# 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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## 1.0 <u>INTRODUCTION</u>

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) <a href="http://www.michigan.gov/deq/0,4561,7-135-3311\_4109\_9846\_76560----,00.html">http://www.michigan.gov/deq/0,4561,7-135-3311\_4109\_9846\_76560----,00.html</a> (Site ID: 31000098). This CSR summarizes the area wide abandoned container interim response (IR) completed at the:

- Calumet & Hecla Lake Linden Operations Area (CHLL)
  - o Torch Lake Backwater Area (Lake Linden)
  - Hubbell Processing Area Coal Dock and Mineral Building Properties (Hubbell)
  - o 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.

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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) <a href="https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0503034">https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0503034</a> and a Great Lakes Area of Concern by the U.S./Canada Great Lakes Water Quality Agreement <a href="https://www.epa.gov/torch-lake-aoc">https://www.epa.gov/torch-lake-aoc</a> 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 <u>RECOMMENDATIONS</u>

MSG has the following recommendations:

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

# **FIGURES**

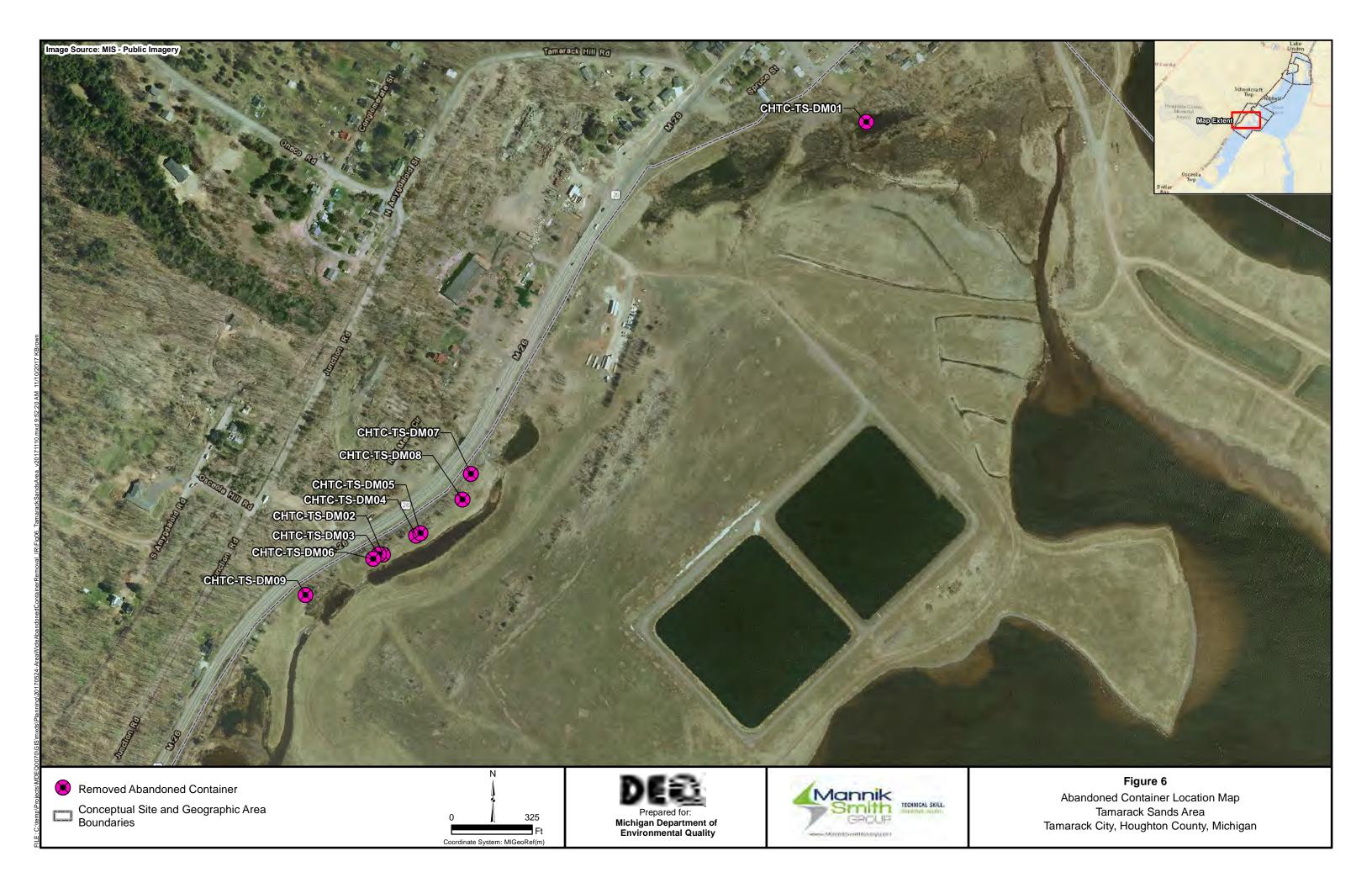
FILE: C:NempiProjects/MDEQ0070/GIS/uxds/Planning/20170524-AreaWideAbandonedContainerRemoval\_IR/Fig01\_ProjectLocation\_v20171110.mxd 9:45:41 AM 11/10/2017 KBrown















**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:

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

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

Authorized by:

Responsible Party: none identified

Cost Recovery:

# APPENDIX B Purchase Order

## STATE OF MICHIGAN

FORM DMB-287 (REV 11/94)	PURCHAS	E ORDER	PAGE: 1 PURCHASE ORDER   NUMBER   761P6600620
REQUESTING DEPARTMENT OR A	GENCY: RD MIC CON 525	- CONTRACTS I HIGAN DEPT OF STITUTION HALL WEST ALLEGAN	ENVIRONMENTAL QUALITY
	LAN	SING	MI 48933
CONTACT:TRACEY CURTIS DO	ELIVERY REOU	TRED AGENCY RE	F # REQ NO. ORDER DATE 761R6600719 09/02/16
U P ENVIRONMENTAL SERVICES P O BOX 127 BARK RIVER MI	INC 49807-0127	CASH DISC DELIVERY REQU FREIGHT CAR	COUNT : NET 30 DAYS JIRED : RRIER : O.B. : DELIVERED
	1	VENDOR PHONE .	
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ITEM COMMODITY ID QUA COMMODITY NAME/SPECIFICATI			TOTAL PRICE  91,464.00
1 912-68	1.00 EA	91,464.000	00 91,464.00
MANAGEMENT, CONSTRUC			,
FURNISH ALL LABOR, M FOR REMOVAL AND PROP CONTAINERS AND DRUMS MINING WASTE SITE #3	ER DISPOSAL ON 8 DIFFER	OF APPROXIMATE	ELATED WORK REQUIRED ELY 40 ABANDONED S WITHIN THE ABANDONED
PM: A. KERANEN	START	Γ: 9/1/16	END: 10/31/16
BILL TO: MICHIGAN D REMEDIATIO ADMINISTRA PO BOX 304 LANSING	N AND REDEVI TION 5TH FLO	RONMENTAL QUALI ELOPMENT DIVISI OOR SOUTH TOWER , MI, 48909	ION
SHIP TO: MICHIGAN D CALUMET FI 55195 U.S. CALUMET	ELD OFFICE -	RONMENTAL QUALI - RRD , MI, 49913	

91,464.00

GRAND TOTAL

## STATE OF MICHIGAN

EODM	DMD 207	PURCHASE ORDER	PURCHASE ORDER	PAGE: 2
	DMB-287 11/94) 	PORCHASE ORDER	PURCHASE ORDER NUMBER	761P6600620
ADDIT	TIONAL REQUIREMENTS :			
	Trieha		JIRED. PENALTY: ER OR CONTRACT.	FAILURE TO
ACCOU SX AC 01 76		GRANT PH PROJ PH 45699000	AG1 AG2 AG3	TOTAL 91464.00
PENAI	TY: FAILURE TO DELIVER MAY	RESULT IN CANCELL	LATION OF ORDER OR	CONTRACT

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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

	T	1	T			T	T		_
Pay Items	Mobilization and demobilization of all materials, tools, labor, and equipment to the factorization of and equipment demonstrated to characterize containers and contents for disposal acceptance. Waste disposal acceptance waste than one than one mobilization.	Mobilization and demobilization and demobilization of all materials, tools, labor, and equipment jointy required for Pay Items 3 through 15. If mobilization and demobilization of a specific piece of equipment or labor force is required for less and labor force is required for less and lot these Pay Items. All or some of the Pay Items May be sharted or the work may be split into more than one mobilization.	Waste characterization and analysis as may be required for disposal facility acceptance of fincluding payment of analysis of the state	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 Recontainer (due to metals appropriet) - solids.	Remove and dispose characteristically hazardous sed container (due to flash point) and 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: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity:  Subtotal:	Quantity: Subtotal:	Quantity: 1 Subtotal:	Quantity: Subtotal:	Quantity:	SUBTOTAL = 0
Hubbell Processing Area - Hubbell Coal Dock	Quantity: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity: 13 Subtotal:	Quantity: 1 Subtotal:	Quantity: 13 Subtotal:	Quantity: Subtotal:	Quantity: 1 Subtotal:	Quantity: Subtotal:	SUBTOTAL = 0
Hubbell Processing Area - Mineral Building	Quantity: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity: 2 Subtotal:	Quantity: 1 Subtotal:	Quantity: 2 Subtotal:	Quantity: Subtotal:	Quantity: Subtotal:	Quantity:  Subtotal:	SUBTOTAL = 0
Hubbell Slag Dump and Beach Area - Hubbell Slag Dump	Quantity: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity: 1  Subtotal:	Quantity: 1 Subtotal:	Quantity: Subtotal:	Quantity: Subtotal:	Quantity:	
Tamarack Sands Area - Historic Municipal Dump	Quantity: 1 Subtotal:	Quantity: 1 Subtotal:	Quantity: 2  Subtotal:	Quantity: 10  Subtotal:	Quantity: 2  Subtotal:	Quantity:  Subtotal:	Quantity:  Subtotal:	Subtotal: Quantity:	SUBTOTAL = 0
Tamarack Processing Area Tamarack Reclamation Plant Complex	Quantity: 1	Quantity: 1	Quantity: 6	Quantity: 3	Quantity: 6	Quantity:	Quantity:	Subtotal: Quantity:	SUBTOTAL = 0
Tamarack Processi <b>Ag</b> ea Tamarack Stamp Mill	Subtotal: Quantity: 1	Subtotal:  Quantity: 1	Subtotal:  Quantity: 12	Subtotal:  Quantity:	Subtotal:  Quantity: 7	Subtotal:  Quantity:	Subtotal:  Quantity: 5	Subtotal: Quantity:	SUBTOTAL = 0
Complex	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL = 0
Pay Items	Remove and dispose non-TSCA regulated material with PCB concentration less than a So ppm - solids.	Remove and dispose non- TSCA regulated material with Ale PCB concentration less than man 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 Coal Coar This includes up to four Equations of test pie excavation and backfilling with removed ammaterial. This does not include tharacterization, 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 Tannarack Stamp Mill and Tompiex. This does not include characterization, transport, or disposal of the recovered drums.	Retrieval of items that are discovered to not be man applications.	Provisional Allowance for activities, situations, and/or waste streams not included in ed; the Pay Items. Payment under all the Provisional Allowance will be based on rates agreed upon prior to conducting the upon prior to conducting the work and receipts provided.	TOTAL =
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:	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:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity: 1		
Tamarack Sands Area - Historic Municipal Dump	Subtotal: Quantity:	Subtotal:  Quantity:	Subtotal: Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity: 1		SUBTOTAL = 0
Tamarack Processing Area Tamarack Reclamation	Subtotal: Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity:	Subtotal: Quantity:	Subtotal: Quantity: 1		SUBTOTAL = 0
Plant Complex  Tamarack Processing Area Tamarack Stamp Mill	Subtotal: Quantity:	Subtotal:  Quantity:	Subtotal: Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity:	Subtotal:  Quantity: 1	Subtotal:  Quantity: 1		SUBTOTAL = 0
Complex	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL = 0
Notes: PCB = Polychlorinated biphe	enyl	Bidder Company Name:		Address:		Date Submitted:			TOTAL =
ppm = parts per million RCRA = Resource Conservat TSCA = Toxic Substances Co		Represented by (print):		Telephone Number:		Signature:		GRAND TOTAL =	

TSCA = Toxic Substances Control Act

GRAND TOTAL =



Table 1 Abandoned Drum Summary Torch Lake Backwater Area C&H Lake Linden Operations Houghton County, Michigan

Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number		Latitude	Container Description	Notes	Container Intact?  Container Empty?  Hazardous Waste Non-Hazardous Waste TSCA Waste TSCA Waste TSCA Weste TCRA Empty Drum Unknown - Requires Characterization if Not Empty TCLP VOCs TCLP SVOCs	Reactive Sulfide Reactive Cyanide Paint Filter Flash Point VOCs PNAs PCBs Metals Cyanide Asbestos DRO/ORO
Abandoned Containers - Traproct  1 CONTAINER01		1040 055 000 00	T 110	00.400500457	47.400440000	han seemed and the seemed and			
1 CONTAINERUT	10/6/2014	012-055-038-00	NA	-88.400529157	47.196416988	White, approximately 3-gallon, plastic	Approximately 1/4 full	Yes No X	

Table 2
Abandoned Drum Summary
Hubbell Processing Area
C&H Lake Linden Operations
Houghton County, Michigan

	1		1	1	I	1		1	T	Was	te Char	racteriz	ation					Δ.	vailabl	e Laboi	atory A	nalyses			_	
Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	ontainer	Hazardous Waste	Non-Hazardous Waste	I SCA Waste RCRA Empty Drum	uires ot Emptv	TCLP VOCs	TCLP SVOCs	TCLP Metals	Reactive Sulfide	cyaniue Cyaniue	Paint Filter	Flash Point	PNAs	Metals	PCBs Hexavalent Chromium	Chloride and Sulfate	Cyanide	Asbestos DRO/ORO
Abandoned Containers - Hubbell Coal D	ock					•																				
CHLL-DM01	8/20/2014	014-307-001-25	1408233	-88.419426675	47.177462803	Weathered, Yellowish gray granular drum contents, Half-full	Grab waste sample from Degraded Abandoned Drum	No	No				Х								х	х	х		х	
CHLL-DM02	8/20/2014	014-307-001-25	1408233	-88.419426675	47.177462803	Weathered, Brownish gray granular drum contents, Half- full	Grab waste sample from Degraded Abandoned Drum	No	No				х								х	х	х		х	
CHLL-DRUMWC-101514	10/15/2014	014-307-001-25	240-43288	-88.419426675	47.177462803	Weathered, Yellow/Brown gray granular drum contents	Composite waste characterization sample from CHLL-DM01 and CHLL-DM02	No	No	Х						Х				)	(	Х			Х	
3 DRUM-03	10/6/2014	014-307-001-25	NA	-88° 25'02.667"	47° 10'50.237"	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.	No	Yes			х														
DRUM-04	10/6/2014	014-307-001-25	NA	-88° 25'09.352"	47° 10'43.914"	Approximately 10 intact drums on the ground surface and protruding from the hillside. Drums are in varying states of deterioration.	Soil samples CHLL-SS04-101514, CHLL-SS05-101514, and CHLL-SS06-101514 were collected from the vicinity of location DRUM-04 during targeted inspection activities.	Yes	Unk				х													
5 DRUM-05	10/6/2014	014-307-001-25	NA	-88° 25'10.035"	47° 10'38.501"	Rusted, deteriorating 55 gallon drum, contents are hardened black material.	The collection of a material sample from the deteriorated drum was attempted during the targeted inspection activities; however, the drum contents were too dense to effectively collect a sample.	No	No				Х													
6 DRUM-06		014-307-001-25	NA	-88° 25'09.300"	47° 10'38.563"	Rusted, drum carcass			Unk				X													
7 Crushed Drum	7/27/2016	014-307-001-25	NA	NA	NA	Rusted crushed drum			Unk				X													
8 Drum Carcass	7/27/2016	014-307-001-25	NA	NA	NA	Drum carcass			Unk				Х													
9 None	7/27/2016	014-307-001-25	NA	NA	NA	Crushed drum	On hillside beneath a fallen utility pole	Unk	Unk				Х		1											

Aband	loned Con	ntainers - Mineral Building											
1	None	10/7/2014	014-307-001-75	NA	88° 25'21.825"	47° 10'37.960"	Possible Drum	No Unk		X			
2	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Drum carcass	No Unk		X			
3	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Crushed drum	Contains metal parts No No		X			
4	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Crushed drum	Leaking black tarry material No No		X			
5	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Crushed blue poly drum	No No		X			
6	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Drum carcass	No Unk		X			
7	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Empty steel drum	Yes Yes		X			
8	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Crushed drum	No Unk		X			
9	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Drum carcass	No Unk		X			
10	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Drum carcass	No Unk		X			
11	None	Spring/Summer 2016	014-307-001-75	NA	NA	NA	Black poly drum	In the drainage ditch		X			

The Mannik & Smith Group, Inc.

Abandoned Mining Wastes – Torch Lake Non-Superfund Site

ABANDONED DRUM SUMMARY

## Table 3 Abandoned Drum Summary Hubbell Slag Dump and Beach Area C&H Lake Linden Operations Houghton County, Michigan

										F	Waste Characterization			Available La	boratory Ar	nalyses		
:	Contai Contai Identifica		Property Identification Number	Laboratory Work Order Number		Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste  Non-Hazardous Waste  TSCA Waste  TSCA Waste  RCRA Empty Drum  Unknown - Requires  Characterization if Not Empty  TCLP VOCs	TCLP SVOCs TCLP Metals Reactive Sulfitide	Reactive Cyanide	Paint Filter Flash Point	VOCs	Metals PCBs	Hexavalent Chromium Chloride and Sulfate	DRO/ORO
Ab	andoned Containers -	Hubbell Slag Dump																
	1 Drum Carcass	10/7/2014	014-409-002-00	NA	-88°.426364019	47°.173560211	Steel, crushed 55-gallon drum	Lying in a rip rap lined drainage ditch.	No L	Jnk	X							
	2 Empty Drum	10/7/2014	014-409-002-00	NA	-88°.425972857	47°.173610735	Steel, 55-gallon, no lid, intact, empty	Lying on its side in standing water.	Yes Y	/es	X							

Table 4
Abandoned Drum Summary
Tamarack Sands Area
C&H Tamarack City Operations
Houghton County, Michigan

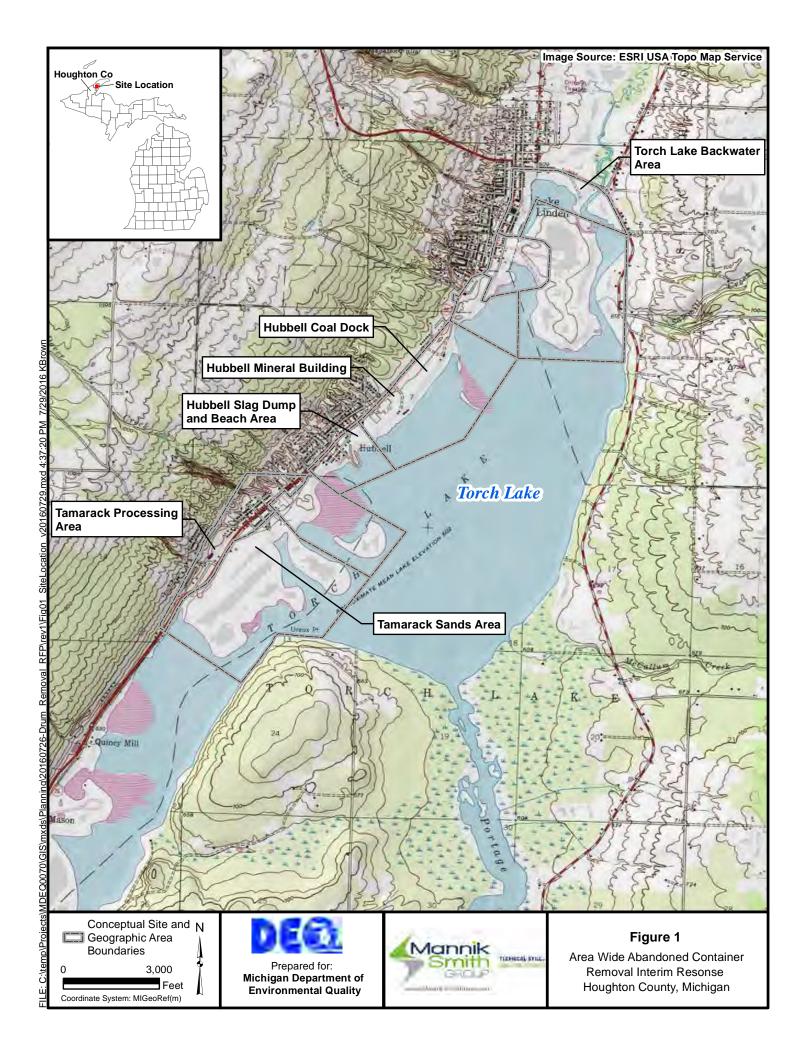
Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	Non-Hazardous Waste	RCRA Empty Drum	Unknown - Requires S Characterization if Not Empty	TCLP VOCs	TCLP SVOCs	TCLP Metals	Reactive Suride	Reactive Cyanide	Paint Filter	Flash Point	s S O O	ory Ana	Metals Metals	Hexavalent Chromium	Chloride and Sulfate	Cyanide Asbestos	DRO/ORO	1
	Possible Drum	5/28/2015	NA	NA			Possible drum protruding from the water.	Located in an inland pond adjacent to an alleged dump.	Unk	Unk				Х							$\overline{}$							$\overline{}$	
	CHTC-DM01	5/28/2015	NA	NA	-88.436860309			Approx. 18 inches in diameter and approx. 3 feet long. Appears to be a container, possible pressure vessel. Partially buried.	Unk					Х							T								٦
Abando	ned Containers - Near M-26	6 Hillside and Treatment	Ponds																•						•				
3-12	Possible Drums	Spring 2016	NA	NA			10 apparent carcasses	Along hillside between M-26 and treatment lagoons.	No	Yes			Х																

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

										Wast	e Cha	acterization					Availabl	e Labora	atory Ana	lyses			
Container Number Identifi		Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	Non-Hazardous Waste	-	Characterization if Not Empty CLP VOCs	CLP SVOCs	teactive Sulfide	keactive Cyanide	aint Filter	lash Point OCs	NAS	/letals CBs	lexavalent Chromium Chloride and Sulfate	yanide	JRO/ORO
Abandoned Containers	- Tamarack Reclamation Plant Con	nplex																					
1 CHTC-DM02	5/28/2015	009-013-004-20 Burcar	NA	-88.444799091	47.164635460	Rusted, crushed drum carcass	Obscured by vegetation on the hillside below/east of Amygdaloid Street.	No	Unk			X											
2 CHTC-DM03	5/28/2015	009-013-004-20 Burcar	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			х											
CHTC-DM04	5/28/2015	009-013-004-20 Burcar	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".	No	No			х											
4 CHTC-DM05	5/28/2015	009-013-004-20 Burcar	NA	-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.	No	No			X											
5 CHTC-DM06	5/28/2015	009-013-004-20 Burcar	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.	No	Unk			X											
6 CHTC-DM07	5/28/2015	009-013-004-20 Burcar	NA	-88.442356600	47.165598480	Rusted, empty drum, crushed, damaged	Lying in a wooded area.		Yes			X											
7 CHTC-DM08	5/28/2015	009-013-004-20 Burcar	NA	-88.442126003	47.165529896	Rusted, empty drum, crushed, damaged	Partially obscured by vegetation.	No	Yes			X											
8 CHTC-DM09	5/28/2015	009-013-004-20 Burcar	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.	No	No			X											
9 CHTC-DM10	5/28/2015	009-013-004-20 Burcar	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.	No	Yes			X											

Abanc	doned Containers - Tamarack S	Stamp Mill Complex					
1-7	CHTC-DM11	5/28/2015	009-013-004-50 Whiteman	NA	-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 No Unk
8+	Building Annex	5/28/2015	009-013-004-50 Whiteman	NA	-88.444299840	47.163544153	Multiple 5-gallon buckets and flowescent lighting fixtures In a small storage area on the west side of the warehouse. Contents of the buckets are unknown.







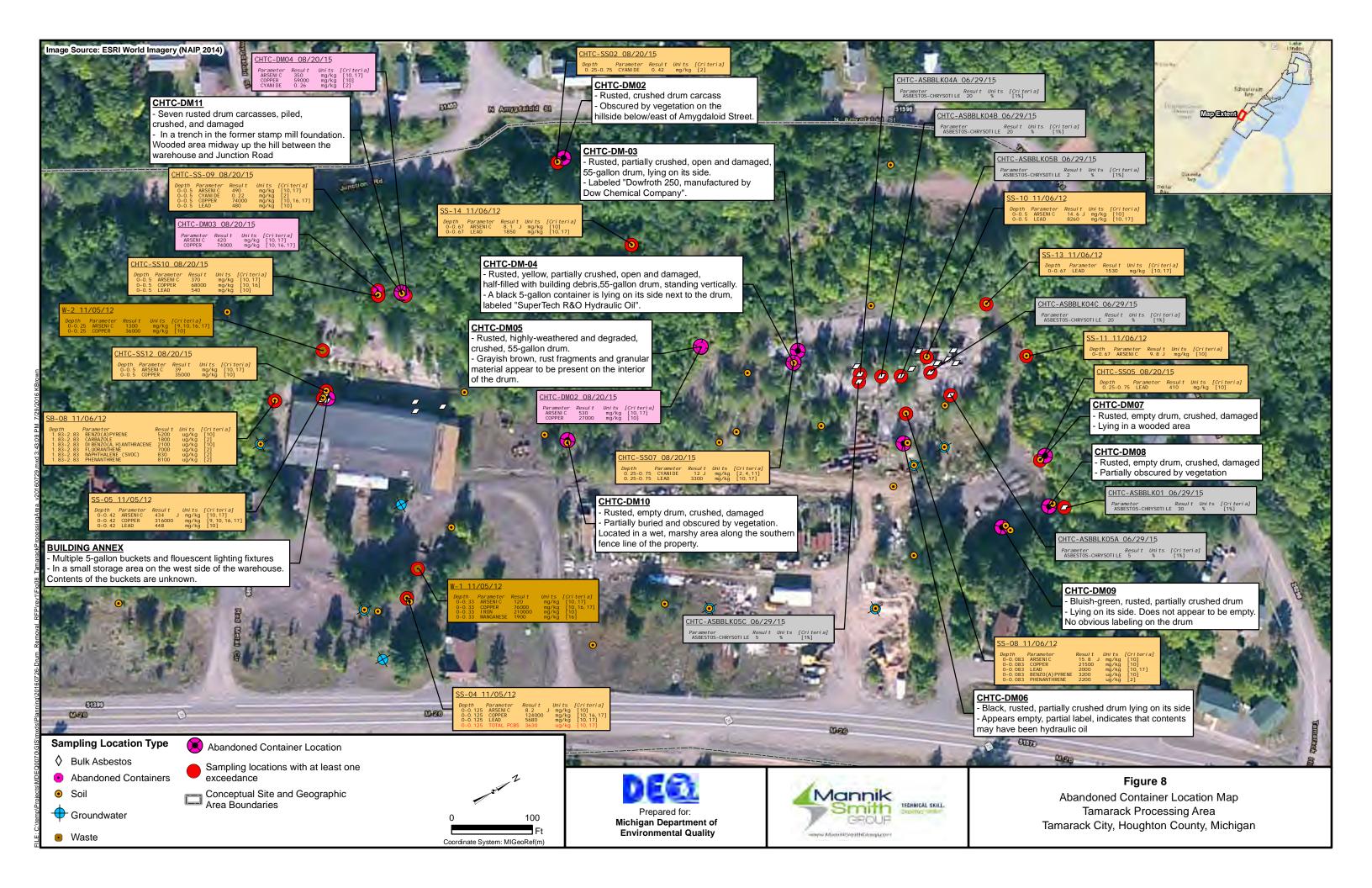


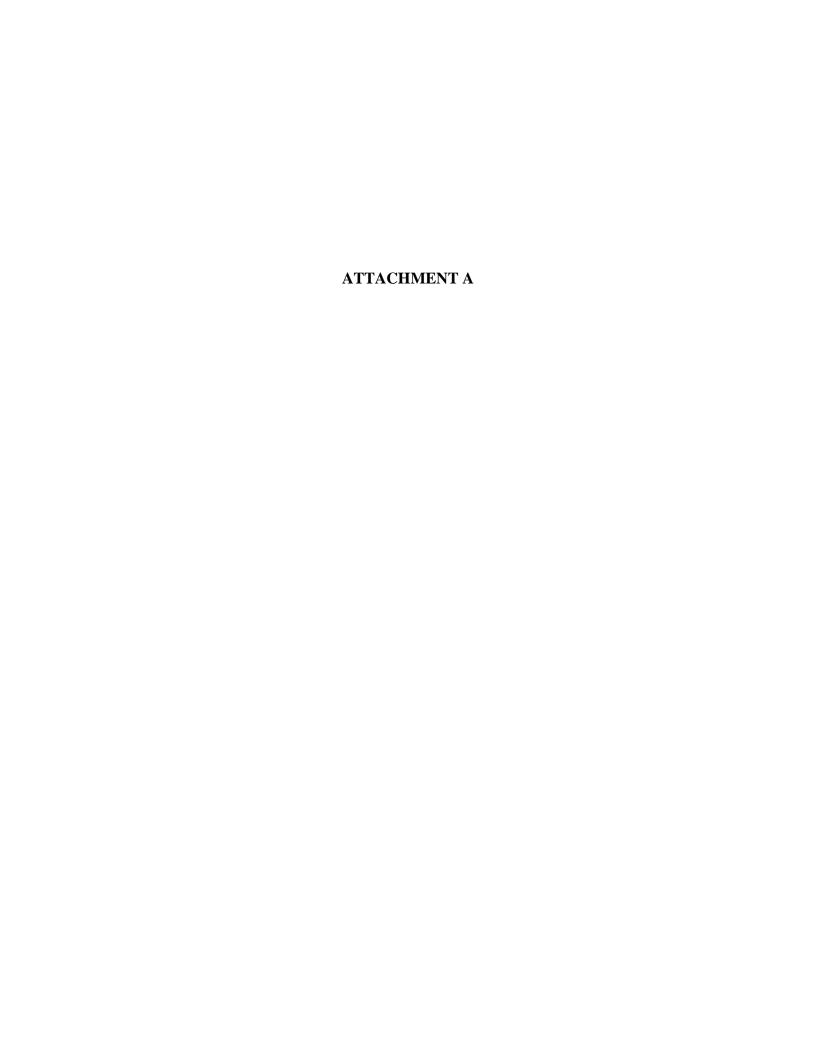














#### Remediation and Redevelopment Division Department of Environmental Quality Conditions for Emergency Bids

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 an
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 seg. 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.

DTMB-0414 (R 1/15)

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

### MEETING ATTENDANCE RECORD

DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

State Facilities Administration Design and Construction Division

PROJECT DESCRIPTION/LOCATION  MDEQ AMW ASADOMED CON	MANNEZ PEMOVAL DZ		DATE 8-10-16
INDEX NUMBER FILE	NUMBER	CONTRACT NUMBER	TIME 13:00
MEETING PLACE			1 1300
Hubbeil PAZK			T
PLEASE PRINT YOUR NA	ME FIRM	YOU REPRESENT	TELEPHONE NUMBER
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Chris Gendron	DIP	nronmental Souces	906-201-6908
HANS HAMPALA	1		hanshacpala egmail com
Amy Keranen	MDEQ		Keranens e michigan 906-281-340 1600/1/200 MMM/ 200; Hogrup 1906-281-4726
Jeff Binkly	Mounik +	Smith Group	Jour 20 Jan Mannik smith swip
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# ATTACHMENT B REVISED BID TABLE, FIGURES, AND TABLES

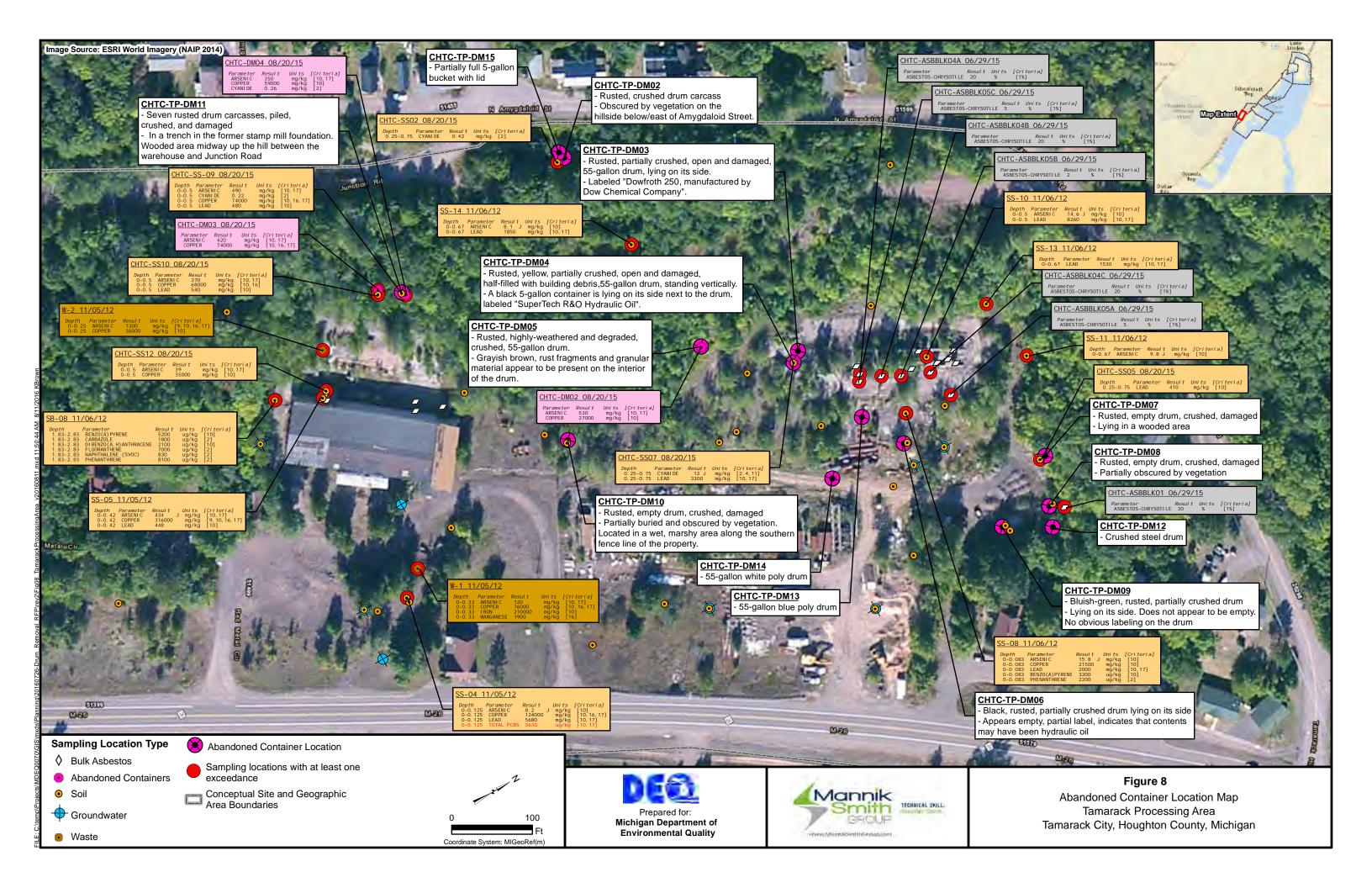
# BID TABLE Area Wide Abandoned Container Removal Interim Response Abandoned Mining Wastes - Torch Lake Non-Superfund Site

	Pay Item 1	Pay Item 2	Pay Item 3	Pay Item 4	Pay Item 5	Pay Item 6	Pay Item 7	Pay Item 8	
Pay Items	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 4 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 fincluding 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: 1	Quantity: 1	Quantity: 1	Quantity:	Quantity:	Quantity: 1	Quantity:	Quantity:	
	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
Hubbell Processing Area - Hubbell Coal Dock	Quantity: 1	Quantity: 1	Quantity: 17	Quantity: 1	Quantity: 17	Quantity:	Quantity: 2	Quantity:	
Trabbell Coal Book	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
Hubbell Processing Area -	Quantity: 1	Quantity: 1	Quantity: 6	Quantity: 9	Quantity: 7	Quantity:	Quantity:	Quantity:	
Mineral Building	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
Hubbell Slag Dump and	Quantity: 1	Quantity: 1	Quantity: 1	Quantity: 2	Quantity:	Quantity:	Quantity:	Quantity:	
Beach Area - Hubbell Slag									
Dump	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
	Quantity: 1	Quantity: 1	Quantity: 9	Quantity: 2	Quantity: 9	Quantity:	Quantity:	Quantity:	
Tamarack Sands Area			-	-	-		-		
	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
Tamarack Processing Area	Quantity: 1	Quantity: 1	Quantity: 6	Quantity: 5	Quantity: 6	Quantity: 2	Quantity:	Quantity:	SOUTOTAL -
Tamarack Processing Area Tamarack Reclamation									
Plant Complex	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
Tamarack Processing Area	Quantity: 1	Quantity: 1	Quantity: 7	Quantity: 2	Quantity: 3	Quantity:	Quantity: 2	Quantity:	565.67/12
Tamarack Processing Area Tamarack Stamp Mill									
Complex	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	SUBTOTAL =
	I							Subtotun	565.67/12
Γ	T	1		T		T			
	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	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 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. A macterization, transport, or disposal of the recovered drums (which are part of other line items).	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 no include characterization, transport, or disposal of the recovered drums.	Retrieval of possible drum from pond. This does not include containing or overpacking, characterization transport, or disposal which are part of other line items.	Provisional Allowance for activities, situations, and/or waste streams not included in a the Pay Items. Payment under a the Provisional Allowance will be based on rates agreed bon on 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 =
	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:		
Torch Lake Backwater Area	-						·		
- Traprock Dump	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
	Quantity:	Quantity:	Quantity:	Quantity:	Quantity: 1	Quantity:	Quantity:		
Hubbell Processing Area - Hubbell Coal Dock								$\rightarrow$	
Habbell coal Book	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
Hubball Processing Area	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:		
Hubbell Processing Area - Mineral Building		<del></del>							
	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
Hubbell Slag Dump and	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:		
Beach Area - Hubbell Slag									
Dump	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity: 1		
Tamarack Sands Area									
	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
Tamarack Processing Area Tamarack Reclamation	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:		
Plant Complex	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
Tamarack Processing Area	Quantity:	Quantity:	Quantity:	Quantity:	Quantity:	Quantity: 1	Quantity:		
Tamarack Stamp Mill									
Complex	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:	Subtotal:		SUBTOTAL =
Notes:		Ridder Company Name:		Address:		Date Submitted:			
Notes: PCB = Polychlorinated biph	nenyl	Bidder Company Name:		Address:		Date Submitted:			TOTAL =
ppm = parts per million	•								
		Represented by (print):		Telephone Number:	<del></del>	Signature:	<del></del>		
RCRA = Resource Conserva TSCA = Toxic Substances Co		Represented by (print):		Telephone Number:		Signature:		GRAND TOTAL =	

Revision 1

Page 1 of 1





# Table 2 Abandoned Drum Summary Hubbell Processing Area C&H Lake Linden Operations Houghton County, Michigan

										V	Vaste Ch	aracter	rization				Ava	ailable La	aborator	y Analyse:	s		
Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Non-Hazardous Waste	TSCA Waste	RCRA Empty Drum Unknown - Requires Characterization if Not Empty	TCLP VOCs TCLP SVOCs	TCLP Metals Reactive Sulfide	Reactive Surnee Reactive Cyanide	Н	Paint Filter Flash Point	VOCs	PNAs Metals	PCBs Hexavalent Chromium	Chloride and Sulfate Cyanide	Asbestos DRO/ORO
Abando	ned Containers - Hubbell Coal Do	ck					Manthan d Vallaviale and an analysis and the life		_												_	_	
1	CHLL-HPA-DM01	8/20/2014	014-307-001-25	1408233	-88.419426675	47.177462803	Weathered, Yellowish gray granular drum contents, Half- full	Grab waste sample from Degraded Abandoned Drum	No	No X			Х		Х					x x	x	X	
2	CHLL-HPA-DM02	8/20/2014	014-307-001-25	1408233	-88.419426675	47.177462803	Weathered, Brownish gray granular drum contents, Half- full	Grab waste sample from Degraded Abandoned Drum	No	No X	:		Х		Х					х х	х	Х	
<u> </u>	CHLL-DRUMWC-101514	10/15/2014	014-307-001-25	240-43288	-88.419426675	47.177462803	Weathered, Yellow/Brown gray granular drum contents	Composite waste characterization sample from CHLL-DM01 and CHLL-DM02						ХХ	Х								
2	CHLL-HPA-DRUM-03	10/6/2014	014-307-001-25	NA	-88° 25'02.667"	47° 10'50.237"	One drum laying on its side, appears to be empty. Small	Soil sample CHLL-SS07-101514 was collected from the vicinity of location DRUM-03 during targeted inspection activities.	Yes	No			х										
4-15	CHLL-HPA-DRUM-04	10/6/2014	014-307-001-25	NA	-88° 25'09.352"	47° 10'43.914"	crushed metal container nearby.  Approximately 12 drums ranging from intact to carcasses on the ground surface and protruding from the hillside.  Drums are in varying states of deterioration.	Soil samples CHLL-SS04-101514, CHLL-SS05-101514, and CHLL-SS06-101514 were collected from the vicinity of location DRUM-04 during targeted inspection activities.	Yes/No	Unk			х										
16	CHLL-HPA-DRUM-05	10/6/2014	014-307-001-25	NA	-88° 25'10.035"	47° 10'38.501"	Rusted, deteriorating 55 gallon drum, contents are hardened black material.	The collection of a material sample from the deteriorated drum was attempted during the targeted inspection activities; however, the drum contents were too dense to effectively collect a sample.	No	No			х										
17	CHLL-HPA-DRUM-06		014-307-001-25	NA	-88° 25'09.300"	47° 10'38.563"		Hardened drum contents similar to DRUM-05	No	Unk			X										
18	CHLL-HPA-DRUM-07	7/27/2016	014-307-001-25	NA	-88° 25'05.825"	47° 10'48.411"	Crushed drum	On hillside beneath a fallen utility pole	No	Unk			Х										
19	CHLL-HPA-DRUM-08	7/27/2016	014-307-001-25	NA	-88.419447	47.178591	Rusted drum remnants		No				X										
20	CHLL-HPA-DRUM-09 (Pt. 26)	7/27/2016	014-307-001-25	NA	-88° 25'12.399"	47° 10'43.080"	Rusted crushed drum		No	Unk			X										
Abando	ned Containers - Mineral Building	1																					
1	CHLL-HPA-DRUM-10 (Pt. 17)	Spring/Summer 2016	014-307-001-75	NA	-88° 25'23.984"	47° 10'36.725"			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"		Contains metal parts	No	No			X									$\vdash$	+
3	CHLL-HPA-DRUM-12 (Pt. 29) CHLL-HPA-DRUM-13 (Pt. 30)	Spring/Summer 2016	014-307-001-75 014-307-001-75	NA NA	-88° 25'17.367"	47° 10'38.210"		Leaking black tarry material	No No	No			X									$\leftarrow$	4
4	CHLL-HPA-DRUM-13 (Pt. 30) CHLL-HPA-DRUM-14 (Pt. 31)	Spring/Summer 2016	014-307-001-75	NA NA	-88° 25'13.879" -88° 25'13.465"	47° 10'36.390" 47° 10'35.948"		Partially melted	No No	NO Unk			X								$\rightarrow$	$\vdash$	
6	CHLL-HPA-DRUM-14 (Pt. 31) CHLL-HPA-DRUM-15 (Pt. 18)	Spring/Summer 2016 Spring/Summer 2016	014-307-001-75	NA NA	-88° 25'13.680"	47° 10'35.383"	Drum carcass Empty steel drum		Yes	Yes			X										
7		Spring/Summer 2016	014-307-001-75	NA NA	-88° 25'11.639"	47° 10'37.864"	Crushed drum	Partially buried	No				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								$\overline{}$		$\overline{}$
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				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										4
12	CHLL-HPA-DRUM-21	8/10/2016	014-307-001-75	NA	NA	NA NA		Partially buried	Yes	Yes						_					$\overline{}$	+	$\perp$
13	CHLL-HPA-DRUM-22	8/10/2016	014-307-001-75	NA NA	NA NA	NA NA	Drum carcass		No				X				+					$\leftarrow$	4
14	CHLL-HPA-DRUM-23 CHLL-HPA-DRUM-22	8/10/2016	014-307-001-75 014-307-001-75	NA NA	NA NA	NA NA	Drum carcass		No No				X			_					$\rightarrow$	$\vdash$	+
16	CHLL-HPA-DRUM-22 CHLL-HPA-DRUM-23	8/10/2016 8/10/2016	014-307-001-75	NA NA	NA NA	NA NA	Drum carcass Drum carcass		No No				X				+++						+ + + + + + + + + + + + + + + + + + + +
10	GLIELTI IL A-DRUM-23	0/10/2010	014-307-001-73	INA	INA	INA	Diulii carcass	l	INO	162			^								-		

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

				1					1	1 1	Wast	e Cha	racteriz	ation				Avail	able I a	aborator	v Analys	ses			
Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	Non-Hazardous Waste	I SCA Waste	Unknown - Requires Characterization if Not Empty	TCLP VOCs	Reactive Sulfide	Reactive Cyanide	pH Paint Filter	Flash Point	VOCs	PNAs Metals	PCBs	Hexavalent Chromium Chloride and Sulfate	Cyanide	Asbestos DRO/ORO
Aband	oned Containers - Tamarack	Reclamation Plant Comp											•												
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				Х											
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				х											
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 co	ol No	No				х				İ		х	х х	х		х	
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											
	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.		Yes			Х												
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				Х											
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			Unk				Х											
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			Х												
13	CHTC-TP-DM15	8/10/2016	009-013-004-20	NA	-88.444799091		5-gallon bucket with lid	Partially full of liquid	Yes	No				X											
Aband	oned Containers - Tamarack	Stomp Mill Compley																							
1-7	CHTC-TP-DM11	5/28/2015	009-013-004-50	1508214	-88.444589959	47.163934225		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 adjace to the drums on 8-20-15.	No	Unk				х						х	х х	х		х	

# ATTACHMENT C PREVAILING WAGES



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 redetermination 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.

(05/16) Page 1 of 1

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
- o 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
- o 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 Dental insurance Vision insurance Health insurance Life insurance Tuition Bonus 401k Employer Contribution	40 hours X \$14.00 per hour = \$560/2080 = \$31.07 monthly premium X 12 mos. = \$372.84 /2080 = \$5.38 monthly premium X 12 mos. = \$64.56/2080 = \$230.00 monthly premium X 12 mos. = \$2,760.00/2080 = \$27.04 monthly premium X 12 mos. = \$324.48/2080 = \$500.00 annual cost/2080 = 4 quarterly bonus/year x \$250 = \$1000.00/2080 = \$2000.00 total annual contribution/2080 =	\$.27 \$.18 \$.03 \$1.33 \$.16 \$.24 \$.48 \$.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

(05/16) Page 1 of 1



#### 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.

	i -			
	Monday thru Friday	Saturday	Sunday & Holidays	Four 10s
First 8 Hours		4		
9th Hour	1	5	8	_
10th Hour	2	6		9
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.

