bromofluorobenzene	103		80.1-120	128		09/30/2016 16:39	WG912888

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 19:23	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 19:23	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 19:23	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 19:23	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 19:23	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 19:23	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 19:23	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 19:23	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 19:23	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 19:23	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 19:23	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 19:23	WG912639
(S) 2-Fluorophenol	46.1		10.0-77.9	87		10/03/2016 19:23	WG912639
(S) Phenol-d5	153	J1	5.00-70.1	67		10/03/2016 19:23	WG912639
(S) Nitrobenzene-d5	48.7		21.8-123	120		10/03/2016 19:23	WG912639
(S) 2-Fluorobiphenyl	48.6		29.5-131	122		10/03/2016 19:23	WG912639
(S) 2,4,6-Tribromophenol	80.7		11.2-130	148		10/03/2016 19:23	WG912639
(S) p-Terphenyl-d14	68.4		29.3-137	149		10/03/2016 19:23	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.7		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.65		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862154-03 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:20	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:20	WG912211
(S) Decachlorobiphenyl	99.3		10.0-143		10/05/2016 01:20	WG912211
(S) Tetrachloro-m-xylene	101		29.2-144		10/05/2016 01:20	WG912211

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.22		9/27/2016 10:38:49 PM	WG911845
Final pH	4.96		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.07		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-04 WG913869: 7.07 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:07	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:46	WG912283
Barium	0.0787		0.0500	100	1	09/30/2016 18:46	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:46	WG912283
Chromium	0.227		0.100	5	1	09/30/2016 18:46	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:46	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:46	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:46	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Chlorobenzene	ND		0.0500	100	1	10/05/2016 02:51	WG912888
Chloroform	ND		0.250	6	1	10/05/2016 02:51	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	10/05/2016 02:51	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	10/05/2016 02:51	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	10/05/2016 02:51	WG912888
Trichloroethene	ND		0.0500	0.50	1	10/05/2016 02:51	WG912888
Vinyl chloride	ND		0.0500	0.20	1	10/05/2016 02:51	WG912888
(S) Toluene-d8	98.6		90.0-115	114		10/05/2016 02:51	WG912888
(S) Dibromofluoromethane	82.5		79.0-121	125		10/05/2016 02:51	WG912888
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		10/05/2016 02:51	WG912888
(S) 4-Bromofluorobenzene	98.0		80.1-120	128		10/05/2016 02:51	WG912888

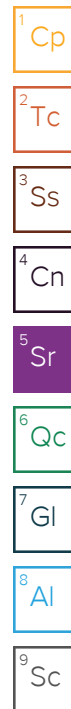


Collected date/time: 09/23/16 14:00

L862154

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 19:46	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 19:46	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 19:46	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 19:46	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 19:46	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 19:46	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 19:46	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 19:46	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 19:46	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 19:46	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 19:46	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 19:46	WG912639
(S) 2-Fluorophenol	17.0		10.0-77.9	87		10/03/2016 19:46	WG912639
(S) Phenol-d5	8.08		5.00-70.1	67		10/03/2016 19:46	WG912639
(S) Nitrobenzene-d5	52.8		21.8-123	120		10/03/2016 19:46	WG912639
(S) 2-Fluorobiphenyl	61.8		29.5-131	122		10/03/2016 19:46	WG912639
(S) 2,4,6-Tribromophenol	75.3		11.2-130	148		10/03/2016 19:46	WG912639
(S) p-Terphenyl-d14	66.1		29.3-137	149		10/03/2016 19:46	WG912639





Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	0.894		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-05 WG912590: Contains Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1221	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1232	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1242	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1248	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1254	ND		0.255	15	10/05/2016 01:34	WG912211
PCB 1260	ND		0.255	15	10/05/2016 01:34	WG912211
(S) Decachlorobiphenyl	73.3		10.0-143		10/05/2016 01:34	WG912211
(S) Tetrachloro-m-xylene	69.3		29.2-144		10/05/2016 01:34	WG912211

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	n/a		9/27/2016 10:38:49 PM	WG911845
Final pH	n/a		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.59		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-06 WG913869: 6.59 at 20.7c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:10	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:49	WG912283
Barium	0.208		0.0500	100	1	09/30/2016 18:49	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:49	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:49	WG912283
Lead	15.1		0.0500	5	1	09/30/2016 18:49	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:49	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:49	WG912283

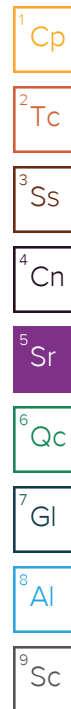
Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 17:20	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 17:20	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 17:20	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 17:20	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 17:20	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 17:20	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 17:20	WG912888
(S) Toluene-d8	104		90.0-115	114		09/30/2016 17:20	WG912888
(S) Dibromofluoromethane	102		79.0-121	125		09/30/2016 17:20	WG912888
(S) a,a,a-Trifluorotoluene	103		90.4-116	114		09/30/2016 17:20	WG912888
(S) 4-Bromofluorobenzene	98.8		80.1-120	128		09/30/2016 17:20	WG912888



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:10	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:10	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:10	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:10	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:10	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:10	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:10	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:10	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:10	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:10	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:10	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:10	WG912639
(S) 2-Fluorophenol	36.4		10.0-77.9	87		10/03/2016 20:10	WG912639
(S) Phenol-d5	24.9		5.00-70.1	67		10/03/2016 20:10	WG912639
(S) Nitrobenzene-d5	48.0		21.8-123	120		10/03/2016 20:10	WG912639
(S) 2-Fluorobiphenyl	65.2		29.5-131	122		10/03/2016 20:10	WG912639
(S) 2,4,6-Tribromophenol	77.3		11.2-130	148		10/03/2016 20:10	WG912639
(S) p-Terphenyl-d14	69.2		29.3-137	149		10/03/2016 20:10	WG912639





Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.0		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862154-07 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1221	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1232	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1242	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1248	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1254	ND		0.0170	1	10/04/2016 17:45	WG912211
PCB 1260	ND		0.0170	1	10/04/2016 17:45	WG912211
(S) Decachlorobiphenyl	70.0		10.0-143		10/04/2016 17:45	WG912211
(S) Tetrachloro-m-xylene	98.9		29.2-144		10/04/2016 17:45	WG912211



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.68		9/27/2016 10:38:49 PM	WG911845
Final pH	5.17		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.30		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862154-08 WG913869: 7.30 at 20.5c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

Mercury by Method 7470A

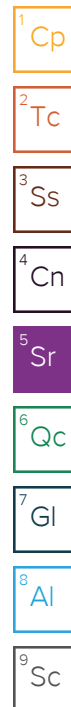
Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 11:13	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:52	WG912283
Barium	0.239		0.0500	100	1	09/30/2016 18:52	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:52	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:52	WG912283
Lead	ND		0.0500	5	1	09/30/2016 18:52	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:52	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:52	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

