



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 489090
TEL: (517) 335-98000
FAX: (517) 335-96000

01 August 2014

Work Order: 1407121O

Price: \$970.00O

Jeff PincumbeO

MDEQ-RRD-LANSINGO

525 W. Allegan StreetO

Lansing, MI 48909O

RE: ABANDONED MINING WASTE-TORCH LAKE PCBO

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

Sincerely, O

George KrisztianO
Laboratory DirectorO



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

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

Project:bABANDONED MINING WASTE-TORCH LAKE PCBb
Site Code:b31000098b
Project Manager:bJeff Pincumbab

Reported:
08/01/2014

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampled p	Date Receivedp	Qualiferp
CHLL-SD66-0"-6"b	1407121-01b	Soil/Sedimentb	06/14/2014b	07/11/2014b	
CHLL-SD13-0"-6"b	1407121-02b	Soil/Sedimentb	06/15/2014b	07/11/2014b	

Notes and Definitions p

- Y20b Reporting Limits (RL) raised due to matrix.b
Y09b Sample was received and extracted/analyzed past USEPA maximum allowable holding time. Data is estimated.b
X3b Spike recovery is not applicable due to large target analyte concentration in the source sample.b
Hb Recommended laboratory holding time was exceeded.b
A05b Result and reporting limit are estimated due to low continuing calibration standard criteria failure.b
A04b Result is estimated due to high matrix spike recovery.b
A03b Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.b
NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb
dry Sample results reported on a dry weight basisb



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORYC

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TEL: (517) 335-98000
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Client ID: CHLL-SD66-0"-6"p

Lab ID: 1407121-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									See note Y09, Y20p
91-57-6b	2-Methylnaphthaleneb	NDb	870b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
83-32-9b	Acenaphtheneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
208-96-8b	Acenaphthyleneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
120-12-7	Anthraceneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	690b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	690b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	690b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	690b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
218-01-9b	Chryseneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	690b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
206-44-0b	Fluorantheneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
86-73-7	Fluoreneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	690b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
91-20-3b	Naphthaleneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
85-01-8b	Phenanthreneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
129-00-0b	Pyreneb	NDb	350b	ug/kg dryb	1b	07/28/14b	B4G1126b	8270b	
Surrogate: 2-Fluorobiphenyl.		80.6 %.	32.9-115.		07/28/14.	B4G1126b	8270.		
Surrogate: Nitrobenzene-d5.		74.8 %.	31.8-115.		07/28/14.	B4G1126b	8270.		
Surrogate: p-Terphenyl-d14.		78.3 %.	38.5-115.		07/28/14.	B4G1126b	8270.		

Inorganics-General Chemistryp

TSb	% Total Solidsp	57.6p	0.1b	%b	1b	07/11/14b	B4G1115b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.17	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	Hb



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Client ID: CHLL-SD66-0"-6"p

Lab ID: 1407121-01p

CAS # ^b	Analyte ^b	Result ^b	RL ^b	Units ^b	Dilution ^b	Analyzed ^b Date ^b	QC Batch ^b	Method ^b	Qualifier ^b
Inorganics-Metalsp									
7429-90-5b	Aluminump	11000p	100b	mg/kg dryb	1000b	07/24/14b	B4G1421b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.6b	mg/kg dryb	20b	07/24/14b	B4G1603b	6020/200.8b	
7440-38-2b	Arsenicb	NDb	5.0b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7440-39-3b	Bariump	42p	10b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7440-41-7	Berylliumb	NDb	2.0b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	07/23/14b	B4G1421b	6020/200.8b	
7440-47-3b	Chromiump	38p	20b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7440-48-4b	Cobaltp	14p	5.0b	mg/kg dryb	100b	07/24/14b	B4G1421b	6020/200.8b	
7440-50-8b	Copperp	2000p	10b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7439-89-6b	Ironp	23000p	5.0b	mg/kg dryb	10b	07/24/14b	B4G1421b	6010/200.7	
7439-92-1b	Leadp	11p	10b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7439-96-5b	Manganesep	290p	10b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7439-97-6b	Mercuryb	NDb	0.09b	mg/kg dryb	1b	07/18/14b	B4G1705b	7471/245.5b	Hb
7440-02-0b	Nickelp	34p	10b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	2.0b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	
7440-22-4b	Silverp	4.0p	0.1b	mg/kg dryb	10b	07/23/14b	B4G1421b	6020/200.8b	
7440-66-6b	Zincp	140p	10b	mg/kg dryb	100b	07/23/14b	B4G1421b	6020/200.8b	



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Client ID: CHLL-SD13-0"-6"p

Lab ID: 1407121-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp										See note Y09, Y20p
91-57-6b	2-Methylnaphthaleneb	NDb	700b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
83-32-9b	Acenaphtheneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
208-96-8b	Acenaphthyleneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
120-12-7	Anthraceneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
56-55-3b	Benz[a]anthraceneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
50-32-8b	Benzo[a]pyreneb	NDb	560b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	560b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	560b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	560b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
218-01-9b	Chryseneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	560b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
206-44-0b	Fluorantheneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
86-73-7	Fluoreneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	560b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
91-20-3b	Naphthaleneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
85-01-8b	Phenanthreneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
129-00-0b	Pyreneb	NDb	280b	ug/kg dryb	1b	07/28/14b	B4G1126b		8270b	
Surrogate: 2-Fluorobiphenyl.			76.4 %.		32.9-115.		07/28/14.	B4G1126b		8270.
Surrogate: Nitrobenzene-d5.			70.5 %.		31.8-115.		07/28/14.	B4G1126b		8270.
Surrogate: p-Terphenyl-d14.			73.7 %.		38.5-115.		07/28/14.	B4G1126b		8270.

Inorganics-General Chemistryp

TSb	% Total Solidsp	70.9p	0.1b	%b	1b	07/11/14b	B4G1115b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.14b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	Hb



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Client ID: CHLL-SD13-0"-6"p

Lab ID: 1407121-02p

CAS # ^b	Analyte ^b	Result ^b	RL ^b	Units ^b	Dilution ^b	Analyzed ^b Date ^b	QC Batch ^b	Method ^b	Qualifier ^b
Inorganics-Metalsp									
7429-90-5b	Aluminump	7700p	100b	mg/kg dryb	1000b	07/23/14b	B4G1421b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.6b	mg/kg dryb	20b	07/24/14b	B4G1603b	6020/200.8b	
7440-38-2b	Arsenicp	1.9p	1.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7440-39-3b	Bariump	26p	2.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7440-41-7	Berylliump	0.8p	0.4b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	07/23/14b	B4G1421b	6020/200.8b	
7440-47-3b	Chromiump	19p	4.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7440-48-4b	Cobaltp	8.8p	1.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7440-50-8b	Copperp	550p	2.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7439-89-6b	Ironp	14000p	5.0b	mg/kg dryb	10b	07/24/14b	B4G1421b	6010/200.7	
7439-92-1b	Leadp	4.3p	2.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7439-96-5b	Manganesep	270p	2.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	A04b
7439-97-6b	Mercuryb	NDb	0.07	mg/kg dryb	1b	07/18/14b	B4G1705b	7471/245.5b	Hb
7440-02-0b	Nickelp	25p	2.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.4b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	
7440-22-4b	Silverp	1.7p	0.1b	mg/kg dryb	10b	07/23/14b	B4G1421b	6020/200.8b	
7440-66-6b	Zincp	61p	2.0b	mg/kg dryb	20b	07/23/14b	B4G1421b	6020/200.8b	



Analysis Request Sheet

1407/21
Lab Work Order Number

Project Name

~~1407/21~~

Abandoned Mining Wastes - Torch Lake non-Superfund Site

Matrix

SOIL/SEDIMENT

Site Code/Project Number

31000098

AV

14

CC Email 1

shireyb

Project TAT Days

Sample Collector

Aaron Berndt

Dept-Division-District

RRD-PSS-GSU

Index

44031

CC Email 2

jbinkley@westonsolutions.com

Project Due Date

Sample Collector Phone

517-335-6419

State Project Manager

Jeff Pincumbe

PCA

30740

CC Email 3

keranena

State Project Manager Email

pincumbej

Project

456990

Phase

0

Accept Analysis
Hold time codes

Y/N

State Project Manager Phone

517-335-6418

Contract Firm

Weston Solutions

Contract Firm Primary Contact

Jeff Binkley

Primary Contact Phone

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL-SD66-0"-6"	6/14/2014	12:13		1406229~04 Relog in
2	02 CHLL-SD13-0"-6"	6/14/2014	11:31		1406229-11
3					
4					
5					
6					
7					
8					
9					
10					

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acids	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10	G5 - General Chemistry 1 2 3 4 5 6 7 8 9 10
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10	Aluminum - Al 1 2 3 4 5 6 7 8 9 10	Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10	Arsenic - As 1 2 3 4 5 6 7 8 9 10	Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10
Chlorinated only	1 2 3 4 5 6 7 8 9 10	Barium - Ba 1 2 3 4 5 6 7 8 9 10	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	Beryllium - Be 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	Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10
OS - Pesticides, PCBs		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
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10	Chromium - Cr 1 2 3 4 5 6 7 8 9 10	
Pesticides only	1 2 3 4 5 6 7 8 9 10	Copper - Cu 1 2 3 4 5 6 7 8 9 10	
PCBs only	1 2 3 4 5 6 7 8 9 10	Iron - Fe 1 2 3 4 5 6 7 8 9 10	
Toxaphene	1 2 3 4 5 6 7 8 9 10	Mercury - Hg 1 2 3 4 5 6 7 8 9 10	
BNA - Base Neutral Acids		Lithium - Li 1 2 3 4 5 6 7 8 9 10	
BHAs	1 2 3 4 5 6 7 8 9 10	Manganese - Mn 1 2 3 4 5 6 7 8 9 10	
PNAs only	1 2 3 4 5 6 7 8 9 10	Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10	
BNS only	1 2 3 4 5 6 7 8 9 10	Nickel - Ni 1 2 3 4 5 6 7 8 9 10	
Organic Specialty Requests		Lead - Pb 1 2 3 4 5 6 7 8 9 10	
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10	Antimony - Sb 1 2 3 4 5 6 7 8 9 10	
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10	Selenium - Se 1 2 3 4 5 6 7 8 9 10	
Finger Print	1 2 3 4 5 6 7 8 9 10	Strontium - Sr 1 2 3 4 5 6 7 8 9 10	
DRO / ORO	1 2 3 4 5 6 7 8 9 10	Titanium - Ti 1 2 3 4 5 6 7 8 9 10	
		Thallium - Tl 1 2 3 4 5 6 7 8 9 10	
		Vanadium - V 1 2 3 4 5 6 7 8 9 10	
		Zinc - Zn 1 2 3 4 5 6 7 8 9 10	
		Calcium - Ca 1 2 3 4 5 6 7 8 9 10	
		Potassium - K 1 2 3 4 5 6 7 8 9 10	
		Magnesium - Mg 1 2 3 4 5 6 7 8 9 10	
		Sodium - Na 1 2 3 4 5 6 7 8 9 10	

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature:	<i>Melissa Smith</i>	7/1/14 9:45
	Print Name & Org. Signature:		
	Print Name & Org. Signature:		



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05 August 2014

Work Order: 1407165O

Price: \$1,535.00O

Jeff PincumbeO

MDEQ-RRD-LANSINGO

525 W. Allegan StreetO

Lansing, MI 48909O

RE: ABANDONED MINING WASTE-TORCH LAKE PCBO

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

Sincerely,O

George KrisztianO
Laboratory DirectorO



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Project:bABANDONED MINING WASTE-TORCH LAKE PCBb

Site Code:b31000098b

Project Manager:bJeff Pincumbeb

Reported:p
08/05/2014

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampled p	Date Receivedp	Qualifierp
CHLL-SD-45 3-3.4'b	1407165-01b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-37-0"-6"b	1407165-02b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-37-1'-3'b	1407165-03b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-37-1'-3' dupb	1407165-04b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-37-3'-5'b	1407165-05b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-36-0"-6"b	1407165-06b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-36-1'-3'b	1407165-07	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-36-3'-5'b	1407165-08b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-25-0"-6"b	1407165-09b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-25-1'-3'b	1407165-10b	Soil/Sedimentb	07/11/2014b	07/15/2014b	

Notes and Definitions p

- Y20b Reporting Limits (RL) raised due to matrix.b
A01b Result(s) and reporting limit(s) are estimated due to low surrogate recovery.b
NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb
dry Sample results reported on a dry weight basisb



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Client ID: CHLL-SD-45 3-3.4'p

Lab ID: 1407165-01p

CAS # ^b	Analyte ^b	Result ^b	RL ^b	Units ^b	Dilution ^b	Analyzed b Date ^b	QC Batch ^b	Method ^b	Qualifier ^b
Organics-PCBs as Aroclors^p									
12674-11-2b	Aroclor 1016b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
11104-28-2b	Aroclor 1221b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
11141-16-5b	Aroclor 1232b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
53469-21-9b	Aroclor 1242b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
12672-29-6b	Aroclor 1248b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
11097-69-1b	Aroclor 1254b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
11096-82-5b	Aroclor 1260b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
37324-23-5b	Aroclor 1262b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
11100-14-4b	Aroclor 1268b	ND ^b	120b	ug/kg dry ^b	1b	07/24/14b	B4G1720b	8081/8082b	
Surrogate: Decachlorobiphenyl-		91.2 %-	30-150-		07/24/14-	B4G1720b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		79.4 %-	30-150-		07/24/14-	B4G1720b	8081/8082-		
Inorganics-General Chemistry^p									
TS ^b	% Total Solid ^{b,p}	84.6p	0.1b	% ^b	1b	07/16/14b	B4G1607	2540 B ^b	



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P.O. Box 302700
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Client ID: CHLL-SD-37-0"-6"p