- 2. 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

#### 3. EXAMPLES:

HHHHHHDN - 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  $1\frac{1}{2}$  rate must be used for time worked after 40 hours are worked Monday thru Friday (characters 1-3); for hours worked on Saturday,  $1\frac{1}{2}$  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.

#### **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
st be awarded by: 11/9/2016

	Contract must	be awarded by	<b>/</b> :	11/9/2016			
Cla Name	assification Description	Page 1	of 26 Last Updated	Straight Tii Hourly	me and Half	a Double Time	Overtime Provision
Asbes	stos & Lead Abatement Laborer						
4 ter	estos & Lead Abatement Laborer n hour days @ straight time allowed day-Saturday, must be consecutive	MLDC		\$40.75	\$54.34	\$67.93 H	HHXXXXXDY
WOII	day Saturday, must be consecutive		10/30/2015				
Asbes	stos & Lead Abatement, Hazardous	s Material Han	dler				
	estos and Lead Abatement, Hazardous erial Handler	AS207		\$40.75	\$54.25	\$67.75 H	HHXXXXDY
	n hour days @ straight time allowed day-Saturday, must be consecutive						
			10/30/2015				
Boile	rmaker						
Boile	ermaker	BO169	2/17/2015	\$54.70	\$81.08	\$107.45 H	H H H H H D Y
	Apprer	itice Rates:					
	1st 6 m	onths		\$40.31	\$59.49	\$78.67	

1st 6 months \$59.49 \$78.67 \$61.21 \$80.95 2nd 6 months \$41.45 \$62.88 3rd 6 months \$42.57 \$83.19 4th 6 months \$43.69 \$64.57 \$85.43 5th 6 months \$44.81 \$66.24 \$87.67 \$72.50 \$96.36 6th 6 months \$48.63 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.

Page 1 of 26

**Issue Date:** 8/11/2016

Contract must be awarded by: 11/9/2016

Page 2 of 26

Classification Name Description		Last Updated	Straight Ti Hourly	me and a Half	a Double Time	Overtime Provision
Bricklayer						
Marble, Tile and Terrazzo Finisher	BR6		\$36.55	\$45.79	\$55.03 H	HDXHHDDY
Make up day allowed comment		6/2/2014				
Four 10s allowed Monday-Thurs. Mal	ke up days: Friday & Saturd	day.				
Bricklayer, stone mason, moisaic wo plasterer, tuck pointer, pointer, caul	-		\$42.71	\$55.03	\$67.35 X	хнххннрү
Make up day allowed comment		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	Н Д Х Н Н Д Д Ү
Make up day allowed comment		6/2/2014				
Four 10s allowed Monday-Thurs. Mal	ke up days: Friday & Saturo	day.				

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

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

Issue Date: 8/11/2016

Contract must be awarded by:

Page 3 of 26

11/9/2016

		rayes	01 20				
Classification  Name Description		.======	Last Updated	Straight Ti Hourly	Half	a Double Time	Overtime Provision
Carpenter							
Carpenter, Drywall Taper & Finishe Make up day allowed comment Saturday	er, & Floor	CA1510-C	7/26/2016	\$42.75	\$54.46	\$66.17 X	XHXXHHDY
	Apprentice F	Rates:					
	1st 6 months			\$33.38	\$40.41	\$47.43	
	2nd 6 months	3		\$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 Saturday			7/26/2016				
	Apprentice F	Rates:					
	1st 6 months			\$33.50	\$40.59	\$47.67	
	2nd 6 months	5		\$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 Number: 761/16108.SAR County: Houghton

#### **Official Rate Schedule**

Every contractor and subcontractor shall keep posted Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates

**Issue Date:** 8/11/2016

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Classification Name Description		Last Updated	Straight Ti Hourly	me and a Half	a Double Time	Overtime Provision
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 comme	nt	6/2/2014				
Four 10s allowed Monday-Thu	rs. Make up days: Friday and Sat Apprentice Rates:	urday.				
	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	ннннннру
Four 10s allowed Monday-Th or Saturday inclement weath Saturday hours for inclemer shall be paid straight rate un worked.	ner make up days. It weather make up					
Make up day allowed comme		10/23/2012				
Friday or Saturday for inclement						
	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

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Official Rate Schedule

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<u>Classification</u> Name Description		Last Updated	Straight Ti Hourly	me and a Half	a Double Time	Overtime Provision
 Electrician				======		=====
Sound and Communications Instal	ler/Technician	EC-219-SC	\$33.43	\$43.97	\$54.51 H	ннннннрү
A 4 day 10 hour day schedule is al	lowed	3/12/2013				
	Apprentice Rat					
	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	
A 4 ten schedule may be worked is consecutive days, M-Th Make up day allowed comment	<sup>-</sup> 4	3/31/2016				
Friday	Apprentice Rat	06.				
	Period 2	<b>c</b> 3.	\$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 indent	ured after 10/12/15	\$25.42	\$32.20	\$38.98	
	Period 2 indent	ired after 10/12/15	\$27.11	\$34.73	\$42.36	
	Period 3 indent	ured after 10/12/15	\$30.50	\$39.82	\$49.14	
	Period 4 indent	ured after 10/12/15	\$33.89	\$44.91	\$55.92	
	Period 5 indent	red after 10/12/15	\$37.28	\$49.99	\$62.70	
	Period 6 indent	red after 10/12/15	\$40.67	\$55.08	\$69.48	

Official Request #: 982 Requestor: MDEQ

Project Number: 761/16108.SAR County: Houghton

#### Official Rate Schedule

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Clas Name	sification Description		Last Updated	Straight Tii Hourly	me and Half	a Double Time	Overtime Provision
A 4 te	wireman for work below 160 n schedule may be worked if cutive days, M-Th		9-ZA-below	\$47.75	\$62.97	\$78.19 H	 Н Н Н Н Н Н D Y
<i>Make</i> Frida	e up day allowed comment		3/31/2016				
		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	
Elevato	or Constructor						
Elevat	or Constructor Mechanic comment	EL-85	4/8/2013	\$70.77		<b>\$116.32</b> D	D D D D D D Y
4 ten	s 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	
		-ui youi		ψ01.00		ψ50.10	

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

Project Number: 761/16108.SAR County: Houghton

#### Official Rate Schedule

Every contractor and subcontractor shall keep posted of all prevailing wage and fringe benefit rates

prescribed in a contract.

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Clas Name	ssification Description			Last Updated	Straight Ti Hourly	me and a	a Double Time	Overtime Provision
======	======================================			======================================	=======		=======	======
Glazie	r							
Glazie	er	(	GL-826		\$44.78	\$60.87	\$76.95 H	нннннрү
4 ten	s allowed on consecutive days							
				6/3/2016				
		Apprentice Rat	es:					
		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 a	nd Frost Insulator							
	and Frost Insulator e up day allowed	ļ	AS127	11/3/2014	\$42.97	\$55.93	\$68.89 H	HHHDDDDY
		Apprentice Rat	es:					
		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	P	\S25S	6/2/2016	\$25.29	\$36.51	Х	XXHHHHHN

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

Project Number: 761/16108.SAR County: Statewide

**Official Rate Schedule** 

Every contractor and subcontractor shall keep posted of all prevailing wage and fringe benefit rates

Issue Date: 8/11/2016

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<u>Classification</u> me Description	rage	Last Updated	Straight Ti Hourly	me and a Half	Double Time	Overtime Provision
 onworker		========	=======	======	=======	=====
For work over \$10 million: St Ornamental, Machinery Rigger Ironworker; installation of she	· & Reinforcing		\$50.07	\$69.76	\$89.45 H	HDHDDDD
A 4-10 work week allowed Mo Thursday. Friday may be use day. Hours in excess of 40 m and one half.	d as a make-up					
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: S Ornamental, Machinery Rigger Ironworker; pre-engineered m	& Reinforcing		\$46.73	\$64.76	\$82.79 H	H D H D D D D
A 4-10 work week allowed Mo Thursday. Friday may be use day. Hours in excess of 40 m and one half.	d as a make-up					
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	
	.,00. 0,0000					
	5,001 - 6,000 hours		\$42.92	\$59.04	\$75.15	

Official Request #: 982

Requestor: MDEQ

Project Number: 761/16108.SAR County: Houghton

#### Official Rate Schedule

Every contractor and subcontractor shall keep posted Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

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Clas Name	ssification  Description		Last Updated	Straight Ti Hourly	me and a Half	Double Time	Overtime Provision
Labore	er						
buildi and s stree rate: rodm cuttir chipp cuttir mixer concr	s A Laborer - construction laborer on ng and heavy construction work, storm, anitary sewers on all construction sites and its which are not included in the road builder s, tool crib attendant, civil engineer helper, an, oxi-gun operator, propane or acetylene g torch operator, motor driven buggies, ing hammers, tamping machines, green ig, sand blasters, mason tenders, mortar s, marterial mixers, vibrator operators, ete mixers, laborers with concrete crew, it to pour, including pour time from trucks.	L1329-B-A		\$33.71	\$43.89	\$54.07 X X	X X X X X D Y
			5/4/2016				
	Apprentice I	Rates:					
	0 - 1,000 hou	ırs		\$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	
blaste	B Laborer - Cement gun nozzleman, ers, miners, drillers, buster operators, layers I non-metallic pipe	L1329-B-B	5/4/2016	\$34.13	\$44.52	\$54.91 X X	X $X$ $X$ $X$ $X$ $D$ $Y$
			J1412010				
Class	C Laborer - caisson worker & airtrack	L1329-B-C	5/4/2016	\$34.49	\$45.06	\$55.63 X X	X $X$ $X$ $X$ $X$ $D$ $Y$
Clas	s E Laborer - digester, tanks & kilns	L1329-B-D	5/4/2016	\$35.85	\$47.10	\$58.35 X X	X X X X X D Y

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

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.

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Classification Name Description		Last Updated	Straight Ti Hourly	me and a	a Double Time	Overtime Provision
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	н н н н н D Y
Make up day allowed comment		11/7/2014				
4 10s allowed M-Th or T-F; inclement weather makeup  Apprentice						
0-1,000 worl	k 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 F	1
Make up day allowed comment		11/7/2014				
4 10s allowed M-Th or T-F; inclement weather makeup  Apprentice						
0-1,000 worl	k 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 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

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

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Clas Name	sification Description		Last Updated	Straight Tii Hourly	me and a	a Double Time	Overtime Provision
Labore	er Underground - Tunnel, Shaft &	 Caisson					
dump	I - Tunnel, shaft and caisson laborer, man, shanty man, hog house tender, g man (on gas), and watchman.	LAUCT-Z2-1		\$35.67	\$47.07	\$58.47 X	$X\;X\;X\;X\;X\;D\;Y$
			10/30/2014				
	Apprer	ntice Rates:					
	0-1,000	) work hours		\$30.52	\$39.35	\$48.17	
	1,001-2	2,000 work hours		\$31.55	\$40.90	\$50.23	
	2,001-3	3,000 work hours		\$32.58	\$42.44	\$52.29	
	3,001-4	1,000 work hours		\$34.64	\$45.53	\$56.41	
builde	II - Manhole, headwall, catch basin er, bricklayer tender, mortar man, mater , fence erector, and guard rail builder	LAUCT-Z2-2 rial		\$35.76	\$47.21	\$58.65 X	X X X X X X X D Y
			10/30/2014				
	Apprer	ntice Rates:					
	0-1,000	) work hours		\$30.58	\$39.44	\$48.29	
	1,001-2	2,000 work hours		\$31.62	\$41.00	\$50.37	
	2,001-3	3,000 work hours		\$32.66	\$42.56	\$52.45	
	3,001-4	,000 work hours		\$34.72	\$45.65	\$56.57	

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Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

Project Number: 761/16108.SAR County: Houghton

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	Classification	Page 12	Last	Straight Ti	ma and a	Doublo	Overtime
Nam			Updated	Hourly	Half	Time	Provision
bu ca fo la cc to w pe te m vi	ass III - Air tool operator (jack hammer man, ush hammer man and grinding man), first of toom man, second bottom man, cage tender, or pusher, carrier man, concrete man, concrete repair man, cement invert borer, cement finisher, concrete shoveler, onveyor man, floor man, gasoline and electric ol operator, gunnite man, grout operator, elder, heading dinky man, inside lock tender, ea gravel operator, pump man, outside lock nder, scaffold man, top signal man, switch an, track man, tugger man, utility man, brator man, winch operator, pipe jacking man, vagon drill and air track operator and concrete law operator (under 40 h.p.).	LAUCT-Z2-3	10/20/2014	\$35.86	\$47.36	\$58.85 X X	X X X X X D Y
	Ammontina	Detec	10/30/2014				
	Apprentice			<b>#</b> 00.00	<b>#</b> 00 <b>F</b> 0	0.40.45	
	0-1,000 wor			\$30.66	\$39.56	\$48.45	
	1,001-2,000			\$31.70	\$41.12	\$50.53	
	2,001-3,000	work hours		\$32.74	\$42.68	\$52.61	
	3,001-4,000	work hours		\$34.82	\$45.80	\$56.77	
br	ass IV - Tunnel, shaft and caisson mucker, acer man, liner plate man, long haul dinky iver and well point man.	LAUCT-Z2-4	10/30/2014	\$36.02	\$47.60	\$59.17 X X	X
	Apprentice	Rates:					
	0-1,000 wor	k hours		\$30.78	\$39.74	\$48.69	
	1,001-2,000	work hours		\$31.83	\$41.32	\$50.79	
	2,001-3,000			\$32.88	\$42.89	\$52.89	
	3,001-4,000	work hours		\$34.97	\$46.02	\$57.07	

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

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

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Classification Name Description			Last Updated	Straight Ti Hourly	me and a Half	Double Time	Overtime Provision
Class V - Tunnel, shaft and caisson m runner, keyboard operator, power kn operator, reinforced steel or mesh ma wire mesh, steel mats, dowel bars)	ife	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 worl	k 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	10/30/2014	\$36.59	\$48.45	\$60.31 X	X $X$ $X$ $X$ $X$ $X$ $X$ $X$ $X$ $Y$
	Apprentice	Rates:					
	0-1,000 worl	k 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 a grading and the restoration of proper replacing mail boxes, wood chips, pla and flagstones.	and topsoil ty such as	LAUCT-Z2-7		\$28.86	\$36.86	\$44.85 X	X X X X X X D Y
and negotones.			10/30/2014				
	Apprentice	Rates:					
	0-1,000 worl	k 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

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Official Rate Schedule

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Clas Name	ssification Description	.======	Last Updated	Straight Ti Hourly	me and Half	a Double Time	Overtime Provision
Lands	cape Laborer						
equip lawn where trimm maint Sunda	scape Specialist includes air, gas, and diesel ment operator, skidsteer (or equivalent), sprinkler installer on landscaping work e seeding, sodding, planting, cutting, ning, backfilling, rough grading or renance of landscape projects occurs. ays paid at time & one half. Holidays paid uble time.	LLAN-Z2-A		\$28.25	\$39.04	\$49.82 X	X
			10/13/2015				
opera mate soddi rough proje Sunda	d Landscape Laborer: small power tool ator, lawn sprinkler installers' tender, rial mover, truck driver on when seeding, ng, planting, cutting, trimming, backfilling, a grading or maintaining of landscape cts occurs asys paid at time & one half. Holidays paid	LLAN-Z2-B		\$24.05	\$32.74	\$41.42 X	XHXXXHD
at do	uble time.		10/13/2015				
Opera	ting Engineer - DIVER						
•	/Wet Tender/Tender/Rov Pilot/Rov Tender	GLF D	4/2/2014	\$52.80	\$79.20	\$105.60 H	H H H H H D
Opera	ting Engineer - Marine Construction						
Diver	/Wet Tender, Engineer (hydraulic dredge)	GLF-1		\$65.00	\$84.85	\$104.70 X	XHHHHD
Mak	e up day allowed		2/12/2014				
	division of county all Great Lakes, islands th	erein, & conne		ary waters			
Crane Opera	e/Backhoe Operator, 70 ton or over Tug ator, Mechanic/Welder, Assistant Engineer aulic dredge), Leverman (hydraulic dredge),	GLF-2		\$63.50	\$82.60	\$101.70 X	хннннн

Holiday pay = \$120.80 per hour, wages &

Make up day allowed 2/12/2014

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

Official Request #: 982 Requestor: MDEQ

**Diver Tender** 

Project Number: 761/16108.SAR

County: Statewide

Official Rate Schedule

Every contractor and subcontractor shall keep posted Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates

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 Classification
 Last
 Straight Time and a Double
 Overtime

 Name
 Description
 Updated
 Hourly
 Half
 Time
 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, GLF-3 \$59.30 \$76.30 \$93.30 X X H H H H H D Y Maintenance of Crane (over 50 ton capacity) or

Backhoe (115,000 lbs or more), Tug/Launch Operator, Loader, Dozer on Barge, Deck Machinery

Holiday pay = \$110.30 per hour, wages &

Make up day allowed 2/12/2014

<u>Subdivision of county</u> All Great Lakes, islands therein, & connecting & tributary waters

Deck Equipment Operator, GLF-4 \$53.60 \$67.75 \$81.90 X X H H H H H D Y

(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

Holiday pay = \$96.05 per hour, wages & fringes

Make up day allowed 2/12/2014

<u>Subdivision of county</u> 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

*comment* 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

**comment** 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

*comment* 5/24/2016

Double time after 12 hours Mon-Sat

Official Request #: 982 Official Rate Schedule

Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

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Project Number: 761/16108.SAR prescribed in a contract.

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Every contractor and subcontractor shall keep posted

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<u>Classification</u> lame Description	Last Updated	Straight Ti Hourly	me and a	a Double Time	Overtime Provision
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
comment	5/24/2016				
Double time after 12 hours Mon-Sat  Apprentice	Rates:				
1st 6 months		\$40.71	\$50.62	\$60.53	
2nd 6 month	S	\$42.12	\$52.74	\$63.35	
3rd 6 months	· S	\$43.54	\$54.87	\$66.19	
4th 6 months	S	\$44.96	\$57.00	\$69.03	
5th 6 months		\$46.37	\$59.11	\$71.85	
6th 6 months	5	\$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  comment	EN-324UP-BGU 5/24/2016	\$47.70	\$60.23	\$72.76 X	ХНННННОМ
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	ХНННННОМ
comment  Double time after 12 hours Mon-Sat	5/24/2016				
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	хннннн в N
comment  Double time after 12 hours Mon-Sat	5/24/2016				
Crane 220' boom & jib  comment  Double time after 12 hours Mon-Sat	EN-324UP-GU 5/24/2016	\$51.95	\$66.61	\$81.26 X	хнннннрм

Official Request #: 982

Official Rate Schedule

Requestor: MDEQ Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

Every contractor and subcontractor shall keep posted of all prevailing wage and fringe benefit rates prescribed in a contract.

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<u>Classification</u> Name Description	Last Updated	Straight Tir Hourly	me and a Half	a Double Time	Overtime Provision
======================================		=======	======	=======	======
Mechanic w/ truck & tools	EN-324UP-MGU	\$52.45	\$67.36	\$82.26 X	X H H H H H D N
comment	5/24/2016				
Double time after 12 hours Mon-Sat					
Operating Engineer Steel Work					
Crane 120' boom & jib	EN-324UP-120S	\$51.85	\$66.46	\$81.06 X	хнннннрү
comment	5/24/2016	ψο 1.00	ψουιο	φ01.00 λ	X II II II II II I
Double time after 12 hours Mon-Sat	3/2 1/2010				
Crane 140' boom & jib	EN-324UP-140S	\$52.10	\$66.83	\$81.56 X	X
comment	7/8/2015				
Double time after 12 hours Mon-Sat					
Crane 220' boom & jib	EN-324UP-220S	\$52.35	\$67.21	\$82.06 X	X H H H H H D Y
comment	5/24/2016				
Double time after 12 hours Mon-Sat					
Crane with 300' boom & jib	EN-324UP-300S	\$54.07	\$69.79	\$85.50 X	ХННННН Д Ү
Make up day allowed comment	5/24/2016				
Double time after 12 hours Mon-Sat					
Crane with 400' boom & jib	EN-324UP-400S	\$55.79	\$72.37	\$88.95 X	хнннннрү
Make up day allowed comment	5/24/2016				
Double time after 12 hours Mon-Sat					
Compressor, Welder & Forklift	EN-324UP-CWS	\$48.10	\$60.83	\$73.56 X	ХННННН Д Ү
comment	5/24/2016				
Double time after 12 hours Mon-Sat					
Mechanic w/ truck & tools	EN-324UP-MS	\$52.85	\$67.96	\$83.06 X	хнннннрү
comment	5/24/2016				
Double time after 12 hours Mon-Sat					
Oiler & Fireman	EN-324UP-OFS	\$46.80	\$58.88	\$70.96 X	хнннннрү
comment	5/24/2016				
Double time after 12 hours Mon-Sat					

Official Rate Schedule Official Request #: 982

Requestor: MDEQ
Project Description: Asbestos containing building material and residual process

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.

Project Number: 761/16108.SAR

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		i age io	01 20				
Cla Name	ssification Description		Last Updated	Straight Ti Hourly	me and a	Time	Overtime Provision
Oper	ator	EN-324UP-OS	;	\$51.35	\$65.71		X
	comment		5/24/2016				
Dou	ble 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	
Painte	er						
Paint	er	PT-1011	7/17/2015	\$31.25	\$41.01	\$50.76 H	HHHHHDN
		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	

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy

Project Number: 761/16108.SAR County: Houghton

#### **Official Rate Schedule**

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		rayeis	01 20				
Classification  Name Description			Last Updated	Straight Ti Hourly	me and a Half	Double Time	Overtime Provision
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
A	pprentice F	Rates:					
1	st 1,000 hou	ırs		\$26.23	\$33.48	\$40.72	
2	nd 1,000 ho	urs		\$27.44	\$35.29	\$43.14	
3	rd 1,000 hou	ırs		\$28.64	\$37.09	\$45.54	
4	th 1,000 hou	ırs		\$29.85	\$38.90	\$47.96	
5	th 1,000 hou	ırs		\$31.06	\$40.72	\$50.38	
6	th 1,000 hou	ırs		\$32.27	\$42.54	\$52.80	
7	th 1,000 hou	ırs		\$33.48	\$44.35	\$55.22	
8th 1,		irs		\$34.68	\$46.15	\$57.62	
Drywall Finisher, Soundproofing, & Plur Component Applicator	al	PT-1011-DF		\$37.67	\$50.64	\$63.60 H	H H H H H D N
			7/17/2015				
A	pprentice F	Rates:					
2	nd 1,000 ho	urs		\$28.59	\$37.02	\$45.44	
3	rd 1,000 hou	ırs		\$29.89	\$38.96	\$48.04	
4	th 1,000 hou	ırs		\$31.19	\$40.92	\$50.64	
5	th 1,000 hou	ırs		\$32.48	\$42.85	\$53.22	
6	th 1,000 hou	ırs		\$33.78	\$44.80	\$55.82	
7	th 1,000 hou	ırs		\$35.08	\$46.75	\$58.42	
8	th 1,000 hou	ırs		\$36.37	\$48.68	\$61.00	
Pipe and Manhole Rehab							
General Laborer for rehab work or norn cleaning and cctv work-top man, scaffo CCTV assistant, jetter-vac assistant		TM247		\$28.20	\$38.20	Н	HHHHHHN
January January Guerra			4/17/2015				
Tap cutter/CCTV Tech/Grout Equipment Operator: unit driver and operator of ( grouting equipment and tap cutting equipment)	CCTV;	TM247-2		\$32.70	\$44.95	Н	нннннни
g. satisfy oquipment and tap satting oqu			4/17/2015				

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Requestor: MDEQ

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County: Statewide

#### Official Rate Schedule

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Clas Name	sification  Description	go _c	Last Updated	Straight Ti	me and a	Double Overtime Time Provision
driver	Technician/Combo Unit Operator: unit and operator of cctv unit or combo unit in ction with normal cleaning and televising	TM247-3		\$31.45	\$43.07	ннннннн
			4/17/2015			
steam	Operator: unit driver and operator of /water heater units and all ancillary ment associated	TM247-4		\$33.20	\$45.70	ннннннн
cquipi	Herit associated		4/17/2015			
Comb	o Unit driver & Jetter-Vac Operator	TM247-5		\$33.20	\$45.70	ннннннн
001110	o officialition a social value operator	1111217	4/17/2015	ψου.20	ψ10.70	
Pipe E	Bursting & Slip-lining Equipment Operator	TM247-6		\$34.20	\$47.20	ннннннн
•			4/17/2015			
Plaster	er					
Plaste	rer	PL16UP	10/23/2012	\$38.71	\$51.63	\$64.54 H H H H H H D N
	Apprentice I	Rates:	10/20/2012			
	1st year			\$29.67	\$38.06	\$46.46
	2nd year			\$32.25	\$41.94	\$51.62
	3rd year			\$34.84	\$45.82	\$56.80

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#### Official Rate Schedule

Every contractor and subcontractor shall keep posted Project Description: Asbestos containing building material and residual process

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		raye zi	01 20				
<u>Classification</u> Name Description			Last Updated	Straight Ti Hourly	me and a Half	Time	Overtime Provision
Plumber & Pipefitter		=======	======	=======		=======	=====
Plumber & Pipefitter 4 ten hour days may be worked Thursday	only Monday-	PL-111		\$47.61	\$71.42	\$95.22 H	нннннрү
Make up day allowed			7/30/2009				
	Apprentice F	Rates:					
	1st 6 months			\$23.96	\$35.94	\$47.92	
	2nd 6 months	5		\$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 Make up day allowed		RO-149-UP	4/17/2015	\$28.23	\$36.56	\$44.88 X	X
	Apprentice F	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 including remote in-ground cutto equipment used in conjunction v	er and other	SR-I		\$43.66	\$59.01	\$74.36 H	HHHHHDN
			11/24/2015				

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Clas Name	ssification  Description		Last Updated	Straight Ti	me and a Half	Double Time	Overtime Provision
circula and m	II-Operator of hot water heaters and ation system; water jetters; and vacuum nechanical debris removal systems and assisting.	SR-II		\$42.13	\$56.72	\$71.30 H F	 
			11/24/2015				
Sheet	Metal Worker						
	Metal Worker allowed as consecutive days, M-Th	shm-7-5		\$51.59	\$65.60	\$79.60 H H	HHDDDDY
	e up day allowed comment		11/5/2015				
Frida	ay Apprentice F	Rates:					
	1st 6 months			\$27.84	\$34.14	\$40.44	
	2nd 6 months	i		\$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	

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			raye 23	01 20				
Cla Name	assification  Description			Last Updated	Straight Ti Hourly	me and a Half	a Double Time	Overtime Provision ======
Sprinl	 kler Fitter							
Sprin	ıkler Fitter		SP 669		\$51.64	\$68.45	\$85.26 H	H $H$ $H$ $H$ $H$ $D$ $Y$
Mai	ke 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	6/7/2016	\$44.10	\$48.81	Н	н н н н н н н ү
(exce	trucks of 8 cubic yard capacity ept dump trucks of 8 cubic yard tandem axle trucks, transit mix d type equipment, double botto	capacity or and semis,	TM-RB2A		\$44.00	\$48.66	Н	нннннннү
buys	)			6/7/2016				
on ei	uclid type equipment		TM-RB2B		\$44.25	\$49.04	Н	ннннннн
	3			6/7/2016		•		

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<u>Classification</u> Name Description			Last Updated	Straight Ti Hourly	me and a Half	Double Time	Overtime Provision
Underground Laborer Open Cut, Clas	 ss I						
Construction Laborer	l	.AUC-Z5-1	10/30/2014	\$32.75	\$42.68	\$52.61 X	XXXXXXXX
Арі	prentice Rat	es:					
0-1	,000 work ho	ours		\$28.35	\$36.08	\$43.81	
1,00	01-2,000 wo	rk hours		\$29.23	\$37.40	\$45.57	
2,00	01-3,000 wo	rk hours		\$30.11	\$38.72	\$47.33	
3,00	01-4,000 wo	rk hours		\$31.87	\$41.36	\$50.85	
Underground Laborer Open Cut, Clas	ss II						
Mortar and material mixer, concrete form signal man, well point man, manhole, hea and catch basin builder, guard rail builder headwall, seawall, breakwall, dock builder fence erector.	idwall s,	AUC-Z5-2		\$32.89	\$42.89	\$52.89 X	X
			10/30/2014				
Арј	prentice Rat	es:					
0-1,	,000 work ho	ours		\$28.46	\$36.25	\$44.03	
1,00	01-2,000 wo	rk hours		\$29.34	\$37.57	\$45.79	
2,00	01-3,000 wo	rk hours		\$30.23	\$38.90	\$47.57	
3,00	01-4,000 wo	rk hours		\$32.00	\$41.56	\$51.11	
Underground Laborer Open Cut, Clas	ss III						
Air, gasoline and electric tool operator, vil operator, drillers, pump man, tar kettle operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, cement finisher, welder, pipe jacking and man, wagon drill and air track operator ar concrete saw operator (under 40 h.p.), wi and tugger man, and directional boring m	perator, n man etc.), boring nd indlass	AUC-Z5-3		\$33.02	\$43.09	\$53.15 X	X
			10/30/2014				
Ар	orentice Rat	es:					
0-1.	,000 work ho	ours		\$28.56	\$36.40	\$44.23	
1,00	01-2,000 wo	rk hours		\$29.45	\$37.74	\$46.01	
2,00	01-3,000 wo	rk hours		\$30.34	\$39.07	\$47.79	
3,00	01-4,000 wo	rk hours		\$32.13	\$41.76	\$51.37	
Official Degree of # 000					0	fficial D	to Cobodulo

Official Request #: 982 Requestor: MDEQ

Project Description: Asbestos containing building material and residual process

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Classification Name Description	go -	Last Updated	Straight Ti Hourly	Half	a Double Time	Overtime Provision
Underground Laborer Open Cut	, Class IV					
Trench or excavating grade man.	LAUC-Z5-4	10/30/2014	\$33.07	\$43.16	\$53.25 X	$X\;X\;X\;X\;X\;X\;X\;D\;Y$
	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	$X\ X\ X\ X\ X\ X\ X\ D\ Y$
	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, at television operations and all other of connection with closed circuit televisinspection, pipe cleaning and pipe rewards the installation and repair of water pipe and appurtenances.	perations in sion elining work	)	\$30.50	\$39.31	\$48.11 X	X
		10/30/2014				
	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 Number: 761/16108.SAR County: Houghton

Official Rate Schedule

Every contractor and subcontractor shall keep posted Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

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Issue Date: 8/11/2016

11/9/2016 Contract must be awarded by:

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Classification Name Description		Last Updated	Straight Ti	me and a	a Double Time	Overtime Provision
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
		10/30/2014				
Apprentice	Rates:					
0-1,000 wor	k 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 Number: 761/16108.SAR County: Houghton

#### Official Rate Schedule

Every contractor and subcontractor shall keep posted Project Description: Asbestos containing building material and residual process on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

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# 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



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



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

MDEQ-RRD-LANSING Project: ABANDONED MINING WASTE-TORCH LAKE PCB

525 W. Allegan Street Site Code: 31000098 Reported:
Lansing MI, 48909 Project Manager: Jeff Pincumbe 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



dry

# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL LABORATORY

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

#### **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
Т	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 $\geq$ 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

Sample results reported on a dry weight basis



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

Client ID: CHLL-SB65-3"-9" Lab ID: 1408233-01

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCBs	s 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	
Surrogate: Decachl	lorobiphenyl		54.0 %	30-150	)	09/03/14	B4H2807	8081/8082	
Surrogate: Tetrachl	loro-m-xylene		55.1 %	30-150	)	09/03/14	B4H2807	8081/8082	
Inorganics-Gei	neral Chemistry								
TS	% Total Solids	94.3	0.1	%	1	08/25/14	B4H2511	2540 B	



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-PCB	s 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: Decachi	lorobiphenyl		53.5 %	30-15	0	09/03/14	B4H2807	8081/8082	
Surrogate: Tetrach	loro-m-xylene		62.9 %	30-15	0	09/03/14	B4H2807	8081/8082	
Inorganics-Ge	neral Chemistry								
TS	% Total Solids	88.5	0.1	%	1	08/25/14	B4H2511	2540 B	



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

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCBs	s 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	
Surrogate: Decachl	orobiphenyl		54.6 %	30-150	)	09/03/14	B4H2807	8081/8082	
Surrogate: Tetrachl	oro-m-xylene		61.3 %	30-150	)	09/03/14	B4H2807	8081/8082	
Inorganics-Ger	neral Chemistry								
TS	% Total Solids	90.2	0.1	%	1	08/25/14	B4H2511	2540 B	



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

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCB	s 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: Decachl	lorobiphenyl		47.2 %	30-150	)	09/04/14	B4H2807	8081/8082	
Surrogate: Tetrachl	loro-m-xylene		66.0 %	30-150	)	09/04/14	B4H2807	8081/8082	
Inorganics-Gei	neral Chemistry								
TS	% Total Solids	93.7	0.1	%	1	08/25/14	B4H2511	2540 B	



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
Inorganics-Ger	neral 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-Me	tals								
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	



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
Inorganics-Gen	eral 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-Met	als								
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	



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
Inorganics-Gen	neral 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-Met	tals								
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	



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
Inorganics-Gen	eral 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-Met	als								
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	



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-Semi	ivolatiles							See no	ote 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	
Surrogate: 2-Fluor	obiphenyl		63.2 %	32.9-11.	5	09/09/14	B4H2718	8270	
Surrogate: Nitrobe	nzene-d5		59.9 %	31.8-11.	5	09/09/14	B4H2718	8270	
Surrogate: p-Terph	nenyl-d14		74.7 %	38.5-11.	5	09/09/14	B4H2718	8270	
Organics-PCB	s 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	
Surrogate: Decach	lorobiphenyl		47.6 %	30-150	)	09/03/14	B4H2807	8081/8082	
Surrogate: Tetrach	loro-m-xvlene		72.3 %	30-150	)	09/03/14	B4H2807	8081/8082	



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Client ID: CHLL-DM01 Lab ID: 1408233-09

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-Ge	eneral 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-Mo	etals								
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	



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Client ID: CHLL-DM02 Lab ID: 1408233-10

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifie
Organics-Sem	ivolatiles							See no	ote Y17, Y2
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-Fluor	obiphenyl		65.3 %	32.9-11	5	09/09/14	B4H2718	8270	
Surrogate: Nitrobe	nzene-d5		60.4 %	31.8-11	'5	09/09/14	B4H2718	8270	
Surrogate: p-Terph	nenyl-d14		74.6 %	38.5-11	'5	09/09/14	B4H2718	8270	
Organics-PCB	s 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: Decach	lorobiphenyl		57.9 %	30-150	)	09/03/14	B4H2807	8081/8082	



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Client ID: CHLL-DM02 Lab ID: 1408233-10

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-Ge	eneral 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-M	etals								
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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Client ID: CHLL-SB140-0-6" Lab ID: 1408233-11

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-Gen	neral 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-Met	tals								
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
Inorganics-Ge	neral 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-Me	tals								
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-Ge	neral 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-Me	tals								
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
Inorganics-Gen	eral 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-Met	als								
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

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCB	s 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	
Surrogate: Decachlorobiphenyl			68.6 %	30-150	)	09/04/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene			72.4 %	30-150	)	09/04/14	B4H2807	8081/8082	
Inorganics-Gei	neral Chemistry								
TS	% Total Solids	86.8	0.1	%	1	08/25/14	B4H2512	2540 B	



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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-PCB	s 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	
Surrogate: Decachlorobiphenyl			57.1 %	30-150	)	09/04/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene			65.3 %	30-150	)	09/04/14	B4H2807	8081/8082	
Inorganics-Ge	neral 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

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCB	s 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	
Surrogate: Decachlorobiphenyl			56.6 %	30-150	)	09/11/14	B4H2807	8081/8082	
Surrogate: Tetrachloro-m-xylene			64.8 %	30-150	)	09/11/14	B4H2807	8081/8082	
Inorganics-Gei	neral 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

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCB	s 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	
Surrogate: Decachl	lorobiphenyl		51.0 %	30-150	)	09/11/14	B4H2807	8081/8082	
Surrogate: Tetrachl	loro-m-xylene		60.0 %	30-150	)	09/11/14	B4H2807	8081/8082	
Inorganics-Ger	neral Chemistry								
TS	% Total Solids	74.5	0.1	%	1	08/25/14	B4H2512	2540 B	



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

Client ID: CHLL-SB102-0-6" Lab ID: 1408233-19

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCB	s 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: Decachi	lorobiphenyl		60.2 %	30-150	)	09/11/14	B4H2807	8081/8082	
Surrogate: Tetrach	loro-m-xylene		64.5 %	30-150	)	09/11/14	B4H2807	8081/8082	
Inorganics-Ge	neral Chemistry								
TS	% Total Solids	83.6	0.1	%	1	08/25/14	B4H2512	2540 B	



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

Client ID: CHLL-SB103-0-6" Lab ID: 1408233-20

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCBs	s 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: Decachl	orobiphenyl		68.6 %	30-150	)	09/04/14	B4H2807	8081/8082	
Surrogate: Tetrachl	oro-m-xylene		78.5 %	30-150	)	09/04/14	B4H2807	8081/8082	
Inorganics-Ger	neral Chemistry								
TS	% Total Solids	80.3	0.1	%	1	08/25/14	B4H2512	2540 B	



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

Client ID: CHLL-SB104-0-6" Lab ID: 1408233-21

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCB	s 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	
Surrogate: Decach	lorobiphenyl		52.5 %	30-150	)	09/11/14	B4H2807	8081/8082	
Surrogate: Tetrach	loro-m-xylene		59.4 %	30-150	)	09/11/14	B4H2807	8081/8082	
Inorganics-Ge	neral Chemistry								
TS	% Total Solids	60.6	0.1	%	1	08/25/14	B4H2512	2540 B	



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

Client ID: CHLL-SB105-0-6" Lab ID: 1408233-22

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Organics-PCBs	s 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: Decachle	orobiphenyl		63.6 %	30-15	0	09/11/14	B4H2807	8081/8082	
Surrogate: Tetrachle	oro-m-xylene		67.4 %	30-15	0	09/11/14	B4H2807	8081/8082	
Inorganics-Gen	neral Chemistry								
TS	% Total Solids	82.2	0.1	%	1	08/25/14	B4H2512	2540 B	



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

Client ID: CHLL-SB106-0-6" Lab ID: 1408233-23

						Analyzed			
CAS#	Analyte	Result	RL	Units	Dilution	Date	QC Batch	Method	Qualifier
Organics-PCB	s 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: Decachl	lorobiphenyl		59.3 %	30-150	)	09/03/14	B4H2807	8081/8082	
Surrogate: Tetrachi	loro-m-xylene		61.9 %	30-150	)	09/03/14	B4H2807	8081/8082	
Inorganics-Ger	neral Chemistry								
TS	% Total Solids	88.8	0.1	%	1	08/25/14	B4H2512	2540 B	



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

Client ID: CHLL-SB137-0-6" Lab ID: 1408233-24

CAS#	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-Gen	neral 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-Met	tals								
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	



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
Inorganics-Ger	neral 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-Me	tals								
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	



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-Gen	neral 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-Met	tals								
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	

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# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET Lab Work Order Number Abandoned Mining Waste- Torch Lake PCB SOIL/SEDIMENT 5650 M 31000098 shirevb 14 Keranon & Liebaci Dept-Division-District CC Email 2 to send additional reports to Project Due Date Sample Collector Phone 44251 RRD-PSS-GSU 906 337-0387 CETIBILITY C WESTONSOLUTIONS State Project Manager Keranena C michigan gov Accept Analysis hold time codes: Yes/No Jeff Pincumbe Weston Solution State Project Manager Ema Overflow Lab Choice 1 Project 1000000 JUL Binkl pincumbei No State Project Manager Phone Overflow Lab Choice 2 517-335-6418 900583545 Lab Use Containe ylaO Field Sample Identification Comments Count 8/19/14 CHLL- 58 65 . 3"-9" 1430 2 CHLL- SB 71 1535 <u>Co-12"</u> CHLL- 5B 3 1520 <sup>CHLL-</sup> SB つ3 3-9" 1510 5 CHLL- SB 135 05 0.6" 1700 6 CHLL- SB 136 0266 1710 7 CHLL- SB 129 0-60 1720 CHLL- SBIZE 8 1730 9 CHLL-DM 01 8/a0/14 0955 8/20/14 CHLL-10 DM 0.2 1000 ORGANIC CHEMISTRY METALS CHEMISTRY PACKAGES MS - TOTAL METALS GENERAL CHEMISTRY VOA - Volatile Organic Acidic 12345678910 OpMemo2 - Total Silver - Ag 1 2 3 4 5 6 7 8 9 10 GS - General Chemistry 1 2 3 4 5 6 7 8 9 (0) 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 Volatiles - Full List (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,Y,Zn) Aluminum - Al Total Cyanide - CN 1 2 3 4 6 607 8 6 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Michigan10 - Total 12345678(910) Arsenic - As Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 Chlorinated only Barium - Ba (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn) Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 GRO Beryllium - Be Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 Cobalt - Co Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10 Chromium • Cr OS - Pesticides, PCBs Copper - Cu Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 102 3 4 5 6 7 8 6 10 Pesticides only Mercury - Hg PERson Lithium - Li 12345678910 Toxaphene Manganese - Mn 1 2 3 4 5 607 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo BNA - Base Neutral Acids Nickel - NI BNAs Lead - Po PNAs only 12345678 9 10 Antimony - Sb 12345678910 BNs only Selenium - Se 12345678910 Strontium - Sr 1 2 3 4 5 6 7 B 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Ubrary search - Volatiles 1 2 3 4 5 6 7 8 9 10 Vanadium - V 12345678910 Library Search - 5emiVols 1 2 3 4 5 6 7 8 9 10 Zinc - Zn Finger Print 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 DRO / ORO 1 2 3 4 5 6 7 8 9 10 Potassium + K 12345678910 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodlum - Na 12345678910 Received By Relinquished by Date / Time Print Name JEFF PINLUMBE Kerauen & Org. Chain of Custody Signature: Print Name JEFF PINCUMBE & Org. Signature: Print Name & Org. Signature:

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# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

**ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET** Lab Work Order Number Project Na SOIL/SEDIMEN **Abandoned Mining Waste- Torch Lake PCB** 908 CC Email 1 to send additional reports to Site Code/Project Number Sample Collector 31000098 14 shirevb CC Email 2 to send additional reports to Dept-Division-District Project Due Date Sample Collector Phone RRD-PSS-GSU J. binkley @ westonsolutions.com State Project Manager Keranenae michigan gov Western Solutions Jeff Pincumbe Accept Analysis hold time codes: Yes/No State Project Manager Emai Overflow Lab Choice 1 NO pincumbej Jeff Binkley 10008 State Project Manager Pho Overflow Lab Choice 2 517-335-6418 900-523-5457 Lab Use Collection Collection Only Field Sample Identification Date Time Comments CHILL- SB/40-0-6" 20/14 1 1418 CHIL- SBIY1-0-6" 2 1455 CHLL- SB110 -0-6" 1530 1 3 CHIL- SB 109-0-6" 4 1535 5 CHLL- Si3 69 -0-6" 6 CHLL- SB 74 R - 0-6" 7 CHLL-8 CHLL-9 CHLL-10 CHLL-ORGANIC CHEMISTRY METALS CHEMISTRY PACKAGES MS - TOTAL METALS GENERAL CHEMISTRY VOA - Volatile Organic Acidic GS - General Chemistry 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 Volatiles - Full List [Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn] Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Total Cyanide - CN (D) (4) 5 6 7 8 9 10 (1/2) (4) 5 6 7 8 9 10 (1/2) (6) 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Michigan 10 - Total 1 2 3 4 5 6 7 8 9 10 Arsenic - As Available Cyanide - CN 12345678910 Chlorinated only 12345678910 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn) 8arium + Ba Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 8ervilium - Be Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1.4 Dioxane 12345678910 Cadmium - Cd Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 2 3 4 5 6 7 8 9 10 OS - Pesticides, PCBs Copper - Cu (1)(2)(**4)**(5) 5 6 7 8 9 10 Pesticides & PC8s 12345678910 Iron - Fe 1 2 3 4 5 6 7 B 9 10 1 2 3 4 5 6 7 8 9 10 Mercury - Hg Pesticides only 1 2 3 4 5 6 7 8 9 10 Lithium - U 1 2 3 4 5 6 7 8 9 10 2345678910 Toxaphene Manganese - Mn (3(2)30(5 5 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo BNA - Base Neutral Acids Nickel - NI 1 2 3 4 5 6 7 8 9 10 Lead - Pb (D)(3)(1)5 6 7 8 9 10 BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 5elentum - Se 8Ns only 1 2 3 4 5 6 7 8 9 10 Strontium - 5r 1 2 3 4 5 6 7 8 9 10 Titanium • Ti 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Ubrary search - Volatiles 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Library Search - 5emiVols 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 DRO / ORO 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 Received By Relinguished by Date / Time Print Name PINCUMBE & Org. of Custody Signature: Print Name JEFF PINCUMBE 8/22 Jul 66/8 & Org. Signature: Print Name & Org. Signature:

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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY **ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET** Lab Work Order Number SOIL/SEDIMENT Abandoned Mining Waste- Torch Lake PCB C 08 3 Site Code/Project Number Sample Collector 31000098 14 shireyb Dept-Division-District CC Email 2 to send additional reports to Project Due Date Sample Collector Phone 13-bin kley e westorsolutions. don RRD-PSS-GSU CC Email 3 to send additional reports to Contract Firm State Project Manager Keranena G michigan gol Jeff Pincumbe Western Solutions Accept Analysis hold time codes: Yes/No State Project Manager Ema Overflow Lab Choice 1 Project Contract Firm Primary Contact Jeff Binkley 100081. pincumbei OCA Overflow Lab Choice 2 State Project Manager Phor Primary Contact Phone 517-335-6418 904-523-5457 Lab Use Collection Collection Container Field Sample Identification Date Comments Count 1 CHIL- 93100-0-6" 8/20/14 1035 CHIL- SB(01-0-0" 2 1040 3 CHLL-5B102-0-6" 1 0930 ١ 0855 4 5 CHLL-513 (04-0-10) 1015 CHLL-SB105-0-6" 6 1005 1 CHLL-SB100-0-6" 7 0950 Ì CHILL 53137-0-104 ( 8 1430 CHIL-SB 138-0-0" 9 1422 CHIL-SB1391-0-6" 10  $14\infty$ ORGANIC CHEMISTRY GENERAL CHEMISTRY METALS CHEMISTRY PACKAGES MS - TOTAL METALS GS - General Chemistry VOA - Volatile Organic Acidic OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 Silver - Ag 1 2 3 4 5 6 7 8 9 10 1234567000 Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 (Sb.As.Ba.Be.Cd.Cr.Cu.Co.Fe.Pb.Mn.Hz.Mo.Ni.Se.Az.Tl.V.Zn) Aluminum - Ai 1 2 3 4 5 6 7 8 9 10 Total Cyanide - CN BTEX/MTBE/TM8 only 1 2 3 4 5 6 7 8 9 10 Michigan 10 - Total 12345678910 Arsenic - As 123456760500 Available Cyanide - CN 12345678910 Chlorinated only 1 2 3 4 5 6 7 8 9 10 (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn) Barium - Ba 1234567(8(9)(10) Chem Oxyg Dem - COD GRO 1 2 3 4 5 6 7 8 9 10 Beryllium - 8e 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 1.4 Dioxane 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Kieldahi Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 12345678910 Chromium - Cr 12345678910 1234567 OS - Pesticides, PCBs Copper - Cu Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 (1)(2)(3)(3)(3)(6)(7) 8 9 10 Pesticides only Mercury - Hg 1 2 3 4 5 6 7 8 9 10 PC8s only Lithlum - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Min Toxaphene 12345678910 123456766000 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo BNA - Base Neutral Acids Nickel - NI 1 2 3 4 5 6 7 8 9 10 8NAs 1 2 3 4 5 6 7 8 9 10 lead Pb 1234567(8)(9)(10) Antimony - Sb PNAs only 1 2 3 4 5 6 7 8 9 10 12345678910 BNs only 1 2 3 4 5 6 7 8 9 10 Selenium - Se 12345678910 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium • Ti 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Thallium - Ti 1 2 3 4 5 6 7 8 9 10 Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Library Search - SemiVols 1 2 3 4 5 6 7 8 9 10 Zînc - Zn 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 DRO/ORO 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

	Relinquished by	Received By	Date / Time
φλ	Print Name & Org. Any Kuana	JEFF PIRCUMBE	8/21/4
sto	Signature:	poff Pan	0/4/14 ()
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# **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

Hus Brooks

Authorized for release by: 10/28/2014 5:49:27 PM

Kris Brooks, Project Manager II (330)966-9790

kris.brooks@testamericainc.com

.....LINKS ......