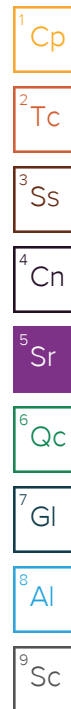
Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Carbon tetrachloride	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Chlorobenzene	ND		0.0500	100	1	09/30/2016 17:40	WG912888
Chloroform	ND		0.250	6	1	09/30/2016 17:40	WG912888
1,2-Dichloroethane	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
1,1-Dichloroethene	ND		0.0500	0.70	1	09/30/2016 17:40	WG912888
2-Butanone (MEK)	ND	J3	0.500	200	1	09/30/2016 17:40	WG912888
Tetrachloroethene	ND		0.0500	0.70	1	09/30/2016 17:40	WG912888
Trichloroethene	ND		0.0500	0.50	1	09/30/2016 17:40	WG912888
Vinyl chloride	ND		0.0500	0.20	1	09/30/2016 17:40	WG912888
(S) Toluene-d8	103		90.0-115	114		09/30/2016 17:40	WG912888
(S) Dibromofluoromethane	98.8		79.0-121	125		09/30/2016 17:40	WG912888
(S) a,a,a-Trifluorotoluene	102		90.4-116	114		09/30/2016 17:40	WG912888
(S) 4-Bromofluorobenzene	99.4		80.1-120	128		09/30/2016 17:40	WG912888





Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 20:33	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 20:33	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 20:33	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 20:33	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 20:33	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 20:33	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 20:33	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 20:33	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 20:33	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 20:33	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 20:33	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 20:33	WG912639
(S) 2-Fluorophenol	34.1		10.0-77.9	87		10/03/2016 20:33	WG912639
(S) Phenol-d5	23.1		5.00-70.1	67		10/03/2016 20:33	WG912639
(S) Nitrobenzene-d5	48.0		21.8-123	120		10/03/2016 20:33	WG912639
(S) 2-Fluorobiphenyl	61.1		29.5-131	122		10/03/2016 20:33	WG912639
(S) 2,4,6-Tribromophenol	69.7		11.2-130	148		10/03/2016 20:33	WG912639
(S) p-Terphenyl-d14	68.2		29.3-137	149		10/03/2016 20:33	WG912639



Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 14:20 • (DUP) WG912583-1 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.65	1.65	1	0.438		20

L862165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-01 09/30/16 14:20 • (DUP) WG912583-2 09/30/16 14:20

Analyte	Original Result g/cm3	DUP Result g/cm3	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Density	1.62	1.57	1	2.96		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1



L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03 09/30/16 13:55 • (DUP) WG912590-1 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05 09/30/16 13:55 • (DUP) WG912590-2 09/30/16 13:55

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Paint Filter Test	See Footnote	See Footnote	1	0.000		20



L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L862222-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911949-2 09/30/16 14:15 • (LCSD) WG911949-3 09/30/16 14:15

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93.0-107			0.245	20



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20

Method Blank (MB)

(MB) R3167331-3 09/30/16 12:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	103			90.0-115
(S) Dibromofluoromethane	100			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	96.2			80.1-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167331-1 09/30/16 11:03 • (LCSD) R3167331-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30/16 15:59 • (MS) R3167331-4 09/30/16 13:14

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Benzene	1.25	ND	1.15	91.8	1	58.6-133	
Carbon tetrachloride	1.25	ND	1.07	85.6	1	60.6-139	
Chlorobenzene	1.25	ND	1.23	98.8	1	70.1-130	
Chloroform	1.25	ND	1.16	92.5	1	66.1-133	
1,2-Dichloroethane	1.25	ND	1.13	90.5	1	60.7-132	
1,1-Dichloroethene	1.25	ND	1.40	112	1	48.8-144	
2-Butanone (MEK)	6.25	ND	5.13	82.0	1	45.0-156	
Tetrachloroethene	1.25	ND	1.28	102	1	57.4-141	
Trichloroethene	1.25	ND	1.23	98.0	1	48.9-148	
Vinyl chloride	1.25	ND	1.27	101	1	44.3-143	
(S) Toluene-d8				104		90.0-115	
(S) Dibromofluoromethane				103		79.0-121	
(S) a,a,a-Trifluorotoluene				102		90.4-116	
(S) 4-Bromofluorobenzene				97.7		80.1-120	

L862143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.23	1.24	98.5	99.4	1	58.6-133			0.970	20
Carbon tetrachloride	1.25	ND	1.17	1.14	93.3	91.4	1	60.6-139			2.08	20
Chlorobenzene	1.25	ND	1.33	1.36	106	109	1	70.1-130			1.98	20
Chloroform	1.25	ND	1.21	1.22	96.9	97.2	1	66.1-133			0.380	20
1,2-Dichloroethane	1.25	ND	1.16	1.17	92.7	93.9	1	60.7-132			1.30	20
1,1-Dichloroethene	1.25	ND	1.47	1.47	118	117	1	48.8-144			0.430	20
2-Butanone (MEK)	6.25	ND	3.14	3.16	50.2	50.5	1	45.0-156			0.620	20.8
Tetrachloroethene	1.25	ND	1.36	1.38	109	111	1	57.4-141			1.53	20
Trichloroethene	1.25	ND	1.28	1.29	102	103	1	48.9-148			1.30	20
Vinyl chloride	1.25	ND	1.42	1.42	113	113	1	44.3-143			0.150	20
(S) Toluene-d8					104	104		90.0-115				
(S) Dibromofluoromethane					101	100		79.0-121				
(S) a,a,a-Trifluorotoluene					104	103		90.4-116				
(S) 4-Bromofluorobenzene					98.9	102		80.1-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3167926-1 10/04/16 08:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.00494	0.0170
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	102			29.2-144

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167926-2 10/04/16 09:01 • (LCSD) R3167926-3 10/04/16 09:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.189	0.192	113	115	46.5-120			1.80	27
PCB 1016	0.167	0.174	0.178	104	107	46.3-117			2.24	27.5
(S) Decachlorobiphenyl				113	110	10.0-143				
(S) Tetrachloro-m-xylene				110	108	29.2-144				

L862158-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862158-01 10/04/16 16:36 • (MS) R3167926-4 10/04/16 16:50 • (MSD) R3167926-5 10/04/16 17:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.181	ND	0.218	0.222	120	123	1	24.6-127			2.18	20
PCB 1016	0.181	ND	0.218	0.220	121	122	1	23.9-147			0.730	25.8
(S) Decachlorobiphenyl					113	116		10.0-143				
(S) Tetrachloro-m-xylene					115	115		29.2-144				



Method Blank (MB)

(MB) R3168428-1 10/05/16 15:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1260	U		0.330	1.00
PCB 1016	U		0.330	1.00
PCB 1221	U		0.330	1.00
PCB 1232	U		0.330	1.00
PCB 1242	U		0.330	1.00
PCB 1248	U		0.330	1.00
PCB 1254	U		0.330	1.00
(S) Decachlorobiphenyl	97.0			60.0-140
(S) Tetrachloro-m-xylene	114			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168428-2 10/05/16 15:24 • (LCSD) R3168428-3 10/05/16 15:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.500	0.620	0.561	124	112	60.0-140			10.0	20
PCB 1016	0.500	0.628	0.600	126	120	60.0-140			4.45	20
(S) Decachlorobiphenyl				103	99.3	60.0-140				
(S) Tetrachloro-m-xylene				117	111	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