Lab ID: 1407165-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
Surrogate: Decachlorobiphenyl-		79.6 %-	30-150-		07/24/14-	B4G1720b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		77.9 %-	30-150-		07/24/14-	B4G1720b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solids	45.4p	0.1b	%b	1b	07/16/14b	B4G1607	2540 Bb		



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Client ID: CHLL-SD-37-1'-3'p

Lab ID: 1407165-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	340b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		75.6 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		88.1 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	58.3p	0.1b	%b	1b	07/16/14b	B4G1607		2540 Bb	



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Client ID: CHLL-SD-37-1'-3' dup

Lab ID: 1407165-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	350b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		70.2 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		72.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	56.5p	0.1b	%b	1b	07/16/14b	B4G1607		2540 Bb	



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Client ID: CHLL-SD-37-3'-5'p

Lab ID: 1407165-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
Surrogate: Decachlorobiphenyl-		74.8 %-	30-150-		07/24/14-	B4G1720b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		74.1 %-	30-150-		07/24/14-	B4G1720b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solids	61.8p	0.1b	%b	1b	07/16/14b	B4G1607	2540 Bb		



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Client ID: CHLL-SD-36-0"-6"p

Lab ID: 1407165-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp									
91-57-6b	2-Methylnaphthaleneb	NDb	2800b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
83-32-9b	Acenaphtheneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
208-96-8b	Acenaphthyleneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
120-12-7	Anthraceneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	2200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	2200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	2200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	2200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
218-01-9b	Chryseneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
206-44-0b	Fluorantheneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
86-73-7	Fluoreneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
91-20-3b	Naphthaleneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
85-01-8b	Phenanthreneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
129-00-0b	Pyreneb	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
Surrogate: 2-Fluorobiphenyl-		84.3 %-	32.9-115-		07/22/14-	B4G1518b	8270-		
Surrogate: Nitrobenzene-d5-		73.1 %-	31.8-115-		07/22/14-	B4G1518b	8270-		
Surrogate: p-Terphenyl-d14-		76.2 %-	38.5-115-		07/22/14-	B4G1518b	8270-		
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b	
Surrogate: Decachlorobiphenyl-		28.9 %-	30-150-		07/24/14-	B4G1720b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		22.4 %-	30-150-		07/24/14-	B4G1720b	8081/8082-		



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Client ID: CHLL-SD-36-0"-6"p

Lab ID: 1407165-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b	Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistryp										
TSb	% Total Solidsp	45.0p	0.1b	%b	1b	07/16/14b	B4G1607		2540 Bb	



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Client ID: CHLL-SD-36-1'-3'p

Lab ID: 1407165-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		57.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		73.2 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	54.0p	0.1b	%b	1b	07/16/14b	B4G1607		2540 Bb	



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Client ID: CHLL-SD-36-3'-5'p

Lab ID: 1407165-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	310b	ug/kg dryb	1b	07/24/14b	B4G1720b	8081/8082b		
Surrogate: Decachlorobiphenyl-		74.4 %-	30-150-		07/24/14-	B4G1720b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		73.2 %-	30-150-		07/24/14-	B4G1720b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solids	64.9p	0.1b	%b	1b	07/16/14b	B4G1607	2540 Bb		



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Client ID: CHLL-SD-25-0"-6"p

Lab ID: 1407165-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	460b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		81.9 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	43.5p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-25-1'-3'p

Lab ID: 1407165-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	290b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		87.1 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		83.1 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	68.0p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



Analysis Request Sheet

Lab Work Order Number 1467165		Project Name Abandoned Mining Waste- Torch Lake PCB		Matrix SOIL/SEDIMENT		
Site Code/Project Number 31000098		AY 13	CC Email 1 pincumbel@michigan.gov	Project TAT Days	Sample Collector Aaron Berndt	
Dept-Division-District RRD		Index 44251	CC Email 2 j.binkely@michigan.gov	Project Due Date	Sample Collector Phone 15173356419	
State Project Manager Amy Keranen & Jeff Pincumber		PCA 30872	CC Email 3 shireyv@michigan.gov	Accept Analysis hold time codes	Contract Firm Weston Solutions	
State Project Manager Email keranena@michigan.gov		Project 456990	Overflow Lab Choice 1		Contract Firm Primary Contact 19065235457	
State Project Manager Phone 9063370389		Phase 00	Overflow Lab Choice 2		Primary Contact Phone 19063370389	
Lab Use Only	Field Sample Identification		Collection Date	Collection Time	Container Count	Comments
1	CHLL-SD- 45- 3'-3.4'		7/11/14	950		
2	CHLL-SD- 37- 0"-6"			1051		
3	CHLL-SD- 37- 1'-3'			1055		
4	CHLL-SD- 37-1'-3' dup			1055		
5	CHLL-SD- 37-3'-5'			1059		
6	CHLL-SD- 36- 0"-6"			1154		
7	CHLL-SD- 36- 1'-3'			1157		
8	CHLL-SD- 36- 3'-5'			1200		
9	CHLL-SD- 25- 0"-6"			1306		
10	CHLL-SD- 25- 1'-3'			1309		
ORGANIC CHEMISTRY		METALS CHEMISTRY PACKAGES	MS - TOTAL METALS		GENERAL CHEMISTRY	
VOA - Volatile Organic Acidic	Op/Memo2 - Total (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1 2 3 4 5 6 7 8 9 10	Silver - Ag	1 2 3 4 5 6 7 8 9 10	GS - General Chemistry	Total Cyanide - CN
Volatiles - Full List	Michigan10 - Total (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10	Aluminum - Al	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	Available Cyanide - CN
BTEX/MTBE/TMB only		1 2 3 4 5 6 7 8 9 10	Arsenic - As	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	Chem Oxyg Dem - COD
Chlorinated only		1 2 3 4 5 6 7 8 9 10	Barium - Ba	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	Total Org Carbon - TOC
GRO		1 2 3 4 5 6 7 8 9 10	Beryllium - Be	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10	Kjeldahl Nitrogen - KN
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	1 2 3 4 5 6 7 8 9 10	Total Phosphorus - TP
OS - Pesticides, PCBs	Op/Memo2 - Total (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1 2 3 4 5 6 7 8 9 10	Cobalt - Co	1 2 3 4 5 6 7 8 9 10		
Pesticides & PCBs	Michigan10 - Total (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10	Chromium - Cr	1 2 3 4 5 6 7 8 9 10		
Pesticides only		1 2 3 4 5 6 7 8 9 10	Copper - Cu	1 2 3 4 5 6 7 8 9 10		
PCBs only		1 2 3 4 5 6 7 8 9 10	Iron - Fe	1 2 3 4 5 6 7 8 9 10		
Toxaphene		1 2 3 4 5 6 7 8 9 10	Mercury - Hg	1 2 3 4 5 6 7 8 9 10		
BNA - Base Neutral Acids	Op/Memo2 - Total (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1 2 3 4 5 6 7 8 9 10	Lithium - Li	1 2 3 4 5 6 7 8 9 10		
BNA's	Michigan10 - Total (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10	Manganese - Mn	1 2 3 4 5 6 7 8 9 10		
PNAs only		1 2 3 4 5 6 7 8 9 10	Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10		
BNAs only		1 2 3 4 5 6 7 8 9 10	Nickel - Ni	1 2 3 4 5 6 7 8 9 10		
Organic Specialty Requests	Op/Memo2 - Total (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1 2 3 4 5 6 7 8 9 10	Lead - Pb	1 2 3 4 5 6 7 8 9 10		
Library search - Volatiles	Michigan10 - Total (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10	Antimony - Sb	1 2 3 4 5 6 7 8 9 10		
Library search - SemiVols		1 2 3 4 5 6 7 8 9 10	Selenium - Se	1 2 3 4 5 6 7 8 9 10		
Finger Print		1 2 3 4 5 6 7 8 9 10	Strontium - Sr	1 2 3 4 5 6 7 8 9 10		
DRO / ORO		1 2 3 4 5 6 7 8 9 10	Titanium - Ti	1 2 3 4 5 6 7 8 9 10		
			Thallium - Tl	1 2 3 4 5 6 7 8 9 10		
			Vanadium - V	1 2 3 4 5 6 7 8 9 10		
			Zinc - Zn	1 2 3 4 5 6 7 8 9 10		
			Calcium - Ca	1 2 3 4 5 6 7 8 9 10		
			Potassium - K	1 2 3 4 5 6 7 8 9 10		
			Magnesium - Mg	1 2 3 4 5 6 7 8 9 10		
			Sodium - Na	1 2 3 4 5 6 7 8 9 10		
Chain of Custody		Relinquished by Aaron Berndt DEQ/RRD Aaron Berndt	Received By Jamy Keranen MDEQ Jamy Keranen	Date / Time 7/11/14 1400		
		Print Name & Org. UPS UPS 14106129535	Print Name & Org. Malissa Smith DEQ Malissa Smith	Date / Time 7/15/14 1305		
		Print Name & Org. 	Print Name & Org. 			



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 489090
TEL: (517) 335-98000
FAX: (517) 335-96000

05 August 2014

Work Order: 1407166O

Price: \$4,125.00O

Jeff PincumbeO

MDEQ-RRD-LANSINGO

525 W. Allegan StreetO

Lansing, MI 48909O

RE: ABANDONED MINING WASTE-TORCH LAKE PCBO

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

Sincerely,O

George KrisztianO
Laboratory DirectorO



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

Project:bABANDONED MINING WASTE-TORCH LAKE PCBb
Site Code:b31000098b
Project Manager:bJeff Pincumbeb

Reported:
08/05/2014b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualiferp
CHLL-SD 46-0"-6"b	1407166-01b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 46-1'-3'b	1407166-02b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 46-1'-3' DUPb	1407166-03b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 46-3'-4.5'b	1407166-04b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 47-0"-6"b	1407166-05b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 47-1'-2'b	1407166-06b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 48-0"-6"b	1407166-07	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 48-1'-3'b	1407166-08b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 48-3'-5'b	1407166-09b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 49-0"-6"b	1407166-10b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD 25-3'-4'b	1407166-11b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD 08-0"-6"b	1407166-12b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD 08-1'-3'b	1407166-13b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD 08-3'-4'b	1407166-14b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD 17-0"-6"b	1407166-15b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD 17-1'-3'b	1407166-16b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD 17-3'-5'b	1407166-17	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD 18-0"-6"b	1407166-18b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD 18-1'-2.7'b	1407166-19b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD 19-0"-6"b	1407166-20b	Soil/Sedimentb	07/12/2014b	07/15/2014b	

Notes and Definitions p

- Y21b Reporting Limits (RL) raised due to matrix interference.b
Y20b Reporting Limits (RL) raised due to matrix.b
X3b Spike recovery is not applicable due to large target analyte concentration in the source sample.b
JAb Result is estimated due to multiple Aroclors present.b
A09b Result is estimated due to high recovery of batch quality control.b
A03b Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.b
NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb
dry Sample results reported on a dry weight basisb



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD 46-0"-6"p

Lab ID: 1407166-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp See note Y20p									
12674-11-2b	Aroclor 1016	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
11104-28-2b	Aroclor 1221	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
12672-29-6b	Aroclor 1248	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
11096-82-5b	Aroclor 1260	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
37324-23-5b	Aroclor 1262	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
11100-14-4b	Aroclor 1268	NDb	470b	ug/kg dryb	1b	07/25/14b	B4G1720b	8081/8082b	
Surrogate: Decachlorobiphenyl-		86.8 %-	30-150-		07/25/14-	B4G1720b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.4 %-	30-150-		07/25/14-	B4G1720b	8081/8082-		
Inorganics-General Chemistryp									
TSb	% Total Solids	42.9p	0.1b	%b	1b	07/16/14b	B4G1608b	2540 Bb	



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Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD 46-1'-3'p

Lab ID: 1407166-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		77.5 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		73.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	53.0p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD 46-1'-3' DUPp
Lab ID: 1407166-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		76.0 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		72.8 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	53.0p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD 46-3'-4.5'p

Lab ID: 1407166-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	360b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		78.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		72.8 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	54.9p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
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Client ID: CHLL-SD 47-0"-6"p

Lab ID: 1407166-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	500b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		82.7 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.0 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	39.6p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD 47-1'-2'p

Lab ID: 1407166-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	380b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		74.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		76.4 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	52.3p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 48-0"-6"p

Lab ID: 1407166-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	440b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		81.1 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		76.4 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	45.6p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 48-1'-3'p

Lab ID: 1407166-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	370b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		85.3 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		83.1 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	54.6p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 48-3'-5'p

Lab ID: 1407166-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	320b	ug/kg dryb	1b	07/24/14b	B4G1720b		8081/8082b	
Surrogate: Decachlorobiphenyl-		83.5 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		80.0 %-	30-150-		07/24/14-	B4G1720b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	61.6p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 49-0"-6"p

Lab ID: 1407166-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	490b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
Surrogate: Decachlorobiphenyl-		85.8 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		81.3 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	41.0p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 25-3'-4'p

Lab ID: 1407166-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	290b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
Surrogate: Decachlorobiphenyl-		79.8 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.7 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	68.2p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 08-0"-6"p

Lab ID: 1407166-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
Surrogate: Decachlorobiphenyl-		84.3 %-	30-150-		07/25/14-	B4G1813b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		80.1 %-	30-150-		07/25/14-	B4G1813b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solids	51.0p	0.1b	%b	1b	07/16/14b	B4G1608b	2540 Bb		



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Client ID: CHLL-SD 08-1'-3'p

Lab ID: 1407166-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	390b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
Surrogate: Decachlorobiphenyl-		92.2 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		89.6 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	51.7p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 08-3'-4'p

Lab ID: 1407166-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	380b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
Surrogate: Decachlorobiphenyl-		65.8 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		65.7 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	52.9p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 17-0"-6"p

