



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

03 June 2015

Work Order: 15051410

Price: \$784.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/03/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-GW68-7-12b	1505141-01b	Waterb	05/12/2015b	05/15/2015b	
CHLL-GW69-9-14b	1505141-02b	Waterb	05/12/2015b	05/15/2015b	

Notes and Definitions p

Xb Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200 °C. 2-Methylnaphthalene & naphthalene b have boiling points above 200 °C and are better suited to analysis by methods 8270 & 625 as semivolatile organics.b

KRb Reporting limit(s) raised due to low sample volume submitted.b

A01b Result(s) and reporting limit(s) are estimated due to low surrogate recovery.b

NDb Indicates compound analyzed for but not detected b

RLb Reporting Limit b

NAb Not Applicable b



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Client ID: CHLL-GW68-7-12'p

Lab ID: 1505141-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-18-4	1,2,3-Trichloropropane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
526-73-8b	1,2,3-Trimethylbenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
120-82-1b	1,2,4-Trichlorobenzene b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-63-6b	1,2,4-Trimethylbenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-93-4	1,2-Dibromoethane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-50-1b	1,2-Dichlorobenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-06-2b	1,2-Dichloroethane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-87-5b	1,2-Dichloropropane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-67-8b	1,3,5-Trimethylbenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
541-73-1b	1,3-Dichlorobenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-46-7b	1,4-Dichlorobenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
591-78-6b	2-Hexanone b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-57-6b	2-Methylnaphthalene b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	20b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-13-1b	Acrylonitrile b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-43-2b	Benzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-86-1b	Bromobenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-97-5b	Bromochloromethane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-27-4	Bromodichloromethane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-25-2b	Bromoform b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-83-9b	Bromomethane b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-15-0b	Carbon disulfide b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
56-23-5b	Carbon tetrachloride b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-90-7b	Chlorobenzene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-00-3b	Chloroethane b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-66-3b	Chloroform b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-87-3b	Chloromethane b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-59-2b	cis-1,2-Dichloroethylene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-01-5b	cis-1,3-Dichloropropylene b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-82-7b	Cyclohexane b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
124-48-1b	Dibromochloromethane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	



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CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
60-29-7b	Diethyl etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-41-4	Ethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-72-1b	Hexachloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	2.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-88-4	Methyl iodideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-09-2b	Methylene chlorideb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-20-3b	Naphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-47-6b	o-Xyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-42-5b	Styreneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	50b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
994-05-8b	tertiaryAmylmethyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-88-3b	Tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-01-6b	Trichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-01-4	Vinyl chlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
Surrogate: Bromofluorobenzene-			97.3 %-	85-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Dibromofluoromethane-			103 %-	82.7-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Toluene-d8-			102 %-	85-115-		05/21/15-	B5E2126b	8260-	



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Lab ID: 1505141-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
83-32-9b	Acenaphtheneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
208-96-8b	Acenaphthyleneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
120-12-7b	Anthraceneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
218-01-9b	Chryseneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
206-44-0b	Fluorantheneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
86-73-7b	Fluoreneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
91-20-3b	Naphthaleneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
85-01-8b	Phenanthreneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
129-00-0b	Pyreneb	NDb	1.0b	ug/Lb	1b	05/20/15b	B5E1514	8270b	
Surrogate: 2-Fluorobiphenyl-			48.4 %-	24.1-115-		05/20/15-	B5E1514	8270-	
Surrogate: Nitrobenzene-d5-			49.8 %-	17.8-115-		05/20/15-	B5E1514	8270-	
Surrogate: p-Terphenyl-d14-			61.3 %-	41.8-115-		05/20/15-	B5E1514	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
Surrogate: Decachlorobiphenyl-			35.1 %-	30-150-		05/20/15-	B5E1901b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			50.8 %-	30-150-		05/20/15-	B5E1901b	8081/8082-	

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CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
16887-00-6b	Chloridep	20p	1.0b	mg/Lb	1b	05/19/15b	B5E1912b	325.2b	
18785-72-3b	Sulfatep	6p	2b	mg/Lb	1b	05/18/15b	B5E1808b	375.2b	



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Client ID: CHLL-GW69-9-14'p

Lab ID: 1505141-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-18-4	1,2,3-Trichloropropane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-87-5b	1,2-Dichloropropane b	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
591-78-6b	2-Hexanoneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	20b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-13-1b	Acrylonitrileb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-43-2b	Benzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-86-1b	Bromobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-97-5b	Bromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-27-4	Bromodichloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-25-2b	Bromoformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-83-9b	Bromomethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-15-0b	Carbon disulfideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-90-7b	Chlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-00-3b	Chloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-66-3b	Chloroformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-87-3b	Chloromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-82-7b	Cyclohexaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
124-48-1b	Dibromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	



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Client ID: CHLL-GW69-9-14'p

Lab ID: 1505141-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
60-29-7b	Diethyl etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-41-4	Ethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-72-1b	Hexachloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	2.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-88-4	Methyl iodideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-09-2b	Methylene chlorideb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-20-3b	Naphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-47-6b	o-Xyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-42-5b	Styreneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	50b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
994-05-8b	tertiaryAmylmethyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-88-3b	Tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-01-6b	Trichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-01-4	Vinyl chlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
Surrogate: Bromofluorobenzene-			101 %-	85-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Dibromofluoromethane-			103 %-	82.7-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Toluene-d8-			100 %-	85-115-		05/21/15-	B5E2126b	8260-	



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Lab ID: 1505141-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
83-32-9b	Acenaphtheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
208-96-8b	Acenaphthyleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
120-12-7b	Anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
218-01-9b	Chryseneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
206-44-0b	Fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
86-73-7b	Fluoreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
91-20-3b	Naphthaleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
85-01-8b	Phenanthreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
129-00-0b	Pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
Surrogate: 2-Fluorobiphenyl-			43.2 %-		24.1-115-	05/22/15-	B5E1514	8270-	
Surrogate: Nitrobenzene-d5-			41.6 %-		17.8-115-	05/22/15-	B5E1514	8270-	
Surrogate: p-Terphenyl-d14-			69.8 %-		41.8-115-	05/22/15-	B5E1514	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
Surrogate: Decachlorobiphenyl-			50.9 %-		30-150-	05/20/15-	B5E1901b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			41.3 %-		30-150-	05/20/15-	B5E1901b	8081/8082-	



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Client ID: CHLL-GW69-9-14'p

Lab ID: 1505141-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
16887-00-6b	Chloridep	24p	1.0b	mg/Lb	1b	05/19/15b	B5E1912b	325.2b	
18785-72-3b	Sulfatep	11p	2b	mg/Lb	1b	05/18/15b	B5E1808b	375.2b	



Analysis Request Sheet

Lab Work Order Number 1505141	Project Name Abandoned Mining Waste Torch Lake	Matrix 1 of 1 WATER
Site Code/Project Number 31000098	AY 13	CC Email 1 pincumbej
Dept./Division/District DEQ-RRD-Calumet Field Office	Index 44251	CC Email 2 shireyb
State Project Manager Amy Keranen	PCA 30872	CC Email 3 J.BINKLEY@WESTON SOLUTIONS.COM
State Project Manager Email keranena	Project 456990	Overflow Lab Choice 1
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2
		Project TAT Days
		Project Due Date
		Sample Collector Jeff Pincumbe
		Sample Collector 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-GW68-7-12'	5/12/15	1449	2-1L	
2	02 CHLL-GW69-9-14'	5/12/15	1545	3VOA 1-500mL	
3	CHLL-				
4	CHLL-				
5	CHLL-				
6	CHLL-				
7	CHLL-				
8	CHLL-				
9	CHLL-				
10	CHLL-				