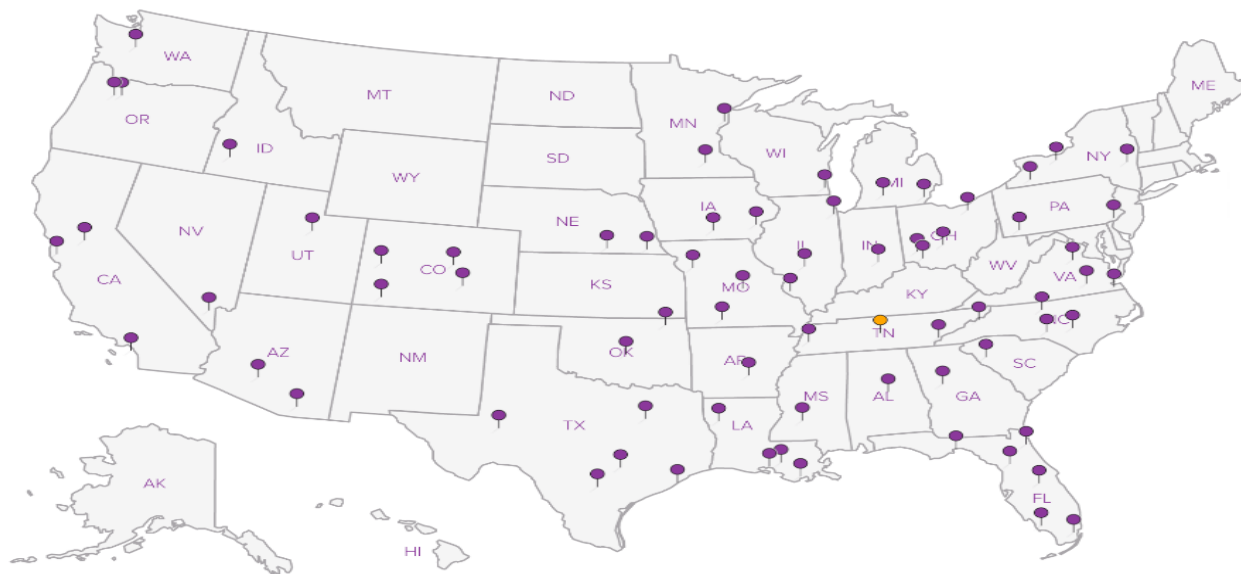
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form

Client: <u>UPENN BRMI</u>	SDG#	<u>6862/54</u>		
Cooler Received/Opened On: <u>9/27/16</u>	Temperature Upon Receipt:	<u>3.2</u> °c		
Received By: <u>Richard Hughes</u>				
Signature: <u>[Signature]</u>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				/
Were custody papers properly filled out?		/		
Did all bottles arrive in good condition?		/		
Were correct bottles used for the analyses requested?		/		
Was sufficient amount of sample sent in each bottle?				/
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				/
If applicable, was an observable VOA headspace present?				/
Non Conformance Generated. (If yes see attached NCF)				

U.P. Environmental Services, Inc.

Sample Delivery Group: L862134
Samples Received: 09/27/2016
Project Number:
Description: Abandon Mining Waste-Torch Lake

Report To: Rick Riedy
PO Box 127
Bark River, MI 49807

Entire Report Reviewed By:



John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HPA-DRUM-18 L862134-01 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 16:30

Received date/time
09/27/16 09:00

¹Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 14:36	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

²Tc

³Ss

⁴Cn

CHLL-HPA-DRUM-18 L862134-02 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 16:30

Received date/time
09/27/16 09:00

⁵Sr

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:42	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:21	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:03	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 20:37	10/04/16 20:37	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:43	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

⁶Qc

⁷Gl

⁸Al

⁹Sc

CHLL-HPA-DM-01 L862134-03 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 17:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 14:50	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DM-01 L862134-04 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 17:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:45	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:24	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:27	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 20:57	10/04/16 20:57	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:44	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

CHLL-HRA-DRUM-05/06 L862134-05 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 17:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	15	09/28/16 21:40	09/30/16 15:17	JNS
Total Solids by Method 2540 G-2011	WG912484	1	09/30/16 12:36	09/30/16 12:56	MEL
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

ACCOUNT:

U.P. Environmental Services, Inc.

PROJECT:

SDG:

L862134

DATE/TIME:

10/05/16 14:03

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



CHLL-HRA-DRUM-05/06 L862134-06 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 17:30

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:47	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:32	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 17:50	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 22:31	10/04/16 22:31	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:53	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG912997	1	10/04/16 12:15	10/04/16 12:15	MAJ

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

CHLL-HPA-DM-02 L862134-07 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 18:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	1	09/28/16 21:40	09/30/16 15:03	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

⁷ Gl

⁸ Al

⁹ Sc

CHLL-HPA-DM-02 L862134-08 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 18:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:50	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:35	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 18:13	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 22:51	10/04/16 22:51	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:54	DR
Wet Chemistry by Method 9034-9030B	WG912345	1	09/29/16 13:39	09/29/16 19:00	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

CHLL-HPA-DRUM-12 L862134-09 Solid

Collected by
Chris Gendron

Collected date/time
09/21/16 10:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Polychlorinated Biphenyls (GC) by Method 8082	WG912210	15	09/28/16 21:40	09/30/16 15:31	JNS
Total Solids by Method 2540 G-2011	WG912486	1	09/29/16 14:24	09/29/16 14:33	KDW
Wet Chemistry by Method 2710 F-2011	WG912583	1	09/30/16 13:58	09/30/16 14:20	AMC
Wet Chemistry by Method 9095B	WG912590	1	09/30/16 12:30	09/30/16 13:55	AMC

CHLL-HPA-DRUM-12 L862134-10 Waste

Collected by
Chris Gendron

Collected date/time
09/21/16 10:00

Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 10:52	NJB
Metals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 18:38	ST
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN

ACCOUNT:

U.P. Environmental Services, Inc.

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CHLL-HPA-DRUM-12 L862134-10 Waste

Collected by
Chris GendronCollected date/time
09/21/16 10:00Received date/time
09/27/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG911888	1	09/27/16 16:37	09/27/16 16:37	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 18:37	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/04/16 23:11	10/04/16 23:11	LRL
Wet Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 14:56	DR
Wet Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
Wet Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
Wet Chemistry by Method D93/1010A	WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Project Narrative

All Reactive Cyanide results reported in the attached report were determined as totals using method 9012B.
All Reactive Sulfide results reported in the attached report were determined as totals using method 9034/9030B.