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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.

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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
В	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.
п	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)

ND

NC

Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

Not Calculated

QC **Quality Control** RER Relative error ratio

Reporting Limit or Requested Limit (Radiochemistry) RL

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.

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#### **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.

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## **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

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# **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

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# **Detection Summary**

Client: Michigan Dept of Environmental Quality Project/Site: Abandoned Mining Waste-Torch Lake TestAmerica Job ID: 240-43288-1

Lab Sample ID: 240-43288-1

### Client Sample ID: CHLL-DRUMWC-101514

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	В	10	0.10	mg/L	100		6010B	TCLP
Cadmium	0.070	J	0.10	0.00014	mg/L	1		6010B	TCLP
Chromium	0.0018	JB	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

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# **Client Sample Results**

Client: Michigan Dept of Environmental Quality Project/Site: Abandoned Mining Waste-Torch Lake TestAmerica Job ID: 240-43288-1

Lab Sample ID: 240-43288-1

Matrix: Solid

Client Sample ID: CHLL-DRUMWC-101514 Date Collected: 10/15/14 15:50

Date Received: 10/18/14 09:30

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

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	В	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	JB	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) - TCL	P								
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
Comment of a malatan									

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

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 Su	rogate Rec
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(80-121)	(70-124)	(80-120)	(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

12DCE BFB TOL DBFI
Lab Sample ID Client Sample ID (80-121) (70-124) (80-120) (80-12
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)

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TestAmerica Job ID: 240-43288-1

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

## 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

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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	

LCS LCS

Surrogate	%Recovery	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** 

	IVID	IVID							
Analyte	Result	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

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepare	d Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96	80 - 121	<del>.</del>	10/22/14 17:27	
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** 

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

TestAmerica Canton

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TestAmerica Job ID: 240-43288-1

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

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

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

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

Matrix: Solid

Analysis Batch: 152967

Client Sample ID: Method Blank Prep Type: Total/NA

**Prep Batch: 152752** 

Analyte         Result         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		МВ	МВ							
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	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
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	Barium	ND		0.10	0.0010	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	Cadmium	ND		0.10	0.00014	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	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
Silver ND 0.50 0.00092 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

**Client Sample ID: Lab Control Sample** 

Matrix: Solid

Analysis Batch: 152967

Prep Type: Total/NA

**Prep Batch: 152752** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%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 Client Sample ID: Method Blank **Matrix: Solid** 

Analysis Batch: 152967

**Prep Type: TCLP** 

**Prep Batch: 152752** 

	LB	LB							
Analyte	Result	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 Client Sample ID: CHLL-DRUMWC-101514

Matrix: Solid

Analysis Batch: 152967

**Prep Type: TCLP Prep Batch: 152752** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	JB	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 Job ID: 240-43288-1

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

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

Lab Sample ID: 240-43288-1 MS

Lab Sample ID: 240-43288-1 MSD

Matrix: Solid

Analysis Batch: 152967

Client Sample	ID:	CHL	L-DRI	JMW	C-101514	4
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**Prep Type: TCLP** 

**Prep Type: TCLP** 

Prep Batch: 152752

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

Client Sample ID: CHLL-DRUMWC-101514

**Matrix: Solid** 

Analysis Batch: 152967									Prep	Batch: 1	52752
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	JB	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	ma/L		101	50 - 150	0	20

Lab Sample ID: 240-43288-1 MSD Client Sample ID: CHLL-DRUMWC-101514

**Matrix: Solid** 

Analysis Batch: 152967

**Prep Type: TCLP** Prep Batch: 152752

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	27	В	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

Analysis Batch: 153429

Client Sample ID: Method Blank

Prep Type: Total/NA

**Prep Batch: 152755** 

An	alyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Me	ercury	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** 

мв мв

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 152755

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

Lab Sample ID: LB 240-152646/1-C Client Sample ID: Method Blank

**Matrix: Solid** 

Analysis Batch: 153429

**Prep Type: TCLP** 

Prep Batch: 152755

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

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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 Client Sample ID: CHLL-DRUMWC-101514 **Matrix: Solid Prep Type: TCLP** 

Prep Batch: 152755 Analysis Batch: 153429 Spike MS MS Sample Sample %Rec.

Result Qualifier babbA Result Qualifier Analyte Unit D %Rec Limits Mercury ND 0.00500 0.00504 mg/L 101 50 - 150

Lab Sample ID: 240-43288-1 MSD Client Sample ID: CHLL-DRUMWC-101514

**Matrix: Solid** Prep Type: TCLP Analysis Batch: 153429 Prep Batch: 152755

Sample Sample Spike MSD MSD Result Qualifier Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Mercury  $\overline{\mathsf{ND}}$ 0.00500 0.00498 mg/L 100 50 - 150 20

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

Lab Sample ID: MB 240-152769/1-A Client Sample ID: Method Blank

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 152835 **Prep Batch: 152769** MR MR

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

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

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 152835 Prep Batch: 152769

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 9.03 Cyanide, Total 8 36 68 - 123 mg/Kg

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

Lab Sample ID: MB 240-152692/8-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 152784 Prep Batch: 152692 MB MB

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

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

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 152784 **Prep Batch: 152692** LCS LCS Spike %Rec.

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

Lab Sample ID: 240-43288-1 MS Client Sample ID: CHLL-DRUMWC-101514

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 152784 Prep Batch: 152692

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

# **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				Client Sample ID: CHLL-DRUMWC-101514
Matrix: Solid				Prep Type: Total/NA
Analysis Batch: 152784				Prep Batch: 152692
	Camania Camania	Cuiles	MCD MCD	0/ Doc

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

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# **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

10/28/2014

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## **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

Date Collected: 10/15/14 15:50 Date Received: 10/18/14 09:30 Lab Sample ID: 240-43288-1

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	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	<b>Expiration Date</b>
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

<sup>\*</sup> Certification renewal pending - certification considered valid.

TestAmerica Laboratories, Inc.

# CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



240-43288 Chain of Custody

#### Michigan Department of Environmental Quality Laboratory Services Section

## **Analysis Request Sheet**

10F3

1	Lab Work Order Number Project N	ame					1	Matrix	, ,
	1410132 AB	ANDONED MINING	y hastes	S-TORCE	1 LAK	CE NSSI	TE	SOIL/SEDIMENT	] :
	Site Code/Project Number	AY CC Email 1				Project TAT Days		Collector	
	31000098	13 j.bink	eleye we	STON SOLUT	02560	Project Due Date		LIEBAU Collector Phone	
	DER-ECD-VP	44(25) CC Email 2				Project Due Date		10-370-0524	7 :
	State Project Manager	PCA CC Email 3				] L	Contrac		
	AMY KERANGN	30872	·			Accept Analysis	WE	STON SOUTIONS	] ;
	State-Project Manager, Email	Project Overflow Lab Cli		\		hold time codes	==-===	t Firm Primary Contact	
	KERANENA@	456990 OVERNOW CONTROL	OICO 2 T	tw-e(i	<u> </u>	No		FF BINKUT	
	900-337-0389	00					acx	0-523-5457	
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	2 02 am -5502			1413					4
	3 63 CHR-5503			1346	15002				4
	4 64 CHU-5504			1430	2802 140ML		,,.,		-
	5 C5 CHU-5505			1445					-
	6 NG CHU-5504	-101514		1450				***************************************	
	7 07 CUPUL-5507	-101514		1517	٣				
	8 - CHU-5508	<del>'नठ\5 \</del>			DE				1
		-101514			DU				1
X		4WC-101514		1950	į,	WASIEC	HARAGA	CITELIZATION	1
Ja	ORGANIC CHEMISTRY  VOA - Volutile Organic Acidie	• METALS CHEMISTRY I	ACKAGES 4 5 6 7 8 9 10		TOTAL MI		GS - General	GENERAL CHEMISTRY Chemistry	-
	Volatiles - Full List BTEX/MTIES/TMB-only Chilor/inated only GRO 1,4 Dioxano  OS - Pasticidaes, PCBs	) 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn) 10 10 10		Arsento - As Barlum - Ba Beryillum - Bo Cadmium - Cd Cobalt - Co Chromium - Cr Copper - Cu	1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3	4 5 6 7 8 9 10 (1) 5 7 8 9 10 (1) 6 7 8 9 10 4 4 5 6 7 8 9 10 4 7 6 7 8 9 10	Total Cyanide Available Cya Chem Oxyg C Total Org Car Kjeldahi Nitro Total Phosph	nilde - CN 1 2 3 4 5 5 7 8 9 10 Dem - COD 1 2 3 4 5 5 7 8 9 10 rbon - TOC 1 2 3 4 5 5 7 8 9 10 ogen - KN 1 2 3 4 5 6 7 8 9 10	
	Posticides & PCBs	3 10 3 10		Mercury - Hg Uthlum - Li	1 2 3	5678910	TOLE	Vacs (B)	
	Toxaphene 1 2 3 4 5 7 8 9	10		Manganese - Mia Molybdenum - M	123	416(C) 8 9 10 5 6) 7 8 9 10			
	BNA - Base Noutral Acids BNAs 1 2 8 4 5 6 7 8 9	0 10		Nickel - Ni Lead - Pb	123	45678910	TOP	METALS(O)	
	PNAs only 129456789 BNs only 123456789	10		Antimony - Sb Selenium - Se	123 123	4 5 6 7 8 9 10 4 5 6 7 8 9 10 4 5 6 7 8 9 10	Sin	(Fiele - react	10.40
				Strontium - Sr Titenium - 17	123	45678910		janicle - recu	
	Organic Specialty Requests  Ubrary search - Volatiles 1 2 3 4 5 6 7 8 9			Thailium - Ti Vanadium - V	1 2 3	45678910	<u> </u>	janiale - (eau	ساعر وما استر والله
	Library search - Semilyols	1 10		Zinc - Zn Calcium - Ca Potassium - K	1.23	4 5 6 7 8 9 10 4 5 6 7 8 9 10 4 5 6 7 8 9 10			•
		1		Magnesium - Mg Sodium - Na	123	4 5 6 7 8 9 10			1 :
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	Signatura;	<u>LDC</u>		12-1	rhol	/N			
	DEG Laboratory Services Sacrothol	10/17 16:3	5 Ma	lester The	ime	X	19-18-		chigan.gov/deq
	Phone: 617-335-9800			TA-Ca	ton			EQ	P4013 (7/201

TestAmerica Canton Sample Receipt Form/Narrative	Login # : 43186
Canton Facility	Quality Cooler unpacket by:
The state of the s	Cogler unpacket by:
Cooler Received on Opened on	1874 Journache In
	estAmerica Courier Other
TestAmerica Cooler # Foam Box Client Cooler	Box Other
Packing material used Bubble Wrap Foam Plastic Bag COOLANT: Wet Ice Blue Ice Dry Ice Water	None Other
1. Cooler temperature upon receipt	
IR GUN# A (CF +2 °C) Observed Cooler Temp °C	Corrected Cooler Temp. °C
IR GUN# 4 (CF -2 °C) Observed Cooler Temp°C	Corrected Cooler Temp. °C See Multiple
IR GUN#5 (CF 0 °C) Observed Cooler Temp. °C	Corrected Cooler Temp. °C Cooler Form
IR GUN#8 (CF 0°C) Observed Cooler Temp. 2, 2°C	Corrected Cooler Temp. 3.8°C
2. Were custody seals on the outside of the cooler(s)? If Yes Qu	nantity Yes (No.
-Were custody seals on the outside of the cooler(s) signed & dated	
-Were custody seals on the bottle(s)?	Yes (No.
3. Shippers' packing slip attached to the cooler(s)?	(Yes OBO) T
4. Did custody papers accompany the sample(s)?	(Tes No
5. Were the custody papers relinquished & signed in the appropriate p	place? Aes No
6. Did all bottles arrive in good condition (Unbroken)?	(Res) No
7. Could all bottle labels be reconciled with the COC?	Cres Livo
8. Were correct bottle(s) used for the test(s) indicated?	Tes' No Tes' No
9. Sufficient quantity received to perform indicated analyses? 10. Were sample(s) at the correct pH upon receipt?	Yes No NA pH Strip Lot HC412469
11. Were VOAs on the COC?	Yes (No)
12. Were air bubbles >6 mm in any VOA vials?	Yes No MA
13. Was a trip blank present in the cooler(s)?	Yes (No)
151 11 110 11 112 5 11121 5 110011 11 112 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
Contacted PM Date by	via Verbal Voice Mail Other
Concerning	
	Samples processed by:
14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES	Samples proceeded oy.
15. SAMPLE CONDITION	d 1 11 11
Sample(s) were received after	
Sample(s)	to TPU 117, annual control of the O
Sample(s)were received	ed with outgois >0 time in distillerst. (Lightly Light)
16. SAMPLE PRESERVATION	
Sample(s) Preservative(s) added/Lot number(s):	were further preserved in the laboratory.

DTMB-0414 (R 1/15)

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?

<u>Answer:</u> 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 Mining Wastes – Torch Lake Non-Superfund Site 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?	Hazardous Waste	o Non-Hazardous Waste CD	TSCA Waste activation oil to carcass/RCRA Empty Drum
	HLL-BA-CONTAINER-01		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		Х	

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

												Was	e Char	acteriza	ition
Container Number		Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	Non-Hazardous Waste	TSCA Waste	Carcass/RCRA Empty Drum
Aba	ndone	ed Containers - Hubbell Coal Doc	:k												
1	1 C	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	Х			
2	<sub>2</sub> C	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	Х			
3	<sub>3</sub> C	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				Х
4	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	Х			
		CHLL-HPA-DRUM-04B		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X		
12-	_	CHLL-HPA-DRUM-04C CHLL-HPA-DRUM-04D		014-307-001-25 014-307-001-25		88° 25' 9.35" W 88° 25' 9.35" W	47° 10' 43.92" N 47° 10' 43.92" N			Yes Yes	No No	Х	Х		
		CHLL-HPA-DRUM-04E		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92 N			Yes	No	^	Х		
		CHLL-HPA-DRUM-04F		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		X		
4	1 C	CHLL-HPA-DRUM-04G		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		Χ		
		CHLL-HPA-DRUM-04H		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		Χ		
		CHLL-HPA-DRUM-04I		014-307-001-25		88° 25' 9.35" W	47° 10' 43.92" N			Yes	No		Х		
6	C	CHLL-HPA-DRUM-04-Carcass CHLL-HPA-DRUM-05	10/6/2014	014-307-001-25 014-307-001-25	NA	88° 25' 9.35" W 88° 25' 10.04" W	47° 10' 43.92" N 47° 10' 38.50" N	Rusted, deteriorating 55 gallon drum, contents are hardened black material.	3	No No	Yes No		Х		X
6	4	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		Х		
	_	CHLL-HPA-DRUM-07	7/27/2016	014-307-001-25	NA NA	88° 25' 5.82" W	47° 10' 48.43" N	Crushed drum	On hillside beneath a fallen utility pole	No	Yes				X
6		CHLL-HPA-DRUM-08 CHLL-HPA-DRUM-09	7/27/2016 7/27/2016	014-307-001-25 014-307-001-25	NA NA	88° 25' 10.01" W 88° 25' 12.40" W	47° 10' 42.93" N 47° 10' 43.08" N	Rusted drum remnants Rusted crushed drum		No No	Yes Yes				X
_		ed Containers - Mineral Building	772772010	014 001 001 20	197	36 20 12.46 W	47 10 40.00 11	Traded ordened drain		110	100				
	1 C	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				Х
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				Х
1	_	CHLL-HPA-DRUM-12	Spring/Summer 2016	014-307-001-75	NA NA	88° 25' 17.37" W	47° 10' 38.21" N	Crushed drum	Had leaked black tarry material	No	No	Х			
- 2	_	CHLL-HPA-DRUM-13 CHLL-HPA-DRUM-14	Spring/Summer 2016 Spring/Summer 2016	014-307-001-75 014-307-001-75	NA NA	88° 25' 13.88" W 88° 25' 13.47" W	47° 10' 36.39" N 47° 10' 35.95" N	Crushed blue poly drum	Partially melted	No No	Yes				X
		CHLL-HPA-DRUM-15	Spring/Summer 2016		NA NA	88° 25' 13.68" W	47° 10' 35.38" N			Yes	Yes				X
7	7 C	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
		CHLL-HPA-DRUM-17	Spring/Summer 2016	014-307-001-75	NA	88° 25' 11.40" W	47° 10' 38.20" N			No					X
		CHLL-HPA-DRUM-18 CHLL-HPA-DRUM-19	Spring/Summer 2016	014-307-001-75	NA NA	88° 25' 11.33" W	47° 10' 38.15" N		In the decisions ditch		No				
		CHLL-HPA-DRUM-19 CHLL-HPA-DRUM-20	Spring/Summer 2016 Spring/Summer 2016	014-307-001-75 014-307-001-75	NA NA	88° 25' 10.97" W 88° 25' 12.62" W	47° 10' 38.28" N 47° 10' 36.06" N	Black poly drum  Crushed drum	In the drainage ditch	Yes No	Yes				X
		CHLL-HPA-DRUM-21	8/10/2016	014-307-001-75	NA NA	88° 25' 13.19" W	47° 10' 35.80" N		Partially buried	Yes	Yes				X
		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					X
		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
		CHLL-HPA-DRUM-24 CHLL-HPA-DRUM-25	8/10/2016 8/10/2016	014-307-001-75 014-307-001-75	NA NA	88° 25' 14.70" W 88° 25' 14.70" W	47° 10' 35.94" N 47° 10' 35.94" N	Drum carcass		No	Yes Yes				X
<u> </u>	U C	DI ILL-( IF A-DINOIVI-20	0/10/2010	014-307-001-73	INA	JU ZJ 14.7U W	#1 10 33.34 IN	Druin carcass	!	INU	162				^

# Abandoned Mining Wastes – Torch Lake Non-Superfund Site ABANDONED CONTAINER REMOVAL INVENTORY

# Table 3 Abandoned Container Removal Inventory Hubbell Slag Dump and Beach Area C&H Lake Linden Operations Houghton County, Michigan

											Waste C	haracteri	zation	
Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	TSCA Waste	Carcass/RCRA Empty Drum	
Aban	doned Containers - Hubbell Sla													
1	CHLL-SD-DRUM-01	10/7/2014	014-409-002-00	NA	88° 25' 34.91" W			Lying in a rip rap lined drainage ditch.	No				X	4
2	CHLL-SD-DRUM-02	10/7/2014	014-409-002-00	NA	88° 25' 33.50" W	47° 10' 25.00" N	Empty drum, steel, 55-gallon, no lid, intact, empty	Lying on its side in standing water.	Yes	Yes			X	_
														4

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

											Wast	e Chara	acterization
Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	Non-Hazardous Waste	TSCA Waste Carcass/RCRA Empty Drum
Abando	oned Containers - Historic Mul	nicipal 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
Abando	oned Containers - Near M-26 H	lillside and Treatment P	onds										
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		Χ	
	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			X
	CHTC-TS-DM04	Spring 2016	NA	NA	88° 26' 40.78" W		Partially buried steel carcass	Along hillside between M-26 and treatment lagoons.	No	Yes			X
	CHTC-TS-DM05	Spring 2016	NA	NA	88° 26' 40.52" W		Partially buried steel carcass	Along hillside between M-26 and treatment lagoons.		Yes			X
	CHTC-TS-DM06	Spring 2016	NA	NA	88° 26' 43.23" W		Partially buried steel 55-gallon drum	Along hillside between M-26 and treatment lagoons.		Yes			X
6	CHTC-TS-DM07	Spring 2016	NA	NA	88° 26' 37.70" W		Rusted steel carcass	Along hillside between M-26 and treatment lagoons.		Yes			X
7	CHTC-TS-DM08	Spring 2016	NA	NA	88° 26' 38.14" W		Rusted-through with contents	Along hillside between M-26 and treatment lagoons.		No		Χ	
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		Χ	

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

											Was	e Chara	acterization
Container Number	Container Identification	Sample / Inspection Date	Property Identification Number	Laboratory Work Order Number	Longitude	Latitude	Container Description	Notes	Container Intact?	Container Empty?	Hazardous Waste	Non-Hazardous Waste	TSCA Waste Carcass/RCRA Empty Drum
Abando	ned Containers - Tamarack F	Reclamation Plant Comp	lex										
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			х
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	х		
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 collect	No	No		Х	
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			Х
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			Х
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	Χ		
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
	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				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		Contained used oil, solidified for disposal	Yes	No		X	
	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				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
Abanda	and Containors Tomorock	tamp Mill Compley											
Abando	ned Containers - Tamarack S	tamp will Complex	1				Course wasted draws appropriate pilled excelled	Lea transh in the former atoms will foundation. We adad are midure, up the hill between the weekleys and transfer and	T	Т	ı	1	
	CHTC-TP-DM11	5/28/2015	009-013-004-50	1508214	88° 26' 40.52" W	47° 9' 50.16" N		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	No	No		Х	Х
1-7			ĺ				carcasses.	were collected of adjacent to the drums on 8-20-15.					



#### 5611 W. HEMLOCK STREET MILWAUKEE, WI 53223

WS Number:	
Approval #:	

# Badger Disposal of WI., Inc.

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

Street of the street	GHWAY M-26				2505A.V	ddress: P.C	A STATE OF THE STA	10000		_
City, State, Zip: H	UBBELL, MI 4993				City, Sta	te, Zip: BAI	K RIVER, MI	Tree !	TENNE OF VICTOR	-
Contact: AMY KEI	RANEN			_		_		Cont	act: RICK RIEDY	_
Telephone: 906337	70389 Ext.	FAX	#:		Phone N	umber: 9064	669900	FAX#: 9	064662641	-
EPA ID: MIK1937	55066 SIG	Code:	This prof	ile sheet was	complete	d using: 🔯	General Knowl	edge 🛭 Analy	rsis (attached) MSD	S Both
B. WASTE DESCRI Name of Waste: U			ACTERISTICS	CAY						
Process Generating	Waste: ABANDO	NED CONTAIN	ER REMOVAL		_		_			
Color BROWN	Odor:	None	□Mild	☐ Strong	Layers	Single !	Layer [	Double Laye	r Multi-Layer	
Free Phases:	Liquid	- % E	Powder	_%	<b>⊠</b> Solid	100	% 🔲 Sludge	%	Debris	%
Filter cake	% 🗆 Meta	Filings	% Gran	ules	% □	Soil	% Acro	sol 🗆 yes 🗀	oo Containers? Dy	es 🔲 no
C. RCRA AND DOT	INFORMATION	100				1000				
Is this a USEPA Has Is this a DOT Haza Is this Universal W Proper Shipping Na	rdous Material? aste?	⊠Yes □	No Anticipate	t the USEPA ed Annual Vo B Waste?	olume:_16	55/	es; D008 Units; GAL Yes PBC conc	Qne time s	hipment ⊠yes ppm	Ппо
Hazardous Class #:	9 PG #: II	U	N/NA #: 3077	Additional	Description	on:				
Method of Shipmer	it: Bulk l	iquid 🗆	Bulk Solid	<b>⊠</b> Drum	Container	Type: STE	EL Size:	85		
O. SPECIAL HANDI	ING INSTRUCT	ONS If	Special handling to	chniques are	required,	specify:				
Treatment:	Sand Indicate		a representative sa	to a late of the second of						
E. METALS (Indicate	in parts per million	The state of the s					☐Generator	Knowledge	□TOTAL	
Metal	Less than	or Actual	Metal		Less t		or Actual	Metal	Less than	or Actual
Arsenic	⊠<5 □<500		Mercury		⊠<0.2	□ <20		Nickel	□ <5 □ <134	
Barium	<b>⊠</b> <100		Selenium		<b>⊠&lt;1</b>	CJ <100		Thallium	□<5 □ <130	
Cadmium	⊠<1 □ <100		Silver		<b>103&lt;5</b>	77 2022		Zinc	□<5	
Chromium	<b>⊠&lt;</b> 5		Chromium-Hex		Ø<5	□<500				
Lead Combined A	/°□<5 ⊠ <500		Copper		<b>□</b> <5	500000				
PHYSICAL/CHEM	01 1:05, 50 0 F vit	IEC			777		and the same			
Specific Gravity: Total Suspended S pH:	□<0.8 olids: □0.5 □<2	0.8-1.0	□1.0-1.2 0.5-2.0 2-6	□2.0-5.0 ⊠6-8 □4-8	1.2-1,4	□5,0-20 □8-10 □8-12	□1.4-1.7 □>20 □10-12.5 □12-16	Actual:	Actual:	
BTU's:	□<1 □<1	□73-140°F	1-4	□>140-20	000	⊠>200°F	1000	Actual:	_	
Flash Point Degree Sulfur (WT):	F: □<73°F ⊠<0.5	Committee of the commit	0.5-2.0		□2-5	E3-200 I	□ >5.0	Actual:		
HAZARDOUS CH	The second secon							110000	The 200	
eactivity: None iscosity: Low lalogens:	☐Explosive ☐Medium %Chlorine	□Pyrophoric □High	□Shock S		□Water I t? % Bro	⊠Yes	☐Etiological ☐No (If yes,	□Radioacti please list in U % Iodine	ve Acutely Haza	
yanides (ppm), CHEMICAL COM	PCB's (ppm) ≤0,	85 AUG Per	sticides: (ppm)		Sulfides:			Phenolies: ()	ppm)	
SEE ATTACHED LA .862134-01, L862134 03, L862134-04, L862 .862134-08	-02, L862134-	100%					*5			
							96			
		%					%			_

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

state proj mgr.

0/19/14

DATE



# ANALYTICAL REPORT October 05, 2016

U.P. Environmental Services, Inc.

L862134 Sample Delivery Group:

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: Jahn V Houkins

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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<sup>9</sup>Sc: Chain of Custody

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•	q,	K

•	SAIVIFLE ST	JIVIIVIAI	X I	01	(L L) (B) (1) (1101(WID
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
	Datch	Dilution	Droparation	Analysis	Analyst
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
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
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
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	Analysis	Analyst
			date/time	date/time	
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	Analysis	Analyst
			date/time	date/time	
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 Wet Chemistry by Method 9045D	WG912345 WG913869	1 1	09/29/16 13:39 10/04/16 14:54	09/29/16 19:00 10/04/16 14:54	MAJ JJL
Wet Chemistry by Method D93/1010A	WG913889 WG911788	1	09/29/16 01:53	09/29/16 01:53	MZ
Wet Chemistry by Method 1937/1010A	W0311766	ı	09/29/10 01.33	03/23/10 01.33	IVIZ
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:	PPO IFCT:		SDG:	DATE/TIME:	P















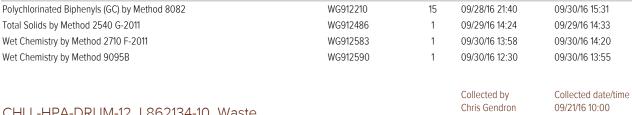




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CHLL-HRA-DRUM-05/06 L862134-06 Waste			Collected by Chris Gendron	Collected date/time 09/21/16 17:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG912412	1	09/29/16 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
CHLL-HPA-DM-02 L862134-07 Solid			Collected by Chris Gendron	Collected date/time 09/21/16 18:00	Received date/time
Crice-ira-divi-02 1802134-07 30110					
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by Chris Gendron	Collected date/time 09/21/16 18:00	Received date/time
CHLL-HPA-DM-02 L862134-08 Waste			Giris Genaron	03/21/10 10:00	03/27/10 03:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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/tim 09/27/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst



CHLL-HPA-DRUM-12 L862134-10 Waste	Chris Gendron	09/21/16 10:00	09/27/16 09:00		
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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



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WG911845

09/27/16 22:38

09/27/16 22:38

JNS

KDW

AMC

AMC

Received date/time

LJN

Preparation by Method 1311

#### CHLL-HPA-DRUM-12 L862134-10 Waste

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

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

Method

Preparation by Method 1311

Wet Chemistry by Method 9012 B

Wet Chemistry by Method 9045D

Wet Chemistry by Method D93/1010A

Wet Chemistry by Method 9034-9030B

Collected by Chris Gendron

Preparation

09/27/16 16:37

10/03/16 07:34

10/04/16 23:11

10/03/16 12:22

10/03/16 17:40

10/04/16 14:54

09/29/16 01:53

date/time

SAMPLE SUMMARY

Dilution

1

1

Batch

WG911888

WG912639

WG912711

WG913176

WG913004

WG913869

WG911788

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

Analysis

date/time

09/27/16 16:37

10/03/16 18:37

10/04/16 23:11 10/03/16 14:56

10/04/16 14:59

10/04/16 14:54

09/29/16 01:53

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

Analyst

LJN

JF

LRL

DR

MAJ

JJL

MZ

<sup>2</sup> Tc

















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.

CASE NARRATIVE





















Technical Service Representative

John Hawkins

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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
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

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#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	3.11		1	09/30/2016 14:20	WG912583



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#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
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

r diyemonnated biphenyis (Ge) by Method GG2								
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	mg/kg		mg/kg		date / time			
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		





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# Collected date/time: 09/21/16 16:30 Preparation by Method 1311

					11
	Result	Qualifier	Prep	Batch	
Analyte			date / time		Ē
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845	ľ
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888	Ļ
Fluid	1		9/27/2016 10:38:49 PM	WG911845	[3
Initial pH	6.84		9/27/2016 10:38:49 PM	WG911845	L
Final pH	5.44		9/27/2016 10:38:49 PM	WG911845	[







#### Wet Chemistry by Method 9012 B

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









# Wet Chemistry by Method 9034-9030B

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

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#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	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

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

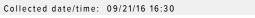
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Arsenic	ND		0.100	5	1	09/30/2016 18:21	WG912283
Barium	0.0978		0.0500	100	1	09/30/2016 18:21	WG912283
Cadmium	ND		0.0200	1	1	09/30/2016 18:21	WG912283
Chromium	ND		0.100	5	1	09/30/2016 18:21	WG912283
Lead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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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











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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	





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

# SAMPLE RESULTS - 03

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L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	3.55		1	09/30/2016 14:20	WG912583



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#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

r drychlorhlated biphenyls (GC) by Method 6062								
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	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		



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

# Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

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





#### Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-04 WG913869: 7.05 at 20.1c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier RDL	Limit	Diluti	on Analysis	Batch
Analyte	mg/l	mg/I	mg/l		date / time	
Benzene	ND	0.05	00 0.50	1	10/04/2016 20:57	WG912711
Carbon tetrachloride	ND	0.05	00 0.50	1	10/04/2016 20:57	WG912711
Chlorobenzene	ND	0.05	00 100	1	10/04/2016 20:57	WG912711
Chloroform	ND	0.25	0 6	1	10/04/2016 20:57	WG912711

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

## SAMPLE RESULTS - 04

#### ONE LAB. NATIONWIDE.

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

Volatile Organic Compounds (OC/MS) by Method 0200B									
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch		
Analyte	mg/l		mg/l	mg/l		date / time			
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		













	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l	<u> </u>	mg/l	mg/l		date / time	<del></del>	
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	9
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	







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52134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	0.796		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-05 WG912590: Contains No Free Liquid



# Polychlorinated Biphenyls (GC) by Method 8082

	Result	Qualifier	RDL	Dilution	Analysis	Batch			
Analyte	mg/kg		mg/kg		date / time				
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			



#### Sample Narrative:

8082 L862134-05 WG912210: Dilution due to sample volume

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L862134

#### Preparation by Method 1311

1 2				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







Cn

#### Wet Chemistry by Method 9012 B

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





#### Wet Chemistry by Method 9034-9030B

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





### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-06 WG913869: 6.67 at 20.1c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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









<sup>°</sup>Qc

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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







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

# SAMPLE RESULTS - 07

#### ONE LAB. NATIONWIDE.

L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.41		1	09/30/2016 14:20	WG912583



Cn

#### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-07 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

СQс

#### Polychlorinated Biphenyls (GC) by Method 8082

- /  -	- ) - ( / -	,					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg		date / time		
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-xvlene	94.9		29.2-144		09/30/2016 15:03	WG912210	





862134

#### ONE LAB. NATIONWIDE.

## 果

# Collected date/time: 09/21/16 18:00 Preparation by Method 1311

	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
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





Cn

### Wet Chemistry by Method 9012 B

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





### Wet Chemistry by Method 9034-9030B

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





### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-08 WG913869: 6.95 at 19.9c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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











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L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>T<sub>0</sub>

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.01		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-09 WG912590: Contains No Free Liquid



СQс

# Polychlorinated Biphenyls (GC) by Method 8082

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	mg/kg		mg/kg		date / time			
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		



#### Sample Narrative:

8082 L862134-09 WG912210: Dilution due to sample volume

#### ONE LAB. NATIONWIDE.

L862134

# Collected date/time: 09/21/16 10:00 Preparation by Method 1311

					т.
	Result	Qualifier	Prep	<u>Batch</u>	l
Analyte			date / time		Ē
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845	ľ
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888	L
Fluid	1		9/27/2016 10:38:49 PM	WG911845	3
Initial pH	7.25		9/27/2016 10:38:49 PM	WG911845	L
Final pH	4.83		9/27/2016 10:38:49 PM	WG911845	_







#### Wet Chemistry by Method 9012 B

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





#### Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-10 WG913869: 6.34 at 20.3c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

# SAMPLE RESULTS - 10

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

Voiatile Organic Com	pourius (GC	C/IVIS) DY IVIE	etilou 6200	JB			
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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













	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		Į
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	L
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	l l
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	



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Total Solids by Method 2540 G-2011

L862134-01,03,05

#### Method Blank (MB)

**Total Solids** 

(MB) R3167449-1 09/30/16 12:56 MB Result MB Qualifier MB MDL Analyte % %

MB RDL

%

0.00130

### 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	DUP Qualifier	DUP RPD Limits
%	%		%		%

Analyte **Total Solids** 83.7 83.3 0.426 5

#### Laboratory Control Sample (LCS)

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

, ,	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	



Ss

<sup>†</sup>Cn

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ACCOUNT:

U.P. Environmental Services, Inc.

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Total Solids by Method 2540 G-2011

L862134-07,09

#### Method Blank (MB)

Analyte

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

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

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	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	t LCS Result	LCS Rec.	Rec. Limits
Analyte	%	%	%	%
Total Solids	50.0	50.0	100	85.0-115



Ss









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Wet Chemistry by Method 9012 B

L862134-02,04,06,08,10

#### Method Blank (MB)

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

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







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

(00) 1 000104 00	10/02/10 14-54	(DLID) D21C7712 C	10/02/10 14-55
(OS) L862134-08	10/03/10 14:54 • 1	(DUP) R316//13-6	10/03/10 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





# <sup>6</sup>Qc

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

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

(03) 2002 103 00 10/03/1	10 14.55 - (DOI ) 1	(31077137 10	000/10 10.0			
	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	<u>P1</u>	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

(200) (1010) / 10 2 10	, ,		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

(OS) L862134-04 10/03/	16 14:44 • (IVIS) R.	310//13-4 10/0	3/16 14:45 • (IV	15D) R316//13-5	0 10/03/16 14:2	<del>1</del> 8							
	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20	

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Wet Chemistry by Method 9034-9030B

L862134-02,04,06,08

#### 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	







(LCS) WG912345-2 09/29/16 19:00 • (LCSD) WG912345-3 09/29/16 1	0 • (LCSD) WG912345-3 09/29/16 19	2 09/29/16 19:00 • (L	LCS) WG912345-2	(L
--	-----------------------------------	-----------------------	-----------------	----

(LCS) WG912345-2 09/29	(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			





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Wet Chemistry by Method 9034-9030B

L862134-10

#### 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

# <sup>2</sup>Tc





#### 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	<b>DUP</b> Qualifier	DUP RPD Limits					
Analyte	mg/kg	mg/kg		%		%					
Reactive Sulfide	ND	ND	1	0.000		20					





# <sup>6</sup>Qc



(200) 11 00 10 00 1 2	Spike Amount	,	LCSD Result		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





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#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

L862134-02,04,06,08,10

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

(OS) L862134-02 10/04/16	14:54 • (DUP) V	VG913869-3 10	0/04/16 14	:54		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Su	su		%		%

6.69







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

6.66

(OS) L862756-29 10/04/16	(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54											
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits						
Analyte	su	SU		%		%						
На	8.05	8.00	1	0.623		1						

0.449







(LC3) WG913609-1 10/04/	10 14.54 • (LCSL	) WG313663	2 10/04/10 14.5	) <del>4</del>						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	SU	su	%	%	%			%	%
pH	6.11	6.18	6.18	101	101	98.4-102			0.000	1





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Wet Chemistry by Method D93/1010A

L862134-02,04,08,10

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

(OS) L862134-10	09/29/16	01:53 • (DUP) \	WG911788-3	09/29/16 0	1:53	
		Original Result	DUP Result	Dilution	DUP RPD	DU

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

# Ss

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

(OS) L862252-18 09/2	29/16 01:53 • (DUP) '	WG911/88-4	09/29/16 (	1:53	
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>
Analyto	Dog E	Dog E		0/_	

Analyte	Deg. F	Deg. F		%	%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000	10







(LCS) ***C5117001 05/25/1	0 01.55 - (ECSE	) 110511700 2	03/23/10 01.3	5						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	82.8	82.8	101	101	93 0-107			0.000	20

**DUP RPD Limits** 





Ignitability

Ignitability

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862134-06

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

(OS) L862543-01 10/04/16	5 12:15 • (DUP) W	/G912997-1	10/04/16 12:1	15	
	Original Result	<b>DUP</b> Result	Dilution	DUP RPD	DUP Qualif
Analyte	Deg. F	Deg. F		%	

79.9

sult	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
		%		%	
	1	0.351		10	





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

79.6

145

(OS) L862604-02 10	/04/16 12:15 • (DUP) V	VG912997-4	10/04/16 12	2:15	
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD	<b>DUP</b> Qualifier
Analyte	Deg. F	Deg. F		%	

145







0.124

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

(LCS) WG312337-2 10/04/10 12:13 • (LCSD) WG312337-3 10/04/10 12:13										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	83.1	82.7	101	101	93.0-107			0.483	20

**DUP RPD Limits** 

%

10





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Mercury by Method 7470A

L862134-02,04,06,08,10

#### 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









(OS) I 862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

(00) 2002 02 00)	00/10/10/2/	0.07202 . 00		(02)	02 0 00/00/.	0 10.07							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	n 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	







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Metals (ICP) by Method 6010B

L862134-02,04,06,08,10

#### Method Blank (MB)

Lead

Silver

Selenium

(MB) R3167437-1 (	09/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	F
Analyte	mg/l		mg/l	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	Γ
Lead	U		0.0167	0.0500	
Selenium	U		0.0333	0.100	L L
Silver	U		0.0167	0.0500	

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

(LCS) R3167437-2 09/30/1	6 18:02 • (LCSE	) R3167437-3	09/30/16 18:04	4							
	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	%	%	%			%	%	
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	

80-120

80-120

80-120

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

9.26

9.16

8.93

92

92

89

93

92

89

(OS) L862118-02 09/30	D/16 18:07 • (MS) R	3167437-5 09/	30/16 18:12 • (	MSD) R3167437	7-6 09/30/16 1	18:15						
	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	%	%		%			%	%
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
_ead	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

10.0

10.0

10.0

9.16

9.18

8.94

20 20

20



















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

# Method Blank (MB)

(MB) R3167391-3 09/30/16	6 14:59			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

# 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							
	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	%	%	%			%	%
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		<u>J3</u>	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				





















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

# 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

	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	%	%		%			%	%
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	е				99.8	99.8		79.0-121				
(S) a,a,a-Trifluorotoluene					104	104		90.4-116				
(S) 4-Bromofluorobenzene	ē.				96.1	101		80.1-120				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862134-01,03,05,07,09

#### Method Blank (MB)

(S) Tetrachloro-m-xylene

(MB) R3167087-1 09/29/1	6 08:39			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/08/-2 09/29/	16 08:53 • (LCS	SD) R316/08/-	3 09/29/16 09:	:07							
	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	%	%	%			%	%	
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					

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	9/29/16 09:48	• (MSD) R3167	087-5 09/29	/16 10:02						
	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	%	%		%			%	%
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				

















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

### Method Blank (MB)

(MB) R3167928-3 10/03/16 15:07									
	MB Result	MB Qualifier	MB MDL	MB RDL					
Analyte	mg/l		mg/l	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					

# 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										
	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	%	%	%			%	%
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				

(S) 2,4,6-Tribromophenol

# QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

#### 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

	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	%	%	%			%	%
(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				

# <sup>'</sup>Cp





# 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

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

66.7













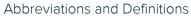


75.8

11.2-130

# **GLOSSARY OF TERMS**





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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
daho	TN00003	Oklahoma	9915
Ilinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
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Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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.



















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			Time: 4:30p	Received by: (Signature)				Samples returned via: UPS					Condition: (lab use only)						
Relinquished by : (Signature)	hed by : (Signature)  Date: Time: Received by: (Signature)				ure)			Temp: °C Bottles Received:				COC Seal Intact: Y N NA							
Relinquished by : (Signature)		Date:		Time: R	Received for lab by:	(Signat	ture)			Date:	27-1	Tim	900		pH C	Checke	d: NCF:		



	Cooler Receipt Form				
Client:	UPENVBRUZ	SDG#	862	134	granger (1) ge
Cooler Received/Opened On: 9-27-W	Temperature Upor	Receipt:	3.1	°c	
Received By: Michael Witherspoon					7
Signature:					
Rece	eipt 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 analys	es requested?		-		
Was sufficient amount of sample sent in	each bottle?			1	-
Were all applicable sample containers co	prrectly preserved and				-
checked for preservation? (Any not in ac	cepted range noted on COC)				
If applicable, was an observable VOA hea					-
Non Conformance Generated. (If yes see					

### 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	Phone Number: 9064669900 FAX #: 9064662641
EPA ID: MIK193755066 SIC Code: This profile	e sheet was completed using:  General Knowledge  Analysis (attached)  MSDS
B. WASTE DESCRIPTION AND GENERAL CHARACTERISTICS	
Name of Waste: <u>UNKNOWN WASTES</u> Process Generating Waste: <u>ABANDONED CONTAINER REMOVAL</u>	
10 10 10 10 10 10 10 10 10 10 10 10 10 1	☐ Strong Layers ☐ Single Layer ☐ Double Layer ☐ Multi-Layer
Free Phases: Liquid %	% Solid% Sludge 100% Debris%
☐ Filter cake% ☐ Metal Filings% ☐ Granu	les% 🗌 Soil% Aerosol 🗆 yes 🗆 no Containers? 🗖 yes 🗆 no
	he USEPA Hazardous waste codes: _D001_D008
	Additional Description:
	☑Drum Container Type: 85 Size: GAL
	niques are required, specify:
	ple provided? □Yes ⊠No
E. METALS (Indicate in parts per million [ppm] if this waste contains any of the	52. 30.00 (A. C.
Metal Less than or Actual Metal	Less than or Actual Metal Less than or Actual
Arsenic	⊠<0.2 □ <20 Nickel □ <5 □ <134
Barium 💆 < 100 Selenium	⊠<1 □ <100 Thallium □<5 □ <130
Cadmium	⊠<5 Zinc □<5
Chromium	⊠<5 □<500
Lead □<5 図 <500 46.4 Copper	<b>D&lt;</b>
F. PHYSICAL/CHEMICAL PROPERTIES	□1.2-1.4 ⊠1.4-1.7 □>1.7 Actual:
	□2.0-5.0 □5.0-20 □>20 Actual:
	☐6-8 ☐8-10 ☐10-12.5 ☐>12.5 Actual: 6.92
The state of the s	□4-8 □8-12 □12-16 Actual;
	]>140-200°F
Sulfur (WT): Sulfur (SULF) COMPONENTS	2-5 >5.0 Actual:
G. HAZARDOUS CHARACTERISTICS AND OTHER COMPONENTS  Reactivity:   None □ Explosive □ Pyrophoric □ Shock Se	나타마다 하는 그들은 경우 보호를 하는 것들은 경기를 하는 것들은 것이 하게 되었다. 그런 그렇게 하게 하게 되었다. 그런 나타와 사용하다 하면서 모든 것을 하면서 되었다. 네트를 하는 것이 없다.
[10] [20] 전에 [10] [20] [20] [20] [20] [20] [20] [20] [2	des present?
Halogens:% Chlorine% Fluorine	% Bromine % Iodine Sulfides: (ppm): Phenolics: (ppm)
SEE ATTACHED LAB RESULTS FOR SAMPLE CHLL-HPA-DRUM- 04A—SAMPLE RESULTS-01 & 02	96
- X	96
% %	56 56 56 56
	is complete and accurate, and that all known or suspected hazards have been disclosed. The

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 WL, Inc. as Generator's agent for disposal of waste. Accordingly Generator specifically authorizes office and/or employees of Badger Disposal of WL, 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 WL, 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

State proj mgr.

10/19/16



# ANALYTICAL REPORT

October 05, 2016



# U.P. Environmental Services, Inc.

L861336 Sample Delivery Group:

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: Jahn V Houkins

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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<sup>7</sup>Gl: Glossary of Terms

<sup>9</sup>Sc: Chain of Custody

<sup>8</sup>Al: Accreditations & Locations

Polychlorinated Biphenyls (GC) by Method 8082M

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

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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
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	Analysis	Analyst
The allow	Baten	Dilation	date/time	date/time	7 mary 50
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
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
Debugble size at al Dishagada (CC) ha Matha d 0000	WC044074	2			INIC
Polychlorinated Biphenyls (GC) by Method 8082 Wet Chemistry by Method 2710 F-2011	WG911074 WG912583	3 1	09/26/16 15:51 09/30/16 13:58	09/27/16 14:06 09/30/16 14:20	JNS 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	Analysis	Analyst
			date/time	date/time	
Polychlorinated Biphenyls (GC) by Method 8082M	WG912356	50	09/29/16 14:02	09/30/16 17:50	JNS



















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	Analysis	Analyst
			date/time	date/time	
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
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	Analysis	Analyst
			date/time	date/time	
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	Analysis	Analyst
			date/time	date/time	
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	ВМВ
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:13	ASK

WG910581

WG910619

1

09/28/16 09:12

09/26/16 13:00

09/28/16 09:12

09/26/16 13:00

JJL

AMC



















Wet Chemistry by Method 9045D

Wet Chemistry by Method D93/1010A



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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L861336-02	CHLL-HPA-DRUM-04A	9095B

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3 - 01

# Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	g/cm3			date / time		
Density	1.47		1	09/30/2016 14:20	WG912583	

# <sup>'</sup>Cp



Ss



	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	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













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1861336

#### Preparation by Method 1311

, ,				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 14:41	WG913176





## Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	6.92		1	09/28/2016 09:12	WG910581

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L861336-02 WG910581: 6.92 at 19.0c

# Wet Chemistry by Method 9095B

	Result	<u>Qualifier</u> Di	ilution	Analysis	Batch
Analyte	%			date / time	
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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	122		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 07:59	WG912087

# Metals (ICP) by Method 6010B

	D !!	0 1:0	DDI	11. 11	D:1 ::	A 1 :	B. I
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	<del></del>
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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



















ONE LAB. NATIONWIDE.



