ORGANIC CHEMISTRY		MAD - DISSOLVED METALS		MA - TOTAL METALS		GENERAL CHEMISTRY	
VOA - Volatile Organic Acidic	1 2 3 4 5 6 7 8 9 10	Diss - Silver - Ag	1 2 3 4 5 6 7 8 9 10	Silver - Ag	1 2 3 4 5 6 7 8 9 10	GB Total Cyanide - CN	1 2 3 4 5 6 7 8 9 10
Volatiles - Full List	1 2 3 4 5 6 7 8 9 10	Diss - Aluminum - Al	1 2 3 4 5 6 7 8 9 10	Aluminum - Al	1 2 3 4 5 6 7 8 9 10	GB Amenable 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	Diss - Arsenic - As	1 2 3 4 5 6 7 8 9 10	Arsenic - As	1 2 3 4 5 6 7 8 9 10	GCN 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	Diss - Boron - B	1 2 3 4 5 6 7 8 9 10	Boron - B	1 2 3 4 5 6 7 8 9 10	CA Chlorophyll	1 2 3 4 5 6 7 8 9 10
GRO	1 2 3 4 5 6 7 8 9 10	Diss - Barium - Ba	1 2 3 4 5 6 7 8 9 10	Barium - Ba	1 2 3 4 5 6 7 8 9 10	GN Ortho Phosphate - OP	1 2 3 4 5 6 7 8 9 10
1,4 Dioxane	1 2 3 4 5 6 7 8 9 10	Diss - Beryllium - Be	1 2 3 4 5 6 7 8 9 10	Beryllium - Be	1 2 3 4 5 6 7 8 9 10	GN Nitrate - NO ₃	1 2 3 4 5 6 7 8 9 10
METH - Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10	Diss - Cadmium - Cd	1 2 3 4 5 6 7 8 9 10	Cadmium - Cd	1 2 3 4 5 6 7 8 9 10	GN Nitrate - NO ₃ (Calc.)	1 2 3 4 5 6 7 8 9 10
Methane, Ethane, Ethene	1 2 3 4 5 6 7 8 9 10	Diss - Cobalt - Co	1 2 3 4 5 6 7 8 9 10	Cobalt - Co	1 2 3 4 5 6 7 8 9 10	GN Suspended Solids - SS	1 2 3 4 5 6 7 8 9 10
ON - Pesticides, PCBs	1 2 3 4 5 6 7 8 9 10	Diss - Chromium - Cr	1 2 3 4 5 6 7 8 9 10	Chromium - Cr	1 2 3 4 5 6 7 8 9 10	GN Dissolved Solids - TDS	1 2 3 4 5 6 7 8 9 10
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10	Diss - Copper - Cu	1 2 3 4 5 6 7 8 9 10	Copper - Cu	1 2 3 4 5 6 7 8 9 10	MN Diss Solids - TDS (Calc.)	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10	Diss - Iron - Fe	1 2 3 4 5 6 7 8 9 10	Iron - Fe	1 2 3 4 5 6 7 8 9 10	GN Turbidity	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10	Diss - Mercury - Hg	1 2 3 4 5 6 7 8 9 10	Mercury - Hg	1 2 3 4 5 6 7 8 9 10	MN Total Alkalinity	1 2 3 4 5 6 7 8 9 10
Toxaphene	1 2 3 4 5 6 7 8 9 10	Diss - Lithium - Li	1 2 3 4 5 6 7 8 9 10	Lithium - Li	1 2 3 4 5 6 7 8 9 10	MN Bicarb/Carb Alkalinity	1 2 3 4 5 6 7 8 9 10
Chlordane	1 2 3 4 5 6 7 8 9 10	Diss - Manganese - Mn	1 2 3 4 5 6 7 8 9 10	Manganese - Mn	1 2 3 4 5 6 7 8 9 10	(Includes Total Alkalinity)	
BNA - Base Neutral Acids	1 2 3 4 5 6 7 8 9 10	Diss - Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10	Molybdenum - Mo	1 2 3 4 5 6 7 8 9 10	MN Chloride - Cl	1 2 3 4 5 6 7 8 9 10
BNAs	1 2 3 4 5 6 7 8 9 10	Diss - Nickel - Ni	1 2 3 4 5 6 7 8 9 10	Nickel - Ni	1 2 3 4 5 6 7 8 9 10	MN Fluoride - F	1 2 3 4 5 6 7 8 9 10
Benztidines	1 2 3 4 5 6 7 8 9 10	Diss - Lead - Pb	1 2 3 4 5 6 7 8 9 10	Lead - Pb	1 2 3 4 5 6 7 8 9 10	MN Sulfate - SO ₄	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10	Diss - Antimony - Sb	1 2 3 4 5 6 7 8 9 10	Antimony - Sb	1 2 3 4 5 6 7 8 9 10	MN Chromium 6 - Cr+6	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10	Diss - Selenium - Se	1 2 3 4 5 6 7 8 9 10	Selenium - Se	1 2 3 4 5 6 7 8 9 10	MN Conductivity	1 2 3 4 5 6 7 8 9 10
Acids only	1 2 3 4 5 6 7 8 9 10	Diss - Strontium - Sr	1 2 3 4 5 6 7 8 9 10	Strontium - Sr	1 2 3 4 5 6 7 8 9 10	MN pH	1 2 3 4 5 6 7 8 9 10
Organic Specialty Requests	1 2 3 4 5 6 7 8 9 10	Diss - Titanium - Ti	1 2 3 4 5 6 7 8 9 10	Titanium - Ti	1 2 3 4 5 6 7 8 9 10	GA Chem Oxyg Dem - COD	1 2 3 4 5 6 7 8 9 10
Library search - Volatiles	1 2 3 4 5 6 7 8 9 10	Diss - Thallium - Tl	1 2 3 4 5 6 7 8 9 10	Thallium - Tl	1 2 3 4 5 6 7 8 9 10	GA Diss Org Carbon - DOC (FF)	1 2 3 4 5 6 7 8 9 10
Library search - SemiVols	1 2 3 4 5 6 7 8 9 10	Diss - Uranium - U	1 2 3 4 5 6 7 8 9 10	Uranium - U	1 2 3 4 5 6 7 8 9 10	(Field - Filtered & Preserved)	
Finger Print	1 2 3 4 5 6 7 8 9 10	Diss - Vanadium - V	1 2 3 4 5 6 7 8 9 10	Vanadium - V	1 2 3 4 5 6 7 8 9 10	GN Diss Org Carbon - DOC (LF)	1 2 3 4 5 6 7 8 9 10
DRO / GRO	1 2 3 4 5 6 7 8 9 10	Diss - Zinc - Zn	1 2 3 4 5 6 7 8 9 10	Zinc - Zn	1 2 3 4 5 6 7 8 9 10	(Lab - Filtered & Preserved)	
METALS CHEMISTRY PACKAGES	1 2 3 4 5 6 7 8 9 10	Diss - Calcium - Ca	1 2 3 4 5 6 7 8 9 10	Calcium - Ca	1 2 3 4 5 6 7 8 9 10	GA Total Org Carbon - TOC	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Total	1 2 3 4 5 6 7 8 9 10	Diss - Potassium - K	1 2 3 4 5 6 7 8 9 10	Potassium - K	1 2 3 4 5 6 7 8 9 10	GA Ammonia - NH ₃	1 2 3 4 5 6 7 8 9 10
OpMemo2 - Dissolved	1 2 3 4 5 6 7 8 9 10	Diss - Magnesium - Mg	1 2 3 4 5 6 7 8 9 10	Magnesium - Mg	1 2 3 4 5 6 7 8 9 10	GA Nitrate+Nitrite - NO ₃ +NO ₂	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)	1 2 3 4 5 6 7 8 9 10	Diss - Sodium - Na	1 2 3 4 5 6 7 8 9 10	Sodium - Na	1 2 3 4 5 6 7 8 9 10	GA Kjeldahl Nitrogen - KN	1 2 3 4 5 6 7 8 9 10
Michigan10 - Total	1 2 3 4 5 6 7 8 9 10	Diss - Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10	Hardness - Ca, Mg	1 2 3 4 5 6 7 8 9 10	GA Total Phosphorus - TP	1 2 3 4 5 6 7 8 9 10
Michigan10 - Dissolved	1 2 3 4 5 6 7 8 9 10	MD - Metals Dissolved	1 2 3 4 5 6 7 8 9 10	LHG - Low Level Mercury	1 2 3 4 5 6 7 8 9 10		
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	1 2 3 4 5 6 7 8 9 10	Lab Filtration	1 2 3 4 5 6 7 8 9 10	Mercury Low Level - Hg	1 2 3 4 5 6 7 8 9 10		

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name Jeff Pincumbe - MDEQ	Sereniah Brown MDEQ	5/15/15
	Signature: 		
	Print Name Sereniah Brown MDEQ	Melissa Smith	5/15/15 859
	Signature: 		
	Print Name & Org.		
	Signature:		



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03 June 2015

Work Order: 15051420

Price: \$2,700.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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MDEQ-RRD-UPb
1504 W. Washington St.
Marquette MI, 49855b

Project: bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code: b31000098b
Project Manager: bAmy Keranenb

Reported: p
06/03/2015

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
CHLL-SB146-0-6"b	1505142-01b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB146-6"-2.5"b	1505142-02b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB146-2.5'-4"b	1505142-03b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB147-0-6"b	1505142-04	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB147-6"-2.5"b	1505142-05b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB147-2.5'-4"b	1505142-06b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB148-0-6"b	1505142-07b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB148-6"-2.5"b	1505142-08b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB148-2.5'-4"b	1505142-09b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB149-0-6"b	1505142-10b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB149-6"-2.5"b	1505142-11b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB149-2.5'-4"b	1505142-12b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB149-6"-2.5'-DUPb	1505142-13b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB150-0-6"b	1505142-14	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB150-6"-2.5"b	1505142-15b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB150-2.5'-4"b	1505142-16b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB151-0-6"b	1505142-17b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB151-6"-2.5"b	1505142-18b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB151-2.5'-4"b	1505142-19b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB152-0-6"b	1505142-20b	Soil/Sedimentb	05/12/2015b	05/15/2015b	

Notes and Definitions

Y21b	Reporting Limits (RL) raised due to matrix interference.b
JAb	Result is estimated due to multiple Aroclors present.b
A07b	Result(s) and reporting limit(s) are estimated due to poor precision.b
A02b	Result is estimated due to high surrogate recovery.b
100b	Decachlorobiphenyl is present in Arochlor 1268. Result is estimated.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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ENVIRONMENTAL LABORATORY**

P.O. Box 302700
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TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SB146-0-6''p

Lab ID: 1505142-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
53469-21-9b	Aroclor 1242b	NDb	390b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
12672-29-6b	Aroclor 1248b	NDb	390b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
11097-69-1b	Aroclor 1254p	1000p	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JA b
11096-82-5b	Aroclor 1260b	NDb	1400b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
37324-23-5b	Aroclor 1262p	1300p	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JA b
11100-14-4	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
<i>Surrogate: Decachlorobiphenyl-</i>			57.6 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			56.6 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	79.5p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB146-6''-2.5'p

Lab ID: 1505142-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
Surrogate: Decachlorobiphenyl-			70.1 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			62.4 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	82.6p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB146-2.5'-4'p

Lab ID: 1505142-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			83.3 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			69.4 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	82.4p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB147-0-6"p

Lab ID: 1505142-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
12672-29-6b	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
11097-69-1b	Aroclor 1254p	640p	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JA b
11096-82-5b	Aroclor 1260b	NDb	910b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
37324-23-5b	Aroclor 1262p	900p	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JA b
11100-14-4	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.5 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			57.3 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids	79.0p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB147-6''-2.5'p

Lab ID: 1505142-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
Surrogate: Decachlorobiphenyl-			76.0 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			66.0 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.2p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB147-2.5'-4'p

Lab ID: 1505142-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
Surrogate: Decachlorobiphenyl-			71.3 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			62.9 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	82.7p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB148-0-6"p

Lab ID: 1505142-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	2800p	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	3000b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	2900p	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	1200b	ug/kg dryb	10b	05/26/15b	B5E1525b	8081/8082b	Y21b
<i>Surrogate: Decachlorobiphenyl-</i>			80.0 %-	30-150-		05/26/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			69.6 %-	30-150-		05/26/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids	82.6p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	


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Client ID: CHLL-SB148-6''-2.5'p
Lab ID: 1505142-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.7 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			74.1 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.5p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB148-2.5'-4'p

Lab ID: 1505142-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/21/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			77.6 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			68.0 %-	30-150-		05/21/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.6p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB149-0-6"p

Lab ID: 1505142-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
53469-21-9b	Aroclor 1242b	NDb	150b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
12672-29-6b	Aroclor 1248b	NDb	150b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
11097-69-1b	Aroclor 1254p	270p	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JA b
11096-82-5b	Aroclor 1260b	NDb	400b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21 b
37324-23-5b	Aroclor 1262p	390p	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JA b
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082 b	
<i>Surrogate: Decachlorobiphenyl-</i>			61.9 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			66.8 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	85.8p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB149-6''-2.5'p

Lab ID: 1505142-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			78.9 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.2 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	85.7p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB149-2.5'-4'p

Lab ID: 1505142-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
Surrogate: Decachlorobiphenyl-			78.6 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			71.7 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	80.7p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB149-6"-2.5'-DUPp

Lab ID: 1505142-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			67.9 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			60.5 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	88.0p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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TEL: (517) 335-98000
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Client ID: CHLL-SB150-0-6"p

Lab ID: 1505142-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	220b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	220b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	300p	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	510b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	500p	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			49.9 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			68.0 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids	78.4p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB150-6''-2.5'p
Lab ID: 1505142-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			76.8 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			73.6 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.6p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB150-2.5'-4'p

Lab ID: 1505142-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/22/15b	B5E1525b	8081/8082b	
Surrogate: Decachlorobiphenyl-			77.4 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			70.8 %-	30-150-		05/22/15-	B5E1525b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.7p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB151-0-6"p

Lab ID: 1505142-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	2900p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	2800b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	2800p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268p	1600p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
<i>Surrogate: Decachlorobiphenyl-</i>			<i>161 %-</i>	<i>30-150-</i>		<i>05/29/15-</i>	B5E1811b	<i>8081/8082-</i>	<i>100, A02-</i>
<i>Surrogate: Tetrachloro-m-xylene-</i>			<i>72.5 %-</i>	<i>30-150-</i>		<i>05/29/15-</i>	B5E1811b	<i>8081/8082-</i>	
Inorganics-General Chemistry									
TSb	% Total Solidsp	81.7p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB151-6''-2.5'p