Sample Handling and Receiving

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862134-01	CHLL-HPA-DRUM-18	9095B
L862134-03	CHLL-HPA-DM-01	9095B
L862134-05	CHLL-HRA-DRUM-05/06	9095B
L862134-07	CHLL-HPA-DM-02	9095B
L862134-09	CHLL-HPA-DRUM-12	9095B

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L862134-02	CHLL-HPA-DRUM-18	9045D
L862134-04	CHLL-HPA-DM-01	9045D
L862134-06	CHLL-HRA-DRUM-05/06	9045D
L862134-08	CHLL-HPA-DM-02	9045D
L862134-10	CHLL-HPA-DRUM-12	9045D

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	84.3		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	3.11		1	09/30/2016 14:20	WG912583

5 Sr

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

6 Qc

7 Gl

Sample Narrative:

9095B L862134-01 WG912590: Contains No Free Liquid

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1254	ND		0.0170	1	09/30/2016 14:36	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 14:36	WG912210
(S) Decachlorobiphenyl	89.8		10.0-143		09/30/2016 14:36	WG912210
(S) Tetrachloro-m-xylene	101		29.2-144		09/30/2016 14:36	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.84		9/27/2016 10:38:49 PM	WG911845
Final pH	5.44		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:43	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.66		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-02 WG913869: 6.66 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:42	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:21	WG912283
Barium	0.0978		0.0500	100	1	09/30/2016 18:21	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:21	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:21	WG912283
Lead	14.9		0.0500	5	1	09/30/2016 18:21	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:21	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:21	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 20:37	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 20:37	WG912711



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:37	WG912711
2-Butanone (MEK)	ND	J3	0.500	200	1	10/04/2016 20:37	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:37	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 20:37	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 20:37	WG912711
(S) Toluene-d8	105		90.0-115	114		10/04/2016 20:37	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 20:37	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 20:37	WG912711
(S) 4-Bromofluorobenzene	93.2		80.1-120	128		10/04/2016 20:37	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:03	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:03	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:03	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:03	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:03	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:03	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:03	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:03	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:03	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:03	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:03	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:03	WG912639
(S) 2-Fluorophenol	23.4		10.0-77.9	87		10/03/2016 17:03	WG912639
(S) Phenol-d5	10.5		5.00-70.1	67		10/03/2016 17:03	WG912639
(S) Nitrobenzene-d5	50.6		21.8-123	120		10/03/2016 17:03	WG912639
(S) 2-Fluorobiphenyl	64.6		29.5-131	122		10/03/2016 17:03	WG912639
(S) 2,4,6-Tribromophenol	65.2		11.2-130	148		10/03/2016 17:03	WG912639
(S) p-Terphenyl-d14	68.3		29.3-137	149		10/03/2016 17:03	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.5		1	09/30/2016 12:56	WG912484

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	3.55		1	09/30/2016 14:20	WG912583

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

Sample Narrative:

9095B L862134-03 WG912590: Contains No Free Liquid

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 14:50	WG912210
PCB 1254	0.185		0.0170	1	09/30/2016 14:50	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 14:50	WG912210
(S) Decachlorobiphenyl	99.4		10.0-143		09/30/2016 14:50	WG912210
(S) Tetrachloro-m-xylene	109		29.2-144		09/30/2016 14:50	WG912210



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.87		9/27/2016 10:38:49 PM	WG911845
Final pH	5.13		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND	J3 J6	0.250	1	10/03/2016 14:44	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.05		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-04 WG913869: 7.05 at 20.1c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:45	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:24	WG912283
Barium	30.7		0.0500	100	1	09/30/2016 18:24	WG912283
Cadmium	0.0358		0.0200	1	1	09/30/2016 18:24	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:24	WG912283
Lead	850		0.0500	5	1	09/30/2016 18:24	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:24	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:24	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 20:57	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 20:57	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 20:57	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 20:57	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 20:57	WG912711
(S) Dibromofluoromethane	99.4		79.0-121	125		10/04/2016 20:57	WG912711
(S) a,a,a-Trifluorotoluene	105		90.4-116	114		10/04/2016 20:57	WG912711
(S) 4-Bromofluorobenzene	93.5		80.1-120	128		10/04/2016 20:57	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:27	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:27	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:27	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:27	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:27	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:27	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:27	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:27	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:27	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:27	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:27	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:27	WG912639
(S) 2-Fluorophenol	13.5		10.0-77.9	87		10/03/2016 17:27	WG912639
(S) Phenol-d5	6.33		5.00-70.1	67		10/03/2016 17:27	WG912639
(S) Nitrobenzene-d5	38.5		21.8-123	120		10/03/2016 17:27	WG912639
(S) 2-Fluorobiphenyl	52.9		29.5-131	122		10/03/2016 17:27	WG912639
(S) 2,4,6-Tribromophenol	63.6		11.2-130	148		10/03/2016 17:27	WG912639
(S) p-Terphenyl-d14	68.5		29.3-137	149		10/03/2016 17:27	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	99.7		1	09/30/2016 12:56	WG912484

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	0.796		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-05 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1221	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1232	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1242	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1248	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1254	ND		0.255	15	09/30/2016 15:17	WG912210
PCB 1260	ND		0.255	15	09/30/2016 15:17	WG912210
(S) Decachlorobiphenyl	72.0		10.0-143		09/30/2016 15:17	WG912210
(S) Tetrachloro-m-xylene	87.3		29.2-144		09/30/2016 15:17	WG912210

9 Sc

Sample Narrative:

8082 L862134-05 WG912210: Dilution due to sample volume



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	6.14		9/27/2016 10:38:49 PM	WG911845
Final pH	4.79		9/27/2016 10:38:49 PM	WG911845

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:53	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.67		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-06 WG913869: 6.67 at 20.1c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	10/04/2016 12:15	WG912997

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:47	WG912412

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:32	WG912283
Barium	0.300		0.0500	100	1	09/30/2016 18:32	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:32	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:32	WG912283
Lead	1.64		0.0500	5	1	09/30/2016 18:32	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:32	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:32	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 22:31	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 22:31	WG912711



Collected date/time: 09/21/16 17:30

L862134

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 22:31	WG912711
2-Butanone (MEK)	ND	J3	0.500	200	1	10/04/2016 22:31	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 22:31	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 22:31	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 22:31	WG912711
(S) Toluene-d8	106		90.0-115	114		10/04/2016 22:31	WG912711
(S) Dibromofluoromethane	100		79.0-121	125		10/04/2016 22:31	WG912711
(S) a,a,a-Trifluorotoluene	107		90.4-116	114		10/04/2016 22:31	WG912711
(S) 4-Bromofluorobenzene	96.9		80.1-120	128		10/04/2016 22:31	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 17:50	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 17:50	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 17:50	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 17:50	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 17:50	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 17:50	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 17:50	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 17:50	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 17:50	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 17:50	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 17:50	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 17:50	WG912639
(S) 2-Fluorophenol	40.5		10.0-77.9	87		10/03/2016 17:50	WG912639
(S) Phenol-d5	25.7		5.00-70.1	67		10/03/2016 17:50	WG912639
(S) Nitrobenzene-d5	49.8		21.8-123	120		10/03/2016 17:50	WG912639
(S) 2-Fluorobiphenyl	68.1		29.5-131	122		10/03/2016 17:50	WG912639
(S) 2,4,6-Tribromophenol	72.9		11.2-130	148		10/03/2016 17:50	WG912639
(S) p-Terphenyl-d14	69.6		29.3-137	149		10/03/2016 17:50	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	87.6		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	2.41		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-07 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1221	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1232	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1242	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1248	ND		0.0170	1	09/30/2016 15:03	WG912210
PCB 1254	0.0404		0.0170	1	09/30/2016 15:03	WG912210
PCB 1260	ND		0.0170	1	09/30/2016 15:03	WG912210
(S) Decachlorobiphenyl	82.5		10.0-143		09/30/2016 15:03	WG912210
(S) Tetrachloro-m-xylene	94.9		29.2-144		09/30/2016 15:03	WG912210