Lab ID: 1407166-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016b	NDb	790b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11104-28-2b	Aroclor 1221b	NDb	790b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11141-16-5b	Aroclor 1232b	NDb	790b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
53469-21-9b	Aroclor 1242p	760p	420b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		JAb
12672-29-6b	Aroclor 1248b	NDb	790b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11097-69-1b	Aroclor 1254p	890p	420b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		JAb
11096-82-5b	Aroclor 1260b	NDb	420b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
37324-23-5b	Aroclor 1262b	NDb	420b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
11100-14-4b	Aroclor 1268b	NDb	420b	ug/kg dryb	1b	07/25/14b	B4G1813b	8081/8082b		
Surrogate: Decachlorobiphenyl-		64.8 %-	30-150-		07/25/14-	B4G1813b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		73.1 %-	30-150-		07/25/14-	B4G1813b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solidsp	48.0p	0.1b	%b	1b	07/16/14b	B4G1608b	2540 Bb		



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Client ID: CHLL-SD 17-1'-3'p

Lab ID: 1407166-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	300b	ug/kg dryb	1b	07/25/14b	B4G1813b		8081/8082b	
Surrogate: Decachlorobiphenyl-		79.0 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.4 %-	30-150-		07/25/14-	B4G1813b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	66.1p	0.1b	%b	1b	07/16/14b	B4G1608b		2540 Bb	



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Client ID: CHLL-SD 17-3'-5'p

Lab ID: 1407166-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	150b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
Surrogate: Decachlorobiphenyl-		76.7 %-	30-150-		07/25/14-	B4G2114b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		75.3 %-	30-150-		07/25/14-	B4G2114b	8081/8082-		
Inorganics-General Chemistry									
TSb	% Total Solidsp	68.9p	0.1b	%b	1b	07/16/14b	B4G1608b	2540 Bb	



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Client ID: CHLL-SD 18-0"-6"p
Lab ID: 1407166-18p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp									
91-57-6b	2-Methylnaphthalene	NDb	1700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
83-32-9b	Acenaphthene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
208-96-8b	Acenaphthylene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
120-12-7	Anthracene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
56-55-3b	Benz[a]anthracene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1400b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1400b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1400b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1400b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
218-01-9b	Chrysene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1400b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
206-44-0b	Fluoranthene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
86-73-7	Fluorene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1400b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
91-20-3b	Naphthalene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
85-01-8b	Phenanthrene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
129-00-0b	Pyrene	NDb	700b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
Surrogate: 2-Fluorobiphenyl-		77.2 %-	32.9-115-		07/22/14-	B4G1518b	8270-		
Surrogate: Nitrobenzene-d5-		67.9 %-	31.8-115-		07/22/14-	B4G1518b	8270-		
Surrogate: p-Terphenyl-d14-		75.7 %-	38.5-115-		07/22/14-	B4G1518b	8270-		
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	140b	ug/kg dryb	1b	07/25/14b	B4G2114b	8081/8082b	
Surrogate: Decachlorobiphenyl-		82.5 %-	30-150-		07/25/14-	B4G2114b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.8 %-	30-150-		07/25/14-	B4G2114b	8081/8082-		



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Client ID: CHLL-SD 18-0"-6"p

Lab ID: 1407166-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solidsp	71.8p	0.1b	%b	1b	07/16/14b	B4G1608b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.14b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	
Inorganics-Metals									
7429-90-5b	Aluminump	4800p	100b	mg/kg dryb	1000b	07/30/14b	B4G2810b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	07/31/14b	B4G2804b	6020/200.8b	
7440-38-2b	Arsenicp	1.7p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-39-3b	Bariump	78p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	A09b
7440-41-7	Berylliump	0.5p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-47-3b	Chromiump	9.0p	2.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-48-4b	Cobaltp	4.5p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-50-8b	Copperp	130p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-89-6b	Ironp	12000p	5.0b	mg/kg dryb	10b	07/31/14b	B4G2810b	6010/200.7	
7439-92-1b	Leadp	27p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-96-5b	Manganese	160p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-97-6b	Mercuryb	NDb	0.07	mg/kg dryb	1b	07/18/14b	B4G1705b	7471/245.5b	
7440-02-0b	Nickelp	12p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-22-4b	Silverp	0.3p	0.1b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-66-6b	Zincp	24p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	



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Client ID: CHLL-SD 18-1'-2.7'p

Lab ID: 1407166-19p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp									
91-57-6b	2-Methylnaphthalene	NDb	1600b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
83-32-9b	Acenaphthene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
208-96-8b	Acenaphthylene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
120-12-7	Anthracene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
56-55-3b	Benz[a]anthracene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
218-01-9b	Chrysene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
206-44-0b	Fluoranthene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
86-73-7	Fluorene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1200b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
91-20-3b	Naphthalene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
85-01-8b	Phenanthrene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
129-00-0b	Pyrene	NDb	620b	ug/kg dryb	1b	07/22/14b	B4G1518b	8270b	
Surrogate: 2-Fluorobiphenyl-		80.0 %-	32.9-115-		07/22/14-	B4G1518b	8270-		
Surrogate: Nitrobenzene-d5-		67.8 %-	31.8-115-		07/22/14-	B4G1518b	8270-		
Surrogate: p-Terphenyl-d14-		80.3 %-	38.5-115-		07/22/14-	B4G1518b	8270-		
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242p	360p	120b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	JAb
12672-29-6b	Aroclor 1248b	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	360p	120b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
Surrogate: Decachlorobiphenyl-		57.6 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		67.3 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		



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Client ID: CHLL-SD 18-1'-2.7'p

Lab ID: 1407166-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistryp									
TSb	% Total Solidsp	80.2p	0.1b	%b	1b	07/16/14b	B4G1613b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.12b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	
Inorganics-Metalsp									
7429-90-5b	Aluminump	3200p	10b	mg/kg dryb	100b	07/30/14b	B4G2810b	6020/200.8b	
7440-36-0b	Antimonyp	17p	0.3b	mg/kg dryb	10b	07/31/14b	B4G2804b	6020/200.8b	
7440-38-2b	Arsenicp	2.3p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-39-3b	Bariump	2700p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	A09b
7440-41-7	Berylliump	1.0p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-43-9b	Cadmiump	3.1p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-47-3b	Chromiump	13p	2.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-48-4b	Cobaltp	6.4p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-50-8b	Copperp	4400p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	
7439-89-6b	Ironp	9900p	5.0b	mg/kg dryb	10b	07/31/14b	B4G2810b	6010/200.7	
7439-92-1b	Leadp	1600p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	
7439-96-5b	Manganesep	120p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-97-6b	Mercuryp	0.1p	0.06b	mg/kg dryb	1b	07/18/14b	B4G1706b	7471/245.5b	
7440-02-0b	Nickelp	17p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7782-49-2b	Seleniump	1.1p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-22-4b	Silverp	13p	0.1b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-66-6b	Zincp	220p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	



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Client ID: CHLL-SD 19-0"-6"p

Lab ID: 1407166-20p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp									
91-57-6b	2-Methylnaphthalene	NDb	1900b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
83-32-9b	Acenaphthene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
208-96-8b	Acenaphthylene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
120-12-7	Anthracene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
56-55-3b	Benz[a]anthracene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1500b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1500b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1500b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1500b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
218-01-9b	Chrysene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1500b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
206-44-0b	Fluoranthene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
86-73-7	Fluorene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1500b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
91-20-3b	Naphthalene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
85-01-8b	Phenanthrene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
129-00-0b	Pyrene	NDb	750b	ug/kg dryb	1b	07/25/14b	B4G1619b	8270b	
Surrogate: 2-Fluorobiphenyl-		68.6 %-	32.9-115-		07/25/14-	B4G1619b	8270-		
Surrogate: Nitrobenzene-d5-		59.1 %-	31.8-115-		07/25/14-	B4G1619b	8270-		
Surrogate: p-Terphenyl-d14-		69.7 %-	38.5-115-		07/25/14-	B4G1619b	8270-		
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
Surrogate: Decachlorobiphenyl-		71.4 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		67.3 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD 19-0"-6"p

Lab ID: 1407166-20p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solidsp	66.2p	0.1b	%b	1b	07/16/14b	B4G1613b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.15b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	
Inorganics-Metals									
7429-90-5b	Aluminump	4400p	100b	mg/kg dryb	1000b	07/30/14b	B4G2810b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	07/31/14b	B4G2804b	6020/200.8b	
7440-38-2b	Arsenicp	1.2p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-39-3b	Bariump	31p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	A09b
7440-41-7	Berylliump	0.4p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-47-3b	Chromiump	8.5p	2.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-48-4b	Cobaltp	4.5p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-50-8b	Copperp	89p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-89-6b	Ironp	10000p	5.0b	mg/kg dryb	10b	07/31/14b	B4G2810b	6010/200.7	
7439-92-1b	Leadp	5.6p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-96-5b	Manganese	130p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-97-6b	Mercuryb	NDb	0.08b	mg/kg dryb	1b	07/18/14b	B4G1706b	7471/245.5b	
7440-02-0b	Nickelp	12p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-22-4b	Silverb	NDb	0.1b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-66-6b	Zincp	23p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Page 1 of 2

ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET

Lab Work Order Number

Project Name

Matrix

Abandoned Mining Waste- Torch Lake PCB

SOIL/SEDIMENT

Site Code/Project Number

AY

CC Email 1 to send additional reports to

shireyb pincumbej

Project TAT Days

31000098

13 22

Sample Collector

Aaron Berndt

Dept-Division-District

Index

CC Email 2 to send additional reports to

RRD-PSS-GSU

44251

Keranen@ michigan.gov

Project Due Date

Sample Collector Phone

State Project Manager

PCA

CC Email 3 to send additional reports to

Jeff Pincumbe / Keranen

30872

j.binkley@westonsolutions.com

Accept Analysis hold time codes: Yes/No

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm

pincumbej

Phase

Overflow Lab Choice 2

Weston Solution

State Project Manager Phone

456990

Contract Firm Primary Contact

517-335-6418

08

1-906 523 5457

Primary Contact Phone

1906 337 0389

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1 01	CHLL-SD 46-0"-6"	7/8/14	10:48		
2 02	CHLL-SD 46-1'-3'		10:50		
3 03	CHLL-SD 46-1'-3' DLP		10:50		
4 04	CHLL-SD 46-3'-4.5'		10:53		
5 05	CHLL-SD 47-0"-6"		12:16		
6 06	CHLL-SD 47-1'-2'		12:20		
7 07	CHLL-SD 48-0"-6"		13:05		
8 08	CHLL-SD 48-1'-3'		13:08		
9 09	CHLL-SD 48-3'-5'		13:12		
10 10	CHLL-SD 49-0"-6"		14:30		

ORGANIC CHEMISTRY

VOA - Volatile Organic Acids	1 2 3 4 5 6 7 8 9 10
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10
Chlorinated only	1 2 3 4 5 6 7 8 9 10
GRO	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10

METALS CHEMISTRY PACKAGES

Op/Memo2 - Total	1 2 3 4 5 6 7 8 9 10
{Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn}	
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10

(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)

MS - TOTAL METALS

Silver - Ag	1 2 3 4 5 6 7 8 9 10
Aluminum - Al	1 2 3 4 5 6 7 8 9 10
Arsenic - As	1 2 3 4 5 6 7 8 9 10
Barium - Ba	1 2 3 4 5 6 7 8 9 10
Beryllium - Be	1 2 3 4 5 6 7 8 9 10
Cadmium - Cd	1 2 3 4 5 6 7 8 9 10
Cobalt - Co	1 2 3 4 5 6 7 8 9 10
Chromium - Cr	1 2 3 4 5 6 7 8 9 10
Copper - Cu	1 2 3 4 5 6 7 8 9 10
Iron - Fe	1 2 3 4 5 6 7 8 9 10
Mercury - Hg	1 2 3 4 5 6 7 8 9 10
Lithium - Li	1 2 3 4 5 6 7 8 9 10
Manganese - Mn	1 2 3 4 5 6 7 8 9 10
Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10
Nickel - Ni	1 2 3 4 5 6 7 8 9 10
Lead - Pb	1 2 3 4 5 6 7 8 9 10
Antimony - Sb	1 2 3 4 5 6 7 8 9 10
Selenium - Se	1 2 3 4 5 6 7 8 9 10
Strontium - Sr	1 2 3 4 5 6 7 8 9 10
Titanium - Ti	1 2 3 4 5 6 7 8 9 10
Thallium - Tl	1 2 3 4 5 6 7 8 9 10
Vanadium - V	1 2 3 4 5 6 7 8 9 10
Zinc - Zn	1 2 3 4 5 6 7 8 9 10
Calcium - Ca	1 2 3 4 5 6 7 8 9 10
Potassium - K	1 2 3 4 5 6 7 8 9 10
Magnesium - Mg	1 2 3 4 5 6 7 8 9 10
Sodium - Na	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GS - General Chemistry	1 2 3 4 5 6 7 8 9 10
Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
Available Cyanide - CN	1 2 3 4 5 6 7 8 9 10
Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10

OS - Pesticides, PCBs

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

BNA - Base Neutral Acids

BNA	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10

Organic Specialty Requests

Library search - Volatiles	1 2 3 4 5 6 7 8 9 10
Library Search - SemiVols	1 2 3 4 5 6 7 8 9 10
Finger Print	1 2 3 4 5 6 7 8 9 10
DRO / DRO	1 2 3 4 5 6 7 8 9 10

Chain of Custody

Relinquished by

Print Name & Org.

Signature: Aaron Berndt - MDEQ
UP5

Print Name & Org.

Signature:

WEL 6129526

Received By

Print Name & Org.