Polychlorinated Biphenyls (GC) by Method 8082

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	1.13		1	09/30/2016 14:20	WG912583

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	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

#### ONE LAB. NATIONWIDE.

861336

#### Preparation by Method 1311

<u> </u>				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 14:42	<u>WG913176</u>





## Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





# <sup>8</sup>Al

# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.01		1	09/28/2016 09:12	WG910581

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L861336-04 WG910581: 7.01 at 18.7c

# Wet Chemistry by Method 9095B

	Result	Qualifier D	ilution	Analysis	Batch
Analyte	%			date / time	
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

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:14	WG912087

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/I		date / time	
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

(S) 4-Bromofluorobenzene

# SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE.

WG911243

09/26/2016 16:59

Volatile Organic Compounds (GC/MS) by Method 8260B										
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/I		date / time				
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			

128

80.1-120





Ss











101

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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



8082M L861336-05 WG912356: Dilution due to matrix

Sample Narrative:

# SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE.

# Polychlorinated Biphenyls (GC) by Method 8082M

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/kg		mg/kg		date / time		
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	<i>7</i> 5. <i>5</i>	 J7	60.0-140		09/30/2016 17:50	WG912356	



















#### ONE LAB. NATIONWIDE.

#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND	<u>J3 J4</u>	0.250	1	09/27/2016 14:12	WG910790



# СQс

# Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	6.50		1	09/28/2016 09:12	WG910581

# Sc

#### Sample Narrative:

9045D L861336-06 WG910581: 6.50 at 18.3c

# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:28	WG912087

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	<u> </u>
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













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

	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	09/28/2016 21:45	WG911865
ND		0.100	0.13	1	09/28/2016 21:45	WG911865
ND		0.100	0.13	1	09/28/2016 21:45	WG911865
ND		0.100	0.50	1	09/28/2016 21:45	WG911865
ND		0.100	3	1	09/28/2016 21:45	WG911865
ND		0.100	2	1	09/28/2016 21:45	WG911865
ND		0.100	5	1	09/28/2016 21:45	WG911865
ND		0.100	400	1	09/28/2016 21:45	WG911865
ND		0.100	200	1	09/28/2016 21:45	WG911865
ND		0.100	100	1	09/28/2016 21:45	WG911865
ND		0.100	400	1	09/28/2016 21:45	WG911865
ND		0.100	2	1	09/28/2016 21:45	WG911865
19.7		10.0-77.9	87		09/28/2016 21:45	WG911865
13.9		5.00-70.1	67		09/28/2016 21:45	WG911865
42.1		21.8-123	120		09/28/2016 21:45	WG911865
58.1		29.5-131	122		09/28/2016 21:45	WG911865
47.8		11.2-130	148		09/28/2016 21:45	WG911865
79.2		29.3-137	149		09/28/2016 21:45	WG911865
	ND N	ND N	ND 0.100 19.7 10.0-77.9 13.9 5.00-70.1 42.1 21.8-123 58.1 29.5-131 47.8 11.2-130	ND 0.100 7.50  ND 0.100 0.13  ND 0.100 0.13  ND 0.100 0.50  ND 0.100 3  ND 0.100 2  ND 0.100 5  ND 0.100 5  ND 0.100 200  ND 0.100 200  ND 0.100 100 100  ND 0.100 200  ND 0.100 100 400  ND 0.100 400  ND 0.100 400  ND 0.100 5  19.7 10.0-77.9 87  13.9 5.00-70.1 67  42.1 21.8-123 120  58.1 29.5-131 122  47.8 11.2-130 148	ND       0.100       7.50       1         ND       0.100       0.13       1         ND       0.100       0.50       1         ND       0.100       3       1         ND       0.100       3       1         ND       0.100       2       1         ND       0.100       5       1         ND       0.100       400       1         ND       0.100       200       1         ND       0.100       100       1         ND       0.100       400       1         ND       0.100       2       1         19.7       10.0-77.9       87         13.9       5.00-70.1       67         42.1       21.8-123       120         58.1       29.5-131       122         47.8       11.2-130       148	ND 0.100 7.50 1 09/28/2016 21:45  ND 0.100 0.13 1 09/28/2016 21:45  ND 0.100 0.13 1 09/28/2016 21:45  ND 0.100 0.50 1 09/28/2016 21:45  ND 0.100 3 1 09/28/2016 21:45  ND 0.100 3 1 09/28/2016 21:45  ND 0.100 2 1 09/28/2016 21:45  ND 0.100 5 1 09/28/2016 21:45  ND 0.100 5 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 100 100 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 20 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 60 1 09/28/2016 21:45  ND 0.100 2 1 09/28/2016 21:45  19.7 10.0-77.9 87 09/28/2016 21:45  13.9 5.00-70.1 67 09/28/2016 21:45  42.1 21.8-123 120 09/28/2016 21:45  58.1 29.5-131 122 09/28/2016 21:45  47.8 11.2-130 148 09/28/2016 21:45





CHLL-HPA-DRUM-04D Collected date/time: 09/20/16 11:00

# SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

	, ,	•					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l		date / time		
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	



















#### ONE LAB. NATIONWIDE.

#### Preparation by Method 1311

<u> </u>				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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





# Ss

# Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND	<u>J3 J4</u>	0.250	1	09/27/2016 14:13	WG910790



Cn







# Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

# Sc

# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:07	WG912087

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

ONE LAB. NATIONWIDE.

L861336

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

Volatile Organic Com	ipounas (GC	JIVIS) BY IVIE	etnoa 8260	JB			
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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















	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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









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Wet Chemistry by Method 9012 B

L861336-06,08

#### 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









(OS) L861447-01	09/27/16 14:14 • (DUP) R:	3166419-4	09/27/16 14:15	
	Original Result	DUP Resul	t Dilution	DUP RPD

Analyte	mg/kg	mg/kg		%	%
Reactive Cyanide	ND	ND	1	0.000	20







(LCS) NS100+13 Z 03/Z	(200) NOTOO+10 2 03/27/10 14.07 - (2000) NOTOO+10 3 03/27/10 14.00									
	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 Cyanide	48 4	52.0	85.5	107	177	50 0-150		.13 .14	49.0	20

DUP Qualifier DUP RPD Limits





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

L861336-02,04

#### 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 Cvanide	U		0.0390	0.250



<sup>2</sup>TC



# 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	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20





# <sup>6</sup>Qc



(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	<u>P1</u>	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

(200) (10107710 2 107	Spike Amount			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

(US) L882 134-U4 10/03/10 14.44 • (MS) R3107/13-4 10/03/10 14.45 • (MSD) R3107/13-5 10/03/10 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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20	

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Wet Chemistry by Method 9034-9030B

L861336-02,04,06,08

#### Method Blank (MB)

Reactive Sulfide

(MB) WG910791-1 09/27/16 02:08									
	MB Result	MB Qualifier	MB MDL	MB RDL					
Analyte	mg/kg		mg/kg	mg/kg					







# L861447-05 Original Sample (OS) • Duplicate (DUP)

U

(OS) L861447-05	(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		%		%				
Andryte		my/ky	mg/kg		/0		/0				



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

7.63

25.0

(LCS) WG910791-2 09/27/16 02:08 • (LCSD) WG910791-3 09/27/16 02:08

(200) 11000107312	03/2//10 02:00 (200	35) 11031073	10 00/2//10 0.	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	72.4	78.4	72.4	78.4	70.0-130			7.96	20





# QUALITY CONTROL SUMMARY

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Wet Chemistry by Method 9045D

L861336-02,04,06,08

# L860076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L860076-01	09/28/16	09:12 •	(DUP)	WG910581-3	09/28/16 09:12		
		Original	Result	DUP Result	Dilution	DUP RPD	

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Su	SU		%		%
pH	3.38	3.40	1	0.590		1

# Ss

# L861673-02 Original Sample (OS) • Duplicate (DUP)

	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	su	su		%		%
рН	4.51	4.55	1	0.883		1







(LCS) WG910581-1 09/28/16 09:12 • (LCSD) WG910581-2 09/28/16 09:12

(LCS) WO310301-1 03120110 03.12 • (LCSD) WO310301-2 03120110 03.12											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	Su	su	Su	%	%	%			%	%	
pH	6.11	6.07	6.07	99.3	99.3	98.4-102			0.000	1	





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Wet Chemistry by Method 9095B

L861336-04

# L863242-01 Original Sample (OS) • Duplicate (DUP)

(OS) L863242-01 10/05/16	(OS) L863242-01 10/05/16 10:00 • (DUP) WG913968-1 10/05/16 10:00										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	%	%		%		%					
Paint Filter Test	See Footnote	See Footnote	1	0.000		20					



















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Wet Chemistry by Method D93/1010A

L861336-02,04,06,08

# L861336-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861336-02	09/26/16 13:00 • (DUP)	WG910619-1	09/26/16 13	3:00
	Original Result	DHP Result	Dilution	DI IP RPI

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	122	124	1	1.63		10

# Ср





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

11 001 11/0010010 0	00/00/40 10:00	// CCD/ ///CO10C10 2	00/00/40 10:00
11 ( \$1 \(\nu(\frac{1}{2}\) \(\nu(\frac{1}2\) \(\	U9//h/lh 13'UU •	(LCSD) WG910619-3	09/76/16 13:00
(200) 110010 2	03/20/10 10.00	(ECOD) 11 CO 10 C	03/20/10 10.00

( /		- ,									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%	
Ignitability	82.0	82.9	83.9	101	102	93.0-107			1.20	20	













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Mercury by Method 7470A

L861336-02,04,06,08

#### 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



<sup>1</sup>Cp





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

1	(1 (3)	R316/239-2	09/30/16 07:54 •	(LCSD	1 R316/239-3	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





# <sup>6</sup>Qc



(OS) L861336-02 09/30/16 07:59 • (MS) R3167239-4 09/30/16 08:02 • (MSD) R3167239-5 09/30/16 08:04

(03) 2001330 02 03/30/	, ,	Original 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

(03) 6801330-08 03/30/10 08.07 • (M3) 8310/233-0 03/30/10 08.03 • (M3D) 8310/233-7 03/30/10 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

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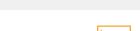
Metals (ICP) by Method 6010B

L861336-02,04,06,08

### Method Blank (MB)

(MB) R3166532-1	09/27/16 23:24
-----------------	----------------

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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



<sup>2</sup>Tc









(LCS) R3166532-2 09/27/16 23:27 • (LCSD) R3166532-3 09/27/16 23:29

	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	%	%	%			%	%
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







# <sup>9</sup>Sc

### 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

(00) 20010 10 01 00	727710 25.52 ° (IVIS) IX	0.00002 0 00	727710 20.07	(11102) 1101000	02 0 03/2//1	0 20.00						
	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	%	%		%			%	%
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

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Metals (ICP) by Method 6010B

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

,	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	%	%		%			%	%
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





















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

L861336-02,04,06,08

### Method Blank (MB)

(MB) R3166244-3 09/26/10	6 08:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

	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	%	%	%			%	%
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				

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

L861336-02,04,06,08

### L861336-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L861336-08 09/26/16 13:57 • (MS) R3166244-4 09/26/16 10:21	(OS)I	861336-08	09/26/16 13:57 •	(MS) R3166244-4	09/26/16 10:21
---	-------	-----------	------------------	-----------------	----------------

(O3) L601330-06 09/20/	10 13.37 • (IVIS) K	3100244-4 09	/20/10 10.21				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
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	<u>J5</u>
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

(03) 1801334-00 03/20	3/10 13.3/ • (IVI3) K	3100244-0 03	/20/10 10.41	(IVISD) KS1002-	4-7 03/20/10	11.01						
	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	%	%		%			%	%
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	e				109	110		79.0-121				
(S) a,a,a-Trifluorotoluene					97.8	98.9		90.4-116				
(S) 4-Bromofluorobenzene	e e				97.3	100		80.1-120				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L861336-01,03

### Method Blank (MB)

(MB) R3166403-1 09/27/1	6 10:22			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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	<i>75.2</i>			29.2-144



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	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	%	%	%			%	%
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

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				



ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L861336-07

### Method Blank (MB)

(MB) R3167488-1 09/30/1	6 14:27			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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



(LCS) R3167488-2	09/30/16 14:41 •	(LCSD) R3167488-3	09/30/16 14:55
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	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	%	%	%			%	%
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				





ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082M

L861336-05

### Method Blank (MB)

(MB) R3167484-1 09/30/1	6 16:55			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 • (LCSE	S) R3167484-2 09/30/16 17:09 • (LCSD) R3167484-3 09/30/16 17:22												
	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	%	%	%			%	%				
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	<u>J4</u>		17.1	20				
(S) Decachlorobiphenyl				101	88.9	60.0-140								
(S) Tetrachloro-m-xylene				113	95.8	60.0-140								





















ONE LAB. NATIONWIDE.

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

L861336-02,04,06

### Method Blank (MB)

(MB) R3166768-3 09/28	/16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

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

(LCS) R3166768-1 09/28/	CS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20													
	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	%	%	%			%	%				
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								

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

	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	%	%	%			%	%
(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

	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	%	%		%			%	%
1,4-Dichlorobenzene	0.500	ND	0.147	0.294	29.3	58.9	1	14.0-104		<u>J3</u>	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		<u>J3</u>	55.4	37.6
Hexachloroethane	0.500	ND	0.136	0.277	27.2	55.5	1	10.4-105		<u>J3</u>	68.3	40
Nitrobenzene	0.500	ND	0.189	0.329	37.7	65.9	1	23.1-121		<u>J3</u>	54.3	29
Pyridine	0.500	ND	0.101	0.188	20.2	37.7	1	10.0-77.8		<u>J3</u>	60.6	38.8
2-Methylphenol	0.500	ND	0.155	0.265	31.0	53.0	1	10.0-133		<u>J3</u>	52.4	40
3&4-Methyl Phenol	0.500	ND	0.179	0.274	35.9	54.7	1	17.4-100		<u>J3</u>	41.5	27.7
Pentachlorophenol	0.500	ND	0.152	0.266	30.3	53.2	1	10.0-108		<u>J3</u>	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		<u>J3</u>	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				

72.3















58.4

11.2-130

ONE LAB. NATIONWIDE.

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

L861336-08

### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

1861336-08

LCS Qualifier

LCSD Qualifier RPD

%

**RPD Limits** 

%

### 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

		Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits
	Analyte	mg/l	mg/l	mg/l	%	%	%
ı	(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



\_\_\_\_ Ср





# <sup>4</sup>Cn

L862604-02 Original Sample (OS) • Matrix Sp	ike (MS) • Matrix Spike Duplicate (MSD)
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(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

66.7

75.8

11.2-130

# **GLOSSARY OF TERMS**

### ONE LAB. NATIONWIDE.

### Abbreviations and Definitions

, 10 0 1 0 1 1 d 1 0 1 1 0 d 1	
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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
llinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
(ansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
ouisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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:			Billing Information:				Analysis / Container / Preservative									Chain of Custod	Page of	
U.P. Environmental Se P.O. BOX 127		TAC	SZ	ine			-									*	ESC	
Bark River, MI 4	Piver, MI 49807												ErAIB 32	C-1-E-N-C-E-S				
906-466-9900						ŧ.										12065 Lebanon Rd	OF CHOICE	
Report to: RICK Reidy			Email To:	upenviro	nmoutal.	DM						12				Mount Juliet, TN 3 Phone: 615-758-58	7122	
Project				The second second								1				Phone: 800-767-58 Fax: 615-758-5859		
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Phone: 906-466-9900	Client Project	#		Lab Project #		į		100		e		00				The second secon		
Fax: 906-466 2641	UPENVI	BRMI -	DRUMS				1	yanis		3						1	12	
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CHLL-HEA-DRUM-043	Grab	OT	MA	9/20/16	530 pm	6	X	%	×	X	×	χ					03/04	
CHLL-HPA-DRUM-O4C	asab	OT	NA	9/20/16	600 pm	8	1 1	X	×	Χ.	X	X	. ,		784		05/06	
CHIL-HPA-DRUM-OYD		OT	PlA	9/21/16	11:00 am	8	7 ×	У	+	Х	Y	X					07108	
		!	-		4												1 (4) 1 (4)	
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						-	H				(34					19.5		
							3							8				
		-													100			
* Matrix: \$\$ - Soil GW - Groundwater \	MANA Attackets	Inter MAI . D	rinking West	or OT - Other		7				рН		Tem	D				, /	
	** ** - **dorc*v	CLE DW-D	misnig vvdu	ar-other		1				Eleve	1.5	7.0			Hold	#		
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Relating Usined by Halghacure)		Date:	116	12:00	eceived by, (signa		鱼				dEx [				1	1084	AND	
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nemiduates of fakilitarie)		l dette			Shey 1	100000					-22-1			100	Control of the Control	المالية		



### YOUR LAB OF CHOICE

Cooler F	Receipt Form					
Client: UPENVEKMI	L861334					
Cooler Received/Opened On: 9-22-16	7.8 °c					
Received By: Green Degumen						
Signature: One Wen						
) "						
Receipt Check	List	Yes	No	N/A		
Were custody seals on outside of cooler and intact?				1		
Were custody papers properly filled out?		/				
Did all bottles arrive in good condition?		1				
Were correct bottles used for the analyses requeste	ed?	1				
Was sufficient amount of sample sent in each bottle	2?	1	NA NEWSCHI	100000000		
Were all applicable sample containers correctly pre-	served and			1		
checked for preservation? (Any not in accepted range	ge noted on COC)			H		
If applicable, was an observable VOA headspace pre	esent?			1		
Non Conformance Generated. (If yes see attached N	ICF)					

### 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: ML DEPT. of ER Address: 52634 HIGHWAY M-26	VIRONMENTAL QUALITY	Bill to: UP ENVIRONMENTAL SERVICES, INC. Billing Address: P.O. BOX 127
City, State, Zip: HUBBELL, MI 4993		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 SI	C Code: This profile sheet was	completed using:  General Knowledge Analysis (attached)  MSDS  Both
. WASTE DESCRIPTION AND GEN	ERAL CHARACTERISTICS	and a second and the second second and a second
Name of Waste: UNKNOWN WATE	RY WHITE SUBSTANCE	
Process Generating Waste: ABANDO	NED CONTAINER REMOVAL	
Color: WHITE Odor:	⊠None	Layers ⊠ Single Layer ☐ Double Layer ☐ Multi-Layer
Free Phases: \ Liquid 10-	% Powder%	Solid <u>50-90</u> % ☐ Sludge <u>26</u> % ☐ Debris%
☐ Filter cake % ☐ Meta	I Filings % Granules	% ☐ Soil % Aerosol ☐ yes ☐ no Containers? ☐ yes ☐ no
RCRA AND DOT INFORMATION		
Is this a USEPA Hazardous Waste?		Hazardous waste codes: D008_D010
Is this a DOT Hazardous Material?		olume: 990 / Units: GALS One time shipment \ yes \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Is this Universal Waste?	☐yes ☐no Is this PCB Waste?	☐yes ☐no If yes PBC concentration: ppm
Proper Shipping Name: HAZARDOU	S WASTE, LIQUIDS, n.o.s.	
Hazardous Class #: 9 PG #: 1		Description:
Method of Shipment: Bulk		A MANAGEMENT OF THE PROPERTY O
SPECIAL HANDLING INSTRUCT		
Treatment:	Is a representative sample provide	
	[ppm] if this waste contains any of the following	HT 4 및 4 (개) 4 (개) : 1 (1) : 1 (2) -
detal Less than	or Actual Metal	Less than or Actual Metal Less than or Actual
arsenic ⊠ <5 □ <500	Mercury	⊠<0.2 □ <20 Nickel □ <5 □ <134
tarium ⊠<100	Selenium	□<1 Ø <100 1.43 Thallium □<5 □ <130
admium ⊠<1 □<100	Silver	⊠<5 Zinc □<5
Chromium 🛮 🖂 <5	Chromium-Hex	⊠<5 □<500
.ead □<5 🖾 <500	12-4 Copper	D<5
COMMUNICATION STREET		
PHYSICAL/CHEMICAL PROPERT Specific Gravity:	□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:	□1-4 □4-8	□8-12 □12-16 Actual:
Flash Point Degree F;	□73-140°F □>140-20	(4) The control of th
Sulfur ( WT):	%□ 0.5-2.0	□2-5 □ >5.0 Actual:
HAZARDOUS CHARACTERISTIC	S AND OTHER COMPONENTS	
activity:⊠ None □Explosive	☐Pyrophoric ☐Shock Sensitive	□Water Reactive □Etiological □Radioactive □Acutely Hazardous Waste
scosity: Low Medium	☐High Are TC Codes preser	at?  ☐ Yes ☐ No (If yes, please list in USEPA Waste Code Section).
logens: % Chlorine	% Fluorine	% Bromine% Iodine
anides (ppm) PCB's (ppm) CHEMICAL COMPOSITION (MUS		Sulfides: (ppm): Phenolics: (ppm)
and a real of the control of the con	%	
EE ATTACHED LAR RESULTS	9	
EE ATTACHED LAB RESULTS OR SAMPLE CHLL-HPA-DRUM-		
EE ATTACHED LAB RESULTS OR SAMPLE CHIL-HPA-DRUM- HD-L861336-07 and L861336-08	%	34
EE ATTACHED LAB RESULTS OR SAMPLE CHILL-HPA-DRUM- 04DL861336-07 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

State proprings

10/19/16



# ANALYTICAL REPORT

October 05, 2016



### U.P. Environmental Services, Inc.

L861336 Sample Delivery Group:

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: Jahn V Houkins

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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<sup>7</sup>Gl: Glossary of Terms

<sup>9</sup>Sc: Chain of Custody

<sup>8</sup>Al: Accreditations & Locations

Polychlorinated Biphenyls (GC) by Method 8082M

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

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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
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	Analysis	Analyst
The aloue	Baten	Dilation	date/time	date/time	7 mary 50
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
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
Debugble size at al Dishagada (CC) ha Matha d 0000	WC044074	2			INIC
Polychlorinated Biphenyls (GC) by Method 8082 Wet Chemistry by Method 2710 F-2011	WG911074 WG912583	3 1	09/26/16 15:51 09/30/16 13:58	09/27/16 14:06 09/30/16 14:20	JNS 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	Analysis	Analyst
			date/time	date/time	
Polychlorinated Biphenyls (GC) by Method 8082M	WG912356	50	09/29/16 14:02	09/30/16 17:50	JNS



















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	Analysis	Analyst
			date/time	date/time	
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
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	Analysis	Analyst
			date/time	date/time	
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	Analysis	Analyst
			date/time	date/time	
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	ВМВ
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:13	ASK

WG910581

WG910619

1

09/28/16 09:12

09/26/16 13:00

09/28/16 09:12

09/26/16 13:00

JJL

AMC



















Wet Chemistry by Method 9045D

Wet Chemistry by Method D93/1010A



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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L861336-02	CHLL-HPA-DRUM-04A	9095B

### ONE LAB. NATIONWIDE.

3 - 01

# Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	g/cm3			date / time		
Density	1.47		1	09/30/2016 14:20	WG912583	

# <sup>'</sup>Cp



Ss



	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	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













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### Preparation by Method 1311

, ,				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 14:41	WG913176





### Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	6.92		1	09/28/2016 09:12	WG910581

# <sup>9</sup>Sc

### Sample Narrative:

9045D L861336-02 WG910581: 6.92 at 19.0c

## Wet Chemistry by Method 9095B

	Result	<u>Qualifier</u> Di	ilution	Analysis	Batch
Analyte	%			date / time	
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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	122		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 07:59	WG912087

### Metals (ICP) by Method 6010B

	D !!	0 1:0	DDI	11. 11	D:1 ::	A 1 :	B. I
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	<del></del>
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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



















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Polychlorinated Biphenyls (GC) by Method 8082

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	1.13		1	09/30/2016 14:20	WG912583

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	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

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### Preparation by Method 1311

<u> </u>				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 14:42	<u>WG913176</u>





### Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





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### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.01		1	09/28/2016 09:12	WG910581

# <sup>9</sup>Sc

### Sample Narrative:

9045D L861336-04 WG910581: 7.01 at 18.7c

## Wet Chemistry by Method 9095B

	Result	Qualifier D	ilution	Analysis	Batch
Analyte	%			date / time	
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

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:14	WG912087

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

(S) 4-Bromofluorobenzene

# SAMPLE RESULTS - 04

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WG911243

09/26/2016 16:59

Volatile Organic Compounds (GC/MS) by Method 8260B								
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
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	

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80.1-120





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	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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



8082M L861336-05 WG912356: Dilution due to matrix

Sample Narrative:

# SAMPLE RESULTS - 05

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### Polychlorinated Biphenyls (GC) by Method 8082M

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/kg		mg/kg		date / time		
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	<i>7</i> 5. <i>5</i>	 J7	60.0-140		09/30/2016 17:50	WG912356	



















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### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND	<u>J3 J4</u>	0.250	1	09/27/2016 14:12	WG910790



# СQс

### Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	6.50		1	09/28/2016 09:12	WG910581

# Sc

### Sample Narrative:

9045D L861336-06 WG910581: 6.50 at 18.3c

# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:28	WG912087

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	<u> </u>
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













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

	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	09/28/2016 21:45	WG911865
ND		0.100	0.13	1	09/28/2016 21:45	WG911865
ND		0.100	0.13	1	09/28/2016 21:45	WG911865
ND		0.100	0.50	1	09/28/2016 21:45	WG911865
ND		0.100	3	1	09/28/2016 21:45	WG911865
ND		0.100	2	1	09/28/2016 21:45	WG911865
ND		0.100	5	1	09/28/2016 21:45	WG911865
ND		0.100	400	1	09/28/2016 21:45	WG911865
ND		0.100	200	1	09/28/2016 21:45	WG911865
ND		0.100	100	1	09/28/2016 21:45	WG911865
ND		0.100	400	1	09/28/2016 21:45	WG911865
ND		0.100	2	1	09/28/2016 21:45	WG911865
19.7		10.0-77.9	87		09/28/2016 21:45	WG911865
13.9		5.00-70.1	67		09/28/2016 21:45	WG911865
42.1		21.8-123	120		09/28/2016 21:45	WG911865
58.1		29.5-131	122		09/28/2016 21:45	WG911865
47.8		11.2-130	148		09/28/2016 21:45	WG911865
79.2		29.3-137	149		09/28/2016 21:45	WG911865
	ND N	ND N	ND 0.100 19.7 10.0-77.9 13.9 5.00-70.1 42.1 21.8-123 58.1 29.5-131 47.8 11.2-130	ND 0.100 7.50  ND 0.100 0.13  ND 0.100 0.13  ND 0.100 0.50  ND 0.100 3  ND 0.100 2  ND 0.100 5  ND 0.100 5  ND 0.100 200  ND 0.100 200  ND 0.100 100 100  ND 0.100 200  ND 0.100 100 400  ND 0.100 400  ND 0.100 400  ND 0.100 5  19.7 10.0-77.9 87  13.9 5.00-70.1 67  42.1 21.8-123 120  58.1 29.5-131 122  47.8 11.2-130 148	ND       0.100       7.50       1         ND       0.100       0.13       1         ND       0.100       0.50       1         ND       0.100       3       1         ND       0.100       3       1         ND       0.100       2       1         ND       0.100       5       1         ND       0.100       400       1         ND       0.100       200       1         ND       0.100       100       1         ND       0.100       400       1         ND       0.100       2       1         19.7       10.0-77.9       87         13.9       5.00-70.1       67         42.1       21.8-123       120         58.1       29.5-131       122         47.8       11.2-130       148	ND 0.100 7.50 1 09/28/2016 21:45  ND 0.100 0.13 1 09/28/2016 21:45  ND 0.100 0.13 1 09/28/2016 21:45  ND 0.100 0.50 1 09/28/2016 21:45  ND 0.100 3 1 09/28/2016 21:45  ND 0.100 3 1 09/28/2016 21:45  ND 0.100 2 1 09/28/2016 21:45  ND 0.100 5 1 09/28/2016 21:45  ND 0.100 5 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 100 100 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 20 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 67 09/28/2016 21:45  13.9 5.00-70.1 67 09/28/2016 21:45  42.1 21.8-123 120 09/28/2016 21:45  58.1 29.5-131 122 09/28/2016 21:45  47.8 11.2-130 148 09/28/2016 21:45





CHLL-HPA-DRUM-04D Collected date/time: 09/20/16 11:00

# SAMPLE RESULTS - 07

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Polychlorinated Biphenyls (GC) by Method 8082

	, ,	•					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l		date / time		
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	



















### ONE LAB. NATIONWIDE.

### Preparation by Method 1311

<u> </u>				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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





# Ss

### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND	<u>J3 J4</u>	0.250	1	09/27/2016 14:13	WG910790



Cn







# Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

# Sc

### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:07	WG912087

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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L861336

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

volatile Organic Compounds (GC/MS) by Method 8260B								
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	















	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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









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Wet Chemistry by Method 9012 B

L861336-06,08

### 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					









(OS) L861447-01	09/27/16 14:14 • (DUP) R:	3166419-4	09/27/16 14:15	
	Original Result	DUP Resul	t Dilution	DUP RPD

Analyte	mg/kg	mg/kg		%	%
Reactive Cyanide	ND	ND	1	0.000	20







(LCS) NS100+13 Z 03/Z	(CC) (C100+13-2-03/21/10-14:07 - (CC)D) (C100+13-3-03/21/10-14:00									
	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 Cyanide	48 4	52.0	85.5	107	177	50 0-150		.13 .14	49.0	20

DUP Qualifier DUP RPD Limits





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

L861336-02,04

### 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 Cvanide	U		0.0390	0.250



<sup>2</sup>TC



### 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	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20





# <sup>6</sup>Qc



(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	<u>P1</u>	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

(200) (10107710 2 107	Spike Amount			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

(US) L862134-04 10/0	3/16 14:44 • (IVIS) R	310//13-4 10/0	3/10 14:45 • (1)	/ISD) R316//I3-:	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	

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Wet Chemistry by Method 9034-9030B

L861336-02,04,06,08

### Method Blank (MB)

Reactive Sulfide

(MB) WG910791-1 09/27/1	6 02:08			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg







### L861447-05 Original Sample (OS) • Duplicate (DUP)

U

(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		%		%
Andryte		mg/kg	mg/kg		/0		/0



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

7.63

25.0

(LCS) WG910791-2 09/27/16 02:08 • (LCSD) WG910791-3 09/27/16 02:08

(200) 1100107012	33/2//10 02.00 (200	00) 110000	10 00/2//10 0.	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	72.4	78.4	72.4	78.4	70.0-130			7.96	20





Analyte

### QUALITY CONTROL SUMMARY

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Wet Chemistry by Method 9045D

L861336-02,04,06,08

## L860076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L860076-01	09/28/16	09:12	• (DUP)	WG910581-3	09/28/16	09:12
		Origina	al Result	<b>DUP Result</b>	Dilution	DUP RPD

su 3.38

DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
SU		%		%
3.40	1	0.590		1









$10^{\circ}$	S)   261673 <sub>-</sub> 02	09/28/16 09:12 •	(DI ID	\ \ <i>\\\C</i> \\\G\\\\\G\\\\\	09/28/16 09·12
10.	) L0010/3-02	03/20/10 03.12	(DOF	/ VV U 3 1 U 3 O 1 <del>- 4</del>	03/20/10 03.12

	Original Resu	lt DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits
Analyte	Su	SU		%		%
рН	4.51	4.55	1	0.883		1







(LCS) WG910581-1 09/28/16 09:12 • (LCSD) WG910581-2 09/28/16 09:12

(200) ***********************************	•	•						1000 0 115		
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	SU	su	SU	%	%	%			%	%
nH	6 11	6.07	6.07	99.3	99.3	98 4-102			0.000	1





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Wet Chemistry by Method 9095B

L861336-04

### L863242-01 Original Sample (OS) • Duplicate (DUP)

(OS) L863242-01 10/05/16 10:00 • (DUP) WG913968-1 10/05/16 10:00											
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	%	%		%		%					
Paint Filter Test	See Footnote	See Footnote	1	0.000		20					



















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Wet Chemistry by Method D93/1010A

L861336-02,04,06,08

### L861336-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861336-02	09/26/16 13:00 •	(DUP)	WG910619-1	09/26/16 13	3:00
	Original	Result	DLIP Result	Dilution	DLIP RP

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	122	124	1	1.63		10





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

( /		,									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%	
Ignitability	82.0	82.9	83.9	101	102	93.0-107			1.20	20	













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Mercury by Method 7470A

L861336-02,04,06,08

#### 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











	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







(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)

/OST 1 861336 08 09/30/16 08:07 - (MS) P3167239 6 09/30/16 08:09 - (MSD) P3167239 7 09/30/16 08:12

(O2) F8613	336-08 09/30/10	5 08:07 • (IVIS) F	316/239-6 US	9/30/16 08:09	• (IVISD) R316/2	39-7 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

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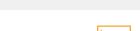
Metals (ICP) by Method 6010B

L861336-02,04,06,08

#### Method Blank (MB)

(MB) R3166532-1	09/27/16 23:24
-----------------	----------------

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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



<sup>2</sup>Tc









(LCS) R3166532-2 09/27/16 23:27 • (LCSD) R3166532-3 09/27/16 23:29

	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	%	%	%			%	%
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







# <sup>9</sup>Sc

#### 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

(00) 20010 10 01 00	727710 25.52 ° (IVIS) IX	0.00002 0 00	727710 20.07	(11102) 1101000	02 0 03/2//1	0 20.00						
	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	%	%		%			%	%
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

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Metals (ICP) by Method 6010B

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

,	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	%	%		%			%	%
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





















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

L861336-02,04,06,08

#### Method Blank (MB)

(MB) R3166244-3 09/26/10	6 08:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

	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	%	%	%			%	%
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				

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

L861336-02,04,06,08

#### L861336-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L861336-08 09/26/16 13:57 • (MS) R3166244-4 09/26/16 10:21	(OS)I	861336-08	09/26/16 13:57 •	(MS) R3166244-4	09/26/16 10:21
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(O3) L601330-06 09/20/	10 13.37 • (IVIS) K	3100244-4 09	/20/10 10.21				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
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	<u>J5</u>
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

(03) 1801334-00 03/20	3/10 13.3/ • (IVI3) K	3100244-0 03	/20/10 10.41	(IVISD) KS1002-	4-7 03/20/10	11.01						
	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	%	%		%			%	%
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	e				109	110		79.0-121				
(S) a,a,a-Trifluorotoluene					97.8	98.9		90.4-116				
(S) 4-Bromofluorobenzene	e e				97.3	100		80.1-120				



















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Polychlorinated Biphenyls (GC) by Method 8082

L861336-01,03

#### Method Blank (MB)

(MB) R3166403-1 09/27/1	6 10:22			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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	<i>75.2</i>			29.2-144



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	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	%	%	%			%	%
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

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				



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Polychlorinated Biphenyls (GC) by Method 8082

L861336-07

#### Method Blank (MB)

(MB) R3167488-1 09/30/1	6 14:27			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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



(LCS) R3167488-2	09/30/16 14:41 •	(LCSD) R3167488-3	09/30/16 14:55
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	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	%	%	%			%	%
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				





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Polychlorinated Biphenyls (GC) by Method 8082M

L861336-05

#### Method Blank (MB)

(MB) R3167484-1 09/30/1	6 16:55			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 • (LCSE	D) R3167484-3	09/30/16 17:2:	2						
	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	%	%	%			%	%
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	<u>J4</u>		17.1	20
(S) Decachlorobiphenyl				101	88.9	60.0-140				
(S) Tetrachloro-m-xylene				113	95.8	60.0-140				





















ONE LAB. NATIONWIDE.

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

L861336-02,04,06

#### Method Blank (MB)

(MB) R3166768-3 09/28	/16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# 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	)						
	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	%	%	%			%	%
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				

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

	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	%	%	%			%	%
(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

	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	%	%		%			%	%
1,4-Dichlorobenzene	0.500	ND	0.147	0.294	29.3	58.9	1	14.0-104		<u>J3</u>	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		<u>J3</u>	55.4	37.6
Hexachloroethane	0.500	ND	0.136	0.277	27.2	55.5	1	10.4-105		<u>J3</u>	68.3	40
Nitrobenzene	0.500	ND	0.189	0.329	37.7	65.9	1	23.1-121		<u>J3</u>	54.3	29
Pyridine	0.500	ND	0.101	0.188	20.2	37.7	1	10.0-77.8		<u>J3</u>	60.6	38.8
2-Methylphenol	0.500	ND	0.155	0.265	31.0	53.0	1	10.0-133		<u>J3</u>	52.4	40
3&4-Methyl Phenol	0.500	ND	0.179	0.274	35.9	54.7	1	17.4-100		<u>J3</u>	41.5	27.7
Pentachlorophenol	0.500	ND	0.152	0.266	30.3	53.2	1	10.0-108		<u>J3</u>	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		<u>J3</u>	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				

72.3















58.4

11.2-130

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

L861336-08

#### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

(S) 2,4,6-Tribromophenol

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

1861336-08

LCS Qualifier

LCSD Qualifier RPD

%

**RPD Limits** 

%

#### 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

		Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits
	Analyte	mg/l	mg/l	mg/l	%	%	%
ı	(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



\_\_\_\_ Ср





# <sup>4</sup>Cn

L862604-02 Original Sample (OS) • Matrix Sp	ike (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

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

66.7

75.8

11.2-130

# **GLOSSARY OF TERMS**

#### ONE LAB. NATIONWIDE.



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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
llinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
(ansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
ouisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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: Billing Information:			Analysis / Container / Preservative							Chain of Custod	Page of						
P.O. BOX 127	U.P. Environmental Services, Inc P.O. BOX 127 SAME			-											*	ESC	
Bark River, MI 4	9807		:		:										ErAIB 32	C-1+E-N-C-E-5	
906-466-9900						ŧ.										12065 Lebanon Rd	OF CHOICE
Report to: RICK Reidy			Email To:	upenviro	nmoutal.	DM						12				Mount Juliet, TN 3 Phone: 615-758-58	7122
Project				The second second								1				Phone: 800-767-58 Fax: 615-758-5859	
Description: Alayon Musica	Waste-Ti	orch La	ke		6bell, MI							1				L# L86	133/
Phone: 906-466-9900	Client Project	#		Lab Project #		į		100		e		00				7 F1	
Fax: 906-466 2641	UPENVI	BRMI -	DRUMS				1	yanı		3						1	12
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CHLL-HEA-DRUM-043	Grab	OT	MA	9/20/16	530 pm	6	X	%	×	X	×	χ					03/04
CHLL-HPA-DRUM-O4C	asab	OT	NA	9/20/16	600 pm	8	1 1	X	×	Χ.	X	X	. ,		784		05/06
CHIL-HPA-DRUM-OYD		OT	PlA	9/21/16	11:00 am	8	7 ×	У	+	Х	Y	X					07108
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nemiduates of fakilitarie)		l de la			Shey 1	100000					-22-1			100		المالية	



#### YOUR LAB OF CHOICE

Cooler F	Receipt Form			
Client: UPENVEKMI	SDG#	L8	613	36
Cooler Received/Opened On: 9-22-16	Temperature Upon Receipt:	7.8	°c	
Received By: Green Degumen				
Signature: One Wen				
) "				
Receipt Check	List	Yes	No	N/A
Were custody seals on outside of cooler and intact?				1
Were custody papers properly filled out?		/		
Did all bottles arrive in good condition?		1		
Were correct bottles used for the analyses requeste	ed?	1		
Was sufficient amount of sample sent in each bottle	2?	1	NA NEWSCHI	100000000
Were all applicable sample containers correctly pre-	served and			1
checked for preservation? (Any not in accepted range	ge noted on COC)			H
If applicable, was an observable VOA headspace pre	esent?			1
Non Conformance Generated. (If yes see attached N	ICF)			

#### 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 Nan Address:52634 H	ne: MI DEPT, of EN IGHWAY M-26	VIRONMENTA	QUALITY		fill to: UP ENVII	RONMENTAL	SERVICES, IN	ic.	_		
City, State, Zip: I	City, State, Zip: HUBBELL, MI 49934 Contact: AMY KERANEN				City, State, Zip: BARK RIVER, MI 49807						
Contact: AMY KI					77			et: RICK RIEDY	-		
Telephone: 90633	70389 Ext.	FAX#		P	hone Number: 9064	4669900	FAX #: 90	the state of the s	-		
EPA ID: MIK193		Code:	7 30 10 10 10	1 1 1 1 1 1 1 1	The state of the s			ris (attached) MSI	os Class		
B. WASTE DESCR Name of Waste: I	IPTION AND GEN JNKNOWN WASTE	ERAL CHARA	CTERISTICS	no moot was or	ompressed using, gg	Octional Kilowic	uge 🖾 Amanys	ins (attached) [_WSL	OS 🗌 Both		
	g Waste: ABANDO	to Assert the second	A P C C C C C C C C C C C C C C C C C C	20	T			- Carre			
Color: BROWN		None	□Mild		Layers Single l		Double Layer	☐ Multi-Layer	0		
Free Phases:			Powder	_% [	Solid 90	% Sludge_	%	Debris	%		
Filter cake	% 🔲 Meta	l Filings	% □ Gran	nules	% Soil	% Aeros	ol Dyes Dn	o Containers? □y	es □no		
Is this a USEPA I Is this a DOT Haz Is this Universal V	lazardous Waste? rardous Material? Vaste?	⊠Yes □	No Anticipate to Is this PC	ed Annual Vol.	White the best of the same of	les: D008 Units: GAL f yes PBC conce	One time shatration;	A CONTRACT OF THE PARTY OF	□no		
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Hazardous Class			/NA # <u>: 3082</u>	Additional D	A DATE HAS DELICATED BY	VVI	_				
Method of Shipm			Bulk Solid		ontainer Type: DR	UM Size: 8	5				
D. SPECIAL HAND	LING INSTRUCT	IONS If S	pecial handling te	chniques are re	equired, specify:						
Treatment:			representative sai								
E. METALS (Indicat	to the company of the party of the company of the c			f the following	using): ATCLP	☐Generator F	Knowledge	□TOTAL .			
Metal	Less than	or Actual	Metal		Less than	or Actual	Metal	Less than	or Artual		
Arsenic	⊠ <5 □ <500		Mercury		⊠<0.2 □<20		Nickel	□ <5 □ <134			
Barium	<b>23&lt;100</b>		Selenium		⊠<1 □<100		Thalliom	C <5 C  <130			
Cadmium	⊠<1 □ <100		Silver		<b>⊠&lt;</b> 5		Zinc	D<5			
Chromium	EXI<5		Chromium-Hex		⊠<5 □<500						
Lead	□<5 図<500		Copper		<b>□&lt;</b> 5						
F. PHYSICAL/CHE Specific Gravity:	MICAL PROPERT	TES ⊠0.8-1.0	□1.0-1.2		]1.2-1.4	□1.4-1.7	□>1.7 /	Actual:			
Total Suspended	Solids: 0.5		,5-2.0	2.0-5.0	□5.0-20	□>20	Actual:		A		
pH:		□2		⊠6-8	□8-10	10-12.5	D>12.5	Actual: 6.59 and 6.	34		
BTU's:	</td <td> 🗆</td> <td>-4</td> <td>□4-8</td> <td>□8-12</td> <td>□12-16</td> <td>Actual:</td> <td></td> <td></td>	🗆	-4	□4-8	□8-12	□12-16	Actual:				
Flash Point Degr		County A.A. A. V. William, The	40000	□>140-200°		The state of the s					
Sulfur ( WT): G. HAZARDOUS C	Ø <0.5		0.5-2.0		]2-5	□ >5.0	Actual:				
Reactivity: None	Explosive	Pyrophoric	Shock :	T	Water Reactive	☐ Etiological	□ padianah	- Davidson			
Viscosity: Low	Medium	High		odes present?	The second of the second of the			e □Acutely Haza SEPA Waste Code S	March Charles Committee Co. I.		
Halogens:	% Chlorine	1	% Fluorine		% Bromine		% lodine	DELTE WHILE COME S	conou).		
Cyanides (ppm) H. CHEMICAL CO	PCB's (ppm) MPOSITION (MUS	Pes T TOTAL 100%	icides: (ppm) 6)	Si	lfides: (ppm):		Phenolics: (p	pm)			
SEE ATTACHED L FOR SAMPLE CHT L862154-05 and L86 CHLL-HPA-DRUM and L862134-10	AB RESULTS C-TP-DM04— 2154-06 and 12—L862134-09	100%				%		*			
		26				%					
7.7	-	96		_		%					

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.

an Keranen, MDEQ

ELL oros mar.

10/19/16



# ANALYTICAL REPORT

October 07, 2016



## 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: Jahn V Houkins

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 ESCIs performed per guidance provided in laboratory standard operating procedures: 663302, 663003, and 060304.

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<sup>9</sup>Sc: Chain of Custody

35

## SAMPLE SUMMA

1ARY	ONE LAB. NATIONWID

09/23/16 11:00

Collected date/time

Collected by

Chris Gendron

ONE	LAB.	NATIONWIDE.

Received date/time

09/27/16 09:00

CHTC-TP-DM09 L862154-01 Solid	Chris Gendron	09/23/16 11:00	09/27/16 09:00		
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time



















# CHTC-TP-DM09 L862154-02 Waste

Method	Batch	Dilution	Preparation	Analysis	Analyst	
			date/time	date/time		
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

CHTC-TS-DM09 L862154-04 Waste

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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



Collected by

Chris Gendron

Collected date/time 09/23/16 14:00

Collected date/time

09/23/16 14:00

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

Received date/time

09/27/16 09:00

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time

ed by	Collected date/time	Re
endron	09/23/16 11:30	09

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

CHTC-TP-DM04 L862154-05 Solid			Chris Gendron	09/23/16 11:30	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

## SAMPLE SUMMARY

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Received date/time

Collected date/time

CHTC-TP-DM04 L862154-06 Waste			Collected by Chris Gendron	Collected date/time 09/23/16 11:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
CHTC-TS-DM02 L862154-07 Solid			Collected by Chris Gendron	Collected date/time 09/23/16 10:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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			Chris Gendron	09/23/16 10:30	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

Collected by















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.