9 Sc



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.55		9/27/2016 10:38:49 PM	WG911845
Final pH	5.14		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:54	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	09/29/2016 19:00	WG912345

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.95		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-08 WG913869: 6.95 at 19.9c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:50	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:35	WG912283
Barium	27.6		0.0500	100	1	09/30/2016 18:35	WG912283
Cadmium	0.0583		0.0200	1	1	09/30/2016 18:35	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:35	WG912283
Lead	506		0.0500	5	1	09/30/2016 18:35	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:35	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:35	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 22:51	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 22:51	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 22:51	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 22:51	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 22:51	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 22:51	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 22:51	WG912711
(S) Toluene-d8	105		90.0-115	114		10/04/2016 22:51	WG912711
(S) Dibromofluoromethane	101		79.0-121	125		10/04/2016 22:51	WG912711
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		10/04/2016 22:51	WG912711
(S) 4-Bromofluorobenzene	99.4		80.1-120	128		10/04/2016 22:51	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 18:13	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 18:13	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 18:13	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 18:13	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 18:13	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 18:13	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 18:13	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 18:13	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 18:13	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 18:13	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 18:13	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 18:13	WG912639
(S) 2-Fluorophenol	15.1		10.0-77.9	87		10/03/2016 18:13	WG912639
(S) Phenol-d5	6.87		5.00-70.1	67		10/03/2016 18:13	WG912639
(S) Nitrobenzene-d5	38.8		21.8-123	120		10/03/2016 18:13	WG912639
(S) 2-Fluorobiphenyl	54.9		29.5-131	122		10/03/2016 18:13	WG912639
(S) 2,4,6-Tribromophenol	61.6		11.2-130	148		10/03/2016 18:13	WG912639
(S) p-Terphenyl-d14	69.3		29.3-137	149		10/03/2016 18:13	WG912639

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.2		1	09/29/2016 14:33	WG912486

1 Cp

2 Tc

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Density	1.01		1	09/30/2016 14:20	WG912583

3 Ss

4 Cn

Wet Chemistry by Method 9095B

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Paint Filter Test	See Footnote		1	09/30/2016 13:55	WG912590

5 Sr

6 Qc

Sample Narrative:

9095B L862134-09 WG912590: Contains No Free Liquid

7 Gl

8 Al

Polychlorinated Biphenyls (GC) by Method 8082

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
PCB 1016	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1221	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1232	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1242	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1248	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1254	ND		0.255	15	09/30/2016 15:31	WG912210
PCB 1260	ND		0.255	15	09/30/2016 15:31	WG912210
(S) Decachlorobiphenyl	69.3		10.0-143		09/30/2016 15:31	WG912210
(S) Tetrachloro-m-xylene	86.7		29.2-144		09/30/2016 15:31	WG912210

9 Sc

Sample Narrative:

8082 L862134-09 WG912210: Dilution due to sample volume



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888
Fluid	1		9/27/2016 10:38:49 PM	WG911845
Initial pH	7.25		9/27/2016 10:38:49 PM	WG911845
Final pH	4.83		9/27/2016 10:38:49 PM	WG911845

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	10/03/2016 14:56	WG913176

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	10/04/2016 14:59	WG913004

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.34		1	10/04/2016 14:54	WG913869

Sample Narrative:

9045D L862134-10 WG913869: 6.34 at 20.3c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170 F		1	09/29/2016 01:53	WG911788

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	09/30/2016 10:52	WG912412

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	09/30/2016 18:38	WG912283
Barium	0.208		0.0500	100	1	09/30/2016 18:38	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:38	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:38	WG912283
Lead	6.20		0.0500	5	1	09/30/2016 18:38	WG912283
Selenium	ND		0.100	1	1	09/30/2016 18:38	WG912283
Silver	ND		0.0500	5	1	09/30/2016 18:38	WG912283

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Chlorobenzene	ND		0.0500	100	1	10/04/2016 23:11	WG912711
Chloroform	ND		0.250	6	1	10/04/2016 23:11	WG912711

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
1,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 23:11	WG912711
2-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 23:11	WG912711
Tetrachloroethene	ND		0.0500	0.70	1	10/04/2016 23:11	WG912711
Trichloroethene	ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
Vinyl chloride	ND		0.0500	0.20	1	10/04/2016 23:11	WG912711
(S) Toluene-d8	104		90.0-115	114		10/04/2016 23:11	WG912711
(S) Dibromofluoromethane	102		79.0-121	125		10/04/2016 23:11	WG912711
(S) a,a,a-Trifluorotoluene	106		90.4-116	114		10/04/2016 23:11	WG912711
(S) 4-Bromofluorobenzene	97.6		80.1-120	128		10/04/2016 23:11	WG912711

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	10/03/2016 18:37	WG912639
2,4-Dinitrotoluene	ND		0.100	0.13	1	10/03/2016 18:37	WG912639
Hexachlorobenzene	ND		0.100	0.13	1	10/03/2016 18:37	WG912639
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	10/03/2016 18:37	WG912639
Hexachloroethane	ND		0.100	3	1	10/03/2016 18:37	WG912639
Nitrobenzene	ND		0.100	2	1	10/03/2016 18:37	WG912639
Pyridine	ND		0.100	5	1	10/03/2016 18:37	WG912639
3&4-Methyl Phenol	ND		0.100	400	1	10/03/2016 18:37	WG912639
2-Methylphenol	ND		0.100	200	1	10/03/2016 18:37	WG912639
Pentachlorophenol	ND		0.100	100	1	10/03/2016 18:37	WG912639
2,4,5-Trichlorophenol	ND		0.100	400	1	10/03/2016 18:37	WG912639
2,4,6-Trichlorophenol	ND		0.100	2	1	10/03/2016 18:37	WG912639
(S) 2-Fluorophenol	36.3		10.0-77.9	87		10/03/2016 18:37	WG912639
(S) Phenol-d5	24.8		5.00-70.1	67		10/03/2016 18:37	WG912639
(S) Nitrobenzene-d5	50.4		21.8-123	120		10/03/2016 18:37	WG912639
(S) 2-Fluorobiphenyl	67.0		29.5-131	122		10/03/2016 18:37	WG912639
(S) 2,4,6-Tribromophenol	76.3		11.2-130	148		10/03/2016 18:37	WG912639
(S) p-Terphenyl-d14	67.8		29.3-137	149		10/03/2016 18:37	WG912639

Method Blank (MB)

(MB) R3167449-1 09/30/16 12:56

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00130			

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L862124-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862124-03 09/30/16 12:56 • (DUP) R3167449-3 09/30/16 12:56

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	83.7	83.3	1	0.426		5

Laboratory Control Sample (LCS)

(LCS) R3167449-2 09/30/16 12:56

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3167212-1 09/29/16 14:33

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L862175-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862175-01 09/29/16 14:33 • (DUP) R3167212-3 09/29/16 14:33

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

Laboratory Control Sample (LCS)

(LCS) R3167212-2 09/29/16 14:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	



Method Blank (MB)

(MB) R3167713-1 10/03/16 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.0390	0.250

L862134-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20

L862165-06 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-06 10/03/16 14:59 • (DUP) R3167713-7 10/03/16 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	0.427	ND	1	63.0	P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167713-2 10/03/16 14:37 • (LCSD) R3167713-3 10/03/16 14:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	48.4	35.8	38.0	74.0	78.0	50.0-150			6.00	20