Signature: Amy Keranen
Metzger Sm. Inc.
JWJ

Date / Time

7/8/14 1500

7/15/14 1300



Analysis Request Sheet

213

Lab Work Order Number		Project Name									
1407166		Abandoned Mining Waste- Torch Lake PCB		SOIL/SEDIMENT							
Site Code/Project Number		AY	CC Email 1	Project TAT Days		Sample Collector					
31000098		13	pincumbel@michigan.gov			Aaron Berndt					
Dept-Division-District		Index	CC Email 2	Project Due Date		Sample Collector Phone					
RRD		44251	i.binkley@michigan.gov			15173356419					
State Project Manager		PCA	CC Email 3	Accept Analysis hold time codes		Contract Firm					
Amy Keranen & Jeff Pincumbel		30872	shireyb@michigan.gov			Weston Solutions					
State Project Manager Email		Project	Overflow Lab Choice 1			Contract Firm Primary Contact					
keranena@michigan.gov		456990	Overflow Lab Choice 2			19065235457					
State Project Manager Phone		Phase	OO			Primary Contact Phone					
9063370389						19063370389					
Lab Use Only	Field Sample Identification			Collection Date	Collection Time	Container Count	Comments				
1	11	CHLL-SD- 2S-3'-4'			7/11/14	1312					
2	12	CHLL-SD- 09-0"-6"			7/11/14	1420					
3	13	CHLL-SD- 08-1'-3'				1424					
4	14	CHLL-SD- 08-3'-4'				1428					
5	15	CHLL-SD- 17-0"-6"			7/12/14	755					
6	16	CHLL-SD- 17-1'-3'				759					
7	17	CHLL-SD- 17-3'-5'				803					
8	18	CHLL-SD- 18-0"-6"				835					
9	19	CHLL-SD- 18-1'-2.7'				838					
10	20	CHLL-SD- 19-0"-6"				920					
ORGANIC CHEMISTRY			METALS CHEMISTRY PACKAGES			MS - TOTAL METALS			GENERAL CHEMISTRY		
VOA - Volatile Organic Acidic Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEx/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10			OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 [Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Ni,Se,Ag,Al,V,Po] Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)			Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10			GS - General Chemistry Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10		
OS - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10									per D. Lida 8/5/15/14		
BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10											
Organic Specialty Requests Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO / ORO 1 2 3 4 5 6 7 8 9 10											

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature: Aaron Berndt, MDEQ Aaron J. Berndt	Received By Amy Keranen Amy Keranen Meisse Jr. HL York	7/11/14 1500 7/12/14 1000
	Print Name & Org. Signature: UPS		7/11/14 1300
	Print Name & Org. Signature: N4106129526		7/11/14 1300



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 489090
TEL: (517) 335-98000
FAX: (517) 335-96000

05 August 2014

Work Order: 1407175O

Price: \$4,327.00O

Jeff PincumbeO

MDEQ-RRD-LANSINGO

525 W. Allegan StreetO

Lansing, MI 48909O

RE: ABANDONED MINING WASTE-TORCH LAKE PCBO

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

Sincerely,O

George KrisztianO

Laboratory DirectorO



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

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

Project:bABANDONED MINING WASTE-TORCH LAKE PCBb
Site Code:b31000098b
Project Manager:bJeff Pincumbeb

Reported:p
08/05/2014b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampled p	Date Receivedp	Qualifierp
CHLL-SD-23-1'-1.5'b	1407175-01b	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD-14-0"-6"b	1407175-02b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-14-1'-3'b	1407175-03b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-14-3'-4'b	1407175-04b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-16-0"-6"b	1407175-05b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-16-1'-3'b	1407175-06b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-16-3'-4'b	1407175-07	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-16-3'-4' DUPb	1407175-08b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-45-0"-6"b	1407175-09b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-45-1'-3'b	1407175-10b	Soil/Sedimentb	07/11/2014b	07/15/2014b	
CHLL-SD-19-1'-2.4'b	1407175-11b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-40-0"-6"b	1407175-12b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-40-1'-3'b	1407175-13b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-40-3'-4'b	1407175-14b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-41-0"-6"b	1407175-15b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-41-1'-3'b	1407175-16b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-41-1'-3' DUPb	1407175-17	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-42-0"-6"b	1407175-18b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-42-1'-3'b	1407175-19b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD-42-3'-3.7'b	1407175-20b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD07-0"-6"b	1407175-21b	Soil/Sedimentb	07/12/2014b	07/15/2014b	
CHLL-SD07-1'-3'b	1407175-22b	Soil/Sedimentb	07/12/2014b	07/15/2014b	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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Notes and Definitions p

- Y21b Reporting Limits (RL) raised due to matrix interference.b
- Y20b Reporting Limits (RL) raised due to matrix.b
- X3b Spike recovery is not applicable due to large target analyte concentration in the source sample.b
- Tb Reported value is less than the reporting limit (RL). Result is estimated.b
- JAb Result is estimated due to multiple Aroclors present.b
- A09b Result is estimated due to high recovery of batch quality control.b
- A03b Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.b
- NDb Indicates compound analyzed for but not detectedb
- RLb Reporting Limitb
- NAb Not Applicableb
- dry Sample results reported on a dry weight basisb



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-23-1'-1.5'p

Lab ID: 1407175-01p

CAS # ^b	Analyte ^b	Result ^b	RL ^b	Units ^b	Dilution ^b	Analyzed ^b Date ^b	QC Batch ^b	Method ^b	Qualifier ^b
Organics-PCBs as Aroclors^p									
12674-11-2b	Aroclor 1016b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
11104-28-2b	Aroclor 1221b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
11141-16-5b	Aroclor 1232b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
53469-21-9b	Aroclor 1242b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
12672-29-6b	Aroclor 1248b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
11097-69-1b	Aroclor 1254b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
11096-82-5b	Aroclor 1260b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
37324-23-5b	Aroclor 1262b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
11100-14-4b	Aroclor 1268b	ND ^b	150b	ug/kg dry ^b	1b	07/26/14b	B4G2114b	8081/8082b	
Surrogate: Decachlorobiphenyl-		80.2 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.1 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		
Inorganics-General Chemistry^p									
TS ^b	% Total Solid ^{b,p}	68.4p	0.1b	% ^b	1b	07/16/14b	B4G1614b	2540 B ^b	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-14-0"-6"p

Lab ID: 1407175-02p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp										
91-57-6b	2-Methylnaphthalene	NDb	2900b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
83-32-9b	Acenaphthene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
208-96-8b	Acenaphthylene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
120-12-7	Anthracene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
56-55-3b	Benz[a]anthracene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
50-32-8b	Benzo[a]pyrene	NDb	2300b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	2300b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	2300b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	2300b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
218-01-9b	Chrysene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	2300b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
206-44-0b	Fluoranthene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
86-73-7	Fluorene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	2300b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
91-20-3b	Naphthalene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
85-01-8b	Phenanthrene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
129-00-0b	Pyrene	NDb	1100b	ug/kg dryb	1b	07/22/14b	B4G1518b		8270b	
Surrogate: 2-Fluorobiphenyl-		86.1 %-	32.9-115-		07/22/14-	B4G1518b		8270-		
Surrogate: Nitrobenzene-d5-		75.7 %-	31.8-115-		07/22/14-	B4G1518b		8270-		
Surrogate: p-Terphenyl-d14-		80.5 %-	38.5-115-		07/22/14-	B4G1518b		8270-		
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016b	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		Y21b
11104-28-2b	Aroclor 1221b	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		Y21b
11141-16-5b	Aroclor 1232b	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		Y21b
53469-21-9b	Aroclor 1242p	340p	230b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		JAb
12672-29-6b	Aroclor 1248b	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		Y21b
11097-69-1b	Aroclor 1254p	390p	230b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		JAb
11096-82-5b	Aroclor 1260b	NDb	230b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
37324-23-5b	Aroclor 1262b	NDb	230b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11100-14-4b	Aroclor 1268b	NDb	230b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
Surrogate: Decachlorobiphenyl-		65.4 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		72.7 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		



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Client ID: CHLL-SD-14-0"-6"p

Lab ID: 1407175-02p

CAS # ^b	Analyte ^b	Result ^b	RL ^b	Units ^b	Dilution ^b	Analyzed ^b Date ^b	QC Batch ^b	Method ^b	Qualifier ^b
Inorganics-General Chemistry^p									
TSb	% Total Solidsp	43.5p	0.1b	%b	1b	07/16/14b	B4G1614b	2540 Bb	
57-12-5b	Total Cyanide ^b	NDb	0.23b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	
Inorganics-Metals^p									
7429-90-5b	Aluminum ^p	15000p	100b	mg/kg dryb	1000b	07/30/14b	B4G2810b	6020/200.8b	
7440-36-0b	Antimony ^p	15p	0.3b	mg/kg dryb	10b	07/31/14b	B4G2804b	6020/200.8b	
7440-38-2b	Arsenic ^p	16p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-39-3b	Barium ^p	2300p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	A09b
7440-41-7	Beryllium ^p	1.3p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-43-9b	Cadmium ^p	3.6p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-47-3b	Chromium ^p	42p	2.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-48-4b	Cobalt ^p	19p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-50-8b	Copper ^p	9800p	100b	mg/kg dryb	1000b	07/29/14b	B4G2810b	6020/200.8b	
7439-89-6b	Iron ^p	31000p	5.0b	mg/kg dryb	10b	07/31/14b	B4G2810b	6010/200.7	
7439-92-1b	Lead ^p	2200p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	
7439-96-5b	Manganese ^p	420p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-97-6b	Mercury ^p	0.3p	0.1b	mg/kg dryb	1b	07/18/14b	B4G1706b	7471/245.5b	
7440-02-0b	Nickel ^p	52p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7782-49-2b	Selenium ^p	1.6p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-22-4b	Silver ^p	26p	0.1b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-66-6b	Zinc ^p	430p	10b	mg/kg dryb	100b	07/29/14b	B4G2810b	6020/200.8b	



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Client ID: CHLL-SD-14-1'-3'p

Lab ID: 1407175-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		76.4 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		68.6 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	65.9p	0.1b	%b	1b	07/16/14b	B4G1614b		2540 Bb	



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Client ID: CHLL-SD-14-3'-4'p

Lab ID: 1407175-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		80.4 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		72.6 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	67.9p	0.1b	%b	1b	07/16/14b	B4G1614b		2540 Bb	



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Client ID: CHLL-SD-16-0"-6"p

Lab ID: 1407175-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp See note Y20p									
12674-11-2b	Aroclor 1016b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
53469-21-9b	Aroclor 1242p	340p	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	JA, Tb
12672-29-6b	Aroclor 1248b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11097-69-1b	Aroclor 1254p	220p	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	JA, Tb
11096-82-5b	Aroclor 1260b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	430b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	
Surrogate: Decachlorobiphenyl-		77.4 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		75.7 %-	30-150-		07/26/14-	B4G2114b	8081/8082-		
Inorganics-General Chemistryp									
TSb	% Total Solidsp	46.4p	0.1b	%b	1b	07/16/14b	B4G1614b	2540 Bb	



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Client ID: CHLL-SD-16-1'-3'p

Lab ID: 1407175-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		85.5 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		81.2 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	66.0p	0.1b	%b	1b	07/16/14b	B4G1614b		2540 Bb	



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Client ID: CHLL-SD-16-3'-4'p

Lab ID: 1407175-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	300b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		85.9 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		83.5 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	66.8p	0.1b	%b	1b	07/16/14b	B4G1614b		2540 Bb	



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Client ID: CHLL-SD-16-3'-4' DUPp
Lab ID: 1407175-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	290b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		86.3 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		80.5 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	67.9p	0.1b	%b	1b	07/16/14b	B4G1614b		2540 Bb	



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Client ID: CHLL-SD-45-0"-6"p

Lab ID: 1407175-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11104-28-2b	Aroclor 1221b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11141-16-5b	Aroclor 1232b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
53469-21-9b	Aroclor 1242b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
12672-29-6b	Aroclor 1248b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11097-69-1b	Aroclor 1254p	180p	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	JA, Tb	
11096-82-5b	Aroclor 1260p	260p	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b	JA, Tb	
37324-23-5b	Aroclor 1262b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11100-14-4b	Aroclor 1268b	NDb	440b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
Surrogate: Decachlorobiphenyl-		77.8 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		69.8 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solidsp	45.2p	0.1b	%b	1b	07/16/14b	B4G1614b	2540 Bb		



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P.O. Box 302700
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TEL: (517) 335-98000
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Client ID: CHLL-SD-45-1'-3'p

Lab ID: 1407175-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	330b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		81.6 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		74.0 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	60.2p	0.1b	%b	1b	07/16/14b	B4G1614b		2540 Bb	



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-19-1'-2.4'p

Lab ID: 1407175-11p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp										
91-57-6b	2-Methylnaphthalene	NDb	1600b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
83-32-9b	Acenaphthene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
208-96-8b	Acenaphthylene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
120-12-7	Anthracene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
56-55-3b	Benz[a]anthracene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
50-32-8b	Benzo[a]pyrene	NDb	1300b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1300b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1300b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1300b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
218-01-9b	Chrysene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1300b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
206-44-0b	Fluoranthene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
86-73-7	Fluorene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1300b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
91-20-3b	Naphthalene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
85-01-8b	Phenanthrene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
129-00-0b	Pyrene	NDb	660b	ug/kg dryb	1b	07/25/14b	B4G1619b		8270b	
Surrogate: 2-Fluorobiphenyl-		65.1 %-	32.9-115-		07/25/14-	B4G1619b		8270-		
Surrogate: Nitrobenzene-d5-		60.7 %-	31.8-115-		07/25/14-	B4G1619b		8270-		
Surrogate: p-Terphenyl-d14-		64.6 %-	38.5-115-		07/25/14-	B4G1619b		8270-		
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	07/25/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		89.9 %-	30-150-		07/25/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		88.8 %-	30-150-		07/25/14-	B4G2114b		8081/8082-		



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Client ID: CHLL-SD-19-1'-2.4'p