Lab ID: 1505142-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			72.3 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			62.7 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	80.8p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



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Client ID: CHLL-SB151-2.5'-4'p

Lab ID: 1505142-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082b	A07 b
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1811b	8081/8082 b	
Surrogate: Decachlorobiphenyl-			70.3 %-	30-150-		05/26/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			71.8 %-	30-150-		05/26/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	85.2p	0.1b	%b	1b	05/15/15b	B5E1509b	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-SB152-0-6"p

Lab ID: 1505142-20p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	230b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	230b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	230b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	230b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	230b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254	NDb	430b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11096-82-5b	Aroclor 1260b	NDb	280b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262b	NDb	190b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			83.0 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			62.7 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	90.4p	0.1b	%b	1b	05/15/15b	B5E1509b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

214

1505142

Abandoned Mining Waste Torch Lake

SOIL/SEDIMENT

Site Code/Project Number

31000098

AY

13

CC Email 1

pincumbej

Project TAT Days

Sample Collector

Jeff Pincumbe

Dept-Division-District

DEQ-RRD-Calumet Field Office

Index

44251

CC Email 2

shierby

Project Due Date

Sample Collector Phone

517-335-6418

State Project Manager

Amy Keranen

PCA

30872

CC Email 3

J.BINKLEY@WESTONSOLUTIONS.COM

Accept Analysis

hold time codes

Contract Firm

WESTON SOLUTIONS

State Project Manager Email

keranena

Project

456990

Overflow Lab Choice 1

NO

Contract Firm Primary Contact

JEFF BINKLEY

State Project Manager Phone

906-337-0389

Phase

00

Overflow Lab Choice 2

Primary Contact Phone

(906) 523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	11 CHLL-SB149-6"-2.5'	5/12/15	1104	1-802	
2	12 CHLL-SB149-2.5'-4'		1106		
3	13 CHLL-SB149-6"-2.5'-DUP		1104		
4	14 CHLL-SB150-0-6"		1110		
5	15 CHLL-SB150-6"-2.5'		1112		
6	16 CHLL-SB150-2.5'-4'		1115		
7	17 CHLL-SB151-0-6"		1122		
8	18 CHLL-SB151-6"-2.5'		1124		
9	19 CHLL-SB151-2.5'-4'		1127		
10	20 CHLL-SB152-0-6"		1307		

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

Relinquished by	Received By	Date / Time
Print Name & Org. Jeff Pincumbe - MDEQ Signature: <i>Jeff Pincumbe</i>	<i>Jeremiah Brown MDEQ</i>	5/15/15
Print Name & Org. Jeremiah Brown MDEQ Signature: <i>Jeremiah Brown</i>	<i>Melissa Smith</i>	5/15/15 855
Print Name & Org. _____ Signature: _____	_____	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 302700
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03 June 2015

Work Order: 1505145

Price: \$1,719.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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TEL: (517) 335-98000
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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/03/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-GW-64-13'-18'b	1505145-01b	Waterb	05/13/2015b	05/15/2015b	
CHLL-GW-65-10'-15'b	1505145-02b	Waterb	05/13/2015b	05/15/2015b	
CHLL-GW-66-10'-15'b	1505145-03b	Waterb	05/13/2015b	05/15/2015b	
CHLL-GW-70-40-45'b	1505145-04	Waterb	05/13/2015b	05/15/2015b	

Notes and Definitions p

Xb	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200 °C. 2-Methylnaphthalene & naphthalene b have boiling points above 200 °C and are better suited to analysis by methods 8270 & 625 as semivolatile organics.b
KRb	Reporting limit(s) raised due to low sample volume submitted.b
Ib	Dilution required due to matrix interference; reporting limit (RL) raised.b
A01b	Result(s) and reporting limit(s) are estimated due to low surrogate recovery.b
NDb	Indicates compound analyzed for but not detected b
RLb	Reporting Limit b
NAb	Not Applicable b



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Client ID: CHLL-GW-64-13'-18'p

Lab ID: 1505145-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-18-4	1,2,3-Trichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-87-5b	1,2-Dichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
591-78-6b	2-Hexanoneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	20b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-13-1b	Acrylonitrileb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-43-2b	Benzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-86-1b	Bromobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-97-5b	Bromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-27-4	Bromodichloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-25-2b	Bromoformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-83-9b	Bromomethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-15-0b	Carbon disulfideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-90-7b	Chlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-00-3b	Chloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-66-3b	Chloroformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-87-3b	Chloromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-82-7b	Cyclohexaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
124-48-1b	Dibromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	



**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-GW-64-13'-18'p

Lab ID: 1505145-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
60-29-7b	Diethyl etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-41-4	Ethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-72-1b	Hexachloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	2.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-88-4	Methyl iodideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-09-2b	Methylene chlorideb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-20-3b	Naphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-47-6b	o-Xyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-42-5b	Styreneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	50b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
994-05-8b	tertiaryAmylmethyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-88-3b	Tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-01-6b	Trichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-01-4	Vinyl chlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
Surrogate: Bromofluorobenzene			102 %-	85-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Dibromofluoromethane			104 %-	82.7-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Toluene-d8-			102 %-	85-115-		05/21/15-	B5E2126b	8260-	


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TEL: (517) 335-98000
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Client ID: CHLL-GW-64-13'-18'p

Lab ID: 1505145-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
83-32-9b	Acenaphtheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
208-96-8b	Acenaphthyleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
120-12-7b	Anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
218-01-9b	Chryseneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
206-44-0b	Fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
86-73-7b	Fluoreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
91-20-3b	Naphthaleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
85-01-8b	Phenanthreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
129-00-0b	Pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
Surrogate: 2-Fluorobiphenyl-			45.0 %-	24.1-115-		05/22/15-	B5E1514	8270-	
Surrogate: Nitrobenzene-d5-			42.8 %-	17.8-115-		05/22/15-	B5E1514	8270-	
Surrogate: p-Terphenyl-d14-			59.9 %-	41.8-115-		05/22/15-	B5E1514	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
Surrogate: Decachlorobiphenyl-			62.5 %-	30-150-		05/20/15-	B5E1901b	8081/8082-	
Surrogate: Tetrachloro-m-xylene			38.5 %-	30-150-		05/20/15-	B5E1901b	8081/8082-	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-GW-65-10'-15'p

Lab ID: 1505145-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-18-4	1,2,3-Trichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-87-5b	1,2-Dichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
591-78-6b	2-Hexanoneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	20b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-13-1b	Acrylonitrileb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-43-2b	Benzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-86-1b	Bromobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-97-5b	Bromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-27-4	Bromodichloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-25-2b	Bromoformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-83-9b	Bromomethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-15-0b	Carbon disulfideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-90-7b	Chlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-00-3b	Chloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-66-3b	Chloroformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-87-3b	Chloromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-82-7b	Cyclohexaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
124-48-1b	Dibromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	



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Client ID: CHLL-GW-65-10'-15'p

Lab ID: 1505145-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
60-29-7b	Diethyl etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-41-4	Ethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-72-1b	Hexachloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	2.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-88-4	Methyl iodideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-09-2b	Methylene chlorideb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-20-3b	Naphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-47-6b	o-Xyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-42-5b	Styreneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	50b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
994-05-8b	tertiaryAmylmethyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-88-3b	Tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-01-6b	Trichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-01-4	Vinyl chlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
Surrogate: Bromofluorobenzene			98.8 %-	85-115-	05/21/15-	B5E2126b	8260-		
Surrogate: Dibromofluoromethane			103 %-	82.7-115-	05/21/15-	B5E2126b	8260-		
Surrogate: Toluene-d8-			102 %-	85-115-	05/21/15-	B5E2126b	8260-		



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Client ID: CHLL-GW-65-10'-15'p

Lab ID: 1505145-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
83-32-9b	Acenaphtheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
208-96-8b	Acenaphthyleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
120-12-7b	Anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
218-01-9b	Chryseneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
206-44-0b	Fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
86-73-7b	Fluoreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
91-20-3b	Naphthaleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
85-01-8b	Phenanthreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
129-00-0b	Pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
Surrogate: 2-Fluorobiphenyl-			51.7 %-		24.1-115-	05/22/15-	B5E1514	8270-	
Surrogate: Nitrobenzene-d5-			48.6 %-		17.8-115-	05/22/15-	B5E1514	8270-	
Surrogate: p-Terphenyl-d14-			70.8 %-		41.8-115-	05/22/15-	B5E1514	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
Surrogate: Decachlorobiphenyl-			61.2 %-		30-150-	05/20/15-	B5E1901b	8081/8082-	
Surrogate: Tetrachloro-m-xylene			45.0 %-		30-150-	05/20/15-	B5E1901b	8081/8082-	



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Client ID: CHLL-GW-66-10'-15'p

Lab ID: 1505145-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-18-4	1,2,3-Trichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-87-5b	1,2-Dichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
591-78-6b	2-Hexanoneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	20b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-13-1b	Acrylonitrileb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-43-2b	Benzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-86-1b	Bromobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-97-5b	Bromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-27-4	Bromodichloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-25-2b	Bromoformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-83-9b	Bromomethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-15-0b	Carbon disulfideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-90-7b	Chlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-00-3b	Chloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-66-3b	Chloroformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-87-3b	Chloromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-82-7b	Cyclohexaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
124-48-1b	Dibromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	


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

Client ID: CHLL-GW-66-10'-15'p

Lab ID: 1505145-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
60-29-7b	Diethyl etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-41-4	Ethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-72-1b	Hexachloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	2.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-88-4	Methyl iodideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-09-2b	Methylene chlorideb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-20-3b	Naphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-47-6b	o-Xyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-42-5b	Styreneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	50b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
994-05-8b	tertiaryAmylmethyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-88-3b	Tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-01-6b	Trichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-01-4	Vinyl chlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
Surrogate: Bromofluorobenzene			100 %-	85-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Dibromofluoromethane			105 %-	82.7-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Toluene-d8-			101 %-	85-115-		05/21/15-	B5E2126b	8260-	



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Client ID: CHLL-GW-66-10'-15'p

Lab ID: 1505145-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
83-32-9b	Acenaphtheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
208-96-8b	Acenaphthyleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
120-12-7b	Anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
218-01-9b	Chryseneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
206-44-0b	Fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
86-73-7b	Fluoreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
91-20-3b	Naphthaleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
85-01-8b	Phenanthreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
129-00-0b	Pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
Surrogate: 2-Fluorobiphenyl-			64.2 %-		24.1-115-	05/22/15-	B5E1514	8270-	
Surrogate: Nitrobenzene-d5-			58.6 %-		17.8-115-	05/22/15-	B5E1514	8270-	
Surrogate: p-Terphenyl-d14-			69.0 %-		41.8-115-	05/22/15-	B5E1514	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
Surrogate: Decachlorobiphenyl-			50.7 %-		30-150-	05/20/15-	B5E1901b	8081/8082-	
Surrogate: Tetrachloro-m-xylene			46.5 %-		30-150-	05/20/15-	B5E1901b	8081/8082-	