L862134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862134-04 10/03/16 14:44 • (MS) R3167713-4 10/03/16 14:45 • (MSD) R3167713-5 10/03/16 14:48

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) WG912345-4 09/29/16 19:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 09/29/16 19:00 • (DUP) WG912345-1 09/29/16 19:00

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG912345-2 09/29/16 19:00 • (LCSD) WG912345-3 09/29/16 19:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulfide	100	109	103	109	103	70.0-130			5.66	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) WG913004-4 10/04/16 14:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0

L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913004-2 10/04/16 14:59 • (LCSD) WG913004-3 10/04/16 14:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Sulfide	100	110	104	110	104	70.0-130			5.61	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L862134-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.66	6.69	1	0.449		1

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L862756-29 Original Sample (OS) • Duplicate (DUP)

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.05	8.00	1	0.623		1

⁷ Gl

⁸ Al

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG913869-1 10/04/16 14:54 • (LCSD) WG913869-2 10/04/16 14:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1

⁹ Sc



L862134-10 Original Sample (OS) • Duplicate (DUP)

(OS) L862134-10 09/29/16 01:53 • (DUP) WG911788-3 09/29/16 01:53						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

L862252-18 Original Sample (OS) • Duplicate (DUP)

(OS) L862252-18 09/29/16 01:53 • (DUP) WG911788-4 09/29/16 01:53						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG911788-1 09/29/16 01:53 • (LCSD) WG911788-2 09/29/16 01:53									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			RPD Limits
Ignitability	82.0	82.8	82.8	101	101	93.0-107			0.000 20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L862543-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862543-01 10/04/16 12:15 • (DUP) WG912997-1 10/04/16 12:15

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	79.6	79.9	1	0.351		10

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L862604-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862604-02 10/04/16 12:15 • (DUP) WG912997-4 10/04/16 12:15

Analyte	Original Result Deg. F	DUP Result Deg. F	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ignitability	145	145	1	0.124		10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG912997-2 10/04/16 12:15 • (LCSD) WG912997-3 10/04/16 12:15

Analyte	Spike Amount Deg. F	LCS Result Deg. F	LCSD Result Deg. F	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ignitability	82.0	83.1	82.7	101	101	93.0-107			0.483	20

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167292-1 09/30/16 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167292-2 09/30/16 10:22 • (LCSD) R3167292-3 09/30/16 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0264	0.0301	88	100	80-120			13	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3167437-1 09/30/16 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100
Silver	U		0.0167	0.0500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.05	9.09	91	91	80-120			0	20
Barium	10.0	9.31	9.35	93	94	80-120			0	20
Cadmium	10.0	9.13	9.17	91	92	80-120			0	20
Chromium	10.0	9.03	9.07	90	91	80-120			1	20
Lead	10.0	9.16	9.26	92	93	80-120			1	20
Selenium	10.0	9.18	9.16	92	92	80-120			0	20
Silver	10.0	8.94	8.93	89	89	80-120			0	20

L862118-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862118-02 09/30/16 18:07 • (MS) R3167437-5 09/30/16 18:12 • (MSD) R3167437-6 09/30/16 18:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.50	9.44	95	94	1	75-125			1	20
Barium	10.0	0.883	10.1	10.0	92	91	1	75-125			0	20
Cadmium	10.0	ND	9.37	9.31	94	93	1	75-125			1	20
Chromium	10.0	ND	9.02	8.92	90	89	1	75-125			1	20
Lead	10.0	ND	9.32	9.24	93	92	1	75-125			1	20
Selenium	10.0	ND	9.62	9.58	96	96	1	75-125			0	20
Silver	10.0	ND	9.17	9.15	92	91	1	75-125			0	20



Method Blank (MB)

(MB) R3167391-3 09/30/16 14:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0167	0.0500
Carbon tetrachloride	U		0.0167	0.0500
Chlorobenzene	U		0.0167	0.0500
Chloroform	U		0.0833	0.250
1,2-Dichloroethane	U		0.0167	0.0500
1,1-Dichloroethene	U		0.0167	0.0500
2-Butanone (MEK)	U		0.167	0.500
Tetrachloroethene	U		0.0167	0.0500
Trichloroethene	U		0.0167	0.0500
Vinyl chloride	U		0.0167	0.0500
(S) Toluene-d8	105			90.0-115
(S) Dibromofluoromethane	102			79.0-121
(S) a,a,a-Trifluorotoluene	102			90.4-116
(S) 4-Bromofluorobenzene	99.5			80.1-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167391-1 09/30/16 11:03 • (LCSD) R3167391-2 09/30/16 11:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0254	0.0258	101	103	73.0-122			1.54	20
Carbon tetrachloride	0.0250	0.0231	0.0238	92.4	95.3	70.9-129			3.15	20
Chlorobenzene	0.0250	0.0268	0.0271	107	108	79.7-122			1.01	20
Chloroform	0.0250	0.0247	0.0255	98.7	102	73.2-125			3.46	20
1,2-Dichloroethane	0.0250	0.0247	0.0245	99.0	97.8	65.3-126			1.17	20
1,1-Dichloroethene	0.0250	0.0295	0.0306	118	122	60.6-133			3.69	20
2-Butanone (MEK)	0.125	0.122	0.0980	98.0	78.4	46.4-155		J3	22.2	20
Tetrachloroethene	0.0250	0.0267	0.0267	107	107	73.5-130			0.150	20
Trichloroethene	0.0250	0.0261	0.0262	104	105	79.5-121			0.190	20
Vinyl chloride	0.0250	0.0275	0.0294	110	117	61.5-134			6.39	20
(S) Toluene-d8				104	104	90.0-115				
(S) Dibromofluoromethane				102	103	79.0-121				
(S) a,a,a-Trifluorotoluene				102	102	90.4-116				
(S) 4-Bromofluorobenzene				100	97.3	80.1-120				



L862165-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862165-08 10/05/16 00:31 • (MS) R3168218-1 10/05/16 00:51 • (MSD) R3168218-2 10/05/16 01:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	0.803	0.846	64.2	67.6	1	58.6-133			5.17	20
Carbon tetrachloride	1.25	ND	0.761	0.805	60.9	64.4	1	60.6-139			5.72	20
Chlorobenzene	1.25	ND	0.952	1.03	76.2	82.4	1	70.1-130			7.85	20
Chloroform	1.25	ND	0.866	0.907	69.2	72.6	1	66.1-133			4.71	20
1,2-Dichloroethane	1.25	ND	0.815	0.819	65.2	65.5	1	60.7-132			0.520	20
1,1-Dichloroethene	1.25	ND	0.885	0.907	70.8	72.6	1	48.8-144			2.47	20
2-Butanone (MEK)	6.25	ND	3.23	3.01	51.6	48.2	1	45.0-156			6.81	20.8
Tetrachloroethene	1.25	ND	0.861	0.942	68.9	75.3	1	57.4-141			8.97	20
Trichloroethene	1.25	ND	0.870	0.925	69.6	74.0	1	48.9-148			6.14	20
Vinyl chloride	1.25	ND	0.712	0.796	57.0	63.7	1	44.3-143			11.1	20
(S) Toluene-d8					105	106		90.0-115				
(S) Dibromofluoromethane					99.8	99.8		79.0-121				
(S) a,a,a-Trifluorotoluene					104	104		90.4-116				
(S) 4-Bromofluorobenzene					96.1	101		80.1-120				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3167087-1 09/29/16 08:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	105			10.0-143
(S) Tetrachloro-m-xylene	114			29.2-144