Lab ID: 1407175-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistryp									
TSb	% Total Solidsp	76.2p	0.1b	%b	1b	07/16/14b	B4G1614b	2540 Bb	
Inorganics-Metalsp									
7429-90-5b	Aluminump	3800p	100b	mg/kg dryb	1000b	07/30/14b	B4G2810b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	07/31/14b	B4G2804b	6020/200.8b	
7440-38-2b	Arsenicp	1.4p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-39-3b	Bariump	20p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	A09b
7440-41-7	Berylliump	0.3p	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-47-3b	Chromiump	8.5p	2.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-48-4b	Cobaltp	4.5p	0.5b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-50-8b	Copperp	140p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-89-6b	Ironp	9000p	5.0b	mg/kg dryb	10b	07/31/14b	B4G2810b	6010/200.7	
7439-92-1b	Leadp	5.4p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-96-5b	Manganesep	110p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-97-6b	Mercuryb	NDb	0.07	mg/kg dryb	1b	07/18/14b	B4G1706b	7471/245.5b	
7440-02-0b	Nickelp	12p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-22-4b	Silverp	0.2p	0.1b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-66-6b	Zincp	25p	1.0b	mg/kg dryb	10b	07/29/14b	B4G2810b	6020/200.8b	



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TEL: (517) 335-98000
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Client ID: CHLL-SD-40-0"-6"p

Lab ID: 1407175-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	320b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
Surrogate: Decachlorobiphenyl-		77.0 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		82.5 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	62.5p	0.1b	%b	1b	07/16/14b	B4G1614b	2540 Bb
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TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD-40-1'-3'p

Lab ID: 1407175-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	340b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
Surrogate: Decachlorobiphenyl-		79.0 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		77.3 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	58.2p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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Client ID: CHLL-SD-40-3'-4'p

Lab ID: 1407175-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b	Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclors										
12674-11-2b	Aroclor 1016b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11104-28-2b	Aroclor 1221b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11141-16-5b	Aroclor 1232b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
53469-21-9b	Aroclor 1242b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
12672-29-6b	Aroclor 1248b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11097-69-1b	Aroclor 1254b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11096-82-5b	Aroclor 1260b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
37324-23-5b	Aroclor 1262b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
11100-14-4b	Aroclor 1268b	NDb	150b	ug/kg dryb	1b	07/26/14b	B4G2114b	8081/8082b		
Surrogate: Decachlorobiphenyl-		86.9 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		82.9 %-	30-150-		07/26/14-	B4G2114b	8081/8082-			

Inorganics-General Chemistry

TSb	% Total Solidsp	66.2p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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Client ID: CHLL-SD-41-0"-6"p

Lab ID: 1407175-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles										See note Y20p
91-57-6b	2-Methylnaphthalene	NDb	2300b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
83-32-9b	Acenaphthene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
208-96-8b	Acenaphthylene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
120-12-7	Anthracene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
56-55-3b	Benz[a]anthracene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
50-32-8b	Benzo[a]pyrene	NDb	1900b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1900b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1900b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1900b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
218-01-9b	Chrysene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1900b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
206-44-0b	Fluoranthene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
86-73-7	Fluorene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1900b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
91-20-3b	Naphthalene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
85-01-8b	Phenanthrene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
129-00-0b	Pyrene	NDb	930b	ug/kg dryb	1b	07/28/14b	B4G1619b		8270b	
Surrogate: 2-Fluorobiphenyl-		78.8 %-	32.9-115-		07/28/14-	B4G1619b		8270-		
Surrogate: Nitrobenzene-d5-		73.1 %-	31.8-115-		07/28/14-	B4G1619b		8270-		
Surrogate: p-Terphenyl-d14-		71.1 %-	38.5-115-		07/28/14-	B4G1619b		8270-		
Organics-PCBs as Aroclors										See note Y20p
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	370b	ug/kg dryb	1b	07/26/14b	B4G2114b		8081/8082b	
Surrogate: Decachlorobiphenyl-		79.0 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		82.2 %-	30-150-		07/26/14-	B4G2114b		8081/8082-		



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-41-0"-6"p

Lab ID: 1407175-15p

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

TSb	% Total Solidsp	53.8p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb	
57-12-5b	Total Cyanide ^b	ND ^b	0.19b	mg/kg dry ^b	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	

Inorganics-Metals^p

7429-90-5b	Aluminump	16000p	100b	mg/kg dry ^b	1000b	07/30/14b	B4G2810b	6020/200.8b	
7440-36-0b	Antimonyp	0.6p	0.3b	mg/kg dry ^b	10b	07/31/14b	B4G2804b	6020/200.8b	
7440-38-2b	Arsenicp	17p	0.5b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-39-3b	Bariump	68p	10b	mg/kg dry ^b	100b	07/29/14b	B4G2810b	6020/200.8b	A09b
7440-41-7	Berylliump	1.0p	0.2b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-43-9b	Cadmium ^b	ND ^b	0.2b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-47-3b	Chromiump	46p	2.0b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-48-4b	Cobaltp	27p	0.5b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-50-8b	Copperp	2300p	1.0b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-89-6b	Ironp	31000p	5.0b	mg/kg dry ^b	10b	07/31/14b	B4G2810b	6010/200.7	
7439-92-1b	Leadp	53p	10b	mg/kg dry ^b	100b	07/29/14b	B4G2810b	6020/200.8b	
7439-96-5b	Manganese^p	550p	1.0b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7439-97-6b	Mercury^p	0.2p	0.09b	mg/kg dry ^b	1b	07/18/14b	B4G1706b	7471/245.5b	
7440-02-0b	Nickelp	65p	1.0b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7782-49-2b	Seleniump	0.4p	0.2b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-22-4b	Silverp	4.7p	0.1b	mg/kg dry ^b	10b	07/29/14b	B4G2810b	6020/200.8b	
7440-66-6b	Zincp	180p	10b	mg/kg dry ^b	100b	07/29/14b	B4G2810b	6020/200.8b	



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ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD-41-1'-3'p

Lab ID: 1407175-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	250b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b		
Surrogate: Decachlorobiphenyl-		85.5 %-	30-150-		07/26/14-	B4G2207	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		79.8 %-	30-150-		07/26/14-	B4G2207	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	78.5p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD-41-1'-3' DUPp
Lab ID: 1407175-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
Surrogate: Decachlorobiphenyl-		82.1 %-	30-150-		07/27/14-	B4G2207	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		75.5 %-	30-150-		07/27/14-	B4G2207	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	79.1p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD-42-0"-6"p

Lab ID: 1407175-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
Surrogate: Decachlorobiphenyl-		63.8 %-	30-150-		07/27/14-	B4G2207	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		56.2 %-	30-150-		07/27/14-	B4G2207	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	61.4p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-42-1'-3'p

Lab ID: 1407175-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
Surrogate: Decachlorobiphenyl-		74.3 %-	30-150-		07/27/14-	B4G2207	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		66.9 %-	30-150-		07/27/14-	B4G2207	8081/8082-		

Inorganics-General Chemistry

TSb	% Total Solidsp	74.2p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-42-3'-3.7'p

Lab ID: 1407175-20p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	07/26/14b	B4G2207	8081/8082b	
Surrogate: Decachlorobiphenyl-		90.2 %-	30-150-		07/26/14-	B4G2207	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		85.2 %-	30-150-		07/26/14-	B4G2207	8081/8082-		

Inorganics-General Chemistry

TSb	% Total Solidsp	80.4p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD07-0"-6"'p

Lab ID: 1407175-21p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	600b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
Surrogate: Decachlorobiphenyl-		79.2 %-	30-150-		07/27/14-	B4G2207	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		75.5 %-	30-150-		07/27/14-	B4G2207	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	33.3p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD07-1'-3'p

Lab ID: 1407175-22p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11104-28-2b	Aroclor 1221	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11141-16-5b	Aroclor 1232	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
53469-21-9b	Aroclor 1242	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
12672-29-6b	Aroclor 1248	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11097-69-1b	Aroclor 1254	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11096-82-5b	Aroclor 1260	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
37324-23-5b	Aroclor 1262	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
11100-14-4b	Aroclor 1268	NDb	460b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b		
Surrogate: Decachlorobiphenyl-		61.6 %-	30-150-		07/27/14-	B4G2207	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		68.9 %-	30-150-		07/27/14-	B4G2207	8081/8082-			

Inorganics-General Chemistryp

TSb	% Total Solidsp	43.4p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb
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Analysis Request Sheet

113

Lab Work Order Number

146775

Project Name

Abandoned Mining Waste- Torch Lake PCB

Matrix

SOIL/SEDIMENT

Site Code/Project Number

31000098

AY

13

CC Email 1

plncumbej@michigan.gov

Project TAT Days

Sample Collector

Aaron Berndt

Dept-Division-District

RRD

Index

44251

CC Email 2

j.binkely@michigan.gov

Project Due Date

Sample Collector Phone

15173356419

State Project Manager

Amy Keranen & Jeff Pincumbe

Project

30872

CC Email 3

shireyb@michigan.gov

Accept Analysis hold time codes

Contract Firm

Weston Solutions

Contract Firm Primary Contact

19065235457

Primary Contact Phone

19063370389

State Project Manager Email

keranena@michigan.gov

State Project Manager Phone

9063370389

Phase

00

Overflow Lab Choice 1

Overflow Lab Choice 2

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL-SD- 23 - 1'-1.5'	7/10/14	1550		15:53
2	02 CHLL-SD- 14 - 0"-6"	7/11/14	746		
3	03 CHLL-SD- 14 - 1'-3'		749		
4	04 CHLL-SD- 14 - 3'-4'		751		3-4.3
5	05 CHLL-SD- 16 - 0"-6"		836		
6	06 CHLL-SD- 16 - 1'-3'		839		
7	07 CHLL-SD- 16 - 3'-4'		843		
8	08 CHLL-SD-16 - 3'-4' dwp		843		
9	09 CHLL-SD- 15 - 0"-6"		944		
10	10 CHLL-SD- 45 - 1'-3'		947		

ORGANIC CHEMISTRY										
VOA - Volatile Organic Acidic										
Volatiles - Full List	1	2	3	4	5	6	7	8	9	10
BTEX/MTBE/FMB only	1	2	3	4	5	6	7	8	9	10
Chlorinated only	1	2	3	4	5	6	7	8	9	10
GRO	1	2	3	4	5	6	7	8	9	10
1,4 Dioxane	1	2	3	4	5	6	7	8	9	10
OS - Pesticides, PCBs										
Pesticides & PCBs	1	2	3	4	5	6	7	8	9	10
Pesticides only	1	2	3	4	5	6	7	8	9	10
PCBs only	1	2	3	4	5	6	7	8	9	10
Toxaphene	1	2	3	4	5	6	7	8	9	10
BNA - Base Neutral Acids										
BNAAs	1	2	3	4	5	6	7	8	9	10
PNAAs only	1	2	3	4	5	6	7	8	9	10
BNS only	1	2	3	4	5	6	7	8	9	10
Organic Specialty Requests										
Urbary search - Volatiles	1	2	3	4	5	6	7	8	9	10
Urbary search - SemiVols	1	2	3	4	5	6	7	8	9	10
Finger Print	1	2	3	4	5	6	7	8	9	10
ORO / ORO	1	2	3	4	5	6	7	8	9	10

METALS CHEMISTRY PACKAGES										
OpMemo2 - Total										
(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)	1	2	3	4	5	6	7	8	9	10
Michigan10 - Total	1	2	3	4	5	6	7	8	9	10

MS - TOTAL METALS										
Silver - Ag	1	2	3	4	5	6	7	8	9	10
Aluminum - Al	1	2	3	4	5	6	7	8	9	10
Arsenic - As	1	2	3	4	5	6	7	8	9	10
Barium - Ba	1	2	3	4	5	6	7	8	9	10
Beryllium - Be	1	2	3	4	5	6	7	8	9	10
Cadmium - Cd	1	2	3	4	5	6	7	8	9	10
Cobalt - Co	1	2	3	4	5	6	7	8	9	10
Chromium - Cr	1	2	3	4	5	6	7	8	9	10
Copper - Cu	1	2	3	4	5	6	7	8	9	10
Iron - Fe	1	2	3	4	5	6	7	8	9	10
Mercury - Hg	1	2	3	4	5	6	7	8	9	10
Uthium - Li	1	2	3	4	5	6	7	8	9	10
Manganese - Mn	1	2	3	4	5	6	7	8	9	10
Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10
Nickel - Ni	1	2	3	4	5	6	7	8	9	10
Lead - Pb	1	2	3	4	5	6	7	8	9	10
Antimony - Sb	1	2	3	4	5	6	7	8	9	10
Selenium - Se	1	2	3	4	5	6	7	8	9	10
Strontium - Sr	1	2	3	4	5	6	7	8	9	10
Titanium - Ti	1	2	3	4	5	6	7	8	9	10
Thallium - Tl	1	2	3	4	5	6	7	8	9	10
Vanadium - V	1	2	3	4	5	6	7	8	9	10
Zinc - Zn	1	2	3	4	5	6	7	8	9	10
Calcium - Ca	1	2	3	4	5	6	7	8	9	10
Potassium - K	1	2	3	4	5	6	7	8	9	10
Magnesium - Mg	1	2	3	4	5	6	7	8	9	10
Sodium - Na	1	2	3	4	5	6	7	8	9	10

GENERAL CHEMISTRY										
GS - General Chemistry	1	2	3	4	5	6	7	8	9	10
Total Cyanide - CN	1	2	3	4	5	6	7	8	9	10
Available Cyanide - CN	1	2	3	4	5	6	7	8	9	10
Chem Oxy Dem - COD	1	2	3	4	5	6	7	8	9	10
Total Org Carbon - TOC	1	2	3	4	5	6	7	8	9	10
Kjeldahl Nitrogen - KN	1	2	3	4	5	6	7	8	9	10
Total Phosphorus - TP	1	2	3	4	5	6	7	8	9	10

per D. Liebau
7/15/14 133

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature: Aaron Berndt 7/14/14	Amy Keranen MDER Amy Keranen 7/14/14	210 • 7/11/14
	Print Name & Org. Signature: WPS 7/14/14	Miss Sp. In Jill S. J.	7/15/14 1320
	Print Name & Org. Signature: WPS 7/11/14		