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Client ID: CHLL-GW-70-40-45'p

Lab ID: 1505145-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-18-4	1,2,3-Trichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-87-5b	1,2-Dichloropropane	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
591-78-6b	2-Hexanoneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	20b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
107-13-1b	Acrylonitrileb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
71-43-2b	Benzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-86-1b	Bromobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-97-5b	Bromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-27-4	Bromodichloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-25-2b	Bromoformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-83-9b	Bromomethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-15-0b	Carbon disulfideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-90-7b	Chlorobenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-00-3b	Chloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-66-3b	Chloroformb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-87-3b	Chloromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-82-7b	Cyclohexaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
124-48-1b	Dibromochloromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	



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Client ID: CHLL-GW-70-40-45'p

Lab ID: 1505145-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
60-29-7b	Diethyl etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-41-4	Ethylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
67-72-1b	Hexachloroethaneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	2.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
74-88-4	Methyl iodideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-09-2b	Methylene chlorideb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
91-20-3b	Naphthaleneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
95-47-6b	o-Xyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
100-42-5b	Styreneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	50b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
994-05-8b	tertiaryAmylmethyletherb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
108-88-3b	Tolueneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	5.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
79-01-6b	Trichloroethyleneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
75-01-4	Vinyl chlorideb	NDb	1.0b	ug/Lb	1b	05/21/15b	B5E2126b	8260b	
Surrogate: Bromofluorobenzene			102 %-	85-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Dibromofluoromethane			106 %-	82.7-115-		05/21/15-	B5E2126b	8260-	
Surrogate: Toluene-d8-			105 %-	85-115-		05/21/15-	B5E2126b	8260-	



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Client ID: CHLL-GW-70-40-45'p

Lab ID: 1505145-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Semivolatiles									
91-57-6b	2-Methylnaphthaleneb	NDb	5.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
83-32-9b	Acenaphtheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
208-96-8b	Acenaphthyleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
120-12-7b	Anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
218-01-9b	Chryseneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
206-44-0b	Fluorantheneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
86-73-7b	Fluoreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	2.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
91-20-3b	Naphthaleneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
85-01-8b	Phenanthreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
129-00-0b	Pyreneb	NDb	1.0b	ug/Lb	1b	05/22/15b	B5E1514	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			61.8 %-	24.1-115-		05/22/15-	B5E1514	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			58.8 %-	17.8-115-		05/22/15-	B5E1514	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			48.2 %-	41.8-115-		05/22/15-	B5E1514	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	05/20/15b	B5E1901b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			35.9 %-	30-150-		05/20/15-	B5E1901b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene</i>			46.7 %-	30-150-		05/20/15-	B5E1901b	8081/8082-	



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Client ID: CHLL-GW-70-40-45'p

Lab ID: 1505145-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Inorganics-Metalsp									
7429-90-5b	Aluminiump	100000p	10000b	ug/Lb	2000b	05/21/15b	B5E1801b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	20b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	1b
7440-38-2b	Arsenicb	NDb	20b	ug/Lb	20b	05/21/15b	B5E1801b	6020/200.8b	1b
7440-39-3b	Bariump	390p	100b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	20b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	1b
7440-43-9b	Cadmiump	0.4p	0.2b	ug/Lb	1b	05/20/15b	B5E1801b	6020/200.8b	
7440-47-3b	Chromiump	360p	20b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7440-48-4	Cobalt p	130p	100b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7440-50-8b	Cop erp	570p	20b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7439-89-6b	Ironp	130000p	200b	ug/Lb	10b	05/28/15b	B5E1801b	6010/200.7b	
7439-92-1b	Leadp	78p	20b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7439-93-2b	Lithiump	150p	10b	ug/Lb	1b	05/28/15b	B5E1801b	6010/200.7b	
7439-95-4	Magnesiump	89p	5.0b	mg/Lb	10b	05/28/15b	B5E1801b	6010/200.7b	
7439-96-5b	Manganesep	2500p	100b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7439-97-6b	Mercuryb	NDb	0.2b	ug/Lb	1b	05/29/15b	B5E2606b	7470/245.1b	
7440-02-0b	Nickelp	380p	40b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	20b	ug/Lb	20b	05/21/15b	B5E1801b	6020/200.8b	1b
7440-22-4	Silverp	0.3p	0.2b	ug/Lb	1b	05/20/15b	B5E1801b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	40b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	1b
7440-66-6b	Zincp	620p	100b	ug/Lb	20b	05/20/15b	B5E1801b	6020/200.8b	



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1505145

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

ground WATER

Site Code/Project Number

AY

CC Email 1

Project IAI Days

Sample Collector

31000098

13

l.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

Daniel.Liebau@WestonSolutions.com

906-337-0389

State Project Manager

PCA

CC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

plncumbel@michigan.gov

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranena@michigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHLL-GW-64-13'-18'	5/13/15	0935	2-1L 3-40mL	
2	CHLL-GW-65-10'-16'	5/13/15	1027		
3	CHLL-GW-66-10'-15'	5/13/15	1105		
4	CHLL-GW-70-40-45'	5-13-15	1345	2-1L 3-40mL 1-500mL	
5	CHLL-GW-				
6	CHLL-GW-				
7	CHLL-GW-				
8	CHLL-GW-				
9	CHLL-GW-				
10	CHLL-GW-				

ORGANIC CHEMISTRY	MAD - DISSOLVED METALS	MA - 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 GRO 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 METH - Methane, Ethane, Ethene Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10 ON - 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 Chlordane 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 Benzidines 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 Acids 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 ORO / ORO 1 2 3 4 5 6 7 8 9 10 METALS CHEMISTRY PACKAGES OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 OpMemo2 - Dissolved 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Ba,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 Michigan10 - Dissolved 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Diss - Silver - Ag 1 2 3 4 5 6 7 8 9 10 Diss - Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Diss - Arsenic - As 1 2 3 4 5 6 7 8 9 10 Diss - Boron - B 1 2 3 4 5 6 7 8 9 10 Diss - Barium - Ba 1 2 3 4 5 6 7 8 9 10 Diss - Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Diss - Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Diss - Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Diss - Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Diss - Copper - Cu 1 2 3 4 5 6 7 8 9 10 Diss - Iron - Fe 1 2 3 4 5 6 7 8 9 10 Diss - Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Diss - Lithium - Li 1 2 3 4 5 6 7 8 9 10 Diss - Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Diss - Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Diss - Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Diss - Lead - Pb 1 2 3 4 5 6 7 8 9 10 Diss - Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Diss - Selenium - Se 1 2 3 4 5 6 7 8 9 10 Diss - Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Diss - Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Diss - Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Diss - Uranium - U 1 2 3 4 5 6 7 8 9 10 Diss - Vanadium - V 1 2 3 4 5 6 7 8 9 10 Diss - Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Diss - Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Diss - Potassium - K 1 2 3 4 5 6 7 8 9 10 Diss - Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Diss - Sodium - Na 1 2 3 4 5 6 7 8 9 10 Diss - Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 MD - Metals Dissolved Lab Filtration 1 2 3 4 5 6 7 8 9 10	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 Boron - B 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 Uranium - U 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 Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 LHG - Low Level Mercury Mercury Low Level - Hg 1 2 3 4 5 6 7 8 9 10	GB Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 GB Amenable Cyanide - CN 1 2 3 4 5 6 7 8 9 10 GCN Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 CA Chlorophyll 1 2 3 4 5 6 7 8 9 10 GN Ortho Phosphate - OP 1 2 3 4 5 6 7 8 9 10 GN Nitrite - NO ₂ 1 2 3 4 5 6 7 8 9 10 GN Nitrate - NO ₃ (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Suspended Solids - SS 1 2 3 4 5 6 7 8 9 10 GN Dissolved Solids - TDS 1 2 3 4 5 6 7 8 9 10 MN Diss Solids - TDS (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Turbidity 1 2 3 4 5 6 7 8 9 10 MN Total Alkalinity 1 2 3 4 5 6 7 8 9 10 MN Bicarb/Carb Alkalinity 1 2 3 4 5 6 7 8 9 10 (Includes Total Alkalinity) MN Chloride - Cl 1 2 3 4 5 6 7 8 9 10 MN Fluoride - F 1 2 3 4 5 6 7 8 9 10 MN Sulfate - SO ₄ 1 2 3 4 5 6 7 8 9 10 MN Chromium 6 - Cr+6 1 2 3 4 5 6 7 8 9 10 MN Conductivity 1 2 3 4 5 6 7 8 9 10 MN pH 1 2 3 4 5 6 7 8 9 10 GA Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 GA Diss Org Carbon - DOC (FF) 1 2 3 4 5 6 7 8 9 10 (Lab - Filtered & Preserved) GA Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 GA Ammonia - NH ₃ 1 2 3 4 5 6 7 8 9 10 GA Nitrate+Nitrite - NO ₃ +NO ₂ 1 2 3 4 5 6 7 8 9 10 GA Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 GA Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature:	Print Name & Org. Signature:	
	Print Name & Org. Signature:	Print Name & Org. Signature:	
	Print Name & Org. Signature:	Print Name & Org. Signature:	
	Print Name & Org. Signature:	Print Name & Org. Signature:	



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P.O. Box 302700
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04 June 2015

Work Order: 15051430

Price: \$2,295.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/04/2015

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SB152-6"-2.5'b	1505143-01b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB153-0-6"b	1505143-02b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB153-6"-2.5'b	1505143-03b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-0-6"b	1505143-04	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-6"-2.5'b	1505143-05b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-6"-2.5'-DUPb	1505143-06b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-6"-2.5'-4"b	1505143-07b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB155-0-6"b	1505143-08b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB155-6"-2.5'b	1505143-09b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB155-2.5'-4"b	1505143-10b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB156-0-6"b	1505143-11b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB156-6"-2.5'b	1505143-12b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB156-2.5'-4"b	1505143-13b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-0-6"b	1505143-14	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-6"-2.5'b	1505143-15b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-6"-2.5'-DUPb	1505143-16b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-2.5'-4"b	1505143-17b	Soil/Sedimentb	05/12/2015b	05/15/2015b	

Notes and Definitions p

Y21b	Reporting Limits (RL) raised due to matrix interference.b
Nb	Result is estimated due to Non-homogeneous sample.b
JAb	Result is estimated due to multiple Aroclors present.b
A07b	Result(s) and reporting limit(s) are estimated due to poor precision.b
A02b	Result is estimated due to high surrogate recovery.b
100b	Decachlorobiphenyl is present in Arochlor 1268. Result is estimated.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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ENVIRONMENTAL LABORATORY**

P.O. Box 302700
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Client ID: CHLL-SB152-6''-2.5'p

Lab ID: 1505143-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			62.1 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			58.3 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	93.2p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB153-0-6"p