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167087-2 09/29/16 08:53 • (LCSD) R3167087-3 09/29/16 09:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	0.188	0.190	113	114	46.5-120			0.620	27
PCB 1016	0.167	0.182	0.183	109	109	46.3-117			0.190	27.5
(S) Decachlorobiphenyl				110	106	10.0-143				
(S) Tetrachloro-m-xylene				118	113	29.2-144				

L862049-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862049-01 09/29/16 09:34 • (MS) R3167087-4 09/29/16 09:48 • (MSD) R3167087-5 09/29/16 10:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	ND	0.188	0.181	113	109	1	24.6-127			3.83	20
PCB 1016	0.167	ND	0.180	0.176	108	106	1	23.9-147			2.20	25.8
(S) Decachlorobiphenyl					105	96.4		10.0-143				
(S) Tetrachloro-m-xylene					112	109		29.2-144				

Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0333	0.100
2,4-Dinitrotoluene	U		0.0333	0.100
Hexachlorobenzene	U		0.0333	0.100
Hexachloro-1,3-butadiene	U		0.0333	0.100
Hexachloroethane	U		0.0333	0.100
Nitrobenzene	U		0.0333	0.100
Pyridine	U		0.0333	0.100
2-Methylphenol	U		0.0333	0.100
3&4-Methyl Phenol	U		0.0333	0.100
Pentachlorophenol	U		0.0333	0.100
2,4,5-Trichlorophenol	U		0.0333	0.100
2,4,6-Trichlorophenol	U		0.0333	0.100
(S) Nitrobenzene-d5	52.9			21.8-123
(S) 2-Fluorobiphenyl	67.7			29.5-131
(S) p-Terphenyl-d14	67.1			29.3-137
(S) Phenol-d5	26.6			5.00-70.1
(S) 2-Fluorophenol	39.0			10.0-77.9
(S) 2,4,6-Tribromophenol	68.4			11.2-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0237	0.0221	47.4	44.3	21.0-89.4			6.78	32.6
2,4-Dinitrotoluene	0.0500	0.0376	0.0366	75.2	73.2	31.2-105			2.63	22
Hexachlorobenzene	0.0500	0.0354	0.0364	70.7	72.7	38.5-116			2.83	20.1
Hexachloro-1,3-butadiene	0.0500	0.0300	0.0278	60.1	55.6	16.1-104			7.74	31.2
Hexachloroethane	0.0500	0.0234	0.0207	46.9	41.4	16.5-89.8			12.3	30.7
Nitrobenzene	0.0500	0.0263	0.0264	52.5	52.8	31.4-106			0.520	25.7
Pyridine	0.0500	0.0136	0.0137	27.1	27.3	13.5-58.9			0.770	32.5
2-Methylphenol	0.0500	0.0239	0.0243	47.8	48.6	26.4-86.9			1.66	26.5
3&4-Methyl Phenol	0.0500	0.0257	0.0263	51.5	52.6	27.9-92.0			2.19	27
Pentachlorophenol	0.0500	0.0226	0.0254	45.2	50.8	10.0-97.4			11.6	35.1
2,4,5-Trichlorophenol	0.0500	0.0362	0.0356	72.4	71.1	34.9-112			1.73	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0340	66.3	68.0	29.8-107			2.64	24.1
(S) Nitrobenzene-d5				54.1	54.5	21.8-123				
(S) 2-Fluorobiphenyl				66.1	64.4	29.5-131				
(S) p-Terphenyl-d14				68.8	66.6	29.3-137				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3167928-1 10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) Phenol-d5				26.6	27.1	5.00-70.1				
(S) 2-Fluorophenol				34.4	36.7	10.0-77.9				
(S) 2,4,6-Tribromophenol				73.0	73.0	11.2-130				

L862604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.253	0.220	50.6	44.0	1	14.0-104			14.1	36.4
2,4-Dinitrotoluene	0.500	ND	0.391	0.370	78.2	74.0	1	16.2-135			5.45	20.6
Hexachlorobenzene	0.500	ND	0.366	0.355	73.2	71.1	1	31.9-135			2.94	20
Hexachloro-1,3-butadiene	0.500	ND	0.309	0.277	61.8	55.4	1	15.7-109			10.9	37.6
Hexachloroethane	0.500	ND	0.240	0.220	48.1	43.9	1	10.4-105			8.99	40
Nitrobenzene	0.500	ND	0.280	0.254	56.0	50.8	1	23.1-121			9.72	29
Pyridine	0.500	ND	0.144	0.123	28.7	24.7	1	10.0-77.8			15.3	38.8
2-Methylphenol	0.500	ND	0.259	0.205	47.9	37.1	1	10.0-133			23.2	40
3&4-Methyl Phenol	0.500	ND	0.286	0.209	52.6	37.2	1	17.4-100		J3	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		J3	60.8	40
2,4,5-Trichlorophenol	0.500	ND	0.379	0.326	75.8	65.3	1	30.6-120			14.9	33.8
2,4,6-Trichlorophenol	0.500	ND	0.341	0.262	68.2	52.4	1	19.1-114			26.2	29.9
(S) Nitrobenzene-d5					55.3	53.6		21.8-123				
(S) 2-Fluorobiphenyl					69.1	66.7		29.5-131				
(S) p-Terphenyl-d14					68.8	66.4		29.3-137				
(S) Phenol-d5					24.3	16.3		5.00-70.1				
(S) 2-Fluorophenol					35.7	23.6		10.0-77.9				
(S) 2,4,6-Tribromophenol					75.8	66.7		11.2-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

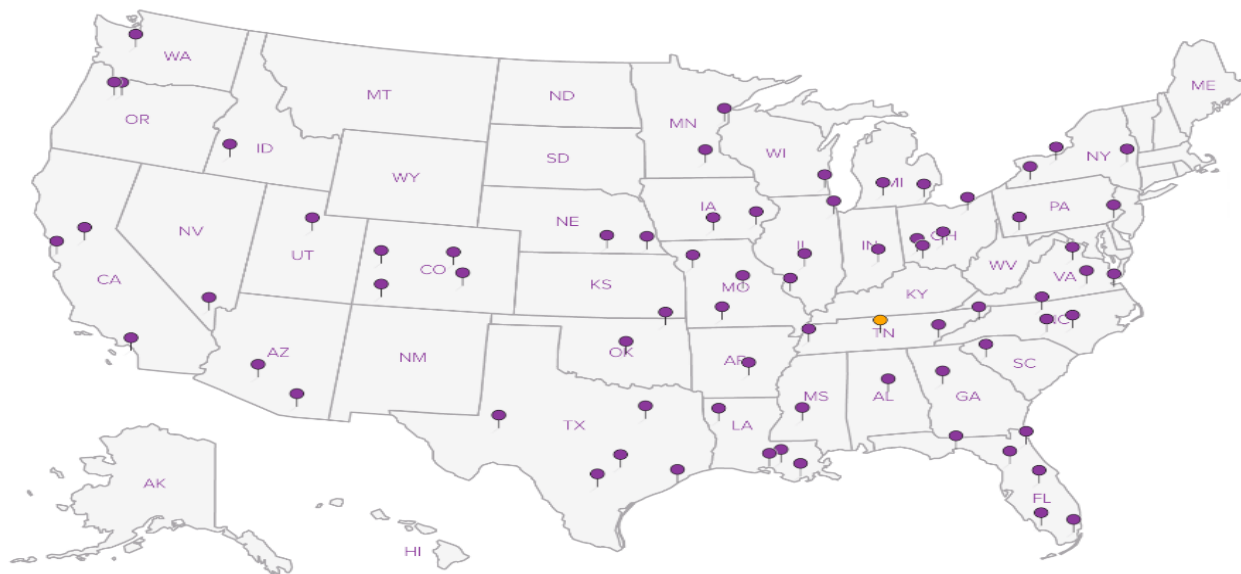
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