Analysis Request Sheet

26

Lab Work Order Number		Project Name		Matrix																																																																			
146775		Abandoned Mining Waste- Torch Lake PCB		SOIL/SEDIMENT																																																																			
Site Code/Project Number 31000098		AY 13	CC Email 1 plncumbe@Michigan.gov	Project TAT Days	Sample Collector Aaron Berndt																																																																		
Dept-Division-District RRD		Index 44251	CC Email 2 j.binkley@Michigan.gov	Project Due Date	Sample Collector Phone 15173356419																																																																		
State Project Manager Amy Keranen & Jeff Pincumbe		PCA 30872	CC Email 3 shireyb@Michigan.gov	Accept Analysis hold time codes	Contract Firm Weston Solutions																																																																		
State Project Manager Email keranena@Michigan.gov		Project 456990	Overflow Lab Choice 1		Contract Firm Primary Contact 19065235457																																																																		
State Project Manager Phone 9063370389		Phase 00	Overflow Lab Choice 2		Primary Contact Phone 19063370389																																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Lab Use Only</th> <th>Field Sample Identification</th> <th>Collection Date</th> <th>Collection Time</th> <th>Container Count</th> <th>Comments</th> </tr> </thead> <tbody> <tr><td>1</td><td>CHLL-SD- 19-1'-2.4'</td><td>7/10/14</td><td>923</td><td></td><td></td></tr> <tr><td>2</td><td>CHLL-SD- 40-0"-6"</td><td></td><td>1026</td><td></td><td></td></tr> <tr><td>3</td><td>CHLL-SD- 40-1'-3'</td><td></td><td>1029</td><td></td><td></td></tr> <tr><td>4</td><td>CHLL-SD- 40-3'-4'</td><td></td><td>1032</td><td></td><td></td></tr> <tr><td>5</td><td>CHLL-SD- 41-0"-6"</td><td></td><td>1118</td><td></td><td></td></tr> <tr><td>6</td><td>CHLL-SD- 41-1'-3'</td><td></td><td>1121</td><td></td><td></td></tr> <tr><td>7</td><td>CHLL-SD- 41-1'-3' dup</td><td></td><td>1121</td><td></td><td></td></tr> <tr><td>8</td><td>CHLL-SD- 42-0"-6"</td><td></td><td>1205</td><td></td><td></td></tr> <tr><td>9</td><td>CHLL-SD- 42-1'-3'</td><td></td><td>1208</td><td></td><td></td></tr> <tr><td>10</td><td>CHLL-SD- 42-3'-3.7'</td><td></td><td>1211</td><td></td><td></td></tr> </tbody> </table>						Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments	1	CHLL-SD- 19-1'-2.4'	7/10/14	923			2	CHLL-SD- 40-0"-6"		1026			3	CHLL-SD- 40-1'-3'		1029			4	CHLL-SD- 40-3'-4'		1032			5	CHLL-SD- 41-0"-6"		1118			6	CHLL-SD- 41-1'-3'		1121			7	CHLL-SD- 41-1'-3' dup		1121			8	CHLL-SD- 42-0"-6"		1205			9	CHLL-SD- 42-1'-3'		1208			10	CHLL-SD- 42-3'-3.7'		1211		
Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments																																																																		
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9	CHLL-SD- 42-1'-3'		1208																																																																				
10	CHLL-SD- 42-3'-3.7'		1211																																																																				
ORGANIC CHEMISTRY		METALS CHEMISTRY PACKAGES		MS - TOTAL METALS	GENERAL CHEMISTRY																																																																		
VOA - Volatile Organic Acidic Volatiles - Full List BTEX/MTBE/TMB only Chlorinated only GRO 1,4 Dioxane		OpMemo2 - Total (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn) Michigan10 - Total (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)		Silver - Ag Aluminum - Al Arsenic - As Barium - Ba Beryllium - Be Cadmium - Cd Cobalt - Co Chromium - Cr Copper - Cu Iron - Fe Mercury - Hg Lithium - Li Manganese - Mn Molybdenum - Mo Nickel - Ni Lead - Pb Antimony - Sb Selenium - Se Strontium - Sr Titanium - Ti Thallium - Tl Vanadium - V Zinc - Zn Calcium - Ca Potassium - K Magnesium - Mg Sodium - Na	GS - General Chemistry Total Cyanide - CN Available Cyanide - CN Chem Oxyg Dem - COD Total Org Carbon - TOC Kjeldahl Nitrogen - KN Total Phosphorus - TP																																																																		
OS - Pesticides, PCBs Pesticides & PCBs Pesticides only PCBs only Toxaphene					<i>Added per D. Liebad 7/15/14</i>																																																																		
BNA - Base Neutral Acids BNAs PNAs only BNs only																																																																							
Organic Specialty Requests Library search - Volatiles Library search - SemiVols Finger Print DRO / ORO																																																																							

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature: Aaron Berndt	Amy Keranen MDEQ Amy Keranen	7/12/14 1400
	Print Name & Org. Signature: TADS 7.14.14	Melinda Smith Melinda Smith	7/15/14 1320
	Print Name & Org. Signature: Nellie 129 5/11		



3/3

Analysis Request Sheet

Lab Work Order Number		Project Name					
146775		Abandoned Mining Waste- Torch Lake PCB		SOIL/SEDIMENT			
Site Code/Project Number		AY	CC Email 1	Project TAT Days		Sample Collector	
31000098		2013	pincumbe@michigan.gov			Aaron Berndt	
Dept-Division-District		Index	CC Email 2	Project Due Date		Sample Collector Phone	
RRD		44251	l.binkley@westonsolutions.com			15173356419	
State Project Manager		PCA	CC Email 3	Accept Analysis hold time codes		Contract Firm	
Amy Keranen & Jeff Pincumbe		30872	shreyb@michigan.gov			Weston Solutions	
State Project Manager Email		Project	Overflow Lab Choice 1			Contract Firm Primary Contact	
keranena@michigan.gov		456990				1906-523-5457	
State Project Manager Phone		Phase	Overflow Lab Choice 2			Primary Contact Phone	
906-337-0389		00				19063370389	
Lab Use Only	Field Sample Identification		Collection Date	Collection Time	Container Count	Comments	
1	Z1	CHLL-SD07- 0"-6"	7/12/14	1337			
2	Z2	CHLL- SD07- 1'-3'	7	1340			
3							
4							
5							
6							
7							
8							
9							
10							
ORGANIC CHEMISTRY		METALS CHEMISTRY PACKAGES		MS - TOTAL METALS		GENERAL CHEMISTRY	
VOA - Volatile Organic Acidic		OpMemo2 - Total (Sb,As,Ba,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)		Silver - Ag Aluminum - Al Arsenic - As Barium - Ba Beryllium - Be Cadmium - Cd Cobalt - Co Chromium - Cr Copper - Cu Iron - Fe Mercury - Hg Lithium - Li Manganese - Mn Molybdenum - Mo Nickel - Ni Lead - Pb Antimony - Sb Selenium - Se Strontium - Sr Titanium - Ti Thallium - Tl Vanadium - V Zinc - Zn Calcium - Ca Potassium - K Magnesium - Mg Sodium - Na		GS - General Chemistry Total Cyanide - CN Available Cyanide - CN Chem Org Dem - COD Total Org Carbon - TOC Kjeldahl Nitrogen - KN Total Phosphorus - TP	
VOCs - Full List		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	
BTEX/TMB/TMB only		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	
Chlorinated only		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	
GRO		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	
1,4 Dioxane		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	
OS - Pesticides, PCBs		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	
Pesticides & PCBs		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	
Pesticides only		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	
PCBs only		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	
Toxaphene		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	
BNA - Base Neutral Acids		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	
BNAs		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	
PNAs only		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	
BNs only		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	
Organic Specialty Requests		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	
Library search - Volatiles		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	
Library search - SemiVols		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	
Finger Print		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	
DRO / ORO		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	

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature:	Aaron Berndt DSD Aaron Berndt	7/12/14
	Print Name & Org. Signature:	UPS 7.14.14 Melissa Smith J. L. Smith	7/15/14 1320
	Print Name & Org. Signature:		



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 489090
TEL: (517) 335-98000
FAX: (517) 335-96000

08 August 2014

Work Order: 1407176O

Price: \$2,565.00O

Jeff PincumbeO
MDEQ-RRD-LANSINGO
525 W. Allegan StreetO
Lansing, MI 48909O

RE: ABANDONED MINING WASTE-TORCH LAKE PCBO

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

Sincerely,O

George KrisztianO
Laboratory DirectorO



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

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

Project:bABANDONED MINING WASTE-TORCH LAKE PCBb

Site Code:b31000098b

Project Manager:bJeff Pincumbeb

Reported:
08/08/2014

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampled p	Date Receivedp	Qualifierp
CHLL-SD-52-3'-4'b	1407176-01b	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD-30-0"-6"b	1407176-02b	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD-30-1'-3'b	1407176-03b	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD-30-1'-3' DUPb	1407176-04b	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD29-0"-6"b	1407176-05b	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD29-1'-2.3'b	1407176-06b	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD28-0"-6"b	1407176-07	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD28-1'-2'b	1407176-08b	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD21-0"-6"b	1407176-09b	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD23-0"-6"b	1407176-10b	Soil/Sedimentb	07/10/2014b	07/15/2014b	
CHLL-SD49-1'-3'b	1407176-11b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD49-3'-4.5'b	1407176-12b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD49-3'-4.5' DUPb	1407176-13b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD67-1'-3'b	1407176-14b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD67-1'-3' DUPb	1407176-15b	Soil/Sedimentb	07/08/2014b	07/15/2014b	
CHLL-SD69-0"-6"b	1407176-16b	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD69-1'-2.5'b	1407176-17	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD52-0"-6"b	1407176-18b	Soil/Sedimentb	07/09/2014b	07/15/2014b	
CHLL-SD52-1'-3'b	1407176-19b	Soil/Sedimentb	07/09/2014b	07/15/2014b	

Notes and Definitions p

- Y20b Reporting Limits (RL) raised due to matrix.b
JAb Result is estimated due to multiple Aroclors present.b
A07 Result(s) and reporting limit(s) are estimated due to poor precision.b
NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb
dry Sample results reported on a dry weight basisb



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-52-3'-4'p

Lab ID: 1407176-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11104-28-2b	Aroclor 1221	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
12672-29-6b	Aroclor 1248	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11096-82-5b	Aroclor 1260	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
37324-23-5b	Aroclor 1262	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
11100-14-4b	Aroclor 1268	NDb	330b	ug/kg dryb	1b	07/27/14b	B4G2207	8081/8082b	
Surrogate: Decachlorobiphenyl-		85.8 %-	30-150-		07/27/14-	B4G2207	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		79.5 %-	30-150-		07/27/14-	B4G2207	8081/8082-		
Inorganics-General Chemistryp									
TSb	% Total Solids	60.3p	0.1b	%b	1b	07/16/14b	B4G1616b	2540 Bb	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-30-0"-6"p

Lab ID: 1407176-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		81.7 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		73.0 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	56.2p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD-30-1'-3'p

Lab ID: 1407176-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	310b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		89.9 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		84.8 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	64.1p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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P.O. Box 302700
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TEL: (517) 335-98000
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Client ID: CHLL-SD-30-1'-3' DUPp
Lab ID: 1407176-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	300b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		80.9 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.0 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	65.7p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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Client ID: CHLL-SD29-0"-6"p

Lab ID: 1407176-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		73.5 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		63.8 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	77.0p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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Client ID: CHLL-SD29-1'-2.3'p

Lab ID: 1407176-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	270b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		79.2 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		72.4 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	73.3p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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TEL: (517) 335-9800O
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Client ID: CHLL-SD28-0"-6"'p

Lab ID: 1407176-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	360b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		86.3 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		79.6 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	55.3p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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Client ID: CHLL-SD28-1'-2'p

Lab ID: 1407176-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	250b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		87.5 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		78.5 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	80.2p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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Client ID: CHLL-SD21-0"-6"p
Lab ID: 1407176-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	260b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		71.9 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		64.4 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	77.5p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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Client ID: CHLL-SD23-0"-6"p
Lab ID: 1407176-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	320b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		82.1 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		77.2 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	62.1p	0.1b	%b	1b	07/16/14b	B4G1616b		2540 Bb	



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Client ID: CHLL-SD49-1'-3'p

Lab ID: 1407176-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	340b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		88.1 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		84.2 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	58.3p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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Client ID: CHLL-SD49-3'-4.5'p

Lab ID: 1407176-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	440b	ug/kg dryb	1b	07/27/14b	B4G2207		8081/8082b	
Surrogate: Decachlorobiphenyl-		79.7 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		75.0 %-	30-150-		07/27/14-	B4G2207		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	45.4p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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Client ID: CHLL-SD49-3'-4.5' DUPp
Lab ID: 1407176-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	420b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		81.8 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		70.0 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	47.9p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD67-1'-3'p

Lab ID: 1407176-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	270b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		69.9 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		67.3 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	73.1p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-9800O
FAX: (517) 335-9600O

Client ID: CHLL-SD67-1'-3' DUPp
Lab ID: 1407176-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	280b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		71.6 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		64.0 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	72.4p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD69-0"-6"p

Lab ID: 1407176-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		77.5 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		69.8 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	51.1p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD69-1'-2.5'p

Lab ID: 1407176-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	340b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		77.5 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		70.0 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	58.7p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