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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L862154-02	CHTC-TP-DM09	D93/1010A

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Collected date/time: 09/23/16 11:00

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	0.899		1	09/30/2016 14:20	WG912583

### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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	









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Collected date/time: 09/23/16 11:00

#### Preparation by Method 1311

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	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







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#### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.750	3	10/03/2016 15:04	WG913176





#### Wet Chemistry by Method 9034-9030B

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





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#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	3.36		1	10/04/2016 14:54	WG913869

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#### Sample Narrative:

9045D L862154-02 WG913869: 3.36 at 20.2c

## Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	81.9		1	09/30/2016 14:15	<u>WG911949</u>

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 10:57	WG912412

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

Collected date/time: 09/23/16 11:00

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J3</u>	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	10.3		80.1-120	128		09/30/2016 16:39	WG912888	









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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J1</u>	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	
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#### Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	97.7		1	09/29/2016 14:33	WG912486

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.65		1	09/30/2016 14:20	WG912583



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#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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								
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	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-xvlene	101		29.2-144		10/05/2016 01:20	WG912211		





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Collected date/time: 09/23/16 14:00

#### Preparation by Method 1311

-									
	Result	Qualifier	Prep	Batch					
Analyte			date / time						
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					







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### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	7.07		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-04 WG913869: 7.07 at 20.0c





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# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

# Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:07	WG912412

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/I		date / time	
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	<u>J3</u>	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

# SAMPLE RESULTS - 04

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L862154

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<i>75.3</i>		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

















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Collected date/time: 09/23/16 11:30

L862154

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	0.894		1	09/30/2016 14:20	WG912583

# <sup>2</sup>To

### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	









ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:30

### Preparation by Method 1311

reparation by method for								
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				









#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	6.59		1	10/04/2016 14:54	<u>WG913869</u>







9045D L862154-06 WG913869: 6.59 at 20.7c





# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

# Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:10	WG912412

# Metals (ICP) by Method 6010B

( / )							
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

(S) p-Terphenyl-d14

Collected date/time: 09/23/16 11:30

# SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

L862154

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

69.2

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

149

29.3-137

















WG912639

10/03/2016 20:10

Collected date/time: 09/23/16 10:30

# SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

L862154

#### Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	94.0		1	09/29/2016 14:33	<u>WG912486</u>



### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	<u>WG912583</u>



#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862154-07 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

Αl

#### Polychlorinated Biphenyls (GC) by Method 8082

r olyomormated Elphenyle (obj. sy method oboz								
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	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		



ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:30

## Preparation by Method 1311

reparation by method for							
	Result	Qualifier	Prep	Batch			
Analyte			date / time				
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			







# <sup>4</sup>Cn

### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.30		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-08 WG913869: 7.30 at 20.5c





# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>



# <sup>9</sup>Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:13	WG912412

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:30

L862154

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

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	10/03/2016 20:33	WG912639
ND		0.100	0.13	1	10/03/2016 20:33	WG912639
ND		0.100	0.13	1	10/03/2016 20:33	WG912639
ND		0.100	0.50	1	10/03/2016 20:33	WG912639
ND		0.100	3	1	10/03/2016 20:33	WG912639
ND		0.100	2	1	10/03/2016 20:33	WG912639
ND		0.100	5	1	10/03/2016 20:33	WG912639
ND		0.100	400	1	10/03/2016 20:33	WG912639
ND		0.100	200	1	10/03/2016 20:33	WG912639
ND		0.100	100	1	10/03/2016 20:33	WG912639
ND		0.100	400	1	10/03/2016 20:33	WG912639
ND		0.100	2	1	10/03/2016 20:33	WG912639
34.1		10.0-77.9	87		10/03/2016 20:33	WG912639
23.1		5.00-70.1	67		10/03/2016 20:33	WG912639
48.0		21.8-123	120		10/03/2016 20:33	WG912639
61.1		29.5-131	122		10/03/2016 20:33	WG912639
69.7		11.2-130	148		10/03/2016 20:33	WG912639
68.2		29.3-137	149		10/03/2016 20:33	WG912639
	mg/l ND	mg/I ND	mg/l         mg/l           ND         0.100           34.1         10.0-77.9           23.1         5.00-70.1           48.0         21.8-123           61.1         29.5-131           69.7         11.2-130	mg/l         mg/l         mg/l           ND         0.100         7.50           ND         0.100         0.13           ND         0.100         0.50           ND         0.100         3           ND         0.100         2           ND         0.100         5           ND         0.100         400           ND         0.100         200           ND         0.100         100           ND         0.100         400           ND         0.100         2           34.1         10.0-77.9         87           23.1         5.00-70.1         67           48.0         21.8-123         120           61.1         29.5-131         122           69.7         11.2-130         148	mg/l         mg/l         mg/l           ND         0.100         7.50         1           ND         0.100         0.13         1           ND         0.100         0.50         1           ND         0.100         3         1           ND         0.100         2         1           ND         0.100         5         1           ND         0.100         400         1           ND         0.100         200         1           ND         0.100         100         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         2         1           34.1         10.0-77.9         87           23.1         5.00-70.1         67           48.0         21.8-123         120           61.1         29.5-131         122           69.7         11.2-130         148	mg/l         mg/l         date / time           ND         0.100         7.50         1         10/03/2016 20:33           ND         0.100         0.13         1         10/03/2016 20:33           ND         0.100         0.13         1         10/03/2016 20:33           ND         0.100         0.50         1         10/03/2016 20:33           ND         0.100         3         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100         5         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         200         1         10/03/2016 20:33           ND         0.100         200         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100



















ONE LAB. NATIONWIDE.

Total Solids by Method 2540 G-2011

L862154-03,07

#### Method Blank (MB)

Analyte

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

MB Result MB MDL MB RDL MB Qualifier % %

**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	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

#### Laboratory Control Sample (LCS)

ACCOUNT:

U.P. Environmental Services, Inc.

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

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



Ss

GI

Density

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2710 F-2011

L862154-01,03,05,07

### L862154-03 Original Sample (OS) • Duplicate (DUP)

1.65

(OS) L862154-03 09/30/16	14:20 • (DUP) \	WG912583-1	09/30/16 1	4:20	
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier
Analyte	g/cm3	g/cm3		%	

1.65

0.438

D	DUP Qualifier	DUP RPD Limits
		%
		20





#### L862165-01 Original Sample (OS) • Duplicate (DUP)

(03) 2002103-01 03/30/10	(03) 2602103-01									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	g/cm3	g/cm3		%		%				
Density	1.62	1.57	1	2.96		20				











ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

L862154-02

#### Method Blank (MB)

Reactive Cyanide

Reactive Cyanide

(MB) R3167713-1 10/03/16 1	4:36			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg









(OS) L862134-08 10/03/16 14:54 • (DUP) R3167713-6 10/03/16 14:55										
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier					
Analyte	mg/kg	mg/kg		%						

ND









ND

(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	<u>P1</u>	20

0.0390

0.250

0.000







### 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

**DUP RPD Limits** 

%

20

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

(OS) | 86213/LOA | 10/03/16 1/·/A - (MS) | P3167713-A | 10/03/16 1/·/A - (MSD) | P3167713-5 | 10/03/16 1/·/A

(US) L802134-U4 10/03/10 14.44 • (MS) R3107/13-4 10/03/10 14.45 • (MSD) R3107/13-3 10/03/10 14.46												
	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9034-9030B

L862154-02

#### 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 <u>DUP Qualifier</u> DUP R										
Analyte	mg/kg	mg/kg		%		%				
Reactive Sulfide	ND	ND	1	0.000		20				





# <sup>6</sup>Qc

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

(200) 11 00 10 10 1	Spike Amount	,	LCSD Result		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





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

L862154-02,04,06,08

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

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54										
Original Result DUP Result Dilution DUP RPD <u>DUP Qualifier</u> DL										
Analyte	Su	su		%		%				
рН	6.66	6.69	1	0.449		1				

# <sup>2</sup>Tc



# <sup>3</sup>Ss

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

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	CII	CII		%		%				
Analyte	Su	Su		70		/0				





# <sup>6</sup>Qc



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

(200) ***********************************	Spike Amount	•	LCSD Result		LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	SU	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





Analyte
Paint Filter Test

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9095B

L862154-01,03,05,07

### L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03	09/30/16 13:55 • (DUP) \	WG912590-1	09/30/16 1	3:55
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD

Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
%	%		%		%
See Footnote	See Footnote	1	0.000		20

# Ср





#### L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05	09/30/16 13:55 •	(DUP) WG912590-2	09/30/16 13:55
(,		( /	

(03) 2002103-03 03/30/10	Original Result				DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Paint Filter Test	See Footnote	See Footnote	1	0.000		20











Ignitability

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862154-02,04,06,08

10

### L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15											
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	Deg. F	Deg. F		%		%					

0.000

DNI at 170 F









DNI at 170 F

(OS) L862222-10 09/30/16	6 14:15 • (DUP) \	NG911949-4 (	09/30/16 14	4:15		
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10





GI



(LCS) WG911949-2 09/30/16 14	:15 • (LCSD) WG911949-3 09/30/	/16 14:15
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(LCS) WOS11343-2 03/30	3/10 14.13 • (LCS	D) WOJIIJ+J-	3 03/30/10 17.1	10						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93 0-107			0.245	20





ONE LAB. NATIONWIDE.

Mercury by Method 7470A

L862154-02,04,06,08

#### Method Blank (MB)

Analyte

Mercury

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





DATE/TIME:





#### 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

mg/l

U

, ,	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) I 862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

(00) 2002 02 00/00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.07202 . 00		(02)	_ 0 00,00,.0	.0.07						
	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







ONE LAB. NATIONWIDE.

Metals (ICP) by Method 6010B

L862154-02,04,06,08

#### Method Blank (MB)

Silver

(MB) R3167437-1 (	09/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

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

(LCS) R3167437-2 C	)9/30/16 18:02 • (LCSE	D) R3167437-3	3 09/30/16 18:0	4							
	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	%	%	%			%	%	
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	

80-120

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

8.93

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

10.0

8.94

89

20



















ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### Method Blank (MB)

(MB) R3167331-3 09/30/16	5 12:23			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

LCS) R3167331-1 09/30/16 11:03 • (LCSD) R3167331-2 09/30/16 11:23												
	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	%	%	%			%	%		
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		<u>J3</u>	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						



(S) a,a,a-Trifluorotoluene

(S) 4-Bromofluorobenzene

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30/16 15:59 • (MS) R3167331-4 09/30/16 13:14												
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier					
Analyte	mg/l	mg/l	mg/l	%		%						
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						

90.4-116

80.1-120

# 

102

97.7

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

(CS) E002143-01 03/30/10 10:13 * (WS) K3107331-0 03/30/10 10:54 * (WS) K3107331-7 03/30/10 10:54												
	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	%	%		%			%	%
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				





















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862154-03,05,07

### Method Blank (MB)

(MB) R3167926-1 10/04/16	6 08:47			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/926-2 10/04/	716 09:01 • (LCSL	)) R316/926-3	3 10/04/16 09:1	5						
	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	%	%	%			%	%
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												
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				

















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082M

L862154-01

#### Method Blank (MB)

(MB) R3168428-1 10/05/16	6 15:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 10/05/1	S) R3168428-2 10/05/16 15:24 • (LCSD) R3168428-3 10/05/16 15:38										
	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	%	%	%			%	%	
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					





















ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

















(S) 2-Fluorophenol

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

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

// OC) DO167000 1	40/00/00/00 44 00 // 000) 00467000 0 40/00/00 44 45	_
(LCS) R316/928-1	10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43	3

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD
Analyte	mg/l	mg/l	mg/l	%	%	%			%
(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) | 862604-02 10/03/16 15:30 - (MS) P3167928-4 10/03/16 15:53 - (MSD) P3167928-5 10/03/16 16:16

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

23.6

66.7













35.7

75.8

10.0-77.9

11.2-130

**RPD Limits** 

# **GLOSSARY OF TERMS**

#### ONE LAB. NATIONWIDE.



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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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:			Billing Info	rmation:	T. H. 18 18 18 1	1000	1	4 / 4	Α	nalysis /	Contain	er / Pre	servativ	/e		4 1 1	Chain of Custody	Page of
UP Environmental Se P.O. BOX 127 BARK River, MI			Sán	ľ										38 28 20 20			WI LA	ESC
Report to:			Email To:		11		4										12065 Lebanon Rd Mount Juliet, TN 3	7122
Report to: RICK Right			rick	upenviro	nautel.com	\	Her										Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859	359
Description: Abandon Mining	Waste-	Torch (	Ke.	City/State Collected:			1/15										1	362154
Phone: Fax:	Client Project			Lab Project #			Pess	7						E 81			K1	
Collected by (print):  Ch (5 Ch a sm.  Collected by (signature):	Site/Facility II	)#		P.O. #			1%	Sulfi		of n							Acctnum: Template:	A CONTRACTOR OF THE PARTY OF TH
Collected by (signature): Immediately Packed on ice N Y	Same Next D	ay	200% 100% 50%	Email?_	Results Needed NoYes  NoYes	No.	010	18	H	Teshore	2815						Prelogin: TSR: PB:	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	of Cntrs	1-	React	9	DL	a						Shipped Via:	
CHTC-TP-DM&9	Gras	ot	Берин	9/23/16		3	1		X	K	X						Rem./Contamina	nt Sample # (lab only)
CHTC-TS-DM49	-0	01				2	-	Y	X	X	Name and Address of the Owner, where							-4/00
CHTC-TR-DMQ4	Gras				2:000	2				×	X	- 400 - 100			- 10 mg	Sec.		-03/-04
CHTC-TS-DMQ2		OT		9/23/16		1877-99	X		X		X							,07/18
CHIL IS YMUL	Gras	OT		11/27/10	10.302	0	12		*	K							75.	2-17 00
										1.20							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
				Wall State						8 1		Market .						
				A CONTRACT OF				7 32					7					
	3/44																	
* Matrix: SS - Soil GW - Groundwater	• <b>WW</b> - WasteW	ater <b>DW</b> - D	rinking Wat	er OT-Other						pH _		Tem			Но	ld#		
Relipquished by : (Signature)		Date:		Time: F	eceived by: (Sign	ature)	A .	A			s return			S		ndition	: (la	ab use only GNV
- John		9/23	/16	7:300						1	edEx [							
Relinquished by (Signature)		Date:			teceived by: (Sign	ature)	X.			Temp:		°CqBo		eceived:	100	C Seal	Intact:	0K nna
Relinquished by : (Signature)		Date:		Time:	deceived for lab b	y: (Sign	ature)			Date:	27-44	Tir	290	2	pH	Checke	ed: N	CF:



Cooler Re	ceipt Form					
Client: UPENVBRMI SDG#			1862/54			
Cooler Received/Opened On: 9/27/16	Cooler Received/Opened On: 9/27/16 Temperature Upon Receipt:		3.2 °c			
Received By: Richard Hughes						
Signature: 21						
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?		/		in the same		
Were correct bottles used for the analyses requested?		/				
Was sufficient amount of sample sent in each bottle?		ļa j		/		
Were all applicable sample containers correctly preser	ved and			1		
checked for preservation? (Any not in accepted range	noted on COC)					
If applicable, was an observable VOA headspace prese	nt?			1		
Non Conformance Generated. (If yes see attached NCF	)					



# ANALYTICAL REPORT

myESC

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: Jahn V Houkins

John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as counded values. This test report shall not be reproduced, except in full, without written appropriated in laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures; 660302, 060303, and 660304.

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<sup>7</sup>Gl: Glossary of Terms

<sup>9</sup>Sc: Chain of Custody

<sup>8</sup>Al: Accreditations & Locations

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

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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
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
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
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
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	Analysis	Analyst
			date/time	date/time	
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
		·			-

PROJECT:

SDG:

L862134

DATE/TIME:

10/05/16 14:03

ACCOUNT:

U.P. Environmental Services, Inc.

















# SAMPLE SUMMARY

$\bigcirc$ N	ΛR	NATIO	VIIA	/IDE

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	Analysis	Analyst
			date/time	date/time	. ,
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
CHLL-HPA-DM-02 L862134-07 Solid			Collected by Chris Gendron	Collected date/time 09/21/16 18:00	Received date/tim 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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/tim 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
	Batch WG912412	Dilution 1	•	,	Analyst NJB
Mercury by Method 7470A			date/time	date/time	,
Mercury by Method 7470A Metals (ICP) by Method 6010B	WG912412	1	date/time 09/29/16 11:47	date/time 09/30/16 10:50	NJB
Mercury by Method 7470A Metals (ICP) by Method 6010B Preparation by Method 1311	WG912412 WG912283	1 1	date/time 09/29/16 11:47 09/30/16 11:28	date/time 09/30/16 10:50 09/30/16 18:35	NJB ST
Method  Mercury by Method 7470A  Metals (ICP) by Method 6010B  Preparation by Method 1311  Preparation by Method 1311  Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912412 WG912283 WG911845	1 1 1	date/time 09/29/16 11:47 09/30/16 11:28 09/27/16 22:38	date/time 09/30/16 10:50 09/30/16 18:35 09/27/16 22:38	NJB ST LJN
Mercury by Method 7470A Metals (ICP) by Method 6010B Preparation by Method 1311 Preparation by Method 1311	WG912412 WG912283 WG911845 WG911888	1 1 1 1	date/time 09/29/16 11:47 09/30/16 11:28 09/27/16 22:38 09/27/16 16:37	date/time 09/30/16 10:50 09/30/16 18:35 09/27/16 22:38 09/27/16 16:37	NJB ST LJN LJN



Wet Chemistry by Method 9034-9030B

Wet Chemistry by Method D93/1010A

Wet Chemistry by Method 9045D

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

WG912345

WG913869

WG911788

CHLL-HPA-DRUM-12	L862134-10	Waste
OFFICE THE A DICOM 12	L00210110	VVGStC

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/2//16 22:38	LJ

09/29/16 13:39

10/04/16 14:54

09/29/16 01:53

Collected by

Collected by

Chris Gendron

Chris Gendron

1

09/29/16 19:00

10/04/16 14:54

09/29/16 01:53

09/21/16 10:00

Collected date/time

Collected date/time

09/21/16 10:00

















MAJ

JJL

ΜZ

Received date/time

Received date/time

09/27/16 09:00

09/27/16 09:00

Collected date/time

10/04/16 14:54

09/29/16 01:53

Received date/time

JJL

MZ

#### 09/21/16 10:00 09/27/16 09:00 Chris Gendron CHLL-HPA-DRUM-12 L862134-10 Waste Method Batch Dilution Preparation Analysis Analyst date/time date/time Preparation by Method 1311 WG911888 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 LRL WG912711 10/04/16 23:11 10/04/16 23:11 Wet Chemistry by Method 9012 B WG913176 10/03/16 12:22 10/03/16 14:56 DR Wet Chemistry by Method 9034-9030B WG913004 10/03/16 17:40 10/04/16 14:59 MAJ

WG913869

WG911788

SAMPLE SUMMARY

Collected by

10/04/16 14:54

09/29/16 01:53

1



















Wet Chemistry by Method 9045D

Wet Chemistry by Method D93/1010A



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.

CASE NARRATIVE























### 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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
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

#### ONE LAB. NATIONWIDE.

#### Total Solids by Method 2540 G-2011

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



#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	3.11		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-01 WG912590: Contains No Free Liquid

# Gl

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#### Polychlorinated Biphenyls (GC) by Method 8082

r diyamamated Biphenyis (e.g.) by Method 6002							
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/kg		mg/kg		date / time		
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	

#### ONE LAB. NATIONWIDE.

862134

# Collected date/time: 09/21/16 16:30 Preparation by Method 1311

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







#### Wet Chemistry by Method 9012 B

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





# Wet Chemistry by Method 9034-9030B

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





# <sup>8</sup>Al

#### Wet Chemistry by Method 9045D

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

# Sc

#### Sample Narrative:

9045D L862134-02 WG913869: 6.66 at 20.3c

# Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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













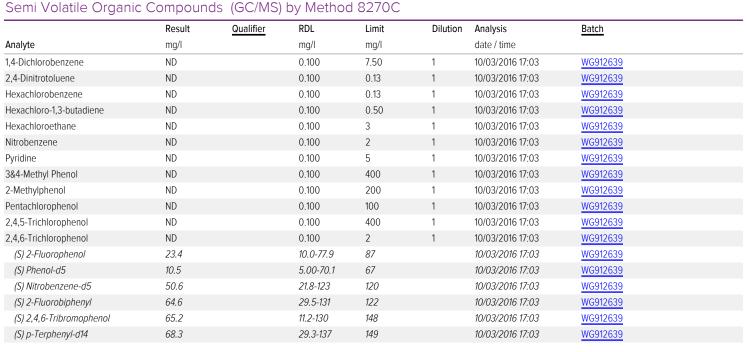












Collected date/time: 09/21/16 17:00

# SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	3.55		1	09/30/2016 14:20	WG912583



Cn

### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-03 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

### Polychlorinated Biphenyls (GC) by Method 8082

,								
	Result	Qualifier	RDL	Dilution	Analysis	Batch		
Analyte	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		





ONE LAB. NATIONWIDE.

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

#### confected date/time. 03/21/10 17.00

Preparation by Method 1311								
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				







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#### Wet Chemistry by Method 9012 B

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





#### Wet Chemistry by Method 9034-9030B

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





# <sup>8</sup>Al

#### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-04 WG913869: 7.05 at 20.1c

# Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

# SAMPLE RESULTS - 04

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862134

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711	
,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711	
-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 20:57	WG912711	
etrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711	
ichloroethene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711	
nyl 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	

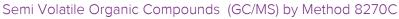
# <sup>1</sup>Cp











	Result	Qualifier	RDL	Limit	Dilution	Analysis	Datah	
		Qualifier			Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
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	







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L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	0.796		1	09/30/2016 14:20	WG912583



Cn

#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862134-05 WG912590: Contains No Free Liquid



Αl

#### Polychlorinated Biphenyls (GC) by Method 8082

Tolyenia mateura Bipmenty is (66) by Method 6662									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	mg/kg		mg/kg		date / time				
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			



#### Sample Narrative:

8082 L862134-05 WG912210: Dilution due to sample volume

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#### L862134

#### Preparation by Method 1311

	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
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

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





### Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-06 WG913869: 6.67 at 20.1c

# Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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









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

# SAMPLE RESULTS - 07

#### ONE LAB. NATIONWIDE.

L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.41		1	09/30/2016 14:20	WG912583



Cn

#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862134-07 WG912590: Contains No Free Liquid



# Polychlorinated Biphenyls (GC) by Method 8082

r diyememated Exprenyis (CO) by Method 0002								
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	mg/kg		mg/kg		date / time			
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		



ONE LAB. NATIONWIDE.

# Collected date/time: 09/21/16 18:00 Preparation by Method 1311

, ,				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

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



Cn



# СQс

# Gl





# Wet Chemistry by Method 9034-9030B

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

#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	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

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

#### Mercury by Method 7470A

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

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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L862134

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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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







#### ONE LAB. NATIONWIDE.

L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.01		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-09 WG912590: Contains No Free Liquid



# Polychlorinated Biphenyls (GC) by Method 8082

. 0., 00	0	,				
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
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



#### Sample Narrative:

8082 L862134-09 WG912210: Dilution due to sample volume

ONE LAB. NATIONWIDE.

#### L80

# Collected date/time: 09/21/16 10:00 Preparation by Method 1311

	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
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





# <sup>3</sup>Ss

Cn

### Wet Chemistry by Method 9012 B

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





## Wet Chemistry by Method 9034-9030B

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





### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-10 WG913869: 6.34 at 20.3c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

# SAMPLE RESULTS - 10

ONE LAB. NATIONWIDE.

L862134

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

Volatile Organie Com	ipodinas (O	Sittle by the	2010000201				
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

# <sup>1</sup>Cp







Cn



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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	<del></del> -
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









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Total Solids by Method 2540 G-2011

L862134-01,03,05

#### Method Blank (MB)

(MB) R3167449-1 09/30/16 12:56 MB Result MB Qualifier MB MDL Analyte

MB RDL % % %

**Total Solids** 0.00130



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

	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	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	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	



GI

Ss

<sup>†</sup>Cn



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Total Solids by Method 2540 G-2011

L862134-07,09

#### Method Blank (MB)

Analyte

**Total Solids** 

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

MB Result MB MDL MB RDL MB Qualifier % %

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	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%

**Total Solids** 81.4 81.5 0.161

#### Laboratory Control Sample (LCS)

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

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits
Analyte	%	%	%	%
Total Solids	50.0	50.0	100	85.0-115



GI

Ss



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Wet Chemistry by Method 9012 B

L862134-02,04,06,08,10

#### Method Blank (MB)

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

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Cvanide	11		0.0390	0.250







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

- (	OS	H 862134-08	10/03/16 14:54 •	(DUP	) R316 / /13-6	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)

(,	Original Result			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) R31677	/13-3	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

(03) 662134-04 10/03/16	3) L662 134-04 10/03/10 14.44 • (NIS) K310/713-4 10/03/10 14.45 • (NISD) K310/713-3 10/03/10 14.46											
	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9034-9030B

L862134-02,04,06,08

#### 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					









(OS) L862134-02	09/29/16	19:00 • (DUP)	WG912345-1	09/29/16 1	19:00	
		Original Result	<b>DUP Result</b>	Dilution	DUP RPD	

Analyte	mg/kg	mg/kg		%	%
Reactive Sulfide	ND	ND	1	0.000	20







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

(LCS) WG312343-2 03/23/10 13:00 • (LCSD) WG312343-3 03/23/10 13:00										
	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

DUP Qualifier DUP RPD Limits





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9034-9030B

L862134-10

#### 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



# <sup>3</sup>Ss

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

(OS) L862134-10 10/04/16	(OS) L862134-10 10/04/16 14:59 • (DUP) WG913004-1 10/04/16 14:59										
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits					
Analyte	mg/kg	mg/kg		%		%					
Reactive Sulfide	ND	ND	1	0.000		20					







(LCS) VVC51500+ 2 10/0+/	100 J 100 J 2 1070 J 10									
	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





рΗ

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

L862134-02,04,06,08,10

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

(OS) L862134-02 10/04/16	14:54 • (DUP) V	) WG913869-3 10/04/16 14:54							
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits			
Analyte	su	su		%		%			

6.69









6.66

(OS) L862756-29	10/04/16 14:54 • (DUP) \	NG913869-4	10/04/16 1	4:54
	Original Result	DUP Result	Dilution	DUP

	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	su	SU		%		%
рН	8.05	8.00	1	0.623		1

0.449







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

(200) 110/01/1	Spike Amount	•			LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862134-02,04,08,10

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

(OS) L862134-10	09/29/16 01:53 • (DUP) V	VG911788-3	09/29/16 0	1:53	
	Original Result	DUP Result	Dilution	DUP RPD	<u> </u>

	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) \	NG911/88-4	09/29/16 0	1:53
	Original Result	<b>DUP</b> Result	Dilution	DUP RPD

	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

(LCS) WOS11700-1 03723	10 01.55 (LC5)	D) WOJII/00-2	2 03/23/10 01.	55						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	82.8	82.8	101	101	93 0-107			0.000	20





Ignitability

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862134-06

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

(OS) L862543-01 10/04/16	12:15 • (DUP) W	/G912997-1	10/04/16 12:	15	
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qual
Analyte	Deg. F	Deg. F		%	

79.9

DUP RPD	DUP Qualifier	DUP RPD Limits
%		%
0.351		10







79.6

(OS) L862604-02	10/04/16 12:15 • (DUP) V	VG912997-4	10/04/16 12	2:15
	Original Result	<b>DUP Result</b>	Dilution	DUP I

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







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

(LC3) WG912997-2 10/	04/16 12.15 • (LCS	D) WG912997	-5 10/04/10 12.	15							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%	
Ignitability	82.0	83.1	82.7	101	101	93.0-107			0.483	20	





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Mercury by Method 7470A

L862134-02,04,06,08,10

#### Method Blank (MB)

Analyte Mercury

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

MB Result	MB Qualifier	MB MDL	MB RDL
mg/l		mg/l	mg/l
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) I 862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

(00) 2002 02 00)	00/10/10/2/	0.07202 . 00		(02)	02 0 00/00/.	0 10.07							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	n 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	







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Metals (ICP) by Method 6010B

L862134-02,04,06,08,10

#### Method Blank (MB)

Lead

Silver

Selenium

(MB) R3167437-1 (	09/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	F
Analyte	mg/l		mg/l	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	Γ
Lead	U		0.0167	0.0500	
Selenium	U		0.0333	0.100	L L
Silver	U		0.0167	0.0500	

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

(LCS) R3167437-2 09/30/1	6 18:02 • (LCSE	) R3167437-3	09/30/16 18:04	4							
	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	%	%	%			%	%	
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	

80-120

80-120

80-120

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

9.26

9.16

8.93

92

92

89

93

92

89

(OS) L862118-02 09/30	D/16 18:07 • (MS) R	3167437-5 09/	30/16 18:12 • (	MSD) R3167437	7-6 09/30/16 1	18:15						
	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	%	%		%			%	%
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
_ead	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

10.0

10.0

10.0

9.16

9.18

8.94

20 20

20



















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

L862134-02,04,06,08,10

#### Method Blank (MB)

(MB) R3167391-3 09/30/16	6 14:59			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

# 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							
	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	%	%	%			%	%
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		<u>J3</u>	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				



















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

#### 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

	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	%	%		%			%	%
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				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862134-01,03,05,07,09

#### Method Blank (MB)

(S) Tetrachloro-m-xylene

(MB) R3167087-1 09/29/1	6 08:39			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/08/-2 09/29/	16 08:53 • (LCS	SD) R316/08/-	3 09/29/16 09:	:07							
	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	%	%	%			%	%	
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					

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	9/29/16 09:48	• (MSD) R3167	087-5 09/29	/16 10:02						
	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	%	%		%			%	%
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				

















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

#### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# 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							
	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	%	%	%			%	%
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				

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

#### 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

	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	%	%	%			%	%
(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				

# <sup>'</sup>Cp





#### 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

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

66.7













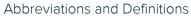


75.8

11.2-130

# **GLOSSARY OF TERMS**





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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
daho	TN00003	Oklahoma	9915
Ilinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
ouisiana	Al30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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:	pany Name/Address:			rmation:			6 a	1.2	Α	nalysis /	Contair	ner / Pre	servativ	е			Chain of Custody	Page of	.1
P.O. Box 127	to: Email To:			2ame													₩F	SC	
Report to: Rick Riedy			Email To:	apenvironmental.com			8	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					4				12065 Lebanon Rd Mount Juliet, TN 371		
Project				City/State	mental.com	_	19					-				10	Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859		
Description: Abah Jon M	iption: Aban Jon Minny Wast - Tordelate   Client Project #		Collected:			14	19	V								L# 8621	74		
Phone: Fax:	Client Project	*		Lab Project #	N. X		Less	made	tho								1085		1
Chas Gadgn	Site/Facility ID	)# 		P.O. #			70	3	E.		orn						Acctnum: Template:	A.	
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Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	1	8	2		1	8			Je -		Shipped Via:	Sample # (lab only)	
CHLL-4PA-DRUM-18	Grab	OT		V21/16	4:300	(0	X	X	1	X	X	X					- Size	orla	42
CHLL-HPA-8000M-01		01		9/21/16	5500p	10	X	X	X	X	×	X						03/01	
CHLL-HRA ~D RUM \$5/04	Greek	OT		8/21/16	5130p	(0	*	X	X	×	X	<						07/166	
	Gmb	OT		9/24/16	Coloop	9	X	X	×	X	×	X	0	77 . 138				07/03	
CHL-HPA-DRUM-12	Grab	OT		9/26/16	10:00A	2	×	×	×	Y	×	~						09/10	
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			265.00		The state of the s					19 .oy 3		y/A+							
							590%		42										- 1
* Matrix: SS - Soil GW - Groundwater Remarks:	<b>ww</b> - WasteW	/ater <b>DW</b> - D	rinking Wate	er OT-Other		Μ	W	9-27	-16	pH _		_ Temp	200		Hold		e 6 8113	5 3046	
			16	Time: 4:30p	ture)					nples returned via: UPS			Condition: (lab use only) Gm						
Relinquished by : (Signature)		Date:			Received by: (Signat	ure)					Temp: °C Bottles Received:			COC Seal Intact:YNNA					
Relinquished by : (Signature)		Date:		Time: R	Received for lab by:	(Signat	ture)			Date: 4 Time 9 W				pH Checked: NCF:					



	Cooler Receipt Form							
Client:	UPENUBRNI	SDG#	862	862134				
Cooler Received/Opened On: 9-27-W	Temperature Upor	Receipt:	3.1	°c				
Received By: Michael Witherspoon					7			
Signature:								
Rece	eipt 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 analys	es requested?		-					
Was sufficient amount of sample sent in	each bottle?			1	-			
Were all applicable sample containers co	prrectly preserved and				-			
checked for preservation? (Any not in ac	cepted range noted on COC)							
If applicable, was an observable VOA hea					-			
Non Conformance Generated. (If yes see								

#### 5611 W. HEMLOCK STREET MILWAUKEE, WI 53223

WS Number:	
Approval #:	

# Badger Disposal of WI., Inc.

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

Address:52634 HIGH		VIRONMENTAL	QUALITY		to: UP ENVIR		SERVICES, IN	ic.	_			
City, State, Zip: HUB	BELL, MI 49934	-			y, State, Zip: BAR	T007777777 T7 T7 T7	19807					
Contact; AMY KERA	57250				Contact: RICK RIEDY							
Telephone: 90633703	89 Ext.	FAX#		Pho	one Number: 9064	669900	THE PARTY IS		=			
EPA ID: MIK1937550	0.04	Code:	74.7	# Toron or other 1970				is (attached) MSD	C / 1			
B. WASTE DESCRIPT Name of Waste: <u>UNK</u>	ION AND GEN	ERAL CHARAC		,, p	print stage	3434	-Be 62 Lumiya	s (snachos) []insp	3 🔲 💆			
Process Generating W	aste: ABANDON	ED CONTAINE	R REMOVAL		-			_				
Color: BROWN	Odor: GAS	None	□Mild	Strong L	yers 🛭 Single I	Layer 🔲	Double Layer	☐ Multi-Layer				
Free Phases:	Liquid 100	% 🗆	Powder	_% 🗆	Solid	% Sludge	%	Debris	%			
Filter cake	% 🔲 Metal	Filings	% 🔲 Стипи	ules 9	% 🔲 Soil	% Aeros	ol Dyes Dn	o Containers? □ye	s 🗆 no			
C. RCRA AND DOT IN	FORMATION							and the second second	-			
Is this a USEPA Haza	rdous Waste?	⊠Yes □N	lo Please list	the USEPA Ha	zardous waste cod	es: D001, D011						
ls this a DOT Hazardo	ous Material?	⊠Yes □N	lo Anticipate	d Annual Volun	ne: 55/	Units: GAL	Ope time sh	ipment 🖾 yes	□no			
Is this Universal Wast	e?	□yes ⊠n	o ls this PCF	3 Waste?	yes ⊠no if	yes PBC conce	ntration:	ppm				
Proper Shipping Name	: FLAMMABLE	LIQUIDS, n.o.s.		The last	March A	As a land						
Hazardous Class #: 3	PG #: I	UN	NA #: 1993	Additional Des	cription:							
Method of Shipment:	23/3/00	Charles Co. Co. Co.	Bulk Solid		ntainer Type: DRI		•					
. SPECIAL HANDLIN			pecial handling tec		Manager Colors and the second	7,777						
Treatment:	The second second	den and	representative sam									
E. METALS (Indicate in	45.50 VA 7.3					По	American I	Tronus				
	Less than	or Actual	Metal	The state of the s	Less than	Generator K	Metal	Less than	or Actual			
Arsenic	⊠ <5 □ <500		Mercury	10	⊠<0.2 □<20		Nickel	□ <5 □ <134				
Barium	⊠<100		Selenium		⊠<1 □<100		Thalliam	□<5 □ <130				
Cadmium	⊠<1 □<100		Silver		<b>83&lt;</b> 5		Zinc	D<5				
Chromium	<b>M</b> <5		Chromium-Hex		⊠<5 □<500		Paris.	64.7				
Lead	⊠<5 □<500		Copper		<b>-&lt;</b> 5							
Thompson a seriori	and the letter to	reto	Озрры				-					
F. PHYSICAL/CHEMIC Specific Gravity:	3<0.8	⊠0.8-1.0	□1.0-1.2	F11	.2-1.4	□1.4-1.7	□>1.7	Actual:				
Total Suspended Soli		THE RESERVE OF THE PARTY OF THE	TO 100 100 100 100 100 100 100 100 100 10	2.0-5.0	□5.0-20	□>20	Actual:					
pH;		□2	-6	□6-8	□8-10	□10-12.5	□>12.5 /	Actual: 3.36				
BTU's:	<b>□</b> <1		4	<b>□4-8</b>	□8-12	⊠12-16	Actual:	CONTRACTOR OF THE PARTY OF THE				
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:					
. HAZARDOUS CHAP				The state of the s		The same of	Charles and					
	Explosive	Pyrophoric	☐Shock S	The state of the s	Vater Reactive		Radioactiv					
	Medium	□Hìgh		odes present?	⊠Yes	☐No (If yes, p		SEPA Waste Code Se	ection).			
lalogens:	_ % Chlorine		% Fluorine		% Bromine	-	% Iodine					
Cyanides (ppm) P L. CHEMICAL COMPO	CB's (ppm) OSITION (MUS		icides: (ppm) <u> </u>	Sulf	ildes: (ppm):	450	Phenolics: (p	pm)				
SEE ATTACHED LAB I FOR SAMPLE CHTC-TI	RESULTS P-DM09	%				96						
L862154-01 and L862154	1-02	%							-			
		96				16.1						
		36				%			-			

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

State pro, mgn

10/19/16



# ANALYTICAL REPORT

October 07, 2016



## 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: Jahn V Houkins

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 ESCIs performed per guidance provided in laboratory standard operating procedures: 66/302, 66/303, and 06/304.

Service Representative

Results relate only to the Items tested or calibrated and are reported as rounded values. This test report shall not be reproduced by ESCIs performed per guidance provided in laboratory standard operating procedures: 66/302, 66/303, and 06/304.

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<sup>9</sup>Sc: Chain of Custody

35

## SAMPLE SUMMA

1ARY	ONE LAB. NATIONWID

09/23/16 11:00

Collected date/time

Collected by

Chris Gendron

ONE	LAB.	NATIONWIDE.

Received date/time

09/27/16 09:00

CHTC-TP-DM09 L862154-01 Solid			Chris Gendron	09/23/16 11:00	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time



















# CHTC-TP-DM09 L862154-02 Waste

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

CHTC-TS-DM09 L862154-04 Waste

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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



Collected by

Chris Gendron

Collected date/time 09/23/16 14:00

Collected date/time

09/23/16 14:00

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

Received date/time

09/27/16 09:00

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time

ed by	Collected date/time	Re
endron	09/23/16 11:30	09

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

CHTC-TP-DM04 L862154-05 Solid			Chris Gendron	09/23/16 11:30	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

## SAMPLE SUMMARY

ONE	ΙΛR	NIATIO	NWIDE.
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ONE	LAB.	NATIONWIDE.	
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Received date/time

Collected date/time

CHTC-TP-DM04 L862154-06 Waste			Collected by Chris Gendron	Collected date/time 09/23/16 11:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
CHTC-TS-DM02 L862154-07 Solid			Collected by Chris Gendron	Collected date/time 09/23/16 10:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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			Chris Gendron	09/23/16 10:30	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

Collected by















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.























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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L862154-02	CHTC-TP-DM09	D93/1010A

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Collected date/time: 09/23/16 11:00

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	0.899		1	09/30/2016 14:20	WG912583

### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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	









ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:00

#### Preparation by Method 1311

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	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







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#### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.750	3	10/03/2016 15:04	WG913176





#### Wet Chemistry by Method 9034-9030B

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





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#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	3.36		1	10/04/2016 14:54	WG913869

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#### Sample Narrative:

9045D L862154-02 WG913869: 3.36 at 20.2c

## Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	81.9		1	09/30/2016 14:15	<u>WG911949</u>

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 10:57	WG912412

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

Collected date/time: 09/23/16 11:00

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J3</u>	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	10.3		80.1-120	128		09/30/2016 16:39	WG912888	









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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J1</u>	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	
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Collected date/time: 09/23/16 14:00

#### Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	97.7		1	09/29/2016 14:33	WG912486

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.65		1	09/30/2016 14:20	WG912583



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#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	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-xvlene	101		29.2-144		10/05/2016 01:20	WG912211			





ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 14:00

#### Preparation by Method 1311

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	Result	Qualifier	Prep	Batch					
Analyte			date / time						
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					







# Cn

### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	7.07		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-04 WG913869: 7.07 at 20.0c





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# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

# Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:07	WG912412

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/I		date / time	
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	<u>J3</u>	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

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 14:00

L862154

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<i>75.3</i>		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



















# SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:30

L862154

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	0.894		1	09/30/2016 14:20	WG912583

# <sup>2</sup>To

### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	









# SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:30

#### Preparation by Method 1311

, ,					
	Result	Qualifier	Prep	Batch	
Analyte			date / time		
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	







# Cn

### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	6.59		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-06 WG913869: 6.59 at 20.7c





# Αl

# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>



# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:10	WG912412

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

(S) p-Terphenyl-d14

Collected date/time: 09/23/16 11:30

# SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

L862154

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

69.2

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

149

29.3-137

















WG912639

10/03/2016 20:10

Collected date/time: 09/23/16 10:30

# SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

L862154

#### Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	94.0		1	09/29/2016 14:33	<u>WG912486</u>



### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	<u>WG912583</u>



#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862154-07 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

Αl

#### Polychlorinated Biphenyls (GC) by Method 8082

Tolyonionnated Diphonylis (66) by Method 6662									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	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			



# SAMPLE RESULTS - 08

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:30

### Preparation by Method 1311

Treparation by Method 1011								
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				







# <sup>4</sup>Cn

### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.30		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-08 WG913869: 7.30 at 20.5c





## Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>



# <sup>9</sup>Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:13	WG912412

# Metals (ICP) by Method 6010B

(, , , , , , , , , , , , , , , , , , ,							
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

# SAMPLE RESULTS - 08

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:30

L862154

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

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	10/03/2016 20:33	WG912639
ND		0.100	0.13	1	10/03/2016 20:33	WG912639
ND		0.100	0.13	1	10/03/2016 20:33	WG912639
ND		0.100	0.50	1	10/03/2016 20:33	WG912639
ND		0.100	3	1	10/03/2016 20:33	WG912639
ND		0.100	2	1	10/03/2016 20:33	WG912639
ND		0.100	5	1	10/03/2016 20:33	WG912639
ND		0.100	400	1	10/03/2016 20:33	WG912639
ND		0.100	200	1	10/03/2016 20:33	WG912639
ND		0.100	100	1	10/03/2016 20:33	WG912639
ND		0.100	400	1	10/03/2016 20:33	WG912639
ND		0.100	2	1	10/03/2016 20:33	WG912639
34.1		10.0-77.9	87		10/03/2016 20:33	WG912639
23.1		5.00-70.1	67		10/03/2016 20:33	WG912639
48.0		21.8-123	120		10/03/2016 20:33	WG912639
61.1		29.5-131	122		10/03/2016 20:33	WG912639
69.7		11.2-130	148		10/03/2016 20:33	WG912639
68.2		29.3-137	149		10/03/2016 20:33	WG912639
	mg/l ND	mg/I ND	mg/l         mg/l           ND         0.100           34.1         10.0-77.9           23.1         5.00-70.1           48.0         21.8-123           61.1         29.5-131           69.7         11.2-130	mg/l         mg/l         mg/l           ND         0.100         7.50           ND         0.100         0.13           ND         0.100         0.50           ND         0.100         3           ND         0.100         2           ND         0.100         5           ND         0.100         400           ND         0.100         200           ND         0.100         100           ND         0.100         400           ND         0.100         2           34.1         10.0-77.9         87           23.1         5.00-70.1         67           48.0         21.8-123         120           61.1         29.5-131         122           69.7         11.2-130         148	mg/l         mg/l         mg/l           ND         0.100         7.50         1           ND         0.100         0.13         1           ND         0.100         0.50         1           ND         0.100         3         1           ND         0.100         2         1           ND         0.100         5         1           ND         0.100         400         1           ND         0.100         200         1           ND         0.100         100         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         2         1           34.1         10.0-77.9         87           23.1         5.00-70.1         67           48.0         21.8-123         120           61.1         29.5-131         122           69.7         11.2-130         148	mg/l         mg/l         date / time           ND         0.100         7.50         1         10/03/2016 20:33           ND         0.100         0.13         1         10/03/2016 20:33           ND         0.100         0.13         1         10/03/2016 20:33           ND         0.100         0.50         1         10/03/2016 20:33           ND         0.100         3         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100         5         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         200         1         10/03/2016 20:33           ND         0.100         200         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100



















ONE LAB. NATIONWIDE.

Total Solids by Method 2540 G-2011

L862154-03,07

#### Method Blank (MB)

Analyte

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

MB Result MB MDL MB RDL MB Qualifier % %

**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	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

#### Laboratory Control Sample (LCS)

ACCOUNT:

U.P. Environmental Services, Inc.

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

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



Ss

GI

Density

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2710 F-2011

L862154-01,03,05,07

#### L862154-03 Original Sample (OS) • Duplicate (DUP)

1.65

(OS) L862154-03 09/30/16	14:20 • (DUP) \	WG912583-1	09/30/16 1	4:20	
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier
Analyte	g/cm3	g/cm3		%	

1.65

0.438

D	DUP Qualifier	DUP RPD Limits
		%
		20





#### L862165-01 Original Sample (OS) • Duplicate (DUP)

(03) 2002103-01 03/30/10	14.20 • (DOF) V	VU312303-2 (	33/30/10 1	4.20		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.62	1.57	1	2.96		20











ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

L862154-02

#### Method Blank (MB)

Reactive Cyanide

Reactive Cyanide

(MB) R3167713-1 10/03/16 1	4:36			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg









(OS) L862134-08 10/03/16	14:54 • (DUP) R	3167713-6 10	/03/16 14:5	55	
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier
Analyte	mg/kg	mg/kg		%	

ND









ND

(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	<u>P1</u>	20

0.0390

0.250

0.000







### 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

**DUP RPD Limits** 

%

20

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

(OS) | 86213/LOA | 10/03/16 1/·/A - (MS) | P3167713-A | 10/03/16 1/·/A - (MSD) | P3167713-5 | 10/03/16 1/·/A

(US) L602134-U4 10/US/11	0 14.44 • (IVIS) R3	10//13-4 10/0	3/10 14.45 • (IVI)	3D) K310//13-3	10/03/10 14.40	)						
	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9034-9030B

L862154-02

#### 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) W	/G913004-1 10	)/04/16 14:	59		
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20





# <sup>6</sup>Qc

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

(200) 11 00 10 10 1	Spike Amount	,	LCSD Result		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





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

L862154-02,04,06,08

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

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54										
	Original Result	<b>DUP</b> Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits				
Analyte	Su	su		%		%				
рН	6.66	6.69	1	0.449		1				

# <sup>2</sup>TC



# <sup>3</sup>Ss

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

(OS) L862756-29 10/04/16	(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	CII	CII		%		%					
Analyte	Su	Su		70		/0					





# <sup>6</sup>Qc



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

(200) ***********************************	Spike Amount	•	LCSD Result		LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	SU	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





Analyte
Paint Filter Test

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9095B

L862154-01,03,05,07

#### L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03	09/30/16 13:55 • (DUP) \	WG912590-1	09/30/16 1	3:55
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD

Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
%	%		%		%
See Footnote	See Footnote	1	0.000		20

# Ср





#### L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05	09/30/16 13:55 •	(DUP) WG912590-2	09/30/16 13:55
(,		( /	

(03) 2002103-03 03/30/10	Original Result				DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Paint Filter Test	See Footnote	See Footnote	1	0.000		20











Ignitability

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862154-02,04,06,08

10

#### L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15												
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits						
Analyte	Deg. F	Deg. F		%		%						

0.000

DNI at 170 F









DNI at 170 F

(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15											
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits					
Analyte	Deg. F	Deg. F		%		%					
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10					





GI



(LCS) WG911949-2 09/30/16 14	:15 • (LCSD) WG911949-3 09/30/	/16 14:15
------------------------------	--------------------------------	-----------

(LCS) WOS11343-2 03/30	3) WO311343-2									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93 0-107			0.245	20





ONE LAB. NATIONWIDE.

Mercury by Method 7470A

L862154-02,04,06,08

#### Method Blank (MB)

Analyte

Mercury

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





DATE/TIME:





#### 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

mg/l

U

, ,	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) I 862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

(00) 2002 02 00/00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.07202 . 00		(02)	_ 0 00,00,.0	.0.07						
	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







ONE LAB. NATIONWIDE.