Lab ID: 1505143-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	3300p	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	8600b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	8500p	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268p	4100p	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
<i>Surrogate: Decachlorobiphenyl-</i>			210 %-	30-150-		05/29/15-	B5E1811b	8081/8082-	100, A02-
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.4 %-	30-150-		05/29/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	75.6p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB153-6"-2.5'p

Lab ID: 1505143-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
Surrogate: Decachlorobiphenyl-			62.8 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			61.6 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	95.6p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB154-0-6"p

Lab ID: 1505143-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	1500p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	2800b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	2800p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
<i>Surrogate: Decachlorobiphenyl-</i>			<i>129 %-</i>	<i>30-150-</i>		<i>05/29/15-</i>	B5E1811b	<i>8081/8082-</i>	
<i>Surrogate: Tetrachloro-m-xylene-</i>			<i>69.0 %-</i>	<i>30-150-</i>		<i>05/29/15-</i>	B5E1811b	<i>8081/8082-</i>	
Inorganics-General Chemistry									
TSb	% Total Solidsp	85.7p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB154-6''-2.5'p
Lab ID: 1505143-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
Surrogate: Decachlorobiphenyl-			69.5 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			67.1 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	96.8p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB154-6"-2.5'-DUPp

Lab ID: 1505143-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			78.1 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	96.8p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB154-6"-2.5'-4'p

Lab ID: 1505143-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			70.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			63.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	94.2p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	Nb



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Client ID: CHLL-SB155-0-6"p

Lab ID: 1505143-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	190b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	190b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	820p	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	750b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	750p	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			93.6 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			63.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	87.5p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	


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Client ID: CHLL-SB155-6''-2.5'p
Lab ID: 1505143-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			83.2 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.0 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	85.9p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	


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Client ID: CHLL-SB155-2.5'-4'p

Lab ID: 1505143-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
Surrogate: Decachlorobiphenyl-			70.2 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			75.8 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	81.7p	0.1b	%b	1b	05/15/15b	B5E1510b	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-SB156-0-6"p

Lab ID: 1505143-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254p	260p	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	370b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	370p	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			53.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			59.4 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	86.4p	0.1b	%b	1b	05/15/15b	B5E1510b	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-SB156-6''-2.5'p

Lab ID: 1505143-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			66.8 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			58.6 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	86.0p	0.1b	%b	1b	05/15/15b	B5E1510b	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-SB156-2.5'-4'p

Lab ID: 1505143-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.6 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.6 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	83.6p	0.1b	%b	1b	05/15/15b	B5E1510b	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-SB157-0-6"p

Lab ID: 1505143-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	370b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	Y21b
11096-82-5b	Aroclor 1260b	NDb	320b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262b	NDb	320b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	Y21b
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.1 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			63.6 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	87.4p	0.1b	%b	1b	05/15/15b	B5E1510b	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-SB157-6''-2.5'p
Lab ID: 1505143-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	A07b
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.7 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.4 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	82.3p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



**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-SB157-6"-2.5'-DUPp

Lab ID: 1505143-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			75.5 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			64.7 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.3p	0.1b	%b	1b	05/15/15b	B5E1510b	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-SB157-2.5'-4'p

Lab ID: 1505143-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			78.5 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.0 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	87.3p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number 1585143	Project Name Abandoned Mining Waste Torch Lake	Matrix 3/4 SOIL/SEDIMENT
Site Code/Project Number 31000098	AY 13	CC Email 1 pincumbej
Dept-Division-District DEQ-RRD-Calumet Field Office	Index 44251	CC Email 2 shleryb
State Project Manager Amy Keranen	PCA 30872	CC Email 3 J.BINKUPY@WESTON SOLUTIONS.COM
State Project Manager Email keranena	Project 456990	Overflow Lab Choice 1
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2
		Accept Analysts hold time codes
		Sample Collector Jeff Pincumbe
		Sample Collector Phone 517-335-6418
		Contract Firm WESTON SOLUTIONS
		Contract Firm Primary Contact JEFF BINKUPY
		Primary Contact Phone (906) 523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL-SB152-6"-2.5'	5/12/15	1310	1-802	
2	02 CHLL-SB153-0-6"		1324		
3	03 CHLL-SB153-6"-2.5'		1327		
4	04 CHLL-SB154-0-6"		1343		
5	05 CHLL-SB154-6"-2.5'		1345		
6	06 CHLL-SB154-6"-2.5'-DUP		1345		
7	07 CHLL-SB154-2.5'-4'		1348		
8	08 CHLL-SB155-0-6"		1409		
9	09 CHLL-SB155-6"-2.5'		1411		
10	10 CHLL-SB155-2.5'-4'		1415		

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Jeff Pincumbe - MDEQ	Serenity Brown MDEQ	5/15/15
	Signature: <i>Jeff Pincumbe</i>	<i>Serenity Brown</i>	
	Print Name & Org. Serenity Brown MDEQ	Melissa Smith	5/15/15 856
	Signature: <i>Serenity Brown</i>	<i>Melissa Smith</i>	
	Print Name & Org. 		
	Signature: 		



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1585143

Abandoned Mining Waste Torch Lake

SOIL/SEDIMENT

Site Code/Project Number

31000098

AY

13

CC Email 1

pincumbej

Project TAT Days

Sample Collector

Jeff Pincumbe

Dept-Division-District

DEQ-RRD-Calumet Field Office

Index

44251

CC Email 2

shierby

Project Due Date

Sample Collector Phone

517-335-6418

State Project Manager

Amy Keranen

PCA

30872

CC Email 3

J.BINKLEY@WESTON SOLUTIONS.COM

Accept Analysis
hold time codes

Contract Firm

WESTON SOLUTIONS

State Project Manager Email

keranena

Project

456990

Overflow Lab Choice 1

Contract Firm Primary Contact

JEFF BINKLEY

State Project Manager Phone

906-337-0389

Phase

00

Overflow Lab Choice 2

Primary Contact Phone

(906) 523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	11 CHLL-SB156-0-6"	5/12/15	1423	1-802	
2	12 CHLL-SB156-6"-2.5'		1425		
3	13 CHLL-SB156-2.5'-4'		1427		
4	14 CHLL-SB157-0-6"		1515		
5	15 CHLL-SB157-6"-2.5'		1517		
6	16 CHLL-SB157-6"-2.5'-DUP		1517		
7	17 CHLL-SB157-2.5'-4'		1520		
8	CHLL-				
9	CHLL-				
10	CHLL-				

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
VOA - Volatile Organic Acidic Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Bc,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Uranium - U 1 2 3 4 5 6 7 8 9 10 Vanadium - V 1 2 3 4 5 6 7 8 9 10 Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Potassium - K 1 2 3 4 5 6 7 8 9 10 Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Sodium - Na 1 2 3 4 5 6 7 8 9 10	GS - General Chemistry Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10
OS - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10			
BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 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.	Jeff Pincumbe - MDEQ	Seremial Brown MDEQ	5/15/15
Signature:	<i>Jeff Pincumbe</i>	<i>Seremial Brown</i>	
Print Name & Org.	Seremial Brown MDEQ	Melissa Smith	5/15/15 8:50
Signature:	<i>Seremial Brown</i>	<i>Melissa Smith</i>	
Print Name & Org.			
Signature:			



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

05 June 2015

Work Order: 1505144

Price: \$1,861.50

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/05/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SB-142-0-6"b	1505144-01b	Soil/Sedimentb	05/13/2015b	05/15/2015b	
CHLL-SB-142-6"-8"b	1505144-02b	Soil/Sedimentb	05/13/2015b	05/15/2015b	
CHLL-SB-143-0-6"b	1505144-03b	Soil/Sedimentb	05/13/2015b	05/15/2015b	
CHLL-SB-143-6"-5"b	1505144-04	Soil/Sedimentb	05/13/2015b	05/15/2015b	
CHLL-SB-144-0-6"b	1505144-05b	Soil/Sedimentb	05/13/2015b	05/15/2015b	
CHLL-SB-144-6"-5"b	1505144-06b	Soil/Sedimentb	05/13/2015b	05/15/2015b	
CHLL-SB-145-0-6"b	1505144-07b	Soil/Sedimentb	05/13/2015b	05/15/2015b	

Notes and Definitions p

Y37b Raised RL due to possible laboratory contamination. b
Y20b Reporting Limits (RL) raised due to matrix. b
Xb Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200 °C. 2-Methylnaphthalene & naphthalene b have boiling points above 200 °C and are better suited to analysis by methods 8270 & 625 as semivolatile organics.b
A11b Result is estimated due to high initial verification standard criteria failure.b
A10b Result and reporting limit are estimated due to low initial verification standard criteria failure.b
A09b Result is estimated due to high recovery of batch quality control.b
A07b Result(s) and reporting limit(s) are estimated due to poor precision.b
A06b Result is estimated due to high continuing calibration standard criteria failure.b
A05b Result and reporting limit are estimated due to low continuing calibration standard criteria failure.b
A04 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 detected b
RLb Reporting Limit b
NAb Not Applicable b
dry Sample results reported on a dry weight basis b



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Client ID: CHLL-SB-142-0-6''p

Lab ID: 1505144-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.7 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.9 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	74.5p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB-142-6"-8'p

Lab ID: 1505144-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
96-18-4	1,2,3-Trichloropropane b	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane b	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
78-87-5b	1,2-Dichloropropane b	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
591-78-6b	2-Hexanoneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	1300b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
107-13-1b	Acrylonitrileb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
71-43-2b	Benzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
108-86-1b	Bromobenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
74-97-5b	Bromochloromethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
75-27-4	Bromodichloromethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
75-25-2b	Bromoformb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
74-83-9b	Bromomethaneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
75-15-0b	Carbon disulfideb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
108-90-7b	Chlorobenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
75-00-3b	Chloroethaneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
67-66-3b	Chloroformb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
74-87-3b	Chloromethaneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	
110-82-7b	Cyclohexaneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	A05b
124-48-1b	Dibromochloromethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	



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Client ID: CHLL-SB-142-6"-8'p

Lab ID: 1505144-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
75-71-8b	Dichlorodifluoromethaneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	A05 b
60-29-7b	Diethyl etherb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
108-20-3b	Diisopropyl Etherb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
100-41-4	Ethylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
637-92-3b	Ethyltertiarybutyletherb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
67-72-1b	Hexachloroethaneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
98-82-8b	Isopropylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
1330-20-7b	m & p - Xyleneb	NDb	130b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
74-88-4	Methyl iodideb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	A05, A10 b
75-09-2b	Methylene chlorideb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
1634-04-4	Methyltertiarybutyletherb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
91-20-3b	Naphthaleneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260b	X b
104-51-8b	n-Butylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
103-65-1b	n-Propylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
95-47-6b	o-Xyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
99-87-6b	p-Isopropyl tolueneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
135-98-8b	sec-Butylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
100-42-5b	Styreneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
98-06-6b	tert-Butylbenzeneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
75-65-0b	tertiary Butyl Alcoholb	NDb	3300b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
994-05-8b	tertiaryAmylmethyletherb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
127-18-4	Tetrachloroethyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
109-99-9b	Tetrahydrofuranb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
108-88-3b	Tolueneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	330b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
79-01-6b	Trichloroethyleneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
75-69-4	Trichlorofluoromethaneb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
75-01-4	Vinyl chlorideb	NDb	66b	ug/kg dryb	50b	05/18/15b	B5E1809b	8260 b	
Surrogate: Bromofluorobenzene-			86.0 %-	40.3-194-		05/18/15-	B5E1809b	8260-	
Surrogate: Dibromofluoromethane-			97.0 %-	52.1-217-		05/18/15-	B5E1809b	8260-	
Surrogate: Toluene-d8-			94.2 %-	55.4-196-		05/18/15-	B5E1809b	8260-	