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Client ID: CHLL-SD52-0"-6"p

Lab ID: 1407176-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016b	NDb	2500b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
11104-28-2b	Aroclor 1221b	NDb	2500b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
11141-16-5b	Aroclor 1232b	NDb	2500b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
53469-21-9b	Aroclor 1242p	2500p	430b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		JAb
12672-29-6b	Aroclor 1248b	NDb	2500b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
11097-69-1b	Aroclor 1254p	850p	430b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		JAb
11096-82-5b	Aroclor 1260b	NDb	430b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
37324-23-5b	Aroclor 1262b	NDb	430b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
11100-14-4b	Aroclor 1268b	NDb	430b	ug/kg dryb	1b	08/05/14b	B4G2916b	8081/8082b		
Surrogate: Decachlorobiphenyl-		68.0 %-	30-150-		08/05/14-	B4G2916b	8081/8082-			
Surrogate: Tetrachloro-m-xylene-		61.1 %-	30-150-		08/05/14-	B4G2916b	8081/8082-			
Inorganics-General Chemistryp										
TSb	% Total Solidsp	46.6p	0.1b	%b	1b	07/16/14b	B4G1617	2540 Bb		



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FAX: (517) 335-96000

Client ID: CHLL-SD52-1'-3'p

Lab ID: 1407176-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	390b	ug/kg dryb	1b	08/05/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		80.7 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		69.7 %-	30-150-		08/05/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solids	50.9p	0.1b	%b	1b	07/16/14b	B4G1617		2540 Bb	



Analysis Request Sheet

11/2

Lab Work Order Number		Project Name		Matrix																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Site Code/Project Number 31000098		AV 13	CC Email 1 oincumbel@michigan.gov	Project TAT Days	Sample Collector Aaron Berndt																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Dept-Division-District RRD		Index 44251	CC Email 2 l.binkley@michigan.gov	Project Due Date	Sample Collector Phone 15173356419																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
State Project Manager Amy Keranen & Jeff Pincumber		PCA 30872	CC Email 3 shireyb@michigan.gov	Accept Analysis hold time codes	Contract Firm Weston Solutions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
State Project Manager Email keranena@michigan.gov		Project 456990	Overflow Lab Choke 1		Contract Firm Primary Contact 19065235457																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
State Project Manager Phone 9063370389		Phase 00	Overflow Lab Choke 2		Primary Contact Phone 19063370389																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Lab Use Only</th> <th>Field Sample Identification</th> <th>Collection Date</th> <th>Collection Time</th> <th>Container Count</th> <th>Comments</th> </tr> </thead> <tbody> <tr><td>1</td><td>01 CHLL-SD-52-3'-4'</td><td>7/9/2014</td><td>10:16</td><td></td><td></td></tr> <tr><td>2</td><td>02 CHLL-SD-30-0"-6"</td><td>7/9/2014</td><td>11:26</td><td></td><td></td></tr> <tr><td>3</td><td>03 CHLL-SD-30-1'-3'</td><td>7/9/2014</td><td>11:30</td><td></td><td></td></tr> <tr><td>4</td><td>04 CHLL-SD-30-1'-3' DUP</td><td>7/9/2014</td><td>11:31</td><td></td><td>11:30</td></tr> <tr><td>5</td><td>05 CHLL-SD 29-0"-6"</td><td>7/10/14</td><td>1040</td><td></td><td></td></tr> <tr><td>6</td><td>06 CHLL SD 29 - 1' - 2.3"</td><td>7/10/14</td><td>1044</td><td></td><td></td></tr> <tr><td>7</td><td>07 CHLL SD 28 - 0" - 6"</td><td></td><td>1234</td><td></td><td></td></tr> <tr><td>8</td><td>08 CHLL SD 28 1' - 2'</td><td></td><td>1237</td><td></td><td></td></tr> <tr><td>9</td><td>09 CHLL SD 21 - 0" - 6"</td><td></td><td>1506</td><td></td><td></td></tr> <tr><td>10</td><td>0 CHLL SD 23 - 0" - 6"</td><td></td><td>1533</td><td></td><td></td></tr> </tbody> </table>						Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments	1	01 CHLL-SD-52-3'-4'	7/9/2014	10:16			2	02 CHLL-SD-30-0"-6"	7/9/2014	11:26			3	03 CHLL-SD-30-1'-3'	7/9/2014	11:30			4	04 CHLL-SD-30-1'-3' DUP	7/9/2014	11:31		11:30	5	05 CHLL-SD 29-0"-6"	7/10/14	1040			6	06 CHLL SD 29 - 1' - 2.3"	7/10/14	1044			7	07 CHLL SD 28 - 0" - 6"		1234			8	08 CHLL SD 28 1' - 2'		1237			9	09 CHLL SD 21 - 0" - 6"		1506			10	0 CHLL SD 23 - 0" - 6"		1533																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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5	05 CHLL-SD 29-0"-6"	7/10/14	1040																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Na</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </tbody> </table>						ORGANIC CHEMISTRY		METALS CHEMISTRY PACKAGES										MS - TOTAL METALS										GENERAL CHEMISTRY										VOA - Volatile Organic Acidic		Opl/Item2 - Total	1	2	3	4	5	6	7	8	9	10	Silver - Ag	1	2	3	4	5	6	7	8	9	10	GS - General Chemistry	1	2	3	4	5	6	7	8	9	10	Volatiles - Full List	1 2 3 4 5 6 7 8 9 10	[Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Tl,Se,Ag,Tl,V,Zn]	1	2	3	4	5	6	7	8	9	10	Aluminum - Al	1	2	3	4	5	6	7	8	9	10	Total Cyanide - CN	1	2	3	4	5	6	7	8	9	10	BTX/MTBE/TMG only	1 2 3 4 5 6 7 8 9 10	Michigan10 - Total	1	2	3	4	5	6	7	8	9	10	Arsenic - As	1	2	3	4	5	6	7	8	9	10	Available Cyanide - CN	1	2	3	4	5	6	7	8	9	10	Chlorinated only	1 2 3 4 5 6 7 8 9 10	[As,Br,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn]	1	2	3	4	5	6	7	8	9	10	Barium - Ba	1	2	3	4	5	6	7	8	9	10	Chem Oxid Dem - COD	1	2	3	4	5	6	7	8	9	10	GRO	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Beryllium - Be	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		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	OS - Pesticides, PCBs	1 2 3 4 5 6 7 8 9 10		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	Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Chromium - Cr	1	2	3	4	5	6	7	8	9	10	Pesticides only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Copper - Cu	1	2	3	4	5	6	7	8	9	10	PCBs only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Iron - Fe	1	2	3	4	5	6	7	8	9	10	Toxaphene	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Mercury - Hg	1	2	3	4	5	6	7	8	9	10	BNA - Base Neutral Acids			1	2	3	4	5	6	7	8	9	10	Lithium - Li	1	2	3	4	5	6	7	8	9	10	BNA's	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Manganese - Mn	1	2	3	4	5	6	7	8	9	10	PNAs only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10	BNS only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Nickel - Ni	1	2	3	4	5	6	7	8	9	10	Organic Specialty Requests			1	2	3	4	5	6	7	8	9	10	Lead - Pb	1	2	3	4	5	6	7	8	9	10	Library search - Volatiles	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Antimony - Sb	1	2	3	4	5	6	7	8	9	10	Library search - SemiVols	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Selenium - Se	1	2	3	4	5	6	7	8	9	10	Finger Print	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Strontium - Sr	1	2	3	4	5	6	7	8	9	10	DRO / ORO	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Titanium - Ti	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Thallium - Tl	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Vanadium - V	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Zinc - Zn	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Calcium - Ca	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Potassium - K	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Magnesium - Mg	1	2	3	4	5	6	7	8	9	10				1	2	3	4	5	6	7	8	9	10	Sodium - Na	1	2	3	4	5	6	7	8	9	10
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Volatiles - Full List	1 2 3 4 5 6 7 8 9 10	[Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Tl,Se,Ag,Tl,V,Zn]	1	2	3	4	5	6	7	8	9	10	Aluminum - Al	1	2	3	4	5	6	7	8	9	10	Total Cyanide - CN	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
BTX/MTBE/TMG only	1 2 3 4 5 6 7 8 9 10	Michigan10 - Total	1	2	3	4	5	6	7	8	9	10	Arsenic - As	1	2	3	4	5	6	7	8	9	10	Available Cyanide - CN	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Chlorinated only	1 2 3 4 5 6 7 8 9 10	[As,Br,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn]	1	2	3	4	5	6	7	8	9	10	Barium - Ba	1	2	3	4	5	6	7	8	9	10	Chem Oxid Dem - COD	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
GRO	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Beryllium - Be	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		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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
OS - Pesticides, PCBs	1 2 3 4 5 6 7 8 9 10		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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Chromium - Cr	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Pesticides only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Copper - Cu	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
PCBs only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Iron - Fe	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Toxaphene	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Mercury - Hg	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
BNA - Base Neutral Acids			1	2	3	4	5	6	7	8	9	10	Lithium - Li	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
BNA's	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Manganese - Mn	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
PNAs only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Molybdenum - Mo	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
BNS only	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Nickel - Ni	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Organic Specialty Requests			1	2	3	4	5	6	7	8	9	10	Lead - Pb	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Antimony - Sb	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Selenium - Se	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Finger Print	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Strontium - Sr	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
DRO / ORO	1 2 3 4 5 6 7 8 9 10		1	2	3	4	5	6	7	8	9	10	Titanium - Ti	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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			1	2	3	4	5	6	7	8	9	10	Vanadium - V	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			1	2	3	4	5	6	7	8	9	10	Zinc - Zn	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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			1	2	3	4	5	6	7	8	9	10	Magnesium - Mg	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			1	2	3	4	5	6	7	8	9	10	Sodium - Na	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature: Print Name & Org. Signature: Print Name & Org. Signature: Print Name & Org. Signature: 	Amy Keranen MDEQ Ogura Melissa J. Schaefer J. Schaefer	29.7/10/14
		7/15/14 1321	

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

ENVIRONMENTAL LABORATORY - ANALYSIS REQUEST SHEET

Lab Work Order Number

Project Name

1407176

Abandoned Mining Waste- Torch Lake PCB

Matrix

SOIL/SEDIMENT

Site Code/Project Number

31000098

AY

13 14

Index

CC Email 1 to send additional reports to

shireyb pincumbej

Project TAT Days

Sample Collector

Aaron Berndt

Dept-Division-District

RRD-PSS-GSU

PCA

4425i

CC Email 2 to send additional reports to

keranen@michigan.gov

Project Due Date

Sample Collector Phone

517-335-6419

State Project Manager

Jeff Pincumbe / Keranen

State Project Manager Email

pincumbej

Project

456970

Overflow Lab Choice 1

Accept Analysis hold time codes: Yes/No

State Project Manager Phone

517-335-6418

Phase

DD

Overflow Lab Choice 2

Contract Firm

Western Solutions

Contract Firm Primary Contact

19065235457

Primary Contact Phone

19063370389

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHLL-SD 49 - 1' - 3'	7/8/14	1433		
2	CHLL-SD 49 - 3' - 4.5'		1436		
3	CHLL-SD 49 - 3' - 4.5' DUP		1436		
4	CHLL-SD 67 - 0" - 6"		1615		Jar Broke Upon arrival
5	CHLL-SD 67 - 1' - 3'		1618		
6	CHLL-SD 67 - 1' - 3' DUP		1619		
7	CHLL-SD 69 - 0" - 6"	7/9/14	856		
8	CHLL-SD 69 - 1' - 2.5'		859		
9	CHLL-SD 52 - 0" - 6"		1009		
10	CHLL-SD 52 - 1' - 3'		1012		

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Aaron Berndt - MDEQ Signature: Aaron J. Berndt	Print Name & Org. Amy Keranen MDEQ Signature: Amy Keranen	28-29/14
	Print Name & Org. UPS 7-14-14 Signature: 141106129577	Print Name & Org. Jill Lissner Signature: Jill Lissner	7/15/14 1321
	Print Name & Org. Signature:		



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 489090
TEL: (517) 335-98000
FAX: (517) 335-96000

12 August 2014

Work Order: 1407213O

Price: \$2,165.00O

Jeff PincumbeO
MDEQ-RRD-LANSINGO
525 W. Allegan StreetO
Lansing, MI 48909O
RE: ABANDONED MINING WASTE-TORCH LAKE PCBO

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

Sincerely,O

George KrisztianO
Laboratory DirectorO



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

MDEQ-RRD-LANSINGb
525 W. Allegan Streetb
Lansing MI, 48909b

Project:bABANDONED MINING WASTE-TORCH LAKE PCBb
Site Code:b31000098b
Project Manager:bJeff Pincumbeb

Reported:p
08/12/2014b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampled p	Date Receivedp	Qualifierp
CHLL-SD64 0-6"b	1407213-01b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD64 1'-3'b	1407213-02b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD64 3-3.4'b	1407213-03b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD64 1'-3' DUPb	1407213-04b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD63 0"-6"b	1407213-05b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD63 1'-3'b	1407213-06b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD61-0"-6"b	1407213-07	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD53 0-6"b	1407213-08b	Soil/Sedimentb	07/15/2014b	07/17/2014b	
CHLL-SD53 1-2.3'b	1407213-09b	Soil/Sedimentb	07/15/2014b	07/17/2014b	

Notes and Definitions p

- Y21b Reporting Limits (RL) raised due to matrix interference.b
Y20b Reporting Limits (RL) raised due to matrix.b
X3b Spike recovery is not applicable due to large target analyte concentration in the source sample.b
Tb Reported value is less than the reporting limit (RL). Result is estimated.b
JAb Result is estimated due to multiple Aroclors present.b
A07 Result(s) and reporting limit(s) are estimated due to poor precision.b
A03b Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.b
NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb
dry Sample results reported on a dry weight basisb



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD64 0-6"p

Lab ID: 1407213-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp See note Y20p									
12674-11-2b	Aroclor 1016b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
53469-21-9b	Aroclor 1242p	310p	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	JA, Tb
12672-29-6b	Aroclor 1248b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11097-69-1b	Aroclor 1254p	370p	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	JA, Tb
11096-82-5b	Aroclor 1260b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	500b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
Surrogate: Decachlorobiphenyl-		73.3 %-	30-150-		08/06/14-	B4G2916b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		64.5 %-	30-150-		08/06/14-	B4G2916b	8081/8082-		
Inorganics-General Chemistryp									
TSb	% Total Solidsp	39.9p	0.1b	%b	1b	07/17/14b	B4G1715b	2540 Bb	