Metals (ICP) by Method 6010B

L862154-02,04,06,08

#### Method Blank (MB)

Silver

(MB) R3167437-1 (	09/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

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

(LCS) R3167437-2 C	09/30/16 18:02 • (LCSE	D) R3167437-3	3 09/30/16 18:0	4							
	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	%	%	%			%	%	
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	

80-120

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

8.93

(OS) L862118-02 09/3	30/16 18:07 • (MS) R3	3167437-5 09/	/30/16 18:12 •	(MSD) R3167437	7-6 09/30/16	18:15						
	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	%	%		%			%	%
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

10.0

8.94

89

20



















ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### Method Blank (MB)

(MB) R3167331-3 09/30/16	5 12:23			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

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

(LCS) R3167331-1 09/30/16	6 11:03 • (LCSD)	R3167331-2 0	9/30/16 11:23							
	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	%	%	%			%	%
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		<u>J3</u>	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				





















(S) 4-Bromofluorobenzene

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30	)/16 15:59 • (MS) R3	3167331-4 09/3	30/16 13:14				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
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) Dibromofluoromethar	пе			103		79.0-121	
(S) a,a,a-Trifluorotoluene	1			102		90.4-116	

80.1-120

### L862143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

97.7

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

	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	%	%		%			%	%
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				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862154-03,05,07

#### Method Blank (MB)

(MB) R3167926-1 10/04/16	6 08:47			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/926-2 10/04/	716 09:01 • (LCSL	)) R316/926-3	3 10/04/16 09:1	5						
	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	%	%	%			%	%
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	6 16:36 • (MS) R3	3167926-4 10/0	04/16 16:50 • (M	SD) R3167926	-5 10/04/16 17	:03						
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				

















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082M

L862154-01

#### Method Blank (MB)

(MB) R3168428-1 10/05/16	6 15:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 10/05/1	16 15:24 • (LCSE	) R3168428-3	10/05/16 15:38	3						
	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	%	%	%			%	%
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				





















ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

















(S) 2-Fluorophenol

(S) 2,4,6-Tribromophenol

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

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

// OC) DO167000 1	40/00/00/00 44 00 // 000) 00467000 0 40/00/00 44 45	_
(LCS) R316/928-1	10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43	3

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD
Analyte	mg/l	mg/l	mg/l	%	%	%			%
(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) | 862604-02 10/03/16 15:30 - (MS) P3167928-4 10/03/16 15:53 - (MSD) P3167928-5 10/03/16 16:16

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

23.6

66.7













35.7

75.8

10.0-77.9

11.2-130

**RPD Limits** 

# **GLOSSARY OF TERMS**

#### ONE LAB. NATIONWIDE.



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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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:			Billing Information:				Analysis / Container / Preservative									4 1 1	Chain of Custody Page of		
UP Environmental Se P.O. BOX 127 BARK River, MI	P.O. BOX 127 BARK RIVER, MI 49807		Sán	Same										38 28 20 20			WI LA	ESC	
Report to:			Email To:		11		4										12065 Lebanon Rd Mount Juliet, TN 3	7122	
Report to: RICK Right			rick	upenviro	nautel.com	\	Her										Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859	359	
Description: Abandon Mining	Waste-	Torch (	Ke.	City/State Collected:			1/15										1	362154	
Phone: Fax:	Client Project			Lab Project #			Pess	7						E 81			K1		
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Collected by (signature): Immediately Packed on ice N Y	Same Next D	ay	200% 100% 50%	Email?_	Results Needed NoYes  NoYes	No.	010	18	H	Teshore	2815						Prelogin: TSR: PB:		
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	of Cntrs	1-	React	9	DL	a						Shipped Via:		
CHTC-TP-DM&9	Gras	ot	Берин	9/23/16		3	1		X	K	X						Rem./Contamina	nt Sample # (lab only)	
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CHTC-TR-DMQ4	Gras				2:000	2				×	X	- 400 - 100			- 10 mg	Sec.		-03/-04	
CHTC-TS-DMQ2		OT		9/23/16		1877-99	X		X		X							,07/18	
CHIL IS YMUL	Gras	OT		11/27/10	10.302	0	12		*	K							75.	2-17 00	
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* Matrix: SS - Soil GW - Groundwater	• <b>WW</b> - WasteW	ater <b>DW</b> - D	rinking Wat	er OT-Other						pH _		Tem			Но	ld#			
Relipquished by : (Signature)		Date:		Time: F	eceived by: (Sign	ature)	A	A			s return			S		ndition	: (la	ab use only GNV	
- John		9/23	/16	7:300						1	edEx [								
Relinquished by (Signature)		Date:			teceived by: (Sign	ature)	X.			Temp:		°CqBo		eceived:	100	C Seal	Intact:	0K nna	
Relinquished by : (Signature)		Date:		Time:	deceived for lab b	y: (Sign	ature)			Date:	7-14	Tir	290	2	pH	Checke	ed: N	CF:	



Cooler Re	ceipt Form					
Client: UPEN/BRMI	SDG#	18	62/5	Ч		
Cooler Received/Opened On: 9/27/16	Temperature Upon Receipt:	3.2	3.2 °c			
Received By: Richard Hughes						
Signature: 21						
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?		/		in the same		
Were correct bottles used for the analyses requested?		/				
Was sufficient amount of sample sent in each bottle?		ļa j		/		
Were all applicable sample containers correctly preser	ved and			1		
checked for preservation? (Any not in accepted range	noted on COC)					
If applicable, was an observable VOA headspace prese	nt?			1		
Non Conformance Generated. (If yes see attached NCF	)					

Ple	ase print or			ite (12-pitch) typewriter.)							n Approved. Ol	VIB No. 2	050-003
		M HAZARDOUS MANIFEST	1. Generator ID Nu MTK193		2. Page <b>1</b>		Response 800-652		4. Manifest	Tracking N	.6865	JJ	K
	Mich	95 US 41,	t. of Em	vironmental Quali , MI 49913	ty	526	or's Site Address 34 High bbell, M	way M-	an mailing addre 26				
П	6. Transpor	ter 1 Company Name		Services, Inc.		!			U.S. EPAID MID98		<i>I.</i> C		
		ter 2 Company Name		services, inc.					U.S. EPA ID		46		_
П													
		ed Facility Name and ger Dispos		T Tre					U.S. EPA ID	Number			
		W. Hemle		Milwaukee, WI 532	223				WID98	85800	56		
	9a. 9b.	U.S. DOT Descriptio		Shipping Name, Hazard Class, ID Numb	er,		10. Contair	ners	11. Total	12. Unit	13 Wa	ste Codes	
	HM and	d Packing Group (if a	ny))				No.	Туре	Quantity	Wt./Vol.		310 00003	
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	4.				***				-				
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	14. Special Handling Instructions and Additional Information						<u></u>	1					
		oval #: #: 171	WS046959	9-CT									
		# ·											
				ON: I hereby declare that the contents of espects in proper condition for transport									
	Export	er, I certify that the co	ontents of this cons	ignment conform to the terms of the attac identified in 40 CFR 262.27(a) (if I am a l	ched EPA Ack	nowledgment	of Consent.	-					•
		Offeror's Printed/Typ				Signature		1 70			Month	Day	Year
<b>1</b>	16. Internati	onal Shipments			]					****			<u> </u>
INT		signature (for export	lmport to is only):	U.S.	Export fro	om U.S.	Port of ent Date leavir						
IER		ter Acknowledgment		ials		0'							- 5
TRANSPORTER	Iransporter	1 Printed/Typed Nam	18		ı	Signature					Month	Day	Year
ANS	Transporter	2 Printed/Typed Nam	16			Signature					Month	Day	Year
Ë ⋆	18. Discrepa	ancy	,	<del></del>									
	<del>-</del>	pancy Indication Space	ce Quan	ntity Type		Г	Residue		Partial Rej	ection		Full Rejec	tion
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_	18b. Alterna	te Facility (or Genera	itor)	<del></del>	^	M	anifest Reference	Number:	U.S. EPA ID N	Number			
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ED FJ	Facility's Pho 18c. Signatu	one: ire of Alternate Facilit	ty (or Generator)								Month	Day	Year
NAT													
DESIGNATED FACILITY	19. Hazardo	us Waste Report Ma	nagement Method	Codes (i.e., codes for hazardous waste to	reatment, disp		ycling systems)		14				
<u>-</u>	<sup>1.</sup>			2.		3.			4.				
	_		Operator: Certifica	I tion of receipt of hazardous materials cov	vered by the n		ot as noted in Item	18a					
	Printed/Type	ed Name			i	Signature					Month I	Day	Year
*													

Ple	se print or type. (Form designed for use on elite (12-pitch) typewriter.)			<u> </u>				n Approved.	OMB No. 2	2050-003		
1	UNIFORM HAZARDOUS 1. Generator ID Number WASTE MANIFEST MIK193755066	2. Page 1 of 1	_	ency Response -652-55		4. Manifest	Tracking N	.686	6 <b>J</b> .	JK		
П	5. Generator's Name and Mailing Address	-			-	an mailing addre						
Ш	Michigan Dept. of Environmental Quilty			4 Highv								
П	55195 US 41, Calumet, MI 49913		Hubb	ell, M	[ 4993	4						
П	Generator's Phone: 906~337~0389											
Н	6. Transporter 1 Company Name					U.S. EPA ID		Outof Late	200566	1016		
П	U. P. Environmental Services, XXXX Inc. 7. Transporter 2 Company Name			U.S. EPA ID Number								
	1. Iransporter 2 company Name					0.3. EFAID	Number					
П	Designated Facility Name and Site Address					U.S. EPA ID	Number		<u>-</u>			
П	Badger Disposal of WI, Inc.											
П	5611 W. Hemlock St., Milwaukee, WI 53223	3										
П	Facility's Phone: 866-271-0961					WID988580056						
П	9a. 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number,			10. Contain	iers	11. Total	12. Unit	13 3	Waste Codes	,		
	HM and Packing Group (if any))			No.	Туре	Quantity	Wt./Vol.	10.	vasie codes	<u> </u>		
	NA 3082, Hazardous Waste, Liquid,							D008	D010			
GENERATOR	n.o.s. (lead, selenium), 9, III.				DM		G					
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Н	<ol> <li>GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this marked and labeled/placarded, and are in all respects in proper condition for transport according.</li> </ol>	ording to appl	licable intern	ational and natio								
П	Exporter, I certify that the contents of this consignment conform to the terms of the attached I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large				l quantity ger	nerator) is true.			,			
П	Generator's/Offeror's Printed/Typed Name		gnature			,		Mon	th Day	Year		
<u>↓</u>												
Ľ Ľ Ľ	16. International Shipments Import to U.S.	Export from	U.S.	Port of ent								
	Transporter signature (for exports only):  17. Transporter Acknowledgment of Receipt of Materials			Date leavin	ig U.S.:							
	Transporter 1 Printed/Typed Name	Sic	gnature					Mon	h Day	Year		
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TRANSPORTER	Transporter 2 Printed/Typed Name	Sig	gnature					Mon	h Day	Year		
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1	18. Discrepancy											
	18a. Discrepancy Indication Space Quantity Type			Residue		Partial Rej	ection		Tull Rejec	ction		
≥	18b. Alternate Facility (or Generator)		wan	ifest Reference	Number:	U.S. EPA ID N	lumber					
등												
FA	Facility's Phone:											
	18c. Signature of Alternate Facility (or Generator)					1	•	Mor	nth Day	Year		
DESIGNATED FACILITY												
ESK	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treats		al, and recyc	ling systems)		14						
Δ.	1.	3.				4.						
	Designated Facility Owner or Operator: Certification of receipt of hazardous materials covere	d by the man	nifest except	as noted in Item	18a							
	Printed/Typed Name		gnature					Mor	th Day	Year		
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Ple	ase prir	nt or type. (Form designed for use on elite (12-pitch) typewriter.)							n Approved. O	MB No. 2	050-003
1		ORM HAZARDOUS 1. Generator ID Number ASTE MANIFEST MIK193755066	2. Page 1 c		rgency Response 0-652-55		4. Manifest		umber . 6863		IK
Н	5. Ger	nerator's Name and Mailing Address		Generate	or's Site Address	(if different th					-
		chigan Dept. of Environmental Qualit 195 US 41, Calumet, MI 49913	У		34 Highw bell, MI						
	Gener	ator's Phone: 906-337-0389		1	,						
		nsporter 1 Company Name P. Environmental Services, Inc.					U.S. EPA ID	Number 85635	8/16		
	-	sporter 2 Company Name					U.S. EPA ID I		<u> </u>		
	8. Des	ignated Facility Name and Site Address					U.S. EPA ID I	Numher			
	Ва	dger Disposal of WI, Inc.					0.0.217110	14111001			
$\ $	1	11 W. Hemlock St., Milwaukee, WI 532	23				I WITDO	385800	156		
П	9a.	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number	er .	Т	10. Contain	are		1 .			
	НМ	and Packing Group (if any))	-		No.	Турв	11. Total Quantity	12. Unit Wt./Vol.	13. Wa	ste Codes	
GENERATOR		NA 3082, Hazardous Waste, Liquid,							D008		
ER		n.o.s. (lead), 9, III				DM		G			
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	14. Sp	ecial Handling Instructions and Additional Information									
		proval #: WS046961-CT G #: 171									
	m	ENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of the arked and labeled/placarded, and are in all respects in proper condition for transport a	ccording to appl	licable inter	national and natio	cribed above nal governm	by the proper shental regulations.	ippiлg name If export sh	e, and are classifi ipment and I am	ed, packag the Primar	jed, y
	l to	xporter, I certify that the contents of this consignment conform to the terms of the attac certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a la	arge quantity ge	nerator) or	or Consent. (b) (if I am a smal	l quantity gen	erator) is true.				
	Genera	tor's/Offeror's Printed/Typed Name	Si <sub>i</sub>	gnature					Month 1	Day	Year
NT.L	16. Inte	mational Shipments Import to U.S.	Export from	U.S.	Port of entr	y/exit:				1	
	_	orter signature (for exports only): sporter Acknowledgment of Receipt of Materials			Date leavin	g U.S.:					
TRANSPORTER		orter 1 Printed/Typed Name	Sig	gnature					Month	Day	Year
NSP(	Transpo	orter 2 Printed/Typed Name	Sie	gnature					Month	Day	Year
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ا <u>ک</u>	18b. Alt	ernate Facility (or Generator)		Ma	nifest Reference I	Number:	U.S. EPA ID N	umber			
DESIGNATED FACILITY		,						an is a			
:D F/		s Phone: gnature of Alternate Facility (or Generator)					1		Month	Day	Year
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ESIG	19. Haz	ardous Waste Report Management Method Codes (i.e., codes for hazardous waste tre		al, and recy	cling systems)				•		
o I	١.	2.	3.				4.				
		ignated Facility Owner or Operator: Certification of receipt of hazardous materials cover			t as noted in Item	18a					
	Printed/	Typed Name	Si <sub>l</sub>	gnature					Month	Day	Year
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Ple	ase pri	nt or type. (Form designed for use on elite (12-pitch) typewriter.)						Forr	n Approved. C	MB No. 2	2050-003	
<b> </b>		ORM HAZARDOUS ASTE MANIFEST MIK193755066	2. Page 1 o		rgency Response 0-652=55			Tracking N 421	umber .6864	1 J.	JK	
П		nerator's Name and Mailing Address			or's Site Address		•	ess)				
		ichigan Dept. of Environmental Quality		52634 Highway M-26								
П	1	5195 US 41, Calumet, MI 49913		Hub	bell, M	L 499	34					
П		ator's Phone: 906~337~0389 sporter 1 Company Name		<u> </u>			U.S. EPA ID	Mumbor				
		P. Environmental Services, Inc.						85635	9/.6			
Н		rsporter 2 Company Name					U.S. EPA ID		040			
	1	ignated Facility Name and Site Address					U.S. EPA ID	Number				
	Ba	adger NixponinixxixxiXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	f WI,	Inc.								
	1	511 W. Hemlock St. Milwaukee, WT 53223 ys Phone: 866-271-0961					LITTO	00500	) F.C			
		9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number,			10. Contain	iom I		885800	726			
	9a. HM	and Packing Group (if any))			No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Wa	ste Codes	:	
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GENERATOR		UN 1993, Waste Flammable Liquids,							DOOL	010		
品	Ш	n.o.s. (Gasoline), 3, II.				DM		G				
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1	$\square$	<u> </u>										
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	14. Special Handling Instructions and Additional Information											
		proval #: WSO46960-FNP										
	EK	GX #: 128										
	15. G	ENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this	consignment	t are fully a	nd accurately des	cribed above	hy the amount sh	innina nama	and are classif	ed nacka	han	
	m	arked and labeled/placarded, and are in all respects in proper condition for transport acco xporter, I certify that the contents of this consignment conform to the terms of the attached	ording to appl	licable inter	national and natio	nal governm	ental regulations.	. If export shi	pment and I am	the Prima	ry	
		certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large				l quantity gen	erator) is true.					
	Genera	ttor's/Offeror's Printed/Typed Name	Się	gnature					Month	Day	Year	
<u>+</u>	16 Inte	mational Shipments					_			<u> </u>		
Ę		import to U.S.	Export from	U.S.	Port of entr Date leavin					-		
	_	nsporter Acknowledgment of Receipt of Materials			DIAG IOQVIII	y 0.0					•	
TRANSPORTER	Transpo	orter 1 Printed/Typed Name	Sig	gnature					Month	Day	Year	
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RAI	Папар	oner 2 i minew rypou manie	- Sil	gnature					Month I	Day	Year	
<u>⊢</u>	18. Dis	crepancy									1	
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DESIGNATED FACILITY	19. Haz	ardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatn 2.	nent, disposa	al, and recy	rcling systems)		TA					
۵	"	ļ <sup>c.</sup>	3.				4.					
	20. Des	ignated Facility Owner or Operator: Certification of receipt of hazardous materials covered	d by the man	nifest excep	t as noted in Item	18a			·· <u>··</u>			
	Printed	Typed Name	Sig	gnature					Month	Day	Year	
<b>\</b>	<u></u>											

Ple	ase prir	nt or type. (Form desig		1 7 71	riter.)							n Approved	. OMB No	. 2050	)-003!
1		ORM HAZARDOUS ASTE MANIFEST	1. Generator ID No MIK193			2. Page 1		gency Response 0-652-5		4. Manifest	1 Tracking N	687	'O J	JK	
	5. Gen	nerator's Name and Mailin	ng Address				Generato	or's Site Address	(if different th						
		chigan Depi						534 High							
	55	195 US 41,			l		Hul	bbell, I	/II 499	34					
		atora i nono.	-337-0389	<del>}</del>											
		sporter 1 Company Nam								U.S. EPA ID					
		P. Environ		Bervices,	Inc.		175			MID9	85635	846			
	7. Tran	nsporter 2 Company Nam	0							U.S. EPA ID	Number				
1		ignated Facility Name and								U.S. EPA ID	Number				
		dger Dispos				_									
1	26	11 W. Hemlo	ock St.,	Milwaukee	, WI 5322.	3					00500				
	Facility	r's Phone: 866-27								MTD9	<u>88580</u>	J56			
١	9a.	9b. U.S. DOT Description and Packing Group (if a		r Shipping Name, Haza	ard Class, ID Number,			10. Contai		11. Total	12. Unit	13.	Waste Cod	les	
	НМ	1			<del></del>			No.	Туре	Quantity	Wt./Vol.				
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GENERATOR	$\vdash$	2.	-aa, ,,	TIT					DIT	-	+-			+	
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ı		ecial Handling Instructions													
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ŀ	15. G	ENERATOR'S/OFFEROI	R'S CERTIFICATIO	N: I hereby declare th	at the contents of this	consignme	ent are fully ar	nd accurately dea	cribed above	by the proper sh	nipoing name	e, and are clas	sified, pac	kaged.	
١	m	arked and labeled/placan	ded, and are in all r	respects in proper cond	lition for transport acco	ording to ap	oplicable inter	national and nation	onal governm	ental regulations	. If export sh	ipment and I	am the Prir	nary	
	Id	xporter, I certify that the c certify that the waste mini	mization statement	identified in 40 CFR 20	e terms of the attached 62.27(a) (if I am a large	e quantity (	generator) or	or Consent. (b) (if I am a sma	II quantity ger	erator) is true.					
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Щ	18c. Sig	gnature of Alternate Facili	ty (or Generator)									Moi	nth Da	y `	Year
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ES	19. Haz	ardous Waste Report Ma	nagement Method		nazardous waste treat	-		cling systems)		L					
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<b> </b>		ORM HAZARDOUS ASTE MANIFEST 1. Generator ID Number MIX193755065	Page 1 of 3. I	mergency Response	Phone	4. Manifest	Tracking N			
П		perator's Name and Mailing Address		erator's Site Address		han mailing addres	ss)			
П		ichigan Dept. of Environmental Quality		2634 Higo						
П		5195 US 41, Calumet, MI 49913		ubbell, M	11 499	34				
П		ator's Phone: 906-337-0389								
Ш		sporter 1 Company Name . P. Povironmental Services, Inc.				U.S. EPA ID N		160		
Ш		isporter 2 Company Name				MTD98	_	140		
П	1	Sports 2 company regine				U.S. EPA ID N	lumber			
П	8. Des	ignated Facility Name and Site Address			- 1	U.S. EPA ID N	lumber			
П		adger Disposal of WI, Inc.				0.0.2.7(15)				
П	5	611 W. Hemlock St., Milwaukee, WI 53223	}							
П	Facility	's Phone: 955-271-0961				WID98	85800	)56		
П	9a.	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number,		10. Contair	ners	11. Total	12. Unit	40.		
П	HM	and Packing Group (if any))		No.	Туре	Quantity	Wt./Vol.	13.	Waste Cod	es
는		NA 3077, Hazardous Waste, Solid,						0008		
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				21 24 mg						
	15. <b>G</b>	ENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this co	nsignment are ful	ly and accurately des	cribed above	e by the proper shi	pping name	, and are clas	sified, pack	aged,
	E	arked and labeled/placarded, and are in all respects in proper condition for transport accord kporter, I certify that the contents of this consignment conform to the terms of the attached E	PA Acknowledam	ent of Consent.			lf export sh	ipment and I a	m the Prim	ary
	· 10	certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large q	uantity generator	or (b) (if I am a smal	Il quantity ge	nerator) is true.			_	
	Genera	tor's/Offeror's Printed/Typed Name	Signature	Carried Contract of the Contra				Mon	,	
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>-	18h Alt	ernate Facility (or Generator)		Manifest Reference	Number:	II O EDA IDA I				
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DESIGNATED FACILITY	`	,						INIOI	ith Day	/ Year
SIG	19. Haz	ardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatme	nt, disposal, and	recycling systems)						
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		ignated Facility Owner or Operator. Certification of receipt of hazardous materials covered by	y the manifest ex	cept as noted in Item	18a 🚬					
	Printed/	Typed Name	Signature	Vision	Va	11101	F	Mon	h Day	Year
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Н	WASTE MANIFEST MTK192755066	1	200-550-55				<u>686</u>	4 Ju	IN.				
	5. Generator's Name and Mailing Address		Generator's Site Address (			s)							
	Michigan Dept. of Environmental Quality		52634 High										
	55195 US 41, Calumet, MI 49913		Hubbell, M	499	34								
	Generator's Phone: 906-337-0389		,										
	6. Transporter 1 Company Name				U.S. EPA ID N								
	U. P. Environmental Services, Inc.				MID985635846								
	7. Transporter 2 Company Name				U.S. EPA ID N	umber							
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	Badger Winne Anixmix XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX												
	Facility's Phone: 365-271-0961				MTD9	38530	056						
	Dis LLC DOT December / including Deeper Chipping Name Hazard Class ID Number		10. Contain	ers	11. Total	12 Unit							
	9a. 9b. 0.5. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, HAM and Packing Group (if any))		No.	Type	Quantity	Wt./Vol.	13. \	Naste Codes	•				
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П	15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this	consignment	are fully and accurately des	scribed above	e by the proper sh	ipping name	e, and are clas	sified, packa	aged,				
П	marked and labeled/placarded, and are in all respects in proper condition for transport acco	ording to applic	cable international and natio	onal governm	nental regulations.	If export sh	ipment and I	am the Prima	ary				
П	Exporter, I certify that the contents of this consignment conform to the terms of the attacher I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large	d EPA Acknow le quantity gen	ledgment of Consent. erator) or (b) (if I am a sma	Il quantity ge	nerator) is true.								
	Generator's/Offeror's Printed/Typed Name		nature	ii quantity go	norator) to a do.		Mor	ith Day	Year				
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門	18c. Signature of Alternate Facility (or Generator)						""	, I	, 10ai				
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	20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials cover			n 18a	2		B4-	with Des	Voor				
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П			Generator's Site Add				100	U U	)K			
	5. Generator's Name and Mailing Address Michigan Dept. of Environmental Quality 55195 US 41, Calumet, FM 49913		52634 H	ighway	M-26	iaj						
Н	001 007 0000	- 1	131,11,11,11,1	9 172 472	7.7.4							
Н	Generator's Phone: 305-337-0383 6. Transporter 1 Company Name											
П	U. P. Environmental Services, Inc.				MID9	85535	845					
П	7. Transporter 2 Company Name				U.S. EPA ID Number							
П												
Н	8. Designated Facility Name and Site Address				U.S. EPA ID N	Vumber						
H	Padger Disposal of WI, Inc.											
П	5611 W. Hemlock St., Milwaukee, WI 5322	23			I DEDO	90596	orr.					
Ш	Facility's Phone: 855-271-0961				W1115	88530 '	WD5					
П	9a. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			ontainers	11. Total Quantity	12. Unit Wt./Vol.	13.	Waste Code	s			
П	HM and Packing Group (if any))		No.	Туре	Quantity	VIC./ VOI.						
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	I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a lar			a small quantity	generator) is true.		Ma	nth Day	Voor			
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AC	Facility's Phone:	h.,			1				İ			
0	18c. Signature of Alternate Facility (or Generator)						M	onth Da	y Year			
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	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials cover			in Item 18a	Mar na			-41-	1			
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Ш	5.	Generator's Name and Mailing Address		Generat	or's Site Address (i	f different tha	014216863 JJK  nt than mailing address)							
Ш		Michigan Dept. of Environmental Quality												
-11				52634 Highway M-26 Hubbell, MI 49934										
-11		55195 US 41, Calumet, MI 49913		Hub	bell, Mi	49934	4							
Ш	Ge	enerator's Phone: 906-337-0339												
Ш		Transporter 1 Company Name					U.S. EPA ID N	lumber						
-11		U. P. Environmental Services, Inc.												
Ш							MID985635846							
Ш	1′	Transporter 2 Company Name					U.S. EPA ID Number							
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Ш	8.	Designated Facility Name and Site Address	_				U.S. EPA ID N	lumber						
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-11		5611 W. Hemlock St., Milwaukee, WI 53223	3											
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Ш	98	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number,			10. Containe	are.	44 7-1-1	40						
Ш	I H	15 11 6 44 1			No.		11. Total Quantity	12. Unit Wt./Vol.	13.1	Waste Code	es			
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Ш	15.	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												
Ш		marked and labeled/placarded, and are in all respects in proper condition for transport according	rding to applic	able inter	national and nation	al governmer	ntal regulations. I	lf export shi	oment and I a	am the Prim	nary			
Н		Exporter, I certify that the contents of this consignment conform to the terms of the attached I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large	EPA Acknowle	edgment	of Consent.									
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JULIO MARINE & SALVAGE CO.

GREENLEE PRINTING - CALUMET, MI 49913 25651-AO

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Thank You





Requested Facility: K & W LANDFILL		☐ Unsure Profile Number:					
Multiple Generator Locations (Attach Locations)		ate of Disposal   Renewal? Original Profile Number:					
Multiple delicitator cocations (victorii cocations)	- medasse ostriio	UP AS TO SERVICE OF THE PARTY O	SECTOMBUNALT				
A. GENERATOR INFORMATION (MATERIAL ORIGIN)		B. BILLING INFORMATION SAME AS GENERATOR					
1. Generator Name: MI Dept. of Environmental Qua	ality		INC.				
2. Site Address: 52634 Highway M-26		2, Billing Address:P.O. BOX 127					
(City, State, ZIP) Hubbell, MI 49934		(City, State, ZIP) BARK RIVER, MI 49807					
3. County: Houghton		3. Contact Name: RICK RIEDY					
4. Contact Name: Amy Keranen		4. Email: rick@upenvironmental.com					
5. Email: keranena@michigan.gov		5. Phone: 906-466-9900 6. Fax: 906-466-	2641				
6. Phone: 906-337-0389 7. Fax:		7. WM Hauled?	Yes No				
B. Generator EPA ID: MIK193755066		8. P.O. Number:	- 1 P				
9. State ID:		9. Payment Method: 🖸 Credit Account 🚨 Cash	Credit Card				
C. MATERIAL INFORMATION		D. REGULATORY INFORMATION					
1. Соттол Name: тикновы вызрав		1. EPA Hazardous Waste?	☐ Yes* ☑ No				
Describe Process Generating Material:	☐ See Attached	Code:					
ABANDONED CONTAINER REMOVAL		2. State Hazardous Waste?	Yes No				
ABANDONED CONTAINER REMOVAL		Code:					
		<ol><li>Is this material non-hazardous due to Treatment, Delisting, or an Exclusion?</li></ol>	☐ Yes* ☑ No				
A 1772 W. 12 1 V.	D.C. Market	4. Contains Underlying Hazardous Constituents?	☐ Yes* ☑ No				
Material Composition and Contaminants:	☐ See Attached	<ol><li>From an industry regulated under Benzene NESHAP?</li></ol>					
1. SLUDGE/SOLIDS	100	<ol><li>Facility remediation subject to 40 CFR 63 GGGGG?</li></ol>					
2.		7. CERCLA or State-mandated clean-up?	☐ Yes* ☑ No				
4.		8. NRC or State-regulated radioactive or NORM waste					
Total comp. must be equal to or greater than 100%	≥100%	*If Yes, see Addendum (page 2) for additional quest					
3. State Waste Codes:		<ol><li>Contains PCBs? → If Yes, answer a, b and c.</li></ol>	Yes No				
4. Color: BROWN		a. Regulated by 40 CFR 761?	☐ Yes ☑ No				
5. Physical State at 70°F: Ø Solid □ Liquid □ Ot	her:	b. Remediation under 40 CFR 761.61 (a)?	Yes Z No				
6. Free Liquid Range Percentage;to		c. Were PCB imported into the US?	☐ Yes ☑ No				
7. pH:to	Ø N/A	<ol> <li>Regulated and/or Untreated Medical/Infectious Waste?</li> </ol>	Yes X No				
8. Strong Odor:  Yes  No Describe:	and Maria Control	11. Contains Asbestos?	Yes M No				
9. Flash Point: □ <140°F □ 140°−199°F □ ≥20		→ If Yes: □ Non-Friable □ Non-Friable – Regul					
E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATIO	ON	F. SHIPPING AND DOT INFORMATION					
Analytical attached	☑ Yes	<ol> <li>         ☐ One-Time Event        ☐ Repeat Event/Ongoing Busing     </li> </ol>	ness				
Please identify applicable samples and/or lab report	s:	Estimated Quantity/Unit of Measure: 33					
See Attached List that identifies the 33 drums refer to	The said Time of the last	☐ Tons ☐ Yards ☑ Drums ☐ Gallons ☐ Other	:				
attached.	Analytical data	3. Container Type and Size: Steel 55 gallon drums					
77373		4. USDOT Proper Shipping Name:	M N/A				
2. Other information attached (such as MSDS)?	☐ Yes		CONT				
all relevant information necessary for proper material characterizal from a sample that is representative as defined in 40 CFR 261 - Ay in the process or new analytical) will be identified by the Generator if I am an agent signing on behalf of the Generator, I have or Generator that information contained in this Profile is accurate.	on submitted in this and tion and to identify kno ppendix 1 or by using a r and be disclosed to W confirmed with the rate and complete.  te:	all attached documents contain true and accurate descriptions of this win and suspected hazards has been provided. Any analytical data attain equivalent method. All changes occurring in the character of the master Management prior to providing the material to Waste Management.  Certification Signature	terial (i.e., changes				
	0						
Company:							

# Generator---Michigan Department of Environmental Quality Site Address---52634 Highway M-26 Hubbell, MI 49934

### Generator ID#: MIK193755066

### Non-Hazardous Drums

Entire Sample GroupL86222	14 drums
Entire Sample GroupL862165	8 drums
SampleCHLL-HPA-DRUM-04BSample Group L861336	6 drums
SampleCHILL-HPA-DRUM-04CSample Group L861336	1 drum
SampleCHTC-TS-DM09Sample Group L862154	2 drums
SampleCHTC-TS-DM02Sample Group L862154	1 drum
SampleCHLL-HRA-DRUM05/06Sample Group L862134	1 drum
Total	33 drums



### ANALYTICAL REPORT October 06, 2016

#### U.P. Environmental Services, Inc.

L862222 Sample Delivery Group: 09/27/2016

Samples Received:

Project Number:

Description: Abandon mining Waste - Torch Lane

Report To: Rick Riedy

PO Box 127

Bark River, MI 49807

Entire Report Reviewed By: Jahn V Houkins

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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<sup>9</sup>Sc: Chain of Custody

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#### AB. NATIONWIDE.

SAMPLE SUMMARY ONE	SAMPLE	SUMMARY	ONE LA
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CHLL-HPA-DRUM-04E L862222-01 Solid			Collected by Chris Gendron	Collected date/time 09/22/16 12:00	Received 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 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
CHLL-HPA-DRUM-04E L862222-02 Waste			Collected by Chris Gendron	Collected date/time 09/22/16 12:00	Received date/time 09/27/16 09:00
	D : 1	D:1 ::		A 1 :	
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
CHLL-HPA-DRUM-04F L862222-03 Solid			Collected by Chris Gendron	Collected date/time 09/22/16 11:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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 Gendron	Collected date/time 09/22/16 11:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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 Gendron	Collected date/time 09/22/16 14:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
	_ 3.0	5	date/time	date/time	, analyse
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 2016 P	WC012500	1	00/20/16 12:20	00/20/16 12:55	AMC



















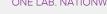
Wet Chemistry by Method 9095B

WG912590

09/30/16 12:30

09/30/16 13:55

AMC







SAMPLE SUMMARY

Ср

















			date/time	date/time	
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

#### Collected by Collected date/time Chris Gendron 09/22/16 14:00 CHLL-HPA-DRUM-04I L862222-10 Waste

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

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



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
Wet Chemistry by Method 9012 B	WG911946	1	09/28/16 11:40	09/28/16 14:49	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	LAM





















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



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 ar 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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L862222-03	CHLL-HPA-DRUM-04F	9095B
L862222-07	CHLL-HPA-DRUM-04H	9095B
L862222-09	CHLL-HPA-DRUM-04I	9095B

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Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.00		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

	Result	<u>Qualifier</u>	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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	





<sup>°</sup>Qc





#### ONE LAB. NATIONWIDE.

Collected date/time: 09/22/16 12:00

#### Preparation by Method 1311

					- 1
	Result	Qualifier	Prep	<u>Batch</u>	
Analyte			date / time		ř
TCLP Extraction	-		9/28/2016 9:15:21 PM	WG912294	
TCLP ZHE Extraction	-		9/29/2016 10:36:29 AM	WG912360	L
Fluid	1		9/28/2016 9:15:21 PM	WG912294	ſ
Initial pH	n/a		9/28/2016 9:15:21 PM	WG912294	L
Final pH	n/a		9/28/2016 9:15:21 PM	WG912294	Г







#### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	09/28/2016 14:44	WG911946







## ΆΙ

## Wet Chemistry by Method 9034-9030B

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

#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:59	WG912747

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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













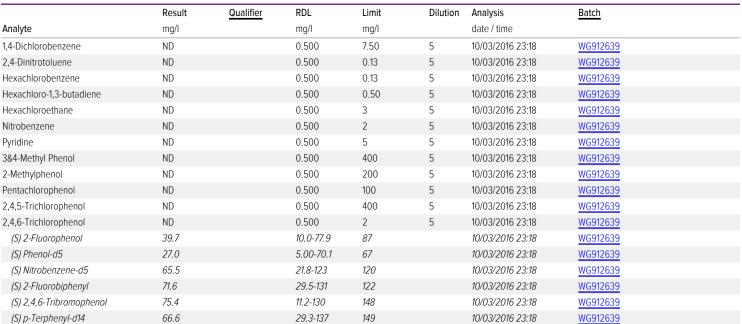












#### Sample Narrative:

8270C L862222-02 WG912639: Dilution due to matrix

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862222

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	g/cm3			date / time		
Density	1.59		1	09/30/2016 14:20	WG912583	

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### 3 Ss

### Wet Chemistry by Method 9095B

	Result <u>C</u>	Qualifier Dilution	Analysis	<u>Batch</u>	
Analyte	%		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

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	







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#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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





## <sup>3</sup>Ss

#### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		1.50	6	09/28/2016 14:45	WG911946



Cn

## <sup>6</sup>Qc

#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	8.28		1	10/04/2016 14:54	WG913869





#### $\label{eq:Sample Narrative: Sample Narrative: } Sample Narrative: \\$

9045D L862222-04 WG913869: 8.28 at 19.8c

## <sup>9</sup>Sc

#### Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 14:50	WG912748

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

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

	•						
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
(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







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Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	10/03/2016 22:07	WG912639
ND		0.100	0.13	1	10/03/2016 22:07	WG912639
ND		0.100	0.13	1	10/03/2016 22:07	WG912639
ND		0.100	0.50	1	10/03/2016 22:07	WG912639
ND		0.100	3	1	10/03/2016 22:07	WG912639
ND		0.100	2	1	10/03/2016 22:07	WG912639
ND		0.100	5	1	10/03/2016 22:07	WG912639
ND		0.100	400	1	10/03/2016 22:07	WG912639
ND		0.100	200	1	10/03/2016 22:07	WG912639
ND		0.100	100	1	10/03/2016 22:07	WG912639
ND		0.100	400	1	10/03/2016 22:07	WG912639
ND		0.100	2	1	10/03/2016 22:07	WG912639
33.6		10.0-77.9	87		10/03/2016 22:07	WG912639
22.3		5.00-70.1	67		10/03/2016 22:07	WG912639
50.6		21.8-123	120		10/03/2016 22:07	WG912639
66.4		29.5-131	122		10/03/2016 22:07	WG912639
61.4		11.2-130	148		10/03/2016 22:07	WG912639
65.4		29.3-137	149		10/03/2016 22:07	WG912639
	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l         mg/l           ND         0.100           33.6         10.0-77.9           22.3         5.00-70.1           50.6         21.8-123           66.4         29.5-131           61.4         11.2-130	mg/l         mg/l         mg/l           ND         0.100         7.50           ND         0.100         0.13           ND         0.100         0.50           ND         0.100         3           ND         0.100         2           ND         0.100         5           ND         0.100         400           ND         0.100         200           ND         0.100         100           ND         0.100         400           ND         0.100         2           33.6         10.0-77.9         87           22.3         5.00-70.1         67           50.6         21.8-123         120           66.4         29.5-131         122           61.4         11.2-130         148	mg/l         mg/l         mg/l           ND         0.100         7.50         1           ND         0.100         0.13         1           ND         0.100         0.50         1           ND         0.100         3         1           ND         0.100         2         1           ND         0.100         5         1           ND         0.100         400         1           ND         0.100         200         1           ND         0.100         100         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         2         1           33.6         10.0-77.9         87           22.3         5.00-70.1         67           50.6         21.8-123         120           66.4         29.5-131         122           61.4         11.2-130         148	mg/l         mg/l         date / time           ND         0.100         7.50         1         10/03/2016 22:07           ND         0.100         0.13         1         10/03/2016 22:07           ND         0.100         0.13         1         10/03/2016 22:07           ND         0.100         0.50         1         10/03/2016 22:07           ND         0.100         3         1         10/03/2016 22:07           ND         0.100         2         1         10/03/2016 22:07           ND         0.100         5         1         10/03/2016 22:07           ND         0.100         400         1         10/03/2016 22:07           ND         0.100         200         1         10/03/2016 22:07           ND         0.100         200         1         10/03/2016 22:07           ND         0.100         400         1         10/03/2016 22:07           ND         0.100         400         1         10/03/2016 22:07           ND         0.100         2         1         10/03/2016 22:07           ND         0.100         2         1         10/03/2016 22:07           ND         0.100











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#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	0.924		1	09/30/2016 14:20	WG912583

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#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	





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#### Preparation by Method 1311

	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
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





## <sup>3</sup>Ss

#### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	09/28/2016 14:34	WG911946



Cn



#### Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	su			date / time	
рН	5.26		1	10/04/2016 14:54	WG913869

## <sup>9</sup>Sc

#### Sample Narrative:

9045D L862222-06 WG913869: 5.26 at 20.5c

#### Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 12:02	WG912747

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
mg/l		mg/l	mg/l		date / time	
ND		0.0500	0.50	1	09/30/2016 19:01	WG912888
ND		0.0500	0.50	1	09/30/2016 19:01	WG912888
ND		0.0500	100	1	09/30/2016 19:01	WG912888
ND		0.250	6	1	09/30/2016 19:01	WG912888
	mg/l ND ND ND	mg/l ND ND ND	mg/l         mg/l           ND         0.0500           ND         0.0500           ND         0.0500           ND         0.0500	mg/l         mg/l         mg/l           ND         0.0500         0.50           ND         0.0500         0.50           ND         0.0500         100	mg/l         mg/l         mg/l           ND         0.0500         0.50         1           ND         0.0500         0.50         1           ND         0.0500         100         1	mg/l         mg/l         mg/l         date / time           ND         0.0500         0.50         1         09/30/2016 19:01           ND         0.0500         0.50         1         09/30/2016 19:01           ND         0.0500         100         1         09/30/2016 19:01

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J3</u>	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	

## <sup>1</sup>Cp











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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

#### Sample Narrative:

8270C L862222-06 WG912639: Dilution due to matrix

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Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.04		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	









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#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	09/28/2016 14:46	<u>WG911946</u>





#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.86		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862222-08 WG913869: 7.86 at 20.3c

## <sup>9</sup>Sc

#### Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 12:04	WG912747

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

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

	· · · · · · · · · · · · · · · · · · ·						
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
(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







Cn

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

		RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	10/03/2016 22:31	WG912639
ND		0.100	0.13	1	10/03/2016 22:31	WG912639
ND		0.100	0.13	1	10/03/2016 22:31	WG912639
ND		0.100	0.50	1	10/03/2016 22:31	WG912639
ND		0.100	3	1	10/03/2016 22:31	WG912639
ND		0.100	2	1	10/03/2016 22:31	WG912639
ND		0.100	5	1	10/03/2016 22:31	WG912639
ND		0.100	400	1	10/03/2016 22:31	WG912639
ND		0.100	200	1	10/03/2016 22:31	WG912639
ND		0.100	100	1	10/03/2016 22:31	WG912639
ND		0.100	400	1	10/03/2016 22:31	WG912639
ND		0.100	2	1	10/03/2016 22:31	WG912639
41.7		10.0-77.9	87		10/03/2016 22:31	WG912639
29.9		5.00-70.1	67		10/03/2016 22:31	WG912639
59.1		21.8-123	120		10/03/2016 22:31	WG912639
72.4		29.5-131	122		10/03/2016 22:31	WG912639
80.3		11.2-130	148		10/03/2016 22:31	WG912639
74.6		29.3-137	149		10/03/2016 22:31	WG912639
	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 Solution of the second of the s	ND 0.100 7.50  ND 0.100 0.13  ND 0.100 0.13  ND 0.100 0.50  ND 0.100 3  ND 0.100 2  ND 0.100 5  ND 0.100 5  ND 0.100 400  ND 0.100 200  ND 0.100 100 100  ND 0.100 200  ND 0.100 400  ND 1.00 400  ND 1.00 400  ND 1.00 67  59.1 21.8-123 120  72.4 29.5-131 122  80.3 11.2-130 148	ND       0.100       7.50       1         ND       0.100       0.13       1         ND       0.100       0.50       1         ND       0.100       3       1         ND       0.100       3       1         ND       0.100       2       1         ND       0.100       5       1         ND       0.100       400       1         ND       0.100       200       1         ND       0.100       100       1         ND       0.100       400       1         ND       0.100       2       1         41,7       10.0-77.9       87         29.9       5.00-70.1       67         59.1       21.8-123       120         72.4       29.5-131       122         80.3       11.2-130       148	ND         0.100         7.50         1         10/03/2016 22:31           ND         0.100         0.13         1         10/03/2016 22:31           ND         0.100         0.13         1         10/03/2016 22:31           ND         0.100         0.50         1         10/03/2016 22:31           ND         0.100         3         1         10/03/2016 22:31           ND         0.100         2         1         10/03/2016 22:31           ND         0.100         5         1         10/03/2016 22:31           ND         0.100         400         1         10/03/2016 22:31           ND         0.100         200         1         10/03/2016 22:31           ND         0.100         200         1         10/03/2016 22:31           ND         0.100         400         1         10/03/2016 22:31           ND         0.100         400         1         10/03/2016 22:31           ND         0.100         2         1         10/03/2016 22:31           ND         0.100         2         1         10/03/2016 22:31           VD         0.100         2         1         10/03/2016 22:31













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#### ONE LAB. NATIONWIDE.