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Client ID: CHLL-SB-142-6''-8'p

Lab ID: 1505144-02p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6b	2-Methylnaphthalene	NDb	580b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
83-32-9b	Acenaphthene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
208-96-8b	Acenaphthylene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
120-12-7b	Anthracene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
56-55-3b	Benz[a]anthracene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	470b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	470b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	470b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	470b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
218-01-9b	Chrysene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	470b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
206-44-0b	Fluoranthene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
86-73-7b	Fluorene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	470b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
91-20-3b	Naphthalene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
85-01-8b	Phenanthrene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
129-00-0b	Pyrene	NDb	230b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			83.3 %-	32.9-115-		05/22/15-	B5E1415b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			64.0 %-	31.8-115-		05/22/15-	B5E1415b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			96.3 %-	38.5-115-		05/22/15-	B5E1415b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			83.7 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			75.8 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	



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P.O. Box 302700
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TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SB-142-6''-8'p
Lab ID: 1505144-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	85.9p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB-143-0-6"p

Lab ID: 1505144-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
Surrogate: Decachlorobiphenyl-			79.2 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			73.8 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	80.0p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB-143-6"-5'p

Lab ID: 1505144-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
96-18-4	1,2,3-Trichloropropane	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
526-73-8b	1,2,3-Trimethylbenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
120-82-1b	1,2,4-Trichlorobenzeneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
95-63-6b	1,2,4-Trimethylbenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
106-93-4	1,2-Dibromoethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
95-50-1b	1,2-Dichlorobenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
107-06-2b	1,2-Dichloroethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
78-87-5b	1,2-Dichloropropane	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-67-8b	1,3,5-Trimethylbenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
541-73-1b	1,3-Dichlorobenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
106-46-7b	1,4-Dichlorobenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
591-78-6b	2-Hexanoneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
91-57-6b	2-Methylnaphthaleneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	1500b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
107-13-1b	Acrylonitrileb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
71-43-2b	Benzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-86-1b	Bromobenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-97-5b	Bromochloromethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-27-4	Bromodichloromethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-25-2b	Bromoformb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-83-9b	Bromomethaneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-15-0b	Carbon disulfideb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
56-23-5b	Carbon tetrachlorideb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-90-7b	Chlorobenzeneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-00-3b	Chloroethaneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
67-66-3b	Chloroformb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-87-3b	Chloromethaneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A05b
156-59-2b	cis-1,2-Dichloroethyleneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
10061-01-5b	cis-1,3-Dichloropropyleneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
110-82-7b	Cyclohexaneb	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A10b
124-48-1b	Dibromochloromethaneb	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	



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Client ID: CHLL-SB-143-6"-5'p

Lab ID: 1505144-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethane	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-71-8b	Dichlorodifluoromethane	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A10b
60-29-7b	Diethyl ether	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-20-3b	Diisopropyl Ether	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
100-41-4	Ethylbenzene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
637-92-3b	Ethyltertiarybutylether	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
67-72-1b	Hexachloroethane	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
98-82-8b	Isopropylbenzene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
1330-20-7b	m & p - Xylene	NDb	150b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-88-4	Methyl iodide	NDb	440b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	Y37b
75-09-2b	Methylene chloride	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
1634-04-4	Methyltertiarybutylether	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
91-20-3b	Naphthalene	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	Xb
104-51-8b	n-Butylbenzene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
103-65-1b	n-Propylbenzene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
95-47-6b	o-Xylene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
99-87-6b	p-Isopropyl toluene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
135-98-8b	sec-Butylbenzene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
100-42-5b	Styrene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
98-06-6b	tert-Butylbenzene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-65-0b	tertiary Butyl Alcohol	NDb	3700b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A05b
994-05-8b	tertiaryAmyl methylether	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
127-18-4	Tetrachloroethylene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
109-99-9b	Tetrahydrofuran	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-88-3b	Toluene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
156-60-5b	trans-1,2-Dichloroethylene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
10061-02-6b	trans-1,3-Dichloropropylene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
110-57-6b	trans-1,4-Dichloro-2-butene	NDb	370b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
79-01-6b	Trichloroethylene	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-69-4	Trichlorofluoromethane	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-01-4	Vinyl chloride	NDb	74	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
Surrogate: Bromofluorobenzene-			119 %-	40.3-194-		05/18/15-	B5E1812b	8260-	
Surrogate: Dibromofluoromethane-			109 %-	52.1-217-		05/18/15-	B5E1812b	8260-	
Surrogate: Toluene-d8-			112 %-	55.4-196-		05/18/15-	B5E1812b	8260-	



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Client ID: CHLL-SB-143-6"-5'p

Lab ID: 1505144-04p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6b	2-Methylnaphthalene	NDb	620b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
83-32-9b	Acenaphthene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
208-96-8b	Acenaphthylene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
120-12-7b	Anthracene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
56-55-3b	Benz[a]anthracene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	500b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	500b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	500b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	500b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
218-01-9b	Chrysene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	500b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
206-44-0b	Fluoranthene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
86-73-7b	Fluorene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	500b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
91-20-3b	Naphthalene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
85-01-8b	Phenanthrene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
129-00-0b	Pyrene	NDb	250b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
Surrogate: 2-Fluorobiphenyl-			83.4 %-	32.9-115-		05/22/15-	B5E1415b	8270-	
Surrogate: Nitrobenzene-d5-			65.0 %-	31.8-115-		05/22/15-	B5E1415b	8270-	
Surrogate: p-Terphenyl-d14-			95.4 %-	38.5-115-		05/22/15-	B5E1415b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
Surrogate: Decachlorobiphenyl-			87.8 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			79.0 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	



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Client ID: CHLL-SB-143-6''-5'p
Lab ID: 1505144-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistryp									
TSb	% Total Solidsp	80.7p	0.1b	%b	1b	05/15/15b	B5E1528b	2540 Bb	


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Client ID: CHLL-SB-144-0-6"p

Lab ID: 1505144-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
Surrogate: Decachlorobiphenyl-			82.8 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			72.3 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	86.6p	0.1b	%b	1b	05/15/15b	B5E1528b	2540 Bb	



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Client ID: CHLL-SB-144-6"-5'p

Lab ID: 1505144-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
630-20-6b	1,1,1,2-Tetrachloroethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
71-55-6b	1,1,1-Trichloroethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
79-34-5b	1,1,2,2-Tetrachloroethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
79-00-5b	1,1,2-Trichloroethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-34-3b	1,1-Dichloroethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-35-4	1,1-Dichloroethyleneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
87-61-6b	1,2,3-Trichlorobenzeneb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
96-18-4	1,2,3-Trichloropropane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
526-73-8b	1,2,3-Trimethylbenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
120-82-1b	1,2,4-Trichlorobenzene b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
95-63-6b	1,2,4-Trimethylbenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
96-12-8b	1,2-Dibromo-3-chloropropane b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
106-93-4	1,2-Dibromoethane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
95-50-1b	1,2-Dichlorobenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
107-06-2b	1,2-Dichloroethane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
78-87-5b	1,2-Dichloropropane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-67-8b	1,3,5-Trimethylbenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
541-73-1b	1,3-Dichlorobenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
106-46-7b	1,4-Dichlorobenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
78-93-3b	2-Butanone (MEK)b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
591-78-6b	2-Hexanone b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
91-57-6b	2-Methylnaphthalene b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	Xb
67-64-1b	2-Propanone (acetone)b	NDb	1400b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A05b
108-10-1b	4-Methyl-2-pentanone (MIBK)b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
107-13-1b	Acrylonitrileb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
71-43-2b	Benzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-86-1b	Bromobenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-97-5b	Bromochloromethane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-27-4	Bromodichloromethane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-25-2b	Bromoformb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-83-9b	Bromomethane b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-15-0b	Carbon disulfideb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
56-23-5b	Carbon tetrachloride b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-90-7b	Chlorobenzene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-00-3b	Chloroethane b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
67-66-3b	Chloroformb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-87-3b	Chloromethane b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A05b
156-59-2b	cis-1,2-Dichloroethylene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
10061-01-5b	cis-1,3-Dichloropropylene b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
110-82-7b	Cyclohexane b	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A10b
124-48-1b	Dibromochloromethane b	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	



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Client ID: CHLL-SB-144-6"-5'p

Lab ID: 1505144-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-Volatiles									
74-95-3b	Dibromomethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-71-8b	Dichlorodifluoromethaneb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A10b
60-29-7b	Diethyl etherb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-20-3b	Diisopropyl Etherb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
100-41-4	Ethylbenzeneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
637-92-3b	Ethyltertiarybutyletherb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
67-72-1b	Hexachloroethaneb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
98-82-8b	Isopropylbenzeneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
1330-20-7b	m & p - Xyleneb	NDb	140b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
74-88-4	Methyl iodideb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-09-2b	Methylene chlorideb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
1634-04-4	Methyltertiarybutyletherb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
91-20-3b	Naphthaleneb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	Xb
104-51-8b	n-Butylbenzeneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
103-65-1b	n-Propylbenzeneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
95-47-6b	o-Xyleneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
99-87-6b	p-Isopropyl tolueneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
135-98-8b	sec-Butylbenzeneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
100-42-5b	Styreneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
98-06-6b	tert-Butylbenzeneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-65-0b	tertiary Butyl Alcoholb	NDb	3500b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	A05b
994-05-8b	tertiaryAmylmethyletherb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
127-18-4	Tetrachloroethyleneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
109-99-9b	Tetrahydrofuranb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
108-88-3b	Tolueneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
156-60-5b	trans-1,2-Dichloroethyleneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
10061-02-6b	trans-1,3-Dichloropropyleneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
110-57-6b	trans-1,4-Dichloro-2-buteneb	NDb	350b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
79-01-6b	Trichloroethyleneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-69-4	Trichlorofluoromethaneb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
75-01-4	Vinyl chlorideb	NDb	69b	ug/kg dryb	50b	05/18/15b	B5E1812b	8260b	
Surrogate: Bromofluorobenzene-			122 %-	40.3-194-		05/18/15-	B5E1812b	8260-	
Surrogate: Dibromofluoromethane-			111 %-	52.1-217-		05/18/15-	B5E1812b	8260-	
Surrogate: Toluene-d8-			121 %-	55.4-196-		05/18/15-	B5E1812b	8260-	



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Client ID: CHLL-SB-144-6"-5'p