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD64 1'-3'p
Lab ID: 1407213-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	300b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		66.3 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		59.0 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solidsp	65.6p	0.1b	%b	1b	07/17/14b	B4G1715b		2540 Bb	



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P.O. Box 302700
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TEL: (517) 335-9800O
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Client ID: CHLL-SD64 3-3.4'p

Lab ID: 1407213-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	350b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		85.5 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		73.4 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solidsp	56.4p	0.1b	%b	1b	07/17/14b	B4G1715b		2540 Bb	



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Client ID: CHLL-SD64 1'-3' DUPp
Lab ID: 1407213-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	290b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		74.8 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		65.8 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solidsp	69.5p	0.1b	%b	1b	07/17/14b	B4G1715b		2540 Bb	



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Client ID: CHLL-SD63 0"-6"p

Lab ID: 1407213-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp See note Y20p									
12674-11-2b	Aroclor 1016b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
53469-21-9b	Aroclor 1242p	620p	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	JA, Tb
12672-29-6b	Aroclor 1248b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11097-69-1b	Aroclor 1254p	810p	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	750b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
Surrogate: Decachlorobiphenyl-		85.8 %-	30-150-		08/06/14-	B4G2916b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		82.1 %-	30-150-		08/06/14-	B4G2916b	8081/8082-		
Inorganics-General Chemistryp									
TSb	% Total Solidsp	26.6p	0.1b	%b	1b	07/17/14b	B4G1715b	2540 Bb	



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Client ID: CHLL-SD63 1'-3'p
Lab ID: 1407213-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclors										
12674-11-2b	Aroclor 1016	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	310b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		72.2 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		62.9 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistry										
TSb	% Total Solidsp	64.5p	0.1b	%b	1b	07/17/14b	B4G1715b		2540 Bb	



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Client ID: CHLL-SD61-0"-6"p

Lab ID: 1407213-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	260b	ug/kg dryb	1b	08/06/14b	B4G2916b		8081/8082b	
Surrogate: Decachlorobiphenyl-		79.9 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		68.9 %-	30-150-		08/06/14-	B4G2916b		8081/8082-		
Inorganics-General Chemistryp										
TSb	% Total Solidsp	77.9p	0.1b	%b	1b	07/17/14b	B4G1715b		2540 Bb	



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Client ID: CHLL-SD53 0-6"p

Lab ID: 1407213-08p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp									
91-57-6b	2-Methylnaphthalene	NDb	2400b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
83-32-9b	Acenaphthene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
208-96-8b	Acenaphthylene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
120-12-7	Anthracene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
56-55-3b	Benz[a]anthracene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1900b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1900b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1900b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1900b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
218-01-9b	Chrysene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1900b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
206-44-0b	Fluoranthene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
86-73-7	Fluorene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1900b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
91-20-3b	Naphthalene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
85-01-8b	Phenanthrene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
129-00-0b	Pyrene	NDb	960b	ug/kg dryb	1b	08/04/14b	B4G2320b	8270b	
Surrogate: 2-Fluorobiphenyl-		73.6 %-	32.9-115-		08/04/14-	B4G2320b	8270-		
Surrogate: Nitrobenzene-d5-		63.6 %-	31.8-115-		08/04/14-	B4G2320b	8270-		
Surrogate: p-Terphenyl-d14-		61.2 %-	38.5-115-		08/04/14-	B4G2320b	8270-		
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	190b	ug/kg dryb	1b	08/06/14b	B4G2916b	8081/8082b	
Surrogate: Decachlorobiphenyl-		83.3 %-	30-150-		08/06/14-	B4G2916b	8081/8082-		
Surrogate: Tetrachloro-m-xylene-		63.5 %-	30-150-		08/06/14-	B4G2916b	8081/8082-		



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Client ID: CHLL-SD53 0-6"p

Lab ID: 1407213-08p

CAS # ^b	Analyte ^b	Result ^b	RL ^b	Units ^b	Dilution ^b	Analyzed ^b Date ^b	QC Batch ^b	Method ^b	Qualifier ^b
Inorganics-General Chemistry^b									
TSb	% Total Solidsp	52.3p	0.1b	%b	1b	07/17/14b	B4G1715b	2540 Bb	
57-12-5b	Total Cyanidep	0.23p	0.19b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	
Inorganics-Metals^b									
7429-90-5b	Aluminump	4700p	100b	mg/kg dryb	1000b	08/05/14b	B4H0405b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	08/06/14b	B4H0512b	6020/200.8b	
7440-38-2b	Arsenicp	12p	0.5b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-39-3b	Bariump	62p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-41-7	Berylliump	0.4p	0.2b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-47-3b	Chromiump	11p	2.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-48-4b	Cobaltp	5.7p	0.5b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-50-8b	Copperp	500p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7439-89-6b	Ironp	19000p	5.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6010/200.7	
7439-92-1b	Leadp	19p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7439-96-5b	Manganese ^b	130p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7439-97-6b	Mercuryb	NDb	0.1b	mg/kg dryb	1b	08/06/14b	B4H0511b	7471/245.5b	
7440-02-0b	Nickelp	14p	1.0b	mg/kg dryb	10b	08/07/14b	B4H0522b	6020/200.8b	
7782-49-2b	Seleniump	0.3p	0.2b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-22-4b	Silverp	0.4p	0.1b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-66-6b	Zincp	38p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	



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Client ID: CHLL-SD53 1-2.3'p

Lab ID: 1407213-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb	Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatilesp										
91-57-6b	2-Methylnaphthalene	NDb	2900b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
83-32-9b	Acenaphthene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
208-96-8b	Acenaphthylene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
120-12-7	Anthracene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
56-55-3b	Benz[a]anthracene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
50-32-8b	Benzo[a]pyrene	NDb	2300b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	2300b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	2300b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	2300b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
218-01-9b	Chrysene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	2300b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
206-44-0b	Fluoranthene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
86-73-7	Fluorene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	2300b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
91-20-3b	Naphthalene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
85-01-8b	Phenanthrene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
129-00-0b	Pyrene	NDb	1200b	ug/kg dryb	1b	08/04/14b	B4G2320b		8270b	
Surrogate: 2-Fluorobiphenyl-		76.2 %-	32.9-115-		08/04/14-	B4G2320b		8270-		
Surrogate: Nitrobenzene-d5-		63.1 %-	31.8-115-		08/04/14-	B4G2320b		8270-		
Surrogate: p-Terphenyl-d14-		54.4 %-	38.5-115-		08/04/14-	B4G2320b		8270-		
Organics-PCBs as Aroclorsp										
12674-11-2b	Aroclor 1016	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
11104-28-2b	Aroclor 1221	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
11141-16-5b	Aroclor 1232	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
53469-21-9b	Aroclor 1242	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
12672-29-6b	Aroclor 1248	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
11097-69-1b	Aroclor 1254	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
11096-82-5b	Aroclor 1260	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
37324-23-5b	Aroclor 1262	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
11100-14-4b	Aroclor 1268	NDb	470b	ug/kg dryb	1b	08/06/14b	B4G3110b		8081/8082b	
Surrogate: Decachlorobiphenyl-		81.6 %-	30-150-		08/06/14-	B4G3110b		8081/8082-		
Surrogate: Tetrachloro-m-xylene-		61.0 %-	30-150-		08/06/14-	B4G3110b		8081/8082-		



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORYC

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SD53 1-2.3'p

Lab ID: 1407213-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistryp									
TSb	% Total Solidsp	42.6p	0.1b	%b	1b	07/17/14b	B4G1715b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.23b	mg/kg dryb	1b	07/23/14b	B4G2105b	ASTM D 7511-09b	A03b
Inorganics-Metalsp									
7429-90-5b	Aluminump	6300p	100b	mg/kg dryb	1000b	08/05/14b	B4H0405b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	08/06/14b	B4H0512b	6020/200.8b	
7440-38-2b	Arsenicp	17p	0.5b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-39-3b	Bariump	96p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-41-7	Berylliump	0.5p	0.2b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-43-9b	Cadmiump	0.3p	0.2b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-47-3b	Chromiump	16p	2.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-48-4b	Cobaltp	8.7p	0.5b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-50-8b	Copperp	2400p	100b	mg/kg dryb	1000b	08/05/14b	B4H0405b	6020/200.8b	
7439-89-6b	Ironp	30000p	5.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6010/200.7	
7439-92-1b	Leadp	36p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7439-96-5b	Manganesep	120p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7439-97-6b	Mercuryp	0.1p	0.1b	mg/kg dryb	1b	08/06/14b	B4H0511b	7471/245.5b	
7440-02-0b	Nickelp	21p	1.0b	mg/kg dryb	10b	08/07/14b	B4H0522b	6020/200.8b	
7782-49-2b	Seleniump	0.7p	0.2b	mg/kg dryb	10b	08/06/14b	B4H0405b	6020/200.8b	
7440-22-4b	Silverp	0.7p	0.1b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	
7440-66-6b	Zincp	62p	1.0b	mg/kg dryb	10b	08/05/14b	B4H0405b	6020/200.8b	



Analysis Request Sheet

Lab Work Order Number	Project Name	Abandoned Mining Waste- Torch Lake PCB						Matrix																																																																
1407213								SOIL/SEDIMENT																																																																
Site Code/Project Number 31000098	AY Index PCA	CC Email 1 pincumbe@michigan.gov	Project TAT Days	Sample Collector Aaron Berndt																																																																				
Dept/Division-District RRD	14031 44251	CC Email 2 l.binkley@westonsolutions.com	Project Due Date	Sample Collector Phone 15173356419																																																																				
State Project Manager Amy Keranen & Jeff Pincumbe	307200 072	CC Email 3 shireyb@michigan.gov	Accept Analysis hold time codes	Contract Firm Weston Solutions																																																																				
State Project Manager Email keranena@michigan.gov	4S6990	Overflow Lab Choice 1		Contract Firm Primary Contact 1906-523-5457																																																																				
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2		Primary Contact Phone 19063370389																																																																				
<table border="1"> <thead> <tr> <th>Lab Use Only</th> <th>Field Sample Identification</th> <th>Collection Date</th> <th>Collection Time</th> <th>Container Count</th> <th>Comments</th> </tr> </thead> <tbody> <tr><td>1</td><td>CHLL-SD64 0"-6"</td><td>7/15/14</td><td>838</td><td></td><td></td></tr> <tr><td>2</td><td>CHLL-SD64 1"-3'</td><td>7/15/14</td><td>841</td><td></td><td></td></tr> <tr><td>3</td><td>CHLL-SD64 3-3.4'</td><td>7/15/14</td><td>844</td><td></td><td></td></tr> <tr><td>4</td><td>CHLL-SD64 1"-3' DUP</td><td></td><td>841</td><td></td><td></td></tr> <tr><td>5</td><td>CHLL-SD63 0"-6"</td><td></td><td>953</td><td></td><td></td></tr> <tr><td>6</td><td>CHLL-SD63 1"-3'</td><td></td><td>956</td><td></td><td></td></tr> <tr><td>7</td><td>CHLL-SD61 -0"-6"</td><td></td><td>1110</td><td></td><td></td></tr> <tr><td>8</td><td>CHLL-SD53 0"-6"</td><td></td><td>1227</td><td></td><td></td></tr> <tr><td>9</td><td>CHLL-SD53 1"-2.3'</td><td></td><td>1230</td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>						Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments	1	CHLL-SD64 0"-6"	7/15/14	838			2	CHLL-SD64 1"-3'	7/15/14	841			3	CHLL-SD64 3-3.4'	7/15/14	844			4	CHLL-SD64 1"-3' DUP		841			5	CHLL-SD63 0"-6"		953			6	CHLL-SD63 1"-3'		956			7	CHLL-SD61 -0"-6"		1110			8	CHLL-SD53 0"-6"		1227			9	CHLL-SD53 1"-2.3'		1230			10						
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ORGANIC CHEMISTRY VOA - Volatile Organic Acidic Volstiles - Full List BTEX/MTBE/TMB only Chlorinated only GRO 1,4 Dioxane		METALS CHEMISTRY PACKAGES OptMemo2 - Total Michigan10 - Total (As, Ba, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn)		MS - TOTAL METALS Silver - Ag Aluminum - Al Arsenic - As Barium - Ba Beryllium - Be Cadmium - Cd Cobalt - Co Chromium - Cr Copper - Cu Iron - Fe Mercury - Hg Lithium - Li Manganese - Mn Molybdenum - Mo Nickel - Ni Lead - Pb Antimony - Sb Selenium - Se Strontium - Sr Titanium - Ti Thallium - Tl Vanadium - V Zinc - Zn Calcium - Ca Potassium - K Magnesium - Mg Sodium - Na		GENERAL CHEMISTRY GS - General Chemistry Total Cyanide - CN Available Cyanide - CN Chem Oxid Dem - COD Total Org Carbon - TOC Kjeldahl Nitrogen - KN Total Phosphorus - TP																																																																		
OS - Pesticides, PCBs Pesticides & PCBs Pesticides only PCBs only Toxaphene																																																																								
BNA - Base Neutral Acids BNAs PNAs only BNs only																																																																								
Organic Specialty Requests Library search - Volatiles Library search - SemiVols Finger Print DRO / ORO																																																																								

Relinquished by	Received By	Date / Time
Print Name & Org.	Aaron Berndt MDEQ	7/15/14 1300
Signature:	Aaron Berndt	
Print Name & Org.	Daniel Peabody MDEQ	
Signature:	Dan Peabody	
Print Name & Org.	Rm 100	
Signature:	Rm 100	
Print Name & Org.	Melissa Smith	
Signature:	Melissa Smith	7/17/14 940