[illegible]



Cooler Receipt Form				
Client:	UPEN/BRMI	SDG#	862134	
Cooler Received/Opened On:	9-27-14	Temperature Upon Receipt:	3.1 °C	
Received By: Michael Witherspoon				
Signature: <i>MWit</i>				
Receipt Check List		Yes	No	N/A
Were custody seals on outside of cooler and intact?				<input checked="" type="checkbox"/>
Were custody papers properly filled out?			<input checked="" type="checkbox"/>	
Did all bottles arrive in good condition?		<input checked="" type="checkbox"/>		
Were correct bottles used for the analyses requested?		<input checked="" type="checkbox"/>		
Was sufficient amount of sample sent in each bottle?		<input checked="" type="checkbox"/>		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)				<input checked="" type="checkbox"/>
If applicable, was an observable VOA headspace present?				<input checked="" type="checkbox"/>
Non Conformance Generated. (If yes see attached NCF)				



Non-Hazardous WAM Approval

Requested Management Facility: K&W Landfill

Profile Number: 119373MI

Waste Approval Expiration Date: 10/25/2017

APPROVAL DETAILS

Approval Decision: ☒ Approved ☐ Not Approved

Profile Renewal: ☐ Yes ☒ No

Management Method: Direct Landfill

Generator Name: MI Dept of Environmental Quality

Material Name: Unknown Sludge

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

Generator Conditions

- Shipment must be scheduled into the disposal facility at least 24 hours in advance. Contact information will be provided by your TSR.
- The waste profile number must appear on the shipping papers.

WM Authorization Name: Ben Dahlby

Title: Waste Approval Manager

WM Authorization Signature: 

Date: 10/25/2016

Agency Authorization (if Required): _____

Date: _____

THINK GREEN.

QUESTIONS? CALL 800 963 4776 FOR ASSISTANCE

Last Revised April 11, 2014
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NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. N/A		Manifest Doc No.		2. Page 1 of 1				
3. Generator's Mailing Address: M. D. E. O. 55195 US 41 Calumet, MI 49913		Generator's Site Address (if different than mailing): 52634 Hwy M-26 Hubbell, MI 49934		A. Manifest Number WMNA		T204708				
4. Generator's Phone 906-337-0389				B. State Generator's ID						
5. Transporter 1 Company Name WM Houghton		6. US EPA ID Number N/A		C. State Transporter's ID						
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 906-466-9900						
9. Designated Facility Name and Site Address K & W Landfill 5436 M 38 Ontonagon, MI 49755		10. US EPA ID Number		E. State Transporter's ID						
				F. Transporter's Phone						
				G. State Facility ID						
				H. State Facility Phone 906-983-3504						
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	L. Misc. Comments		
	a. Unknown Sludge			No.	Type					
	WM Profile # 119 373 MI			1	CM	40	Y	10.02 Tons		
	b.									
	WM Profile #									
	c.									
TRANSPORTER	WM Profile #									
	d.									
	WM Profile #									
	J. Additional Descriptions for Materials Listed Above			K. Disposal Location						
			Cell				Level			
			Grid							
15. Special Handling Instructions and Additional Information										
Purchase Order #				EMERGENCY CONTACT / PHONE NO.: Amy Keranen 906-337-0389						
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
Printed Name Amy Keranen, MDEA				Signature "On behalf of" Amy Keranen, MDEA			Month 11	Day 1	Year 2016	
FACILITY	17. Transporter 1 Acknowledgement of Receipt of Materials				Signature Jim Purponen			Month 11	Day 2	Year 16
	Printed Name Jim Purponen				Signature			Month	Day	Year
	18. Transporter 2 Acknowledgement of Receipt of Materials				Signature			Month	Day	Year
Printed Name				Signature			Month	Day	Year	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.										
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.										
Printed Name Linda Thoreson Operations Specialist				Signature Linda Thoreson			Month 11	Day 2	Year 16	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Pink- FACILITY USE ONLY

Blue- GENERATOR #2 COPY

Gold- TRANSPORTER #1 COPY

Yellow- GENERATOR #1 COPY

APPENDIX F

Photographic Log





Photo 1: CHLL-BA-CONTAINER-01 prior to removal from the Torch Lake Backwater Area. Photo taken August 5, 2016.



Photo 2: CHLL-HPA-DM-01 and 02 prior to removal from the Hubbell Coal Dock property. Photo taken August 5, 2016.



Photo 3: CHLL-HPA-DRUM-03 prior to removal from the Hubbell Coal Dock property. Photo taken August 5, 2016.



Photo 4: CHLL-HPA-DRUM-04 area prior to removal from the Hubbell Coal Dock property. Photo taken August 5, 2016.



Photo 5: CHLL-HPA-DRUM-12 prior to removal from the Mineral Building property. Photo taken August 5, 2016.



Photo 6: CHLL-HPA-DRUM-18 prior to removal from the Mineral Building property. Photo taken August 5, 2016.



Photo 7: CHLL-SD-DRUM-02 prior to removal from the Hubbell Slag Dump and Beach Area. Photo taken August 5, 2016.



Photo 8: CHTC-TS-DM08 prior to removal from the Tamarack Sands Area. Photo taken September 20, 2016.



Photo 9: Drums located at the north end of CHTC-TP-DM11 area prior to removal from the Tamarack Processing Area. Photo taken August 5, 2016.



Photo 10: CHTC-TP-DM04 prior to removal from the Tamarack Processing Area. Photo taken August 5, 2016.



Photo 11: CHTC-TP-DM09 prior to removal from the Tamarack Processing Area. Photo taken August 5, 2016.



Photo 12: View of drums exposed during excavation at area initially labeled CHLL-HPA-DRUM-04. Photo taken September 20, 2016.



Photo 13: View looking north to staging area at CHLL Hubbell Processing Area. Photo taken September 22, 2017.



Photo 14: View of staged, empty drums removed from the CHLL-HPA-DRUM-04 location during excavation. Photo taken September 22, 2016.



Photo 15: Staged empty drums removed from the Tamarack Processing Area and Hubbell Slag Dump and Beach Area. Photo taken September 19, 2016.



Photo 16: View looking south of the CHLL-HPA-DRUM-04 removal area after drum excavation and restoration. Photo taken September 23, 2016.