Lab ID: 1505144-06p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6b	2-Methylnaphthalene	NDb	600b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
83-32-9b	Acenaphthene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
208-96-8b	Acenaphthylene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
120-12-7b	Anthracene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
56-55-3b	Benz[a]anthracene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	480b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	480b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	480b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	480b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
218-01-9b	Chrysene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	480b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
206-44-0b	Fluoranthene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
86-73-7b	Fluorene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	480b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
91-20-3b	Naphthalene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
85-01-8b	Phenanthrene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
129-00-0b	Pyrene	NDb	240b	ug/kg dryb	1b	05/22/15b	B5E1415b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			81.4 %-	32.9-115-		05/22/15-	B5E1415b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			62.1 %-	31.8-115-		05/22/15-	B5E1415b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			84.0 %-	38.5-115-		05/22/15-	B5E1415b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			76.6 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			76.3 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	



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Client ID: CHLL-SB-144-6''-5'p
Lab ID: 1505144-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistryp									
TSb	% Total Solidsp	83.3p	0.1b	%b	1b	05/15/15b	B5E1528b	2540 Bb	



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Client ID: CHLL-SB-145-0-6"p

Lab ID: 1505144-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	140b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
Surrogate: Decachlorobiphenyl-			80.5 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			73.2 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	71.9p	0.1b	%b	1b	05/15/15b	B5E1528b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number 1585144	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops		Matrix SOIL
Site Code/Project Number 31000098	AY 13	CC Email 1 j.binkley@westonsolutions.com	Project IAT Days
Dept/Division/District DEQ-RRD-UP District	Index 44251	CC Email 2 daniel.lebau@westonsolutions.com	Project Due Date
State Project Manager Amy Keranen	PCA 30872	CC Email 3 pincumbej@michigan.gov	Sample Collector AK/JP/AB-DEQ-RRD
State Project Manager Email keranena@michigan.gov	Project 456990	Overflow Lab Choice 1 	Sample Collector Phone 906-337-0389
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2 	Contract Firm Weston Solutions
		Accept Analysis hold time codes no	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-SB-142-0-6"	5/12/15	0840	1-802	
2	02 CHLL-SB-142-6"-8'		0845	2-802 1-40mL	
3	03 CHLL-SB-143-0-6"		0947	1-802	
4	04 CHLL-SB-143-6"-5'		0955	2-802 1-40mL	
5	05 CHLL-SB-144-0-6"		1030	1-802	
6	06 CHLL-SB-144-6"-5'		1037	2-802 1-40mL	
7	07 CHLL-SB-145-0-6"		1122	1-802	
8	CHLL-SB-				
9	CHLL-SB-				
10	CHLL-SB-				

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. JEFF PINCUMBE MDEQ	Print Name & Org. Jeremiah Brown MDEQ	5/15/15
	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	
	Print Name & Org. Jeremiah Brown MDEQ	Print Name & Org. Melissa Smith	5/15/15 900
	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	
	Print Name & Org. 	Print Name & Org. 	
	Signature: 	Signature: 	



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

P.O. Box 30270
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ORRECTED REPORT

15 June 2015

Work Order: 15051430

Price: \$2,295.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855

RE: ABANDONED MINING WASTES-TORCH LAKE NSO

A correction has been made to the original report that was sent to you. A description of the correction should be present in the case narrative section of this report in order to clarify any changes.

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

Sincerely,

George Krisztian
Laboratory Director



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CORRECTED REPORT

MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/15/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SB152-6"-2.5'b	1505143-01b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB153-0-6"b	1505143-02b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB153-6"-2.5'b	1505143-03b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-0-6"b	1505143-04	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-6"-2.5'b	1505143-05b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-6"-2.5'-DUPb	1505143-06b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB154-2.5'-4'b	1505143-07b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB155-0-6"b	1505143-08b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB155-6"-2.5'b	1505143-09b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB155-2.5'-4'b	1505143-10b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB156-0-6"b	1505143-11b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB156-6"-2.5'b	1505143-12b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB156-2.5'-4'b	1505143-13b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-0-6"b	1505143-14	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-6"-2.5'b	1505143-15b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-6"-2.5'-DUPb	1505143-16b	Soil/Sedimentb	05/12/2015b	05/15/2015b	
CHLL-SB157-2.5'-4'b	1505143-17b	Soil/Sedimentb	05/12/2015b	05/15/2015b	

Notes and Definitions p

Y21b Reporting Limits (RL) raised due to matrix interference.b
Nb Result is estimated due to Non-homogeneous sample. b
JAb Result is estimated due to multiple Aroclors present. b
A07b Result(s) and reporting limit(s) are estimated due to poor precision. b
A02b Result is estimated due to high surrogate recovery. b
100b Decachlorobiphenyl is present in Arochlor 1268. Result is estimated. b
NDb Indicates compound analyzed for but not detected b
RLb Reporting Limit b
NAb Not Applicable b
dry Sample results reported on a dry weight basisb

Case Narrativep

This is a corrected report. This report for Laboratory work order 1505143 , ABANDONED MINING WASTES-TORCH LAKE NS , received on b 5/15/2015 8:56:00 AM has been modified from the original report. The field ID for sample 1505143-07 was changed from CHLL-SB154-6"-2.5'-4' b to CHLL-SB154-2.5'-4'.b



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ENVIRONMENTAL LABORATORY

P.O. Box 302700
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ORRECTED REPORT

Client ID: CHLL-SB152-6''-2.5'p

Lab ID: 1505143-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
Surrogate: Decachlorobiphenyl-			62.1 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			58.3 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	93.2p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORTC

Client ID: CHLL-SB153-0-6"p

Lab ID: 1505143-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	3300p	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	8600b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	8500p	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268p	4100p	1300b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
<i>Surrogate: Decachlorobiphenyl-</i>			210 %-	30-150-		05/29/15-	B5E1811b	8081/8082-	100, A02-
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.4 %-	30-150-		05/29/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	75.6p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORTC

Client ID: CHLL-SB153-6''-2.5'p

Lab ID: 1505143-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			62.8 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			61.6 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	95.6p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORTC

Client ID: CHLL-SB154-0-6''p

Lab ID: 1505143-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11104-28-2b	Aroclor 1221b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11141-16-5b	Aroclor 1232b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
53469-21-9b	Aroclor 1242b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	1500p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	2800b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	2800p	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	1200b	ug/kg dryb	10b	05/29/15b	B5E1811b	8081/8082b	Y21b
<i>Surrogate: Decachlorobiphenyl-</i>			<i>129 %-</i>	<i>30-150-</i>		<i>05/29/15-</i>	B5E1811b	<i>8081/8082-</i>	
<i>Surrogate: Tetrachloro-m-xylene-</i>			<i>69.0 %-</i>	<i>30-150-</i>		<i>05/29/15-</i>	B5E1811b	<i>8081/8082-</i>	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	85.7p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORTC

Client ID: CHLL-SB154-6''-2.5'p

Lab ID: 1505143-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
Surrogate: Decachlorobiphenyl-		69.5 %-	30-150-			05/27/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-		67.1 %-	30-150-			05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	96.8p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORTC

Client ID: CHLL-SB154-6''-2.5'-DUPp

Lab ID: 1505143-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	100b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			78.1 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	96.8p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORTC

Client ID: CHLL-SB154-2.5'-4'p

Lab ID: 1505143-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			70.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			63.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	94.2p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	Nb



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Client ID: CHLL-SB155-0-6''p

Lab ID: 1505143-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	190b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
12672-29-6b	Aroclor 1248b	NDb	190b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
11097-69-1b	Aroclor 1254p	820p	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260b	NDb	750b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	750p	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			93.6 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			63.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	87.5p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB155-6''-2.5'p

Lab ID: 1505143-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
Surrogate: Decachlorobiphenyl-			83.2 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			67.0 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	85.9p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB155-2.5'-4'p

Lab ID: 1505143-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			70.2 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			75.8 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	81.7p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB156-0-6''p

Lab ID: 1505143-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254p	260p	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11096-82-5b	Aroclor 1260	NDb	370b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262p	370p	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	JAb
11100-14-4	Aroclor 1268	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			53.9 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			59.4 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	86.4p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB156-6''-2.5'p

Lab ID: 1505143-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1811b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			66.8 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			58.6 %-	30-150-		05/27/15-	B5E1811b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	86.0p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORT

Client ID: CHLL-SB156-2.5'-4'p

Lab ID: 1505143-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.6 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.6 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	83.6p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORT

Client ID: CHLL-SB157-0-6"p

Lab ID: 1505143-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	370b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	Y21b
11096-82-5b	Aroclor 1260	NDb	320b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	Y21b
37324-23-5b	Aroclor 1262	NDb	320b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	Y21b
11100-14-4	Aroclor 1268	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.1 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			63.6 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	87.4p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORT

Client ID: CHLL-SB157-6''-2.5'p

Lab ID: 1505143-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	A07b
11104-28-2b	Aroclor 1221	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268	NDb	120b	ug/kg dryb	1b	05/26/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.7 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.4 %-	30-150-		05/26/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistryp									
TSb	% Total Solidsp	82.3p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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ORRECTED REPORT

Client ID: CHLL-SB157-6"-2.5'-DUPp

Lab ID: 1505143-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
Surrogate: Decachlorobiphenyl-			75.5 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			64.7 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	84.3p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



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Client ID: CHLL-SB157-2.5'-4'p

Lab ID: 1505143-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
12672-29-6b	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11097-69-1b	Aroclor 1254	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
11100-14-4	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	05/27/15b	B5E1907b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			78.5 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.0 %-	30-150-		05/27/15-	B5E1907b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	87.3p	0.1b	%b	1b	05/15/15b	B5E1510b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number 1585143	Project Name Abandoned Mining Waste Torch Lake	Matrix 3/4 SOIL/SEDIMENT
Site Code/Project Number 31000098	AY 13	CC Email 1 pincumbej
Dept-Division-District DEQ-RRD-Calumet Field Office	Index 44251	CC Email 2 shleryb
State Project Manager Amy Keranen	PCA 30872	CC Email 3 J.BINKUPY@WESTON SOLUTIONS.COM
State Project Manager Email keranena	Project 456990	Overflow Lab Choice 1
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2
		Accept Analysts hold time codes
		Sample Collector Jeff Pincumbe
		Sample Collector Phone 517-335-6418
		Contract Firm WESTON SOLUTIONS
		Contract Firm Primary Contact JEFF BINKUPY
		Primary Contact Phone (906) 523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL-SB152-6"-2.5'	5/12/15	1310	1-802	
2	02 CHLL-SB153-0-6"		1324		
3	03 CHLL-SB153-6"-2.5'		1327		
4	04 CHLL-SB154-0-6"		1343		
5	05 CHLL-SB154-6"-2.5'		1345		
6	06 CHLL-SB154-6"-2.5'-DUP		1345		
7	07 CHLL-SB154-2.5'-4'		1348		
8	08 CHLL-SB155-0-6"		1409		
9	09 CHLL-SB155-6"-2.5'		1411		
10	10 CHLL-SB155-2.5'-4'		1415		