862222

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	WG912583

## <sup>2</sup>T<sub>0</sub>

#### Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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	







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#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







## Cn

#### Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	09/28/2016 14:49	WG911946





#### Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Su			date / time	
рН	7.37		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862222-10 WG913869: 7.37 at 20.5c

## Sc

#### Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

#### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 12:07	WG912747

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
mg/l		mg/l	mg/l		date / time	
ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
ND		0.0500	100	1	09/30/2016 19:41	WG912888
ND		0.250	6	1	09/30/2016 19:41	WG912888
ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
ND		0.0500	0.70	1	09/30/2016 19:41	WG912888
ND	<u>J3</u>	0.500	200	1	09/30/2016 19:41	WG912888
ND		0.0500	0.70	1	09/30/2016 19:41	WG912888
ND		0.0500	0.50	1	09/30/2016 19:41	WG912888
ND		0.0500	0.20	1	09/30/2016 19:41	WG912888
	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l         mg/l           ND         0.0500           ND         0.0500           ND         0.0500           ND         0.250           ND         0.0500           ND         0.0500           ND         J3         0.500           ND         0.0500           ND         0.0500           ND         0.0500           ND         0.0500	mg/l         mg/l         mg/l           ND         0.0500         0.50           ND         0.0500         100           ND         0.250         6           ND         0.0500         0.50           ND         0.0500         0.70           ND         0.0500         0.50	mg/l         mg/l           ND         0.0500         0.50         1           ND         0.0500         0.50         1           ND         0.0500         100         1           ND         0.250         6         1           ND         0.0500         0.50         1           ND         0.0500         0.70         1           ND         J3         0.500         200         1           ND         0.0500         0.70         1           ND         0.0500         0.70         1           ND         0.0500         0.50         1	mg/l         mg/l         date / time           ND         0.0500         0.50         1         09/30/2016 19:41           ND         0.0500         0.50         1         09/30/2016 19:41           ND         0.0500         100         1         09/30/2016 19:41           ND         0.250         6         1         09/30/2016 19:41           ND         0.0500         0.50         1         09/30/2016 19:41           ND         0.0500         0.70         1         09/30/2016 19:41           ND         J3         0.500         200         1         09/30/2016 19:41           ND         0.0500         0.70         1         09/30/2016 19:41           ND         0.0500         0.70         1         09/30/2016 19:41           ND         0.0500         0.70         1         09/30/2016 19:41

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

	\	, ,					
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
(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

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	10/03/2016 22:55	WG912639
ND		0.100	0.13	1	10/03/2016 22:55	WG912639
ND		0.100	0.13	1	10/03/2016 22:55	WG912639
ND		0.100	0.50	1	10/03/2016 22:55	WG912639
ND		0.100	3	1	10/03/2016 22:55	WG912639
ND		0.100	2	1	10/03/2016 22:55	WG912639
ND		0.100	5	1	10/03/2016 22:55	WG912639
ND		0.100	400	1	10/03/2016 22:55	WG912639
ND		0.100	200	1	10/03/2016 22:55	WG912639
ND		0.100	100	1	10/03/2016 22:55	WG912639
ND		0.100	400	1	10/03/2016 22:55	WG912639
ND		0.100	2	1	10/03/2016 22:55	WG912639
17.8		10.0-77.9	87		10/03/2016 22:55	WG912639
7.73		5.00-70.1	67		10/03/2016 22:55	WG912639
38.1		21.8-123	120		10/03/2016 22:55	WG912639
53.4		29.5-131	122		10/03/2016 22:55	WG912639
65.5		11.2-130	148		10/03/2016 22:55	WG912639
65.8		29.3-137	149		10/03/2016 22:55	WG912639
	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l         mg/l           ND         0.100           17.8         10.0-77.9           7.73         5.00-70.1           38.1         21.8-123           53.4         29.5-131           65.5         11.2-130	mg/l         mg/l         mg/l           ND         0.100         7.50           ND         0.100         0.13           ND         0.100         0.50           ND         0.100         3           ND         0.100         2           ND         0.100         5           ND         0.100         400           ND         0.100         200           ND         0.100         100           ND         0.100         400           ND         0.100         400           ND         0.100         400           ND         0.100         67           38.1         21.8-123         120           53.4         29.5-131         122           65.5         11.2-130         148	mg/l         mg/l           ND         0.100         7.50         1           ND         0.100         0.13         1           ND         0.100         0.13         1           ND         0.100         0.50         1           ND         0.100         3         1           ND         0.100         2         1           ND         0.100         5         1           ND         0.100         400         1           ND         0.100         200         1           ND         0.100         100         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         2         1           17.8         10.0-77.9         87           7.73         5.00-70.1         67           38.1         21.8-123         120           53.4         29.5-131         122           65.5         11.2-130         148	mg/l         mg/l         date / time           ND         0.100         7.50         1         10/03/2016 22:55           ND         0.100         0.13         1         10/03/2016 22:55           ND         0.100         0.13         1         10/03/2016 22:55           ND         0.100         0.50         1         10/03/2016 22:55           ND         0.100         3         1         10/03/2016 22:55           ND         0.100         2         1         10/03/2016 22:55           ND         0.100         5         1         10/03/2016 22:55           ND         0.100         400         1         10/03/2016 22:55           ND         0.100         200         1         10/03/2016 22:55           ND         0.100         200         1         10/03/2016 22:55           ND         0.100         100         1         10/03/2016 22:55           ND         0.100         400         1         10/03/2016 22:55           ND         0.100         2         1         10/03/2016 22:55           ND         0.100         2         1         10/03/2016 22:55           ND         0.100













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Wet Chemistry by Method 9012 B

L862222-02,04,06,08,10

#### 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 <u>DUP Qualifier</u> DUP R									
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

(200) 10100710 0 00	Spike Amount	′	LCSD Result		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)

(03	s) 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 MSD Result MSD Result MSD Rec. Dilution Rec. Limits MS Qualifier MSD Qualifier RPD RPD Limits												
	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 Cvanide	3.33	ND	3 23	3 12	95.0	92.0	1	75.0-125			4 00	20

Wet Chemistry by Method 9034-9030B

L862222-02,06

#### Method Blank (MB)

Reactive Sulfide

(MB) WG913004-4 10/04/16 14:59 MB MDL MB Result MB Qualifier Analyte mg/kg mg/kg

U

MB RDL
ma/ka



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

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

00, 2002.00	.0,0 ,,.0 ,00 (201)	00.000.		••	
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifi
and the		II		0/	

% mg/kg mg/kg

7.63

Analyte Reactive Sulfide ND ND 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

(200) 11 00 1000 12	10/0 1/10 11:00 (200	<i>D</i> ) <b>W</b> 031000	1 0 10/0 1/10 11	.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	110	104	110	104	70.0-130			5.61	20

PROJECT:

**DUP RPD Limits** 



Ss

GI

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Wet Chemistry by Method 9045D

L862222-02,04,06,08,10

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

(OS) L862134-02	10/04/16 14:54 • (DUP) W	/G913869-3	10/04/16 14	:54
	Original Result	DUP Result	Dilution	DUP F

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	SU	SU		%		%
рН	6.66	6.69	1	0.449		1





(OS) L862756-29	10/04/16 14:54	<ul> <li>(DUP) V</li> </ul>	VG913869-4	10/04/16 14	1:54
	Origin	al Result	DUP Result	Dilution	DUP RPD

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







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

(200) 110/01/	Spike Amount	•		LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	SU	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





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Wet Chemistry by Method D93/1010A

L862222-02,04,06,08,10

#### L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15											
	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					









(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15										
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits				
Analyte	Deg. F	Deg. F		%		%				
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10				







(LCS) WG911949-2 09/30/16 14	:15 • (LCSD) WG911949-3 09/30/	/16 14:15
------------------------------	--------------------------------	-----------

(LCS) WOS11343-2 03/30	3/10 14.13 • (LCS	D) WOJIIJ+J-	3 03/30/10 17.1	10						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93 0-107			0.245	20





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Mercury by Method 7470A

L862222-02,06,08,10

#### 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



<sup>2</sup>Tc



#### 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









(OS) L862165-04 09/30/16 11:51 • (MS) R3167322-4 09/30/16 11:54 • (MSD) R3167322-5 09/30/16 11:57

(03) 2002 103 04 03/30	10 11.51 - (1415) 13	3107322 + 037	30/10 11.54 - (	(NOD) (NOTO) 522	. 5 05/50/10	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	







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Mercury by Method 7470A

L862222-04

#### Method Blank (MB)

Analyte

Mercury

Mercury

(MB) R3167410-1 09/30/16 14:43 MB Result

mg/l

U



0.00333

MB RDL

0.0100

91

90







Cn



(LCS) R3167410-2 09/30/16 14:45 • (LCSD) R3167410-3 09/30/16 14:48

0.0300

, ,	•	•				
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits
Analyte	ma/l	ma/l	ma/l	%	%	%

LCS Qualifier LCSD Qualifier RPD Limits % %

1 20





0.0270

(OS) L862222-04 09/30/16 14:50 • (MS) R3167410-4 09/30/16 14:53 • (MSD) R3167410-5 09/30/16 15:01

0.0274

,	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	

80-120









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Metals (ICP) by Method 6010B

#### L862222-02,06,08,10

#### Method Blank (MB)

(MB) R3167131-2 (	09/29/16 22:57				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	<u>J</u>	0.0333	0.100	
Silver	U		0.0167	0.0500	









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

(===)	,,, (	,									
	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	%	%	%			%	%	
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)

` '	, ,			,								
	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	%	%		%			%	%
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

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Metals (ICP) by Method 6010B

L862222-04

#### Method Blank (MB)

Silver

(MB) R3167428-1 (	09/30/16 15:25				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

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

/LCC) D21C7420 2 00/20/10	15.00 // 005	N D21C7420 2	00/20/10 15.2	^							
(LCS) R3167428-2 09/30/16	Spike Amount	•	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	
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	

80-120

#### L862222-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

9.52

(OS) L862222-04 09/30/	16 15:33 • (MS) F	R3167428-5 09	9/30/16 15:38 •	(MSD) R316742	28-6 09/30/16	15:42						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
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

10.0

9.44

95

20

















ONE LAB. NATIONWIDE.

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

L862222-02,04,06,08,10

#### Method Blank (MB)

(MB) R3167331-3 09/30/16	5 12:23			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

### ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

(LCS) R3167331-1 09/30/16	6 11:03 • (LCSD)	R3167331-2 (	09/30/16 11:23								
	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	%	%	%			%	%	
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		<u>J3</u>	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					

Sc

(S) a,a,a-Trifluorotoluene

(S) 4-Bromofluorobenzene

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862222-02,04,06,08,10

#### L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS	L861691-01	09/30/16 15:59 •	(MS) R3167331-4 09/30/16 13:14	

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
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	

90.4-116

80.1-120

### 

102

97.7

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

	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	%	%		%			%	%
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	1				98.9	102		80.1-120				





















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862222-03,05,07,09

#### Method Blank (MB)

(MB) R3167926-1 10/04/16	6 08:47			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/926-2 10/04/	16 09:01 • (LCSL	D) R316/926-3	10/04/16 09:15	)						
	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	%	%	%			%	%
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	6 16:36 • (MS) R3	3167926-4 10/0	04/16 16:50 • (M	SD) R3167926	5-5 10/04/16 17	:03						
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				

ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082M

L862222-01

#### Method Blank (MB)

(MB) R3168428-1 10/05/16	6 15:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 • (LCSE	) R3168428-3	3 10/05/16 15:38	3					
Snike Amount	LCS Result	LCSD Result	LCS Rec	LCSD Rec	Rec Limits	LCS Qualifier	LCSD Qualifier	RPD

	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	%	%	%			%	%	
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					



















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ONE LAB. NATIONWIDE.

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

L862222-02,04,06,08,10

## Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07					
	MB Result	MB Qualifier	MB MDL	MB RDL		
Analyte	mg/l		mg/l	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		

## 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							
	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	%	%	%			%	%
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				

















(S) 2,4,6-Tribromophenol

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862222-02,04,06,08,10

LCS Qualifier

LCSD Qualifier RPD

%

**RPD Limits** 

%

#### 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

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits
Analyte	mg/l	mg/l	mg/l	%	%	%
(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

	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	%	%		%			%	%	
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		<u>J3</u>	31.3	27.7	
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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					

66.7















75.8

11.2-130

## **GLOSSARY OF TERMS**

#### ONE LAB. NATIONWIDE.

## 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.













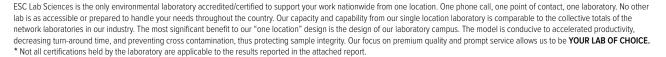






## **ACCREDITATIONS & LOCATIONS**





#### 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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	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 <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01	
Canada	1461.01	USDA	S-67674	
EPA-Crvpto	TN00003			

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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.



















<b>1</b>		Billing Info	rmation:				CLES-	_ A	nalysis	/ Contai	ner / Pre	servative			Chain of Custody	Page of
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mine L	nel Ti	reh law	City/State Collected:			1						de .			Fax: 615-758-5859	
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	Cooler Re	eceipt Form			
Client:	UPENUBRMZ	SDG#	186	,22	22
Cooler Received/Opened On:	9-27-16	Temperature Upon Receipt:	3.3	°c	eroye.
Received By: Michael Withers	poon		1		
Signature: Mwt					a King Car
	Receipt Check Lis	st	Yes	No	N/A
Were custody seals on outsid	le of cooler and intact?		week a		
Were custody papers proper	ly filled out?				
Did all bottles arrive in good	condition?				
Were correct bottles used fo	r the analyses requested	?			
Was sufficient amount of san	nple sent in each bottle?				
Were all applicable sample co	ontainers correctly prese	erved and	/		
checked for preservation? (A	ny not in accepted range	e noted on COC)			
If applicable, was an observa	ble VOA headspace pres	ent?			
Non Conformance Generated	d. (If yes see attached NC	CF)			



# ANALYTICAL REPORT

October 07, 2016



## 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: Jahn V Houkins

John Hawkins

Technical Service Representative

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

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Sr







<sup>9</sup>Sc: Chain of Custody

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Cn

Sr

<sup>°</sup>Qc

GI

Sc

	SAMI LL S		<b>\</b> 1		
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
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	Analysis	Analyst
			date/time	date/time	
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
		<u> </u>			

ACCOUNT:

U.P. Environmental Services, Inc.

Received date/time

Analyst

JNS

KDW

AMC

AMC

Received date/time

09/27/16 09:00

Collected by

Collected date/time

Analysis

date/time

10/04/16 18:40

09/29/16 14:33

09/30/16 14:20

09/30/16 13:55

09/23/16 10:15

Collected date/time

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CHTC-TP-DM11B L862165-06 Waste			Chris Gendron	09/23/16 09:35	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time
CHTC-TS-DM08 L862165-07 Solid			Chris Gendron	09/23/16 10:15	09/27/16 09:00

Dilution

1

1

1

Preparation

10/03/16 02:18

09/29/16 14:24

09/30/16 13:58

09/30/16 12:30

Collected by

Chris Gendron

date/time

Batch

WG912211

WG912486

WG912583

WG912590

SAMPLE SUMMARY

_		
	Ср	



















## CHTC-TS-DM08 L862165-08 Waste

Polychlorinated Biphenyls (GC) by Method 8082

Total Solids by Method 2540 G-2011

Wet Chemistry by Method 9095B

Wet Chemistry by Method 2710 F-2011

Method

ethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
ercury by Method 7470A	WG912412	1	09/29/16 11:47	09/30/16 11:25	NJB
etals (ICP) by Method 6010B	WG912283	1	09/30/16 11:28	09/30/16 19:12	ST
reparation by Method 1311	WG911845	1	09/27/16 22:38	09/27/16 22:38	LJN
reparation by Method 1311	WG911888	1	09/27/16 18:37	09/27/16 18:37	LJN
emi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912639	1	10/03/16 07:34	10/03/16 21:44	JF
olatile Organic Compounds (GC/MS) by Method 8260B	WG912711	1	10/05/16 00:31	10/05/16 00:31	LRL
et Chemistry by Method 9012 B	WG913176	1	10/03/16 12:22	10/03/16 15:01	DR
et Chemistry by Method 9034-9030B	WG913004	1	10/03/16 17:40	10/04/16 14:59	MAJ
et Chemistry by Method 9045D	WG913869	1	10/04/16 14:54	10/04/16 14:54	JJL
et 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.

#### Sample Handling and Receiving

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

ESC Sample ID	Project Sample ID	Method
L862165-02	CHTC-TP-DM05	9045D
L862165-04	CHTC-TP-DM11A	9045D
L862165-06	CHTC-TP-DM11B	9045D
L862165-08	CHTC-TS-DM08	9045D

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 09:00

## Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	67.2		1	09/29/2016 14:33	WG912486



## Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.62		1	09/30/2016 14:20	<u>WG912583</u>



## Wet Chemistry by Method 9095B

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



Cn

#### Sample Narrative:

9095B L862165-01 WG912590: Contains No Free Liquid



СQс

## Polychlorinated Biphenyls (GC) by Method 8082

,	, ,	,					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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-xvlene	91.6		29.2-144		10/04/2016 17:59	WG912211	





ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 09:00

L862165

#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







# <sup>4</sup>Cn

## Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.750	3	10/03/2016 15:05	WG913176

Dilution

Analysis

date / time

10/04/2016 14:59

Batch

WG913004

RDL

mg/kg

25.0

Qualifier





# 7

# <sup>7</sup>Gl



# <sup>8</sup>Al

# Analyte mg/kg Reactive Sulfide ND

Wet Chemistry by Method 9034-9030B

Result

Wet Chemistry by	Method	9045D
------------------	--------	-------

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	7.09		1	10/04/2016 14:54	WG913869

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862165-02 WG913869: 7.09 at 20.3c

## Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:20	WG912412

## Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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Collected date/time: 09/23/16 09:00

L862165

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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











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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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





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## Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	81.5		1	09/29/2016 14:33	WG912486

# <sup>2</sup>Tc

## Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	1.94		1	09/30/2016 14:20	WG912583



## Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862165-03 WG912590: Contains No Free Liquid

# 7 GI

## Polychlorinated Biphenyls (GC) by Method 8082

1 Olychionnated Dipin	r drychlorinated Biphenyls (GG) by Method GGZ									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>				
Analyte	mg/kg		mg/kg		date / time					
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				



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Collected date/time: 09/23/16 09:30

#### confected date/time. 09/23/10 09.30

#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

# Ср





## Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 15:06	<u>WG913176</u>





## Wet Chemistry by Method 9034-9030B

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





# <sup>8</sup>Al

## Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.09		1	10/04/2016 14:54	WG913869

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862165-04 WG913869: 7.09 at 20.5c

## Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:51	WG912747

## Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
mg/l		mg/l	mg/l		date / time	
ND		0.0500	0.50	1	10/04/2016 23:51	WG912711
ND		0.0500	0.50	1	10/04/2016 23:51	WG912711
ND		0.0500	100	1	10/04/2016 23:51	WG912711
ND		0.250	6	1	10/04/2016 23:51	WG912711
	mg/l ND ND ND	mg/l ND ND ND	mg/l         mg/l           ND         0.0500           ND         0.0500           ND         0.0500	mg/l         mg/l         mg/l           ND         0.0500         0.50           ND         0.0500         0.50           ND         0.0500         100	mg/l         mg/l         mg/l           ND         0.0500         0.50         1           ND         0.0500         0.50         1           ND         0.0500         100         1	mg/l         mg/l         date / time           ND         0.0500         0.50         1         10/04/2016 23:51           ND         0.0500         0.50         1         10/04/2016 23:51           ND         0.0500         100         1         10/04/2016 23:51

## CHTC-TP-DM11A

## SAMPLE RESULTS - 04

L862165

Collected date/time: 09/23/16 09:30

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

<u> </u>	1 (	, ,					
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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



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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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







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ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 09:35

L862165

#### Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	87.8		1	09/29/2016 14:33	WG912486



## Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.74		1	09/30/2016 14:20	WG912583



Cn

## Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862165-05 WG912590: Contains No Free Liquid



СQс

## Polychlorinated Biphenyls (GC) by Method 8082

1 Olychionnated Dipin	criyis (OC) b	y ivictilod o	002			
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
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



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Collected date/time: 09/23/16 09:35

#### L862165

#### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







## Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	0.427	<u>P1</u>	0.250	1	10/03/2016 14:59	<u>WG913176</u>





## Wet Chemistry by Method 9034-9030B

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





## Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.47		1	10/04/2016 14:54	WG913869

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862165-06 WG913869: 7.47 at 20.2c

## Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	WG911949

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:23	WG912412

## Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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Collected date/time: 09/23/16 09:35

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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















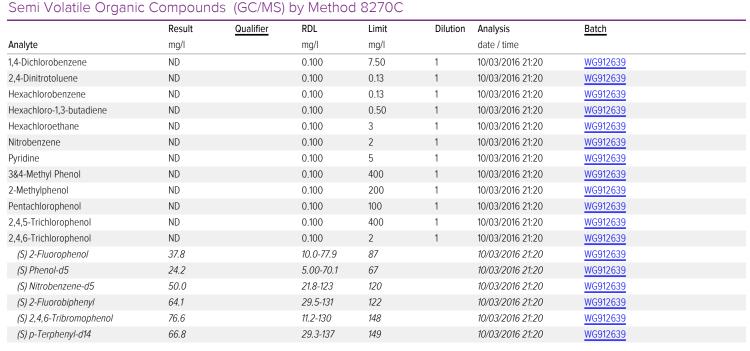












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Collected date/time: 09/23/16 10:15

## Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	92.6		1	09/29/2016 14:33	WG912486

# <sup>2</sup>Tc

## Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.20		1	09/30/2016 14:20	WG912583



## Wet Chemistry by Method 9095B

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



Cn

#### Sample Narrative:

9095B L862165-07 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

## Polychlorinated Biphenyls (GC) by Method 8082

i diyamamataa Bipmanyia (day ay matinaa dada									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	mg/kg		mg/kg		date / time				
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			



Αl

#### ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:15

#### Preparation by Method 1311

r reparation by wer	.1100 1511				1
	Result	Qualifier	Prep	<u>Batch</u>	
Analyte			date / time		-
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	3
Initial pH	8.71		9/27/2016 10:38:49 PM	WG911845	
Final pH	6.59		9/27/2016 10:38:49 PM	WG911845	







Cn

## Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	0.285		0.250	1	10/03/2016 15:01	WG913176





# <sup>7</sup>Gl





## Wet Chemistry by Method 9034-9030B

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

# <sup>9</sup>Sc

## Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:25	WG912412

## Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

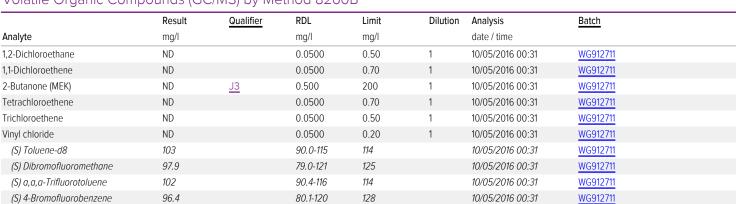
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Benzene	ND		0.0500	0.50	1	10/05/2016 00:31	WG912711
Carbon tetrachloride	ND		0.0500	0.50	1	10/05/2016 00:31	WG912711
Chlorobenzene	ND		0.0500	100	1	10/05/2016 00:31	WG912711
Chloroform	ND		0.250	6	1	10/05/2016 00:31	WG912711

Collected date/time: 09/23/16 10:15

L862165



#### Volatile Organic Compounds (GC/MS) by Method 8260B Result Qualifier RDL Analyte mg/l



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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	







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Total Solids by Method 2540 G-2011

L862165-01,03,05,07

#### Method Blank (MB)

Analyte

**Total Solids** 

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

MB Result MB Qualifier MB MDL MB RDL % %

<sup>3</sup>Ss

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

0.00100

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

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



# <sup>6</sup>Qc

## Laboratory Control Sample (LCS)

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





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2710 F-2011

L862165-01,03,05,07

## L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03	09/30/16 14:20 • (DUP)	WG912583-1	09/30/16 1	14:20
	Original Result	DUP Result	Dilution	DUP RE

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.65	1.65	1	0.438		20

# \_ <sup>1</sup>Cp





## L862165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-01	09/30/16 14:20	• (DUP) WG912583-2	09/30/16 14:20
(00) 2002100 01	03/00/10 11.20	(001) 110012000 2	03/00/10 11.2

(03) 2802 103-01									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	g/cm3	g/cm3		%		%			
Density	1.62	1.57	1	2.96		20			











ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

#### L862165-02,04,06,08

#### Method Blank (MB)

Reactive Cyanide

(MB) R3167713-1 10/03/16 14:36 MB Result MB Qualifier Analyte mg/kg



0.250

0.0390









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

,	Original Result	DUP Result	Dilution	DUP RPD
Analyte	mg/kg	mg/kg		%

Analyte	mg/kg	mg/kg		%	%
Reactive Cyanide	ND	ND	1	0.000	20

**DUP** Qualifier

%	

**DUP RPD Limits** 









(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	<u>P1</u>	20







(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) | 86213/LOA | 10/03/16 1/·/A - (MS) | P3167713-A | 10/03/16 1/·/A - (MSD) | P3167713-5 | 10/03/16 1/·/A

(US) LOOZ 134-04 10/03/10 14.44 • (NIS) K3107/13-4 10/03/10 14.45 • (NIS) K3107/13-5 10/03/10 14.46												
	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20

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Wet Chemistry by Method 9034-9030B

L862165-02,04,06,08

#### Method Blank (MB)

(MB) WG913004-4 10/04	1/16 14:59			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Reactive Sulfide	U		7.63	25.0









(OS) L862134-10	10/04/16 14:59 • (DUP) WG913004-1	10/04/16 14:5	59
	Original Desult DLID Desult	Dilution	חח

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







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

(200)00.000 . 2 .0	(200) (100) (200) (200) (200) (200)											
	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		





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## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

L862165-02,04,06,08

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

(OS) L862134-02 10/04/16 14:54 • (DUP) WG913869-3 10/04/16 14:54										
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	Su	su		%		%				

6.69









6.66

(OS) L862756-29 10/04/16 14:54 • (DUP) WG913869-4 10/04/16 14:54										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	su	SU		%		%				
рН	8.05	8.00	1	0.623		1				

0.449





# <sup>6</sup>Qc

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

(200) 110/01/	Spike Amount	•		LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	SU	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





Paint Filter Test

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9095B

L862165-01,03,05,07

## L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03	09/30/16 13:55 • (DUP) \	NG912590-1 09/30/1	16 13:55	
	Original Result	DUP Result Dilution	on DUP RPD	<b>DUP</b> Qualifier
Analyte	%	%	%	

0.000

See Footnote See Footnote 1

DUP Qualifier	DUP RPD Limits %	
	20	







## L862165-05 Original Sample (OS) • Duplicate (DUP)

(03) 2002 103-03 03/30/10	55) E002103-03 03/30/10 13:33 (D01 ) W0312330-2 03/30/10 13:33										
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits					
Analyte	%	%		%		%					
Paint Filter Test	See Footnote	See Footnote	1	0.000		20					











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Wet Chemistry by Method D93/1010A

L862165-02,04,06,08

Limits

#### L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16 14:15 • (DUP) WG911949-1 09/30/16 14:15										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD				
Analyte	Deg. F	Deg. F		%		%				
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10				









(OS) L862222-10 09/30/1	(OS) L862222-10 09/30/16 14:15 • (DUP) WG911949-4 09/30/16 14:15										
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits					
Analyte	Deg. F	Deg. F		%		%					
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10					









(1 (	WG911949-2	09/30/16 14:15 •	(I CSD	WG911949-3	09/30/16 14:15
(	) VV O J 11 J ¬ J Z	03/30/10 17.13		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	03/30/10 17.13

(LCS) WG911949-2 09/	/30/16 14:15 • (LCS	D) WG911949-	3 09/30/16 14:1	15						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99 5	99.3	93 0-107			0.245	20





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Mercury by Method 7470A

L862165-02,06,08

#### 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



<sup>2</sup>Tc



## 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		





# <sup>6</sup>Ос



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

(,		Original 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	%	%		%			%	%
Mercurv	0.0300	ND	0.0294	0.0304	98	101	1	75-125			4	20







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Mercury by Method 7470A

L862165-04

## 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	





# <sup>6</sup>Qc

## 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

(03) 2002103 04 03/30/10 11.31 - (M3) 1/310/322 4 03/30/10 11.34 - (M32) 1/310/322 3 03/30/10 11.37												
	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	0.0303	0.0309	101	103	1	75-125			2	20







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Metals (ICP) by Method 6010B

L862165-02,06,08

## Method Blank (MB)

(MB) R3167437-1 0	9/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# <sup>5</sup>Sr

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

\ /	\	,									
	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	%	%	%			%	%	L
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	L
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) R316/43/-5 09/30/16 18:12 •	(MSD) R316/43/-6	09/30/16 18:15
--------------------------------	------------------------------------	------------------	----------------

(00) 2002110 02 05/00	710 10.07 (1110) 11	0107 107 0 007	00/10 10.12	(11102) 10107 10	, 0 00,00,10	10.10						
	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	%	%		%			%	%
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

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Metals (ICP) by Method 6010B

L862165-04

#### Method Blank (MB)

Silver

(MB) R3167131-2 (	09/29/16 22:57				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	<u>J</u>	0.0333	0.100	
Silver	U		0.0167	0.0500	

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

(LCS) R316/131-3 C	09/29/16 22:59 • (LCSD	D) R316/131-/	09/30/16 00:19									E
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits		ľ
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%		L
Arsenic	10.0	9.10	8.98	91	90	80-120			1	20		8
Barium	10.0	9.27	9.20	93	92	80-120			1	20		ı
Cadmium	10.0	9.09	8.99	91	90	80-120			1	20		Ī
Chromium	10.0	8.99	8.95	90	90	80-120			0	20		1
Lead	10.0	9.09	9.08	91	91	80-120			0	20		L
Selenium	10.0	9.19	9.02	92	90	80-120			2	20		

80-120

## L862492-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

8.87

89

89

(OS) L862492-02 09/2	S) L862492-02 09/29/16 23:05 • (MS) R3167131-5 09/29/16 23:10 • (MSD) R3167131-6 09/29/16 23:13													
	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	%	%		%			%	%		
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		

10.0

8.85

20

















ONE LAB. NATIONWIDE.

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

L862165-02,04,06,08

## Method Blank (MB)

(MB) R3167391-3 09/30/16	6 14:59			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

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

(LCS) R3167391-1 09/30/16	6 11:03 • (LCSD)	R3167391-2 C	9/30/16 11:23							
	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	%	%	%			%	%
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		<u>J3</u>	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				



















ONE LAB. NATIONWIDE.

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

L862165-02,04,06,08

## 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

	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	%	%		%			%	%
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				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862165-01,03,05,07

## Method Blank (MB)

(MB) R3167926-1 10/04/16	6 08:47			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R3167926-2 10/04/	/16 09:01 • (LCSE	D) R3167926-3	3 10/04/16 09:19	5							
	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	%	%	%			%	%	
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	6 16:36 • (MS) R3	3167926-4 10/0	04/16 16:50 • (M	SD) R3167926	-5 10/04/16 17	:03						
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				

ONE LAB. NATIONWIDE.

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

L862165-02,06,08

## Method Blank (MB)

(MB) R3167928-3 10/03/1	6 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	mg/l	
1,4-Dichlorobenzene	U		0.0333	0.100	
2,4-Dinitrotoluene	U		0.0333	0.100	3
Hexachlorobenzene	U		0.0333	0.100	
Hexachloro-1,3-butadiene	U		0.0333	0.100	4
Hexachloroethane	U		0.0333	0.100	
Nitrobenzene	U		0.0333	0.100	
Pyridine	U		0.0333	0.100	5
2-Methylphenol	U		0.0333	0.100	
3&4-Methyl Phenol	U		0.0333	0.100	6
Pentachlorophenol	U		0.0333	0.100	
2,4,5-Trichlorophenol	U		0.0333	0.100	_
2,4,6-Trichlorophenol	U		0.0333	0.100	7
(S) Nitrobenzene-d5	52.9			21.8-123	
(S) 2-Fluorobiphenyl	67.7			29.5-131	8
(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	9
(S) 2,4,6-Tribromophenol	68.4			11.2-130	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

(S) 2-Fluorophenol

(S) 2,4,6-Tribromophenol

# QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862165-02,06,08

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

(I OO) DO467000 4	10/00/10 11 00	(LOCD) DO167000 0	10/00/10 11 10
(LCS) R316/928-1	10/03/16 14:20 •	(LCSD) R3167928-2	10/03/16 14:43

	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	%	%	%			%	%
(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

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

23.6

66.7















35.7

75.8

10.0-77.9

11.2-130

ONE LAB. NATIONWIDE.

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

L862165-04

## Method Blank (MB)

(MB) R3168087-3 10/04/	16 11:32				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

	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	%	%	%			%	%
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				



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

LCSD Qualifier RPD

**RPD Limits** 

%

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

1	I CS) D3169097 1	10/04/16 10:21 -	(LCSD) R3168087-2	10/04/16 10:45
u	LC31 K3100U07-L	10/04/10 10.21 •	ILUSDI KSIBAUA7-Z	10/04/10 10.45

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	mg/l	%	%	%	
(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	







- 1	
	<sup>4</sup> Cn

# 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) F	R3168087-5	10/04/16 17:00

	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	%	%		%			%	%
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				

# **GLOSSARY OF TERMS**



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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	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 <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01	
Canada	1461.01	USDA	S-67674	
EPA-Crvpto	TN00003			

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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:		11.5	Billing Info	rmation:		4	Analysis / Container / Preservative							Chain of Custody Page of			
UP Environmental? P.O. Box 127 Bark River, MI	Bervicos, I 49807	Inc.	Sa	me			9									L. A. B. S. C.	SC III E IN C I E IS
Report to:			Email To:	pupenviror	mental (	m	tri									Mount Juliet, TN 3712 Phone: 615-758-5858	2
Report to: RICK Riedy Project Description: Abandon Min	ins Wast			City/State Collected:			4/15									Phone: 800-767-5859 Fax: 615-758-5859	
Phone:	Client Project	*		Lab Project #			Per									K16	7
Chris Gendron	Site/Facility ID	#	· 聲	P.O. #		1	Mo		3			7				Acctnum: Template:	
Collected by (signature)	Rush? (L Same I Next D Two Da	ab MUST Be Day	200% 100% 50%	Email?	_NoYes	No.	360	<i>-</i>	ash Pou	0						Prelogin: TSR: PB:	
Packed on ice N Y	Three I		25%	FAX?N		No. of Cntrs	2	HO	1/2	20						Shipped Via:	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time				-							Rem./Contaminant	Sample # (lab pnly)
CHTC-TP-DMØ5	Grab	OT		9/23/16	E 10 1 A 10 PM V 10 10 PM 22 - 22 EO /	2	B 100 100 100 100 100 100 100 100 100 10	×	×	X							-01/01
CHTC-TP-DMILA	Gras	OT		9/23/16		9	6	×	K	R				3 10 10			,03/4
CHTC-TP-DMILB	Grab	OT		9/23/16	9:35A	2	×	×	×	×		95/77				10.74 T	105-06
ette-TS-Dmø8	Grab	OT		9/23/16	10:15A	2	×	X	×	×							0/10-
				4-0,								Selection of the select					
						AGE C											
		1 A 1	7		4			2									
		54/ 4				J		1			<u>l</u>						
* Matrix: SS - Soil GW - Groundwate Remarks:	r <b>WW</b> - WasteW	Vater <b>DW</b> - D	rinking Wat	ter OT - Other						pH Flow	27	Temp		Hold #			
Relinquished by : (Signature)		Date /25	16	Time: R	eceived by: (Signa	ature)			HQ	☐ Fe	dEx 🗆 (	via: 🗆 U Courier l		Conditi	ion:	(lab u	ise only Gn
Refinquished by (Signature)		Date:	1,		eceived by: (Signa	7 ps				Temp: 3, 7	°C	Bottles F	F+B	NEOC Seal Intact:YNNA			
Relinquished by : (Signature)		Date:		Time:	eceived for lab by	: (Sign:	ature)			9-2-	1-16	Time: 9	W	pH Che	ecked	l: NCF:	



Cooler Re	eceipt Form				
Client: UPENVBDMI	1862165				
Cooler Received/Opened On: 9/27/16	ved/Opened On: 9/27/16 Temperature Upon Receipt:				
Received By: Richard Hughes					
Signature:					
Receipt Check Lis	st	Yes	No	N/A	
Were custody seals on outside of cooler and intact?				-	
Were custody papers properly filled out?				HUKIT	
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 prese	erved and			1	
checked for preservation? (Any not in accepted range	e noted on COC)				
If applicable, was an observable VOA headspace pres	ent?			/	
Non Conformance Generated. (If yes see attached NC	(F)				



# ANALYTICAL REPORT

my ESC

# 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 V Houkins

John Hawkins

Results rolate only to the items tested or calibrated and are reported as reported values. The test report shall not be reported.cot, except in full, without written approach or the laboratory. Where applicable, sampling conducted by SC is porteriored per guidance provided in laboratory standard operating procedures. 196302, 960033, and 960004.

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<sup>7</sup>Gl: Glossary of Terms

<sup>9</sup>Sc: Chain of Custody

<sup>8</sup>Al: Accreditations & Locations

Polychlorinated Biphenyls (GC) by Method 8082M

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

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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
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	Analysis	Analyst
The aloue	Baten	Dilation	date/time	date/time	7 mary 50
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
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
Debugble size at al Dishagada (CC) ha Matha d 0000	WC044074	2			INIC
Polychlorinated Biphenyls (GC) by Method 8082 Wet Chemistry by Method 2710 F-2011	WG911074 WG912583	3 1	09/26/16 15:51 09/30/16 13:58	09/27/16 14:06 09/30/16 14:20	JNS 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	Analysis	Analyst
			date/time	date/time	
Polychlorinated Biphenyls (GC) by Method 8082M	WG912356	50	09/29/16 14:02	09/30/16 17:50	JNS



















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	Analysis	Analyst
			date/time	date/time	
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
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	Analysis	Analyst
			date/time	date/time	
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	Analysis	Analyst
			date/time	date/time	
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	ВМВ
Wet Chemistry by Method 9012 B	WG910790	1	09/26/16 21:58	09/27/16 14:13	ASK

WG910581

WG910619

1

09/28/16 09:12

09/26/16 13:00

09/28/16 09:12

09/26/16 13:00

JJL

AMC



















Wet Chemistry by Method 9045D

Wet Chemistry by Method D93/1010A



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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L861336-02	CHLL-HPA-DRUM-04A	9095B

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3 - 01

# Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	g/cm3			date / time		
Density	1.47		1	09/30/2016 14:20	WG912583	

# <sup>'</sup>Cp



Ss



	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	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













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1861336

### Preparation by Method 1311

, ,				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 14:41	WG913176





## Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	6.92		1	09/28/2016 09:12	WG910581

# <sup>9</sup>Sc

### Sample Narrative:

9045D L861336-02 WG910581: 6.92 at 19.0c

# Wet Chemistry by Method 9095B

	Result	<u>Qualifier</u> Di	ilution	Analysis	Batch
Analyte	%			date / time	
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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	122		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 07:59	WG912087

# Metals (ICP) by Method 6010B

	D !!	0 1:0	DDI	11. 11	D:1 ::	A 1 :	B. I
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	<del></del>
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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



















ONE LAB. NATIONWIDE.



















Polychlorinated Biphenyls (GC) by Method 8082

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	1.13		1	09/30/2016 14:20	WG912583

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	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

### ONE LAB. NATIONWIDE.

861336

### Preparation by Method 1311

<u> </u>				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	10/03/2016 14:42	<u>WG913176</u>





## Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





# <sup>8</sup>Al

# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.01		1	09/28/2016 09:12	WG910581

# <sup>9</sup>Sc

### Sample Narrative:

9045D L861336-04 WG910581: 7.01 at 18.7c

# Wet Chemistry by Method 9095B

	Result	Qualifier D	ilution	Analysis	Batch
Analyte	%			date / time	
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

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

### Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:14	WG912087

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

(S) 4-Bromofluorobenzene

# SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE.

WG911243

09/26/2016 16:59

Volatile Organic Con	npounds (GC	C/MS) by $Me$	ethod 8260	OB			
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

128

80.1-120





Ss











101

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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



8082M L861336-05 WG912356: Dilution due to matrix

Sample Narrative:

# SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE.

# Polychlorinated Biphenyls (GC) by Method 8082M

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/kg		mg/kg		date / time		
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	<i>7</i> 5. <i>5</i>	 J7	60.0-140		09/30/2016 17:50	WG912356	



















### ONE LAB. NATIONWIDE.

### Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
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

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND	<u>J3 J4</u>	0.250	1	09/27/2016 14:12	WG910790



# СQс

# Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791





# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	6.50		1	09/28/2016 09:12	WG910581

# Sc

### Sample Narrative:

9045D L861336-06 WG910581: 6.50 at 18.3c

# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:28	WG912087

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	<u> </u>
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













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

	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	09/28/2016 21:45	WG911865
ND		0.100	0.13	1	09/28/2016 21:45	WG911865
ND		0.100	0.13	1	09/28/2016 21:45	WG911865
ND		0.100	0.50	1	09/28/2016 21:45	WG911865
ND		0.100	3	1	09/28/2016 21:45	WG911865
ND		0.100	2	1	09/28/2016 21:45	WG911865
ND		0.100	5	1	09/28/2016 21:45	WG911865
ND		0.100	400	1	09/28/2016 21:45	WG911865
ND		0.100	200	1	09/28/2016 21:45	WG911865
ND		0.100	100	1	09/28/2016 21:45	WG911865
ND		0.100	400	1	09/28/2016 21:45	WG911865
ND		0.100	2	1	09/28/2016 21:45	WG911865
19.7		10.0-77.9	87		09/28/2016 21:45	WG911865
13.9		5.00-70.1	67		09/28/2016 21:45	WG911865
42.1		21.8-123	120		09/28/2016 21:45	WG911865
58.1		29.5-131	122		09/28/2016 21:45	WG911865
47.8		11.2-130	148		09/28/2016 21:45	WG911865
79.2		29.3-137	149		09/28/2016 21:45	WG911865
	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 ND 0.100 19.7 10.0-77.9 13.9 5.00-70.1 42.1 21.8-123 58.1 29.5-131 47.8 11.2-130	ND 0.100 7.50  ND 0.100 0.13  ND 0.100 0.13  ND 0.100 0.50  ND 0.100 3  ND 0.100 2  ND 0.100 5  ND 0.100 5  ND 0.100 200  ND 0.100 200  ND 0.100 100 100  ND 0.100 200  ND 0.100 100 400  ND 0.100 400  ND 0.100 400  ND 0.100 5  19.7 10.0-77.9 87  13.9 5.00-70.1 67  42.1 21.8-123 120  58.1 29.5-131 122  47.8 11.2-130 148	ND       0.100       7.50       1         ND       0.100       0.13       1         ND       0.100       0.50       1         ND       0.100       3       1         ND       0.100       3       1         ND       0.100       2       1         ND       0.100       5       1         ND       0.100       400       1         ND       0.100       200       1         ND       0.100       100       1         ND       0.100       400       1         ND       0.100       2       1         19.7       10.0-77.9       87         13.9       5.00-70.1       67         42.1       21.8-123       120         58.1       29.5-131       122         47.8       11.2-130       148	ND 0.100 7.50 1 09/28/2016 21:45  ND 0.100 0.13 1 09/28/2016 21:45  ND 0.100 0.13 1 09/28/2016 21:45  ND 0.100 0.50 1 09/28/2016 21:45  ND 0.100 3 1 09/28/2016 21:45  ND 0.100 3 1 09/28/2016 21:45  ND 0.100 2 1 09/28/2016 21:45  ND 0.100 5 1 09/28/2016 21:45  ND 0.100 5 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 100 100 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 200 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 400 1 09/28/2016 21:45  ND 0.100 67 09/28/2016 21:45  13.9 5.00-70.1 67 09/28/2016 21:45  42.1 21.8-123 120 09/28/2016 21:45  58.1 29.5-131 122 09/28/2016 21:45  47.8 11.2-130 148 09/28/2016 21:45





CHLL-HPA-DRUM-04D Collected date/time: 09/20/16 11:00

# SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

	, ,	•					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l		date / time		
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	



















### ONE LAB. NATIONWIDE.

### Preparation by Method 1311

<u> </u>				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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





# Ss

# Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND	<u>J3 J4</u>	0.250	1	09/27/2016 14:13	WG910790



Cn







# Wet Chemistry by Method 9034-9030B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Sulfide	ND		25.0	1	09/27/2016 02:08	WG910791

# Sc

# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	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

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/26/2016 13:00	WG910619

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 08:07	WG912087

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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L861336

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

volatile Organic Compounds (GC/MS) by Method 8260B										
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>			
Analyte	mg/l		mg/l	mg/l		date / time				
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			















	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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









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Wet Chemistry by Method 9012 B

L861336-06,08

### 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









(OS) L861447-01	09/27/16 14:14 • (DUP) R:	3166419-4	09/27/16 14:15	
	Original Result	DUP Resul	t Dilution	DUP RPD

Analyte	mg/kg	mg/kg		%	%
Reactive Cyanide	ND	ND	1	0.000	20







(LCS) NS100+13 Z 03/Z	7710 14.07 (LCSL	) NS100+13 3	03/2//10 14.00	,						
	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 Cyanide	48 4	52.0	85.5	107	177	50 0-150		.13 .14	49.0	20

DUP Qualifier DUP RPD Limits





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Wet Chemistry by Method 9012 B

L861336-02,04

### 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 Cvanide	U		0.0390	0.250



<sup>2</sup>TC



## 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	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	ND	1	0.000		20





# <sup>6</sup>Qc



(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	<u>P1</u>	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

(200) (10107710 2 107	Spike Amount			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

(US) L862134-04 10/0	3/16 14:44 • (IVIS) R	310//13-4 10/0	3/10 14:45 • (1)	/ISD) R316//IS-:	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20	

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Wet Chemistry by Method 9034-9030B

L861336-02,04,06,08

### Method Blank (MB)

Reactive Sulfide

(MB) WG910791-1 09/27/	16 02:08			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg







## L861447-05 Original Sample (OS) • Duplicate (DUP)

U

(OS) L861447-05	09/27/16	02:08 • (DUP)	WG910791-4 (	9/27/16 0	2:08		
		Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte		mg/kg	mg/kg		%		%
Andryte		my/ky	mg/kg		/0		/0



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

7.63

25.0

(LCS) WG910791-2 09/27/16 02:08 • (LCSD) WG910791-3 09/27/16 02:08

(200) 11000107312	Spike Amount LCS Result LCSD Result LCS Rec. LCSD Rec. Rec. Limits LCS Qualifier LCSD Qualifier RPD RPD Limits											
	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		





# QUALITY CONTROL SUMMARY

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Wet Chemistry by Method 9045D

L861336-02,04,06,08

# L860076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L860076-01	09/28/16	09:12 •	(DUP)	WG910581-3	09/28/16 09:12	
		Original	Result	DUP Result	Dilution	DUP RPD

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Su	SU		%		%
pH	3.38	3.40	1	0.590		1

# Ss

## L861673-02 Original Sample (OS) • Duplicate (DUP)

	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	su	su		%		%
рН	4.51	4.55	1	0.883		1







(LCS) WG910581-1 09/28/16 09:12 • (LCSD) WG910581-2 09/28/16 09:12

(LCS) WOSIOSOFI 05/20/10 05/12 • (LCSD) WOSIOSOFI 05/20/10 05/12											
		Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Analyte	Su	su	Su	%	%	%			%	%
	pH	6.11	6.07	6.07	99.3	99.3	98.4-102			0.000	1





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Wet Chemistry by Method 9095B

L861336-04

# L863242-01 Original Sample (OS) • Duplicate (DUP)

(OS) L863242-01 10/05/16 10:00 • (DUP) WG913968-1 10/05/16 10:00										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	%	%		%		%				
Paint Filter Test	See Footnote	See Footnote	1	0.000		20				



















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Wet Chemistry by Method D93/1010A

L861336-02,04,06,08

# L861336-02 Original Sample (OS) • Duplicate (DUP)

(OS) L861336-02	09/26/16 13:00 • (DUP)	WG910619-1	09/26/16 13	3:00
	Original Result	DHP Result	Dilution	DI IP RPI

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	122	124	1	1.63		10

# Ср





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

11 001 11/0010010 0	00/00/40 10:00	// CCD/ ///CO10C10 2	00/00/40 10:00
11 ( \$1 \(\nu(\frac{1}{2}\) \(\nu(\frac{1}2\) \(\	U9//h/lh 13'UU •	(LCSD) WG910619-3	09/76/16 13:00
(200) 110010 2	03/20/10 10.00	(ECOD) 11 CO 10 C	03/20/10 10.00

( /													
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%			
Ignitability	82.0	82.9	83.9	101	102	93.0-107			1.20	20			













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Mercury by Method 7470A

L861336-02,04,06,08

### 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











	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







(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)

/OST 1 861336 08 09/30/16 08:07 - (MS) P3167239 6 09/30/16 08:09 - (MSD) P3167239 7 09/30/16 08:12

(O2) F8613	336-08 09/30/10	5 08:07 • (IVIS) F	316/239-6 US	9/30/16 08:09	• (IVISD) R316/2	39-7 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

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Metals (ICP) by Method 6010B

L861336-02,04,06,08

### Method Blank (MB)

Silver

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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



<sup>2</sup>Tc







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

0.0167

0.0500

(LCS) R3166532-2 09/27/16 23:27 • (LCSD) R3166532-3 09/27/16 23:29

U

	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	%	%	%			%	%	
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	







# 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

(00) 20010 10 01 00	727710 25.52 ° (IVIS) IX	0.00002 0 00	727710 20.07	(11102) 1101000	02 0 03/2//1	0 20.00						
	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	%	%		%			%	%
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

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Metals (ICP) by Method 6010B

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

,	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	%	%		%			%	%
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





















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

L861336-02,04,06,08

## Method Blank (MB)

(MB) R3166244-3 09/26/1	6 08:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

,	,	,								
	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	%	%	%			%	%
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				



















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

L861336-02,04,06,08

## L861336-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L861336-08 09/26/16 13:57 • (MS) R3166244-4 09/26/16 10:21	(OS)I	861336-08	09/26/16 13:57 •	(MS) R3166244-4	09/26/16 10:21
---	-------	-----------	------------------	-----------------	----------------

(O3) L601330-06 09/20/	10 13.37 • (IVIS) K	3100244-4 09	/20/10 10.21				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
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	<u>J5</u>
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

(03) 1801334-00 03/20	3/10 13.3/ • (IVI3) K	3100244-0 03	/20/10 10.41	(IVISD) KS1002-	4-7 03/20/10	11.01						
	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	%	%		%			%	%
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	e				109	110		79.0-121				
(S) a,a,a-Trifluorotoluene					97.8	98.9		90.4-116				
(S) 4-Bromofluorobenzene	e e				97.3	100		80.1-120				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L861336-01,03

#### Method Blank (MB)

(MB) R3166403-1 09/27/1	6 10:22			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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	<i>75.2</i>			29.2-144



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	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	%	%	%			%	%
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

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				



ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L861336-07

## Method Blank (MB)

(MB) R3167488-1 09/30/1	6 14:27			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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



(LCS) R3167488-2	09/30/16 14:41 •	(LCSD) R3167488-3	09/30/16 14:55
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	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	%	%	%			%	%
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				





ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082M

L861336-05

## Method Blank (MB)

(MB) R3167484-1 09/30/1	6 16:55			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 • (LCSE	D) R3167484-3	09/30/16 17:2:	2						
	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	%	%	%			%	%
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	<u>J4</u>		17.1	20
(S) Decachlorobiphenyl				101	88.9	60.0-140				
(S) Tetrachloro-m-xylene				113	95.8	60.0-140				





















ONE LAB. NATIONWIDE.

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

L861336-02,04,06

#### Method Blank (MB)

(MB) R3166768-3 09/28	/16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

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

(LCS) R3166768-1 09/28/	.CS) R3166768-1 09/28/16 13:57 • (LCSD) R3166768-2 09/28/16 14:20										
	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	%	%	%			%	%	
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					

(S) 2,4,6-Tribromophenol

# QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

	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	%	%	%			%	%
(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

	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	%	%		%			%	%
1,4-Dichlorobenzene	0.500	ND	0.147	0.294	29.3	58.9	1	14.0-104		<u>J3</u>	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		<u>J3</u>	55.4	37.6
Hexachloroethane	0.500	ND	0.136	0.277	27.2	55.5	1	10.4-105		<u>J3</u>	68.3	40
Nitrobenzene	0.500	ND	0.189	0.329	37.7	65.9	1	23.1-121		<u>J3</u>	54.3	29
Pyridine	0.500	ND	0.101	0.188	20.2	37.7	1	10.0-77.8		<u>J3</u>	60.6	38.8
2-Methylphenol	0.500	ND	0.155	0.265	31.0	53.0	1	10.0-133		<u>J3</u>	52.4	40
3&4-Methyl Phenol	0.500	ND	0.179	0.274	35.9	54.7	1	17.4-100		<u>J3</u>	41.5	27.7
Pentachlorophenol	0.500	ND	0.152	0.266	30.3	53.2	1	10.0-108		<u>J3</u>	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		<u>J3</u>	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				

72.3















58.4

11.2-130

ONE LAB. NATIONWIDE.

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

L861336-08

#### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

# ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

(S) 2,4,6-Tribromophenol

## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

1861336-08

LCS Qualifier

LCSD Qualifier RPD

%

**RPD Limits** 

%

#### 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

		Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits
	Analyte	mg/l	mg/l	mg/l	%	%	%
ı	(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



\_\_\_\_ Ср





# <sup>4</sup>Cn

L862604-02 Original Sample (OS) • Matrix Sp	ike (MS) • Matrix Spike Duplicate (MSD)
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(OS) L862604-02 10/03/16 15:30 • (MS) R3167928-4 10/03/16 15:53 • (MSD) R3167928-5 10/03/16 16:16

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

66.7

75.8

11.2-130

# **GLOSSARY OF TERMS**

#### ONE LAB. NATIONWIDE.

# Abbreviations and Definitions

, 10 0 1 0 1 1 d 1 0 1 1 0 d 1	
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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
llinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
(ansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
ouisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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:			Billing Infor	mation:		7.	Analysis / Container / Preservative						Chain of Custod	Page of			
U.P. Environmental Se P.O. BOX 127		TAC	SZ	ine			-									*	ESC
Bark River, MI 4	9807															ErAIB 32	C-1-E-N-C-E-S
906-466-9900						ŧ.										12065 Lebanon Rd	OF CHOICE
Report to: RICK Reidy			Email To:	upenviro	nmoutal.	DM						12				Mount Juliet, TN 3 Phone: 615-758-58	7122
Project				The second secon								1				Phone: 800-767-58 Fax: 615-758-5859	
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Phone: 906-466-9900	Client Project	#		Lab Project #		į		100		e		00				7 F1	
Fax: 906-466 2641	UPENVI	BRMI -	DRUMS				1	yanı		3						1	12
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CHLL-HPA-DRUM-04 A	Grah	OT	NA		5,00pm	6	X		χ	Χ	X	<					-01/02
CHLL-HEA-DRUM-043	Grab	OT	MA	9/20/16	530 pm	6	X	%	×	X	×	χ					03/04
CHLL-HPA-DRUM-O4C	asab	OT	NA	9/20/16	600 pm	8	1 1	X	×	×.	X	X	. ,		784		05/06
CHIL-HPA-DRUM-OYD		OT	PlA	9/21/16	11:00 am	8	7 ×	У	+	Х	Y	X					07108
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* Matrix: \$\$ - Soil GW - Groundwater \	MANAL ARTOCACAS	Inter PMAI . D	rinking West	or OT - Other		7				рН		Tem	D				, /
	** ** - **dorc*v	CLE DW-D	misnig vvdu	ar-other		1				Eleve	1.5	7.0			Hold	#	
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## YOUR LAB OF CHOICE

Cooler F	Receipt Form			
Client: UPENVEKMI	SDG#	L8	613	36
Cooler Received/Opened On: 9-22-16	7.8	°c		
Received By: Green Degumen				
Signature: One Wen				
) "				
Receipt Check	List	Yes	No	N/A
Were custody seals on outside of cooler and intact?				1
Were custody papers properly filled out?		/		
Did all bottles arrive in good condition?		1		
Were correct bottles used for the analyses requeste	ed?	1		
Was sufficient amount of sample sent in each bottle	2?	1	NA NEWSCHI	100000000
Were all applicable sample containers correctly pre-	served and			1
checked for preservation? (Any not in accepted range	ge noted on COC)			H
If applicable, was an observable VOA headspace pre	esent?			1
Non Conformance Generated. (If yes see attached N	ICF)			



# ANALYTICAL REPORT

October 07, 2016



# U.P. Environmental Services, Inc.

L862154 Sample Delivery Group:

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 V Houkins

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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<sup>9</sup>Sc: Chain of Custody

35

# SAMPLE SUMMA

1ARY	ONE LAB. NATIONWID

09/23/16 11:00

Collected date/time

Collected by

Chris Gendron

ONE	LAB.	NATIONWIDE.

Received date/time

09/27/16 09:00

CHTC-TP-DM09 L862154-01 Solid			Chris Gendron	09/23/16 11:00	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time



















# CHTC-TP-DM09 L862154-02 Waste

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

CHTC-TS-DM09 L862154-04 Waste

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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



Collected by

Chris Gendron

Collected date/time 09/23/16 14:00

Collected date/time

09/23/16 14:00

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

Received date/time

09/27/16 09:00

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
			Collected by	Collected date/time	Received date/time

ed by	Collected date/time	Re
endron	09/23/16 11:30	09

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

CHTC-TP-DM04 L862154-05 Solid			Chris Gendron	09/23/16 11:30	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

# SAMPLE SUMMARY

ONE	ΙΛR	NIATIO	NWIDE.
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ONE	LAB.	NATIONWIDE.	
·	_,		

Received date/time

Collected date/time

CHTC-TP-DM04 L862154-06 Waste			Collected by Chris Gendron	Collected date/time 09/23/16 11:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
CHTC-TS-DM02 L862154-07 Solid			Collected by Chris Gendron	Collected date/time 09/23/16 10:30	Received date/time 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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			Chris Gendron	09/23/16 10:30	09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

Collected by















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.























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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
L862154-02	CHTC-TP-DM09	D93/1010A

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:00

## Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	0.899		1	09/30/2016 14:20	WG912583

# Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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	









ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:00

#### Preparation by Method 1311

				l de la companya de la companya de la companya de la companya de la companya de la companya de la companya de
	Result	Qualifier	Prep	Batch
Analyte			date / time	
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







Cn

## Wet Chemistry by Method 9012 B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.750	3	10/03/2016 15:04	WG913176





## Wet Chemistry by Method 9034-9030B

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





# ΆΙ

## Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	3.36		1	10/04/2016 14:54	WG913869

# Sc

#### Sample Narrative:

9045D L862154-02 WG913869: 3.36 at 20.2c

# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	81.9		1	09/30/2016 14:15	<u>WG911949</u>

## Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 10:57	WG912412

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

Collected date/time: 09/23/16 11:00

ONE LAB. NATIONWIDE.

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J3</u>	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	10.3		80.1-120	128		09/30/2016 16:39	WG912888	









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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	<u>J1</u>	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	
							· · · · · · · · · · · · · · · · · · ·	







ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 14:00

## Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	97.7		1	09/29/2016 14:33	WG912486

# Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	1.65		1	09/30/2016 14:20	WG912583



Cn

## Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			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									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	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-xvlene	101		29.2-144		10/05/2016 01:20	WG912211			





ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 14:00

### Preparation by Method 1311

-1								
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				







# Cn

# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Su			date / time	
рН	7.07		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-04 WG913869: 7.07 at 20.0c





# Αl

# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

# Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:07	WG912412

# Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>		
Analyte	mg/l		mg/l	mg/l		date / time			
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/I		date / time	
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	<u>J3</u>	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

# SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE.

L862154

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<i>75.3</i>		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

















ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:30

L862154

## Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	0.894		1	09/30/2016 14:20	WG912583

# <sup>2</sup>To

# Wet Chemistry by Method 9095B

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			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

	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	









ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 11:30

# Preparation by Method 1311

Treparation by met	reparation by Method 1011							
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				









## Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	6.59		1	10/04/2016 14:54	<u>WG913869</u>







9045D L862154-06 WG913869: 6.59 at 20.7c





# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>

# Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:10	WG912412

# Metals (ICP) by Method 6010B

( / )							
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

(S) p-Terphenyl-d14

Collected date/time: 09/23/16 11:30

# SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

L862154

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

69.2

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

149

29.3-137

















WG912639

10/03/2016 20:10

Collected date/time: 09/23/16 10:30

# SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

L862154

## Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	94.0		1	09/29/2016 14:33	<u>WG912486</u>



# Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.04		1	09/30/2016 14:20	<u>WG912583</u>



## Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862154-07 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

Αl

## Polychlorinated Biphenyls (GC) by Method 8082

r olyemennated Elphenyle (elephyl method elebz							
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	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	



ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:30

# Preparation by Method 1311

Treparation by met	reparation by Method 1011							
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				







# <sup>4</sup>Cn

# Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
рН	7.30		1	10/04/2016 14:54	<u>WG913869</u>





#### Sample Narrative:

9045D L862154-08 WG913869: 7.30 at 20.5c





# Wet Chemistry by Method D93/1010A

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	Deg. F			date / time	
Ignitability	DNI at 170 F		1	09/30/2016 14:15	<u>WG911949</u>



# <sup>9</sup>Sc

# Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	09/30/2016 11:13	WG912412

# Metals (ICP) by Method 6010B

(, , , , , , , , , , , , , , , , , , ,							
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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

ONE LAB. NATIONWIDE.

Collected date/time: 09/23/16 10:30

L862154

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

Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.100	7.50	1	10/03/2016 20:33	WG912639
ND		0.100	0.13	1	10/03/2016 20:33	WG912639
ND		0.100	0.13	1	10/03/2016 20:33	WG912639
ND		0.100	0.50	1	10/03/2016 20:33	WG912639
ND		0.100	3	1	10/03/2016 20:33	WG912639
ND		0.100	2	1	10/03/2016 20:33	WG912639
ND		0.100	5	1	10/03/2016 20:33	WG912639
ND		0.100	400	1	10/03/2016 20:33	WG912639
ND		0.100	200	1	10/03/2016 20:33	WG912639
ND		0.100	100	1	10/03/2016 20:33	WG912639
ND		0.100	400	1	10/03/2016 20:33	WG912639
ND		0.100	2	1	10/03/2016 20:33	WG912639
34.1		10.0-77.9	87		10/03/2016 20:33	WG912639
23.1		5.00-70.1	67		10/03/2016 20:33	WG912639
48.0		21.8-123	120		10/03/2016 20:33	WG912639
61.1		29.5-131	122		10/03/2016 20:33	WG912639
69.7		11.2-130	148		10/03/2016 20:33	WG912639
68.2		29.3-137	149		10/03/2016 20:33	WG912639
	mg/l ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/I ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/l         mg/l           ND         0.100           34.1         10.0-77.9           23.1         5.00-70.1           48.0         21.8-123           61.1         29.5-131           69.7         11.2-130	mg/l         mg/l         mg/l           ND         0.100         7.50           ND         0.100         0.13           ND         0.100         0.50           ND         0.100         3           ND         0.100         2           ND         0.100         5           ND         0.100         400           ND         0.100         200           ND         0.100         100           ND         0.100         400           ND         0.100         2           34.1         10.0-77.9         87           23.1         5.00-70.1         67           48.0         21.8-123         120           61.1         29.5-131         122           69.7         11.2-130         148	mg/l         mg/l         mg/l           ND         0.100         7.50         1           ND         0.100         0.13         1           ND         0.100         0.50         1           ND         0.100         3         1           ND         0.100         2         1           ND         0.100         5         1           ND         0.100         400         1           ND         0.100         200         1           ND         0.100         100         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         400         1           ND         0.100         2         1           34.1         10.0-77.9         87           23.1         5.00-70.1         67           48.0         21.8-123         120           61.1         29.5-131         122           69.7         11.2-130         148	mg/l         mg/l         date / time           ND         0.100         7.50         1         10/03/2016 20:33           ND         0.100         0.13         1         10/03/2016 20:33           ND         0.100         0.13         1         10/03/2016 20:33           ND         0.100         0.50         1         10/03/2016 20:33           ND         0.100         3         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100         5         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         200         1         10/03/2016 20:33           ND         0.100         200         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         400         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100         2         1         10/03/2016 20:33           ND         0.100



















ONE LAB. NATIONWIDE.

Total Solids by Method 2540 G-2011

L862154-03,07

#### Method Blank (MB)

Analyte

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

MB Result MB MDL MB RDL MB Qualifier % %

**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	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.4	81.5	1	0.161		5

## Laboratory Control Sample (LCS)

ACCOUNT:

U.P. Environmental Services, Inc.

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

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



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ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2710 F-2011

L862154-01,03,05,07

# L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03	09/30/16 14:20 • (DUP)	WG912583-1	09/30/16 14	4:20
	Original Result	DUP Result	Dilution	DUP RP

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.65	1.65	1	0.438		20

# <sup>1</sup>Cp





## L862165-01 Original Sample (OS) • Duplicate (DUP)

(03) 2002 103-01 03/30/10	14.20 (DOI) V	VO512505-2 (	33/30/10 1	7.20		
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.62	1.57	1	2.96		20











ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

L862154-02

#### Method Blank (MB)

Reactive Cyanide

(MB) R3167713-1 10/03/16	14:36			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg









(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

0.0390

0.250







(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	<u>P1</u>	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 10/0	3/16 14:44 • (IVIS) R.	310//13-4 10/0	3/10 14:45 • (1\	(15D) R316//13-:	5 10/03/16 14:4	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 Cvanide	3.33	ND	2.72	1.83	80.0	53.0	1	75.0-125		J3 J6	39.0	20	

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9034-9030B

L862154-02

#### 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) W	/G913004-1 10	)/04/16 14:	59		
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20





# <sup>6</sup>Qc

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

(200) 11 00 10 00 1 2	Spike Amount	,	LCSD Result		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





ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9045D

L862154-02,04,06,08

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

(OS) L862134-02	10/04/16 14:54 • (DUP) \	WG913869-3	10/04/16 14	1:54		
	Original Result	<b>DUP</b> Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits
Analyte	Su	su		%		%
рН	6.66	6.69	1	0.449		1

# <sup>2</sup>TC



# <sup>3</sup>Ss

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

(OS) L862756-29 10/04/16	14:54 • (DUP) \	NG913869-4 1	0/04/16 14	1:54		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	CII	CII		%		%
Analyte	Su	Su		70		/0





# <sup>6</sup>Qc



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

(200) ***********************************	Spike Amount	•	LCSD Result		LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	SU	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





Analyte
Paint Filter Test

# QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9095B

L862154-01,03,05,07

# L862154-03 Original Sample (OS) • Duplicate (DUP)

(OS) L862154-03	09/30/16 13:55 • (DUP) \	WG912590-1	09/30/16 1	3:55
	Original Result	<b>DUP Result</b>	Dilution	DUP RPD

Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
%	%		%		%
See Footnote	See Footnote	1	0.000		20

# Ср





## L862165-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862165-05	09/30/16 13:55 •	(DUP) WG912590-2	09/30/16 13:55
(,		( /	

(03) 2002103-03 03/30/10	Original Result				DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Paint Filter Test	See Footnote	See Footnote	1	0.000		20











Ignitability

# QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862154-02,04,06,08

10

# L862143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862143-01 09/30/16	14:15 • (DUP) W	/G911949-1 09/	/30/16 14:1	15		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%

0.000

DNI at 170 F









DNI at 170 F

(OS) L862222-10 09/30/16	6 14:15 • (DUP) \	NG911949-4 (	09/30/16 14	4:15		
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	DNI at 170 F	DNI at 170 F	1	0.000		10





GI



(LCS) WG911949-2 09/30/16 14	:15 • (LCSD) WG911949-3  09/30/16	3 14:15
------------------------------	-----------------------------------	---------

(LCS) WOS11343-2 03/30	(LCS) WG311343-2 03/30/10 14.13 (LCSD) WG311343-3 03/30/10 14.13									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	81.6	81.4	99.5	99.3	93 0-107			0.245	20





ONE LAB. NATIONWIDE.

Mercury by Method 7470A

L862154-02,04,06,08

#### Method Blank (MB)

Analyte

Mercury

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





DATE/TIME:





#### 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

mg/l

U

, ,	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) I 862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

(00) 2002 02 00/00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.07202 . 00		(02)	_ 0 00,00,.0	.0.07						
	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







ONE LAB. NATIONWIDE.

Metals (ICP) by Method 6010B

L862154-02,04,06,08

#### Method Blank (MB)

Silver

(MB) R3167437-1 (	09/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

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

(LCS) R3167437-2 C	)9/30/16 18:02 • (LCSE	D) R3167437-3	3 09/30/16 18:0	4							
	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	%	%	%			%	%	
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	

80-120

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

8.93

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

10.0

8.94

89

20



















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

L862154-02,04,06,08

#### Method Blank (MB)

(MB) R3167331-3 09/30/16	5 12:23			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	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

## ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

(LCS) R3167331-1 09/30/16 11:03 • (LCSD) R3167331-2 09/30/16 11:23												
	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	%	%	%			%	%		
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		<u>J3</u>	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						



(S) a,a,a-Trifluorotoluene

(S) 4-Bromofluorobenzene

#### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### L861691-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L861691-01 09/30/16 15:59 • (MS) R3167331-4 09/30/16 13:14											
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier				
Analyte	mg/l	mg/l	mg/l	%		%					
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					

90.4-116

80.1-120

## 

102

97.7

(OS) L862143-01 09/30/16 16:19 • (MS) R3167331-6 09/30/16 13:34 • (MSD) R3167331-7 09/30/16 13:54

(CS) 2002 143-01 CS/30/10 10:13 - (IMS) (CSIG/351-0 CS/30/10 IS:54 - (IMSE) (CSIG/351-7 CS/30/10 IS:54												
	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	%	%		%			%	%
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				





















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862154-03,05,07

### Method Blank (MB)

(MB) R3167926-1 10/04/16	6 08:47			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/926-2 10/04/	16 09:01 • (LCSL	)) R316/926-3	10/04/16 09:15	)						
	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	%	%	%			%	%
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												
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
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				

















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082M

L862154-01

#### Method Blank (MB)

(MB) R3168428-1 10/05/16	6 15:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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 10/05/1	16 15:24 • (LCSE	) R3168428-3	10/05/16 15:38	3						
	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	%	%	%			%	%
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				





















ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

#### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

## ${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

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

















(S) 2-Fluorophenol

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862154-02,04,06,08

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

// OC/ DO467000 4	40/00/00/00 44 00 // 000) 00467000 0 40/00/00 44 45	_
(LCS) R316/928-1	10/03/16 14:20 • (LCSD) R3167928-2 10/03/16 14:43	3

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD
Analyte	mg/l	mg/l	mg/l	%	%	%			%
(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) | 862604-02 10/03/16 15:30 - (MS) P3167928-4 10/03/16 15:53 - (MSD) P3167928-5 10/03/16 16:16

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

23.6

66.7













35.7

75.8

10.0-77.9

11.2-130

**RPD Limits** 

## **GLOSSARY OF TERMS**

#### ONE LAB. NATIONWIDE.



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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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.



















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UP Environmental Se P.O. BOX 127 BARK River, MI	P.O. BOX 127 BARK River, MI 49807		Sán	ľ										38 28 20 20			WI LA	ESC
Report to:			Email To:		11		Herb										12065 Lebanon Rd Mount Juliet, TN 3	7122
Report to: RICK Right			rick	puper vironnutel.com													Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859	359
Description: Abandon Mining	Waste-	Torch (	Ke.	City/State Collected:													1	362154
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Collected by (signature): Immediately Packed on ice N Y	Same Next D	Rush?         (Lab MUST Be Notified)           Same Day         200%           Next Day         100%           Two Day         50%           Three Day         25%		Date Results Needed  Email?NoYes  FAX?NoYes			610	Reactur.	H	Teshore	2815						Prelogin: TSR: PB:	
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CHTC-TS-DMQ2		OT		9/23/16		1877-99	X		X		X							,07/18
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	3/44																	
* Matrix: SS - Soil GW - Groundwater	• <b>WW</b> - WasteW	ater <b>DW</b> - D	rinking Wat	er OT-Other						pH _		Tem			Но	ld#		
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9/23/1		/16	7:300						1	edEx [								
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Relinquished by : (Signature)		Date:		Time:	deceived for lab b	y: (Sign	ature)			Date: Time O						pH Checked: NCF:		



Cooler Re	ceipt Form			
Client: UPEN/BRMI	SDG#	18	62/5	Ч
Cooler Received/Opened On: 9/27/16	Temperature Upon Receipt:	3.2	°c	
Received By: Richard Hughes				
Signature: 21				
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?		/		in the same
Were correct bottles used for the analyses requested?		/		
Was sufficient amount of sample sent in each bottle?		ļa j		/
Were all applicable sample containers correctly preser	ved and			1
checked for preservation? (Any not in accepted range	noted on COC)			
If applicable, was an observable VOA headspace prese	nt?			1
Non Conformance Generated. (If yes see attached NCF	)			



# ANALYTICAL REPORT

myESC

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: Jahn V Houkins

John Hawkins

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as counded values. This test report shall not be reproduced, except in full, without written appropriated in laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures; 660302, 060303, and 660304.

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CHLL-HRA-DRUM-05/06 L862134-06	14
CHLL-HPA-DM-02 L862134-07	16
CHLL-HPA-DM-02 L862134-08	17
CHLL-HPA-DRUM-12 L862134-09	19
CHLL-HPA-DRUM-12 L862134-10	20
<sup>6</sup> Qc: Quality Control Summary	22
Total Solids by Method 2540 G-2011	22
Wet Chemistry by Method 9012 B	24
Wet Chemistry by Method 9034-9030B	25
Wet Chemistry by Method 9045D	27
Wet Chemistry by Method D93/1010A	28
Mercury by Method 7470A	30
Metals (ICP) by Method 6010B	31
Volatile Organic Compounds (GC/MS) by Method 8260B	32
Polychlorinated Biphenyls (GC) by Method 8082	34

















<sup>7</sup>Gl: Glossary of Terms

<sup>9</sup>Sc: Chain of Custody

<sup>8</sup>Al: Accreditations & Locations

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

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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
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
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
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
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	Analysis	Analyst
			date/time	date/time	
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
		·			-

PROJECT:

SDG:

L862134

DATE/TIME:

10/05/16 14:03

ACCOUNT:

U.P. Environmental Services, Inc.

















## SAMPLE SUMMARY

$\bigcirc$ N	ΛR	NATIO	VIIA	/IDE

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	Analysis	Analyst
			date/time	date/time	. ,
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
CHLL-HPA-DM-02 L862134-07 Solid			Collected by Chris Gendron	Collected date/time 09/21/16 18:00	Received date/tim 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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/tim 09/27/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
	Batch WG912412	Dilution 1	•	,	Analyst NJB
Mercury by Method 7470A			date/time	date/time	,
Mercury by Method 7470A Metals (ICP) by Method 6010B	WG912412	1	date/time 09/29/16 11:47	date/time 09/30/16 10:50	NJB
Mercury by Method 7470A Metals (ICP) by Method 6010B Preparation by Method 1311	WG912412 WG912283	1 1	date/time 09/29/16 11:47 09/30/16 11:28	date/time 09/30/16 10:50 09/30/16 18:35	NJB ST
Method  Mercury by Method 7470A  Metals (ICP) by Method 6010B  Preparation by Method 1311  Preparation by Method 1311  Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG912412 WG912283 WG911845	1 1 1	date/time 09/29/16 11:47 09/30/16 11:28 09/27/16 22:38	date/time 09/30/16 10:50 09/30/16 18:35 09/27/16 22:38	NJB ST LJN
Mercury by Method 7470A Metals (ICP) by Method 6010B Preparation by Method 1311 Preparation by Method 1311	WG912412 WG912283 WG911845 WG911888	1 1 1 1	date/time 09/29/16 11:47 09/30/16 11:28 09/27/16 22:38 09/27/16 16:37	date/time 09/30/16 10:50 09/30/16 18:35 09/27/16 22:38 09/27/16 16:37	NJB ST LJN LJN



Wet Chemistry by Method 9034-9030B

Wet Chemistry by Method D93/1010A

Wet Chemistry by Method 9045D

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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

WG912345

WG913869

WG911788

CHLL-HPA-DRUM-12	L862134-10	Waste
OFFICE THE A DIVOINT 12	L00210110	VVGStC

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
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
Preparation by Method 1311	WG911845	1	09/27/16 22:38	09/2//16 22:38	LJ

09/29/16 13:39

10/04/16 14:54

09/29/16 01:53

Collected by

Collected by

Chris Gendron

Chris Gendron

1

09/29/16 19:00

10/04/16 14:54

09/29/16 01:53

09/21/16 10:00

Collected date/time

Collected date/time

09/21/16 10:00

















MAJ

JJL

ΜZ

Received date/time

Received date/time

09/27/16 09:00

09/27/16 09:00

Collected date/time

10/04/16 14:54

09/29/16 01:53

Received date/time

JJL

MZ

#### 09/21/16 10:00 09/27/16 09:00 Chris Gendron CHLL-HPA-DRUM-12 L862134-10 Waste Method Batch Dilution Preparation Analysis Analyst date/time date/time Preparation by Method 1311 WG911888 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 LRL WG912711 10/04/16 23:11 10/04/16 23:11 Wet Chemistry by Method 9012 B WG913176 10/03/16 12:22 10/03/16 14:56 DR Wet Chemistry by Method 9034-9030B WG913004 10/03/16 17:40 10/04/16 14:59 MAJ

WG913869

WG911788

SAMPLE SUMMARY

Collected by

10/04/16 14:54

09/29/16 01:53

1



















Wet Chemistry by Method 9045D

Wet Chemistry by Method D93/1010A



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.

CASE NARRATIVE























### 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.

ESC Sample ID	Project Sample ID	Method
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.

ESC Sample ID	Project Sample ID	Method
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

#### ONE LAB. NATIONWIDE.

#### Total Solids by Method 2540 G-2011

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



#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	3.11		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-01 WG912590: Contains No Free Liquid

## Gl

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#### Polychlorinated Biphenyls (GC) by Method 8082

r diyememated Biphenyis (66) by Method 6662									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	mg/kg		mg/kg		date / time				
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			

#### ONE LAB. NATIONWIDE.

862134

## Collected date/time: 09/21/16 16:30 Preparation by Method 1311

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







#### Wet Chemistry by Method 9012 B

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





## Wet Chemistry by Method 9034-9030B

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





# <sup>8</sup>Al

#### Wet Chemistry by Method 9045D

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

## Sc

#### Sample Narrative:

9045D L862134-02 WG913869: 6.66 at 20.3c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

ONE LAB. NATIONWIDE.

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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	<u>J3</u>	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













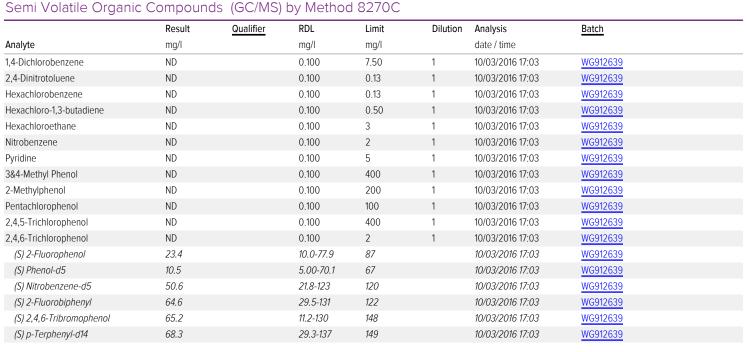












Collected date/time: 09/21/16 17:00

## SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	3.55		1	09/30/2016 14:20	WG912583



Cn

### Wet Chemistry by Method 9095B

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



#### Sample Narrative:

9095B L862134-03 WG912590: Contains No Free Liquid

# <sup>7</sup>Gl

### Polychlorinated Biphenyls (GC) by Method 8082

		,					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	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	





ONE LAB. NATIONWIDE.

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

#### confected date/time. 03/21/10 17.00

Preparation by Method 1311								
	Result	Qualifier	Prep	Batch				
Analyte			date / time					
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				







Cn

#### Wet Chemistry by Method 9012 B

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





#### Wet Chemistry by Method 9034-9030B

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





# <sup>8</sup>Al

#### Wet Chemistry by Method 9045D

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

## <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-04 WG913869: 7.05 at 20.1c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

## SAMPLE RESULTS - 04

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862134

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
1,2-Dichloroethane	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
,1-Dichloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
-Butanone (MEK)	ND	<u>J3</u>	0.500	200	1	10/04/2016 20:57	WG912711
etrachloroethene	ND		0.0500	0.70	1	10/04/2016 20:57	WG912711
ichloroethene	ND		0.0500	0.50	1	10/04/2016 20:57	WG912711
nyl 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

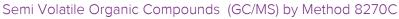
# <sup>1</sup>Cp











	Result	Qualifier	RDL	Limit	Dilution	Analysis	Datah	
		Qualifier			Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
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	







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L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

#### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	0.796		1	09/30/2016 14:20	WG912583



Cn

#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862134-05 WG912590: Contains No Free Liquid



Αl

#### Polychlorinated Biphenyls (GC) by Method 8082

r diyememated Bipmenyis (Ge) by Method GGG2								
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>		
Analyte	mg/kg		mg/kg		date / time			
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		



#### Sample Narrative:

8082 L862134-05 WG912210: Dilution due to sample volume

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#### L862134

#### Preparation by Method 1311

	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
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

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





## Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

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

## <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-06 WG913869: 6.67 at 20.1c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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









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

## SAMPLE RESULTS - 07

#### ONE LAB. NATIONWIDE.

L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	g/cm3			date / time	
Density	2.41		1	09/30/2016 14:20	WG912583



Cn

#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862134-07 WG912590: Contains No Free Liquid



## Polychlorinated Biphenyls (GC) by Method 8082

r oryentormated Expriently (OO) by method 0002									
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>			
Analyte	mg/kg		mg/kg		date / time				
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			



862134

#### ONE LAB. NATIONWIDE.

## 果

## Collected date/time: 09/21/16 18:00 Preparation by Method 1311

	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
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





## <sup>3</sup>Ss <sup>4</sup>Cn

#### Wet Chemistry by Method 9012 B

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



# <sup>6</sup>Qc

## Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

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

## <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-08 WG913869: 6.95 at 19.9c

## Wet Chemistry by Method D93/1010A

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

#### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
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

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L862134

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

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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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











СQс



	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>	
Analyte	mg/l		mg/l	mg/l		date / time		
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	

Gl





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L862134

#### Total Solids by Method 2540 G-2011

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

# <sup>2</sup>Tc

### Wet Chemistry by Method 2710 F-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	g/cm3			date / time	
Density	1.01		1	09/30/2016 14:20	WG912583



#### Wet Chemistry by Method 9095B

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



СQс

#### Sample Narrative:

9095B L862134-09 WG912590: Contains No Free Liquid



### Polychlorinated Biphenyls (GC) by Method 8082

r ory or normate a Bipin	oy.o ( <b>o o</b> ) o	<i>y</i>				
	Result	Qualifier	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg		date / time	
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



#### Sample Narrative:

8082 L862134-09 WG912210: Dilution due to sample volume

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L862134

## Collected date/time: 09/21/16 10:00 Preparation by Method 1311

,					-11
	Result	Qualifier	Prep	<u>Batch</u>	ı
Analyte			date / time		E
TCLP Extraction	-		9/27/2016 10:38:49 PM	WG911845	ľ
TCLP ZHE Extraction	-		9/27/2016 4:37:57 PM	WG911888	L
Fluid	1		9/27/2016 10:38:49 PM	WG911845	3
Initial pH	7.25		9/27/2016 10:38:49 PM	WG911845	L
Final pH	4.83		9/27/2016 10:38:49 PM	WG911845	[







#### Wet Chemistry by Method 9012 B

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





## Wet Chemistry by Method 9034-9030B

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





#### Wet Chemistry by Method 9045D

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

# <sup>9</sup>Sc

#### Sample Narrative:

9045D L862134-10 WG913869: 6.34 at 20.3c

## Wet Chemistry by Method D93/1010A

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

### Mercury by Method 7470A

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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
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

Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
mg/l		mg/l	mg/l		date / time	
ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
ND		0.0500	0.50	1	10/04/2016 23:11	WG912711
ND		0.0500	100	1	10/04/2016 23:11	WG912711
ND		0.250	6	1	10/04/2016 23:11	WG912711
	mg/l ND ND ND	mg/I ND ND ND	mg/l         mg/l           ND         0.0500           ND         0.0500           ND         0.0500	mg/l         mg/l         mg/l           ND         0.0500         0.50           ND         0.0500         0.50           ND         0.0500         100	mg/l         mg/l         mg/l           ND         0.0500         0.50         1           ND         0.0500         0.50         1           ND         0.0500         100         1	mg/l         mg/l         date / time           ND         0.0500         0.50         1         10/04/2016 23:11           ND         0.0500         0.50         1         10/04/2016 23:11           ND         0.0500         100         1         10/04/2016 23:11

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

## SAMPLE RESULTS - 10

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L862134

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

Volatile organic compounds (como) by method 0200B									
	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>		
Analyte	mg/l		mg/l	mg/l		date / time			
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		

# <sup>1</sup>Cp







Cn



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

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	<del></del> -
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









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Total Solids by Method 2540 G-2011

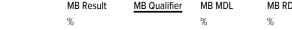
L862134-01,03,05

#### Method Blank (MB)

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

MB RDL MB Qualifier MB MDL

Analyte **Total Solids** 0.00130



### 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	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	%	%		%		%

**Total Solids** 83.7 83.3 0.426

## Laboratory Control Sample (LCS)

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

	Spike Amount	pike Amount L	LCS Result LCS Rec	ec. Rec. Limits
Analyte	%	6 %	% %	%
Total Solids	50.0	0.0 5	50.0 100	85.0-115



















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Total Solids by Method 2540 G-2011

L862134-07,09

#### Method Blank (MB)

Analyte

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

MB Result MB RDL MB Qualifier MB MDL % %

**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	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%

**Total Solids** 81.4 81.5 0.161

#### Laboratory Control Sample (LCS)

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





















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Wet Chemistry by Method 9012 B

L862134-02,04,06,08,10

#### Method Blank (MB)

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

	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)

(00) 1 000104 00	10/02/10 14-54	(DLID) D21C7712 C	10/02/10 14-55
(OS) L862134-08	10/03/10 14.54 • 1	(DUP) K310//13-0	10/03/10 14.33

	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> 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) R316//13-7	10/03/16 15:00
---	----------------

(US) L862165-U6	(05) 1802 105-06 10/03/16 14.59 • (DOP) R316//13-7 10/03/16 15:00									
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits				
Analyte	mg/kg	mg/kg		%		%				
Reactive Cyanide	0.427	ND	1	63.0	<u>P1</u>	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) R31677	13-4 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		<u>J3 J6</u>	39.0	20

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Wet Chemistry by Method 9034-9030B

L862134-02,04,06,08

### 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









(OS) L862134-02	09/29/16	19:00 • (DUP)	WG912345-1	09/29/16 1	19:00
		Original Result	<b>DUP Result</b>	Dilution	DUP RPD

Analyte	mg/kg	mg/kg		%	%
Reactive Sulfide	ND	ND	1	0.000	20







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

LC3) WG312345-2										
	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

DUP Qualifier DUP RPD Limits





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Wet Chemistry by Method 9034-9030B

L862134-10

### 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



# <sup>3</sup>Ss

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

(OS) L862134-10 10/04/16	14:59 • (DUP) W	/G913004-1 1	0/04/16 14:	59		
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP</b> Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Reactive Sulfide	ND	ND	1	0.000		20







(LCS) VVC51500+ 2 10/0+/	10 14.55 - (ECS	D) WO313004	5 10/04/10 14.5							
	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





рΗ

### QUALITY CONTROL SUMMARY

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Wet Chemistry by Method 9045D

L862134-02,04,06,08,10

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

(OS) L862134-02 10/04/16	14:54 • (DUP) V	VG913869-3 10	)/04/16 14	:54		
	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	su	su		%		%

6.69









6.66

(OS) L862756-29	10/04/16 14:54 • (DUP) \	NG913869-4	10/04/16 1	4:54
	Original Result	DUP Result	Dilution	DUP

	Original Result	DUP Result	Dilution	DUP RPD	<b>DUP Qualifier</b>	DUP RPD Limits
Analyte	su	SU		%		%
рН	8.05	8.00	1	0.623		1

0.449







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

(200) 110/01/1	Spike Amount	•			LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	SU	SU	%	%	%			%	%
nH	6 11	6 18	6 18	101	101	98 4-102			0.000	1





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Wet Chemistry by Method D93/1010A

L862134-02,04,08,10

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

(OS) L862134-10	09/29/16 01:53 • (DUP) V	09/29/16 0	1:53		
	Original Result	DUP Result	Dilution	DUP RPD	<u> </u>

	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) \	NG911/88-4	09/29/16 0	1:53
	Original Result	<b>DUP</b> Result	Dilution	DUP RPD

	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

(LCS) WOSTI OO-1 03/23/10 01:33 · (LCSD) WOSTI OO-2 03/23/10 01:33										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	82.8	82.8	101	101	93 0-107			0.000	20





Ignitability

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method D93/1010A

L862134-06

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

(OS) L862543-01 10/04/16	12:15 • (DUP) W	/G912997-1	10/04/16 12:	15	
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qual
Analyte	Deg. F	Deg. F		%	

79.9

DUP RPD	DUP Qualifier	DUP RPD Limits
%		%
0.351		10







79.6

(OS) L862604-02	10/04/16 12:15 • (DUP) V	VG912997-4	10/04/16 12	2:15
	Original Result	<b>DUP Result</b>	Dilution	DUP I

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







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

(LC3) MGa15aa7-5 10/04/10 12:13 • (LC3D) MGa15aa7-3 10/04/10 12:13											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	Deg. F	Deg. F	Deg. F	%	%	%			%	%	
Ignitability	82.0	83.1	82.7	101	101	93.0-107			0.483	20	





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Mercury by Method 7470A

L862134-02,04,06,08,10

### 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









(OS) I 862118-02 09/30/16 10:27 • (MS) R3167292-4 09/30/16 10:34 • (MSD) R3167292-5 09/30/16 10:37

(00) 2002 02 00)	(00) 2002110 02 00/00/10 10:27 (110) 10:07 202 1 00/00/10 10:07												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	n 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	







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Metals (ICP) by Method 6010B

L862134-02,04,06,08,10

### Method Blank (MB)

Lead

Silver

Selenium

(MB) R3167437-1 (	09/30/16 17:59				
	MB Result	MB Qualifier	MB MDL	MB RDL	F
Analyte	mg/l		mg/l	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	Γ
Lead	U		0.0167	0.0500	
Selenium	U		0.0333	0.100	L L
Silver	U		0.0167	0.0500	

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

(LCS) R3167437-2 09/30/1	S) R3167437-2 09/30/16 18:02 • (LCSD) R3167437-3 09/30/16 18:04											
	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	%	%	%			%	%		
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		

80-120

80-120

80-120

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

9.26

9.16

8.93

92

92

89

93

92

89

(OS) L862118-02 09/30	D/16 18:07 • (MS) R	3167437-5 09/	30/16 18:12 • (	MSD) R3167437	7-6 09/30/16 1	18:15						
	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	%	%		%			%	%
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
_ead	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

10.0

10.0

10.0

9.16

9.18

8.94

20 20

20



















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

### Method Blank (MB)

(MB) R3167391-3 09/30/16 14:59									
	MB Result	MB Qualifier	MB MDL	MB RDL					
Analyte	mg/l		mg/l	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					

# 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											
	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	%	%	%			%	%	
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		<u>J3</u>	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					





















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

### 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

	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	%	%		%			%	%
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	е				99.8	99.8		79.0-121				
(S) a,a,a-Trifluorotoluene					104	104		90.4-116				
(S) 4-Bromofluorobenzene	ē.				96.1	101		80.1-120				



















ONE LAB. NATIONWIDE.

Polychlorinated Biphenyls (GC) by Method 8082

L862134-01,03,05,07,09

### Method Blank (MB)

(S) Tetrachloro-m-xylene

(MB) R3167087-1 09/29/1	6 08:39			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	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

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

(LCS) R316/087-2 09/29/16 08:53 • (LCSD) R316/087-3 09/29/16 09:07											
	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	%	%	%			%	%	
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					

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												
	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	%	%		%			%	%
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				

















ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

### Method Blank (MB)

(MB) R3167928-3 10/03/	16 15:07				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	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	

## 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											
	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	%	%	%			%	%	
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					

(S) 2,4,6-Tribromophenol

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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

L862134-02,04,06,08,10

### 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

	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	%	%	%			%	%
(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				

# <sup>'</sup>Cp





### 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

	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	%	%		%			%	%
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		<u>J3</u>	31.3	27.7
Pentachlorophenol	0.500	ND	0.255	0.136	51.0	27.2	1	10.0-108		<u>J3</u>	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				

66.7













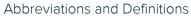


75.8

11.2-130

# **GLOSSARY OF TERMS**





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.





















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
Conneticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio-VAP	CL0069
daho	TN00003	Oklahoma	9915
Ilinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee 14	2006
ouisiana	Al30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> 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.



















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Project				City/State	mental.com	_	6/3					-				10	Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859		
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							590%		42										1
* Matrix: SS - Soil GW - Groundwater Remarks:	<b>ww</b> - WasteW	/ater <b>DW</b> - D	rinking Wate	er OT-Other		Μ	W	9-27	-16	pH _		_ Temp	- 199		Hold		e 6 8113	5 3046	
Relinguished by : (Signature)	4.2	Date: 9/26/	16	Time: 4:30p	Received by: (Signat	ture)					s return	ed via:	□ UPS		Cont	dition:	(lab us	se only) Gm	
Relinquished by : (Signature)		Date:			Received by: (Signat	ure)				Temp:	•	C Bot	210	)	coc	Seal I	ntact:Y	_NNA	
Relinquished by : (Signature)		Date:		Time: R	Received for lab by:	(Signat	ture)			Date:	27-1	Tim	900		pH C	Checke	d: NCF:		



	Cooler Receipt Form				
Client:	UPENUBRNI	SDG#	862	134	granger (1) ge
Cooler Received/Opened On: 9-27-W	Temperature Upor	Receipt:	3.1	°c	
Received By: Michael Witherspoon					7
Signature:					
Rece	eipt 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 analys	es requested?		-		
Was sufficient amount of sample sent in	each bottle?			1	-
Were all applicable sample containers co	prrectly preserved and				-
checked for preservation? (Any not in ac	cepted range noted on COC)				
If applicable, was an observable VOA hea					-
Non Conformance Generated. (If yes see					



# 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: <u>Direct Landfill</u>	
Generator Name: MI Dept of Environmental Ouality	
Material Name: <u>Unkonown_Sludge</u>	
Management Facility Precautions, Special Handling Procedures or Limitat	ion on approval:
Generator Conditions	
	ty at least 24 hours in advance. Contact information will
be provided by your TSR.	
- The waste profile number must appear on the shipping	g papers.
WM Authorization Name; Ben Dahlby	Title: Waste Approval Manager
WM Authorization Name: Ben Dahlby WM Authorization Signature:	Date: 10/25/2016
Agency Authorization (if Required):	
- 19 - 19 - 19 - 19 - 19 - 19 - 19 - 19	Date.



# **NON-HAZARDOUS MANIFEST**

	NON-HAZARDOUS MANIFEST  1. Generator's	US EPA ID No.	Manifest Do	c No.	2. Page 1	of	Total and the second second				
	3. Generator's Mailing Address:  M. D. E. O.  55195 US 41  Calumet, MI 49913  4. Generator's Phone	Generator's Site Address of 52634 Hu Hubbell, N	N PE	1-26	A. Manifest Number T20470  B. State Generator's ID						
	906-337-0389 5. Transporter 1 Company Name Will Hough Hon 7. Transporter 2 Company Name	N/c	ID Number		C. State Transporter's ID  D. Transporter's Phone 906-966-900  E. State Transporter's ID  F. Transporter's Phone						
	9. Designated Facility Name and Site Address K & W Lancibili 5436 M 38 Ontanagon, MI 49358	10. US EP	4 ID Numbe	r		G. State Facility ID H. State Facility Phone 905-983-3504					
	11. Description of Waste Materials	Acceptable of the second secon	12.0	ontainers	13. Total	14. Unit	I Alle Comment				
G E N	a. Unknown Studge	A CONTRACTOR OF THE PARTY OF TH	No.	Type	Quantity	Wt./Vol.	L Misc. Comments				
ERA	WM Profile # 119 373 MIZ						10.000.100				
T O R	WM Profile # d.  WM Profile #		and the second s								
Annales of Section Community Sections (42) Section Section (43)	Additional Descriptions for Materials Listed Above     Special Handling Instructions and Additional Information		K. Disposal Location  Cell Level Grid								
-					<u> </u>	3000.00 40 4 1000 40 1400 400					
To the same of the same of	Purchase Order # EMERGENCY CONTACT / PHONE NO.: Amy Keronene 906 - 33 7 - 16. GENERATOR'S CERTIFICATE:  1 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    Signature On behalf of   Month   Day   Year										
TRAN	17. Transporter 1 Acknowledgement of Receipt of Ma	terials Signature	1				Month Day Year				
5 P O R	18. Transporter 2 Acknowledgement of Receipt of Ma Printed Name						11 2 16				
E		Signature			****		Month Day Year				
FACIL	applicable laws, regulations, permits and licenses on the	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 optionals covered by this manifest.									
7		Ton S Aignature	Day	Hlen	200	Own GENERA	Month Day Year				

Pink- FACILITY USE ONLY

# 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.