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Jeff Pincumbe - MDEQ	Serenity Brown MDEQ	5/15/15
	Signature: <i>Jeff Pincumbe</i>	<i>Serenity Brown</i>	
	Print Name & Org. Serenity Brown MDEQ	Melissa Smith	5/15/15 856
	Signature: <i>Melissa Smith</i>	<i>De Sa</i>	
	Print Name & Org.		
	Signature:		



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1585143

Abandoned Mining Waste Torch Lake

SOIL/SEDIMENT

Site Code/Project Number

AY

CC Email 1

Project TAT Days

Sample Collector

31000098

13

pincumbej

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-Calumet Field Office

44251

shierby

State Project Manager

PCA

CC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

J.BINKLEY@WESTONSOLUTIONS.COM

WESTON SOLUTIONS

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranena

456990

JEFF BINKLEY

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

(906) 523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	11 CHLL-SB156-0-6"	5/12/15	1423	1-802	
2	12 CHLL-SB156-6"-2.5'		1425		
3	13 CHLL-SB156-2.5'-4'		1427		
4	14 CHLL-SB157-0-6"		1515		
5	15 CHLL-SB157-6"-2.5'		1517		
6	16 CHLL-SB157-6"-2.5'-DUP		1517		
7	17 CHLL-SB157-2.5'-4'		1520		
8	CHLL-				
9	CHLL-				
10	CHLL-				

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,Bc,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn)		Silver - Ag 1 2 3 4 5 6 7 8 9 10		GS - General Chemistry	
Volatiles - Full List 1 2 3 4 5 6 7 8 9 10		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 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			
BNAs 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			
				Uranium - U 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. Jeff Pincumbe - MDEQ	Jeremiah Brown MDEQ	5/15/15
	Signature: <i>Jeff Pincumbe</i>	Signature: <i>Jeremiah Brown</i>	
	Print Name & Org. Jeremiah Brown MDEQ	Melissa Smith	5/15/15 8:50
	Signature: <i>Jeremiah Brown</i>	Signature: <i>Melissa Smith</i>	
	Print Name & Org.		
	Signature:		



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

19 June 2015

Work Order: 15060010

Price: \$4,870.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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Lansing, MI 48909
TEL: (517) 335-98000
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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/19/2015

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SD-80 0'-6"b	1506001-01b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-80 1'-3"b	1506001-02b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-80 3'-4.75"b	1506001-03b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-81 0'-6"b	1506001-04b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-81 1'-3"b	1506001-05b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-81 3'-4"b	1506001-06b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-74 0'-6"b	1506001-07b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-74 1'-3"b	1506001-08b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-74 3'-5"b	1506001-09b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-73 0'-6"b	1506001-10b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-73 1'-3"b	1506001-11b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-73 3'-4.9"b	1506001-12b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-75 0'-6"b	1506001-13b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-75 1'-3"b	1506001-14b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-75 3'-5"b	1506001-15b	Soil/Sedimentb	05/27/2015b	06/01/2015b	
CHLL-SD-73 1'-3' DUPb	1506001-16b	Soil/Sedimentb	05/27/2015b	06/01/2015b	

Notes and Definitions p

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
Ib	Dilution required due to matrix interference; reporting limit (RL) raised.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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ENVIRONMENTAL LABORATORY**

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

Client ID: CHLL-SD-80 0'-6''p

Lab ID: 1506001-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254p	210p	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	550b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.8 %-	30-150-		06/11/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			80.6 %-	30-150-		06/11/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	36.5p	0.1b	%b	1b	06/01/15b	B5F0119b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.27b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	
Inorganics-Metals									
7429-90-5b	Aluminiump	15000p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyp	11p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	14p	5.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	660p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiump	2.7p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	40p	20b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt p	19p	5.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	6700p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	23000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	1800p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	15p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	12000p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganesep	450p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryp	0.3p	0.1b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	51p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	16p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	5.0b	mg/kg dryb	100b	06/10/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	310p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	



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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-80 1'-3'p

Lab ID: 1506001-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	1900b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
83-32-9b	Acenaphthene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
208-96-8b	Acenaphthylene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
120-12-7b	Anthracene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
56-55-3b	Benz[a]anthracene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1500b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1500b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1500b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1500b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
218-01-9b	Chrysene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1500b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
206-44-0b	Fluoranthene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
86-73-7b	Fluorene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1500b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
91-20-3b	Naphthalene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
85-01-8b	Phenanthrene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
129-00-0b	Pyrene	NDb	750b	ug/kg dryb	1b	06/12/15b	B5F0308b	8270b	
Surrogate: 2-Fluorobiphenyl-			75.7 %-	32.9-115-		06/12/15-	B5F0308b	8270-	
Surrogate: Nitrobenzene-d5-			69.8 %-	31.8-115-		06/12/15-	B5F0308b	8270-	
Surrogate: p-Terphenyl-d14-			76.3 %-	38.5-115-		06/12/15-	B5F0308b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			85.7 %-	30-150-		06/11/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			82.0 %-	30-150-		06/11/15-	B5F0516	8081/8082-	



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Client ID: CHLL-SD-80 1'-3'p
Lab ID: 1506001-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	66.6p	0.1b	%b	1b	06/01/15b	B5F0119b	2540 Bb	


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Client ID: CHLL-SD-80 3'-4.75'p

Lab ID: 1506001-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			72.7 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			67.1 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	67.4p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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**Client ID: CHLL-SD-81 0'-6''p
Lab ID: 1506001-04p**

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254p	130p	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	360b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			71.3 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			72.3 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids ^p	55.8p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	
57-12-5b	Total Cyanide ^b	NDb	0.18b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	
Inorganics-Metals^p									
7429-90-5b	Aluminium^p	10000p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimony^p	12p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenic^p	6.8p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Barium^p	800p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Beryllium^p	1.3p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmium^p	2.9p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromium^p	23p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt^p	13p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop er^p	9900p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Iron^p	18000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Lead^p	1700p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithium^p	21p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesium^p	11000p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganese^p	340p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercury^p	0.3p	0.09b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickel^p	33p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Selenium^p	0.6p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silver^p	20p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thallium ^b	NDb	5.0b	mg/kg dryb	100b	06/10/15b	B5F0503b	6020/200.8b	
7440-66-6	Zinc^p	290p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



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Client ID: CHLL-SD-81 1'-3'p

Lab ID: 1506001-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	1800b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
83-32-9b	Acenaphthene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
208-96-8b	Acenaphthylene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
120-12-7b	Anthracene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
56-55-3b	Benz[a]anthracene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1400b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1400b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1400b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1400b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
218-01-9b	Chrysene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1400b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
206-44-0b	Fluoranthene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
86-73-7b	Fluorene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1400b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
91-20-3b	Naphthalene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
85-01-8b	Phenanthrene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
129-00-0b	Pyrene	NDb	720b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
Surrogate: 2-Fluorobiphenyl-			71.8 %-	32.9-115-		06/13/15-	B5F0308b	8270-	
Surrogate: Nitrobenzene-d5-			63.8 %-	31.8-115-		06/13/15-	B5F0308b	8270-	
Surrogate: p-Terphenyl-d14-			66.6 %-	38.5-115-		06/13/15-	B5F0308b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			78.4 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			79.3 %-	30-150-		06/12/15-	B5F0516	8081/8082-	



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Client ID: CHLL-SD-81 1'-3'p
Lab ID: 1506001-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	69.5p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-81 3'-4'p

Lab ID: 1506001-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	290b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			82.7 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			78.1 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	68.6p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-74 0'-6"p

Lab ID: 1506001-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254p	210p	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	JA, Tb
11096-82-5b	Aroclor 1260b	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262p	160p	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	JA, Tb
11100-14-4b	Aroclor 1268b	NDb	450b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			77.0 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			79.2 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids ^p	44.0p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.23b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	
Inorganics-Metals^p									
7429-90-5b	Aluminium^p	11000p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimony^p	7.5p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenic^p	12p	5.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Barium^p	570p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmium^p	2.6p	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromium^p	30p	20b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt^p	13p	5.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Copper^p	4000p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Iron^p	20000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Lead^p	1100p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithium^p	10p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesium^p	8600p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganese^p	320p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercury^p	0.2p	0.1b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickel^p	43p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silver^p	7.8p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zinc^p	440p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	



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Client ID: CHLL-SD-74 1'-3'p

Lab ID: 1506001-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	1900b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
83-32-9b	Acenaphthene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
208-96-8b	Acenaphthylene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
120-12-7b	Anthracene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
56-55-3b	Benz[a]anthracene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1500b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1500b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1500b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1500b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
218-01-9b	Chrysene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1500b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
206-44-0b	Fluoranthene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
86-73-7b	Fluorene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1500b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
91-20-3b	Naphthalene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
85-01-8b	Phenanthrene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
129-00-0b	Pyrene	NDb	740b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
Surrogate: 2-Fluorobiphenyl-			74.6 %-	32.9-115-		06/13/15-	B5F0308b	8270-	
Surrogate: Nitrobenzene-d5-			66.0 %-	31.8-115-		06/13/15-	B5F0308b	8270-	
Surrogate: p-Terphenyl-d14-			73.6 %-	38.5-115-		06/13/15-	B5F0308b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			75.4 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			82.6 %-	30-150-		06/12/15-	B5F0516	8081/8082-	



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Client ID: CHLL-SD-74 1'-3'p
Lab ID: 1506001-08p

Inorganics-General Chemistry									
CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
TS	% Total Solids	67.3	0.1	%	1	06/02/15	B5F0120	2540 B	



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Client ID: CHLL-SD-74 3'-5'p

Lab ID: 1506001-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	260b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			60.6 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			58.8 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	77.1p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-73 0'-6"p

Lab ID: 1506001-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254p	180p	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	400b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			66.4 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			65.4 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	49.8p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.20b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	
Inorganics-Metalsp									
7429-90-5b	Aluminiump	7100p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyp	13p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	4.8p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	2300p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliump	0.8p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiump	2.7p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	19p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt p	8.9p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	3800p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	12000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	1900p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	6.8p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	6000p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganesep	190p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryp	0.1p	0.1b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	27p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniump	0.4p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	13p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	290p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



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Client ID: CHLL-SD-73 1'-3'p

Lab ID: 1506001-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
83-32-9b	Acenaphthene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
208-96-8b	Acenaphthylene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
120-12-7b	Anthracene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
56-55-3b	Benz[a]anthracene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1700b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1700b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1700b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1700b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
218-01-9b	Chrysene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1700b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
206-44-0b	Fluoranthene	940p	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
86-73-7b	Fluorene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1700b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
91-20-3b	Naphthalene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
85-01-8b	Phenanthrene	NDb	830b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
129-00-0b	Pyrene	700p	420b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	Tb
<i>Surrogate: 2-Fluorobiphenyl-</i>			76.3 %-	32.9-115-		06/13/15-	B5F0308b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			63.2 %-	31.8-115-		06/13/15-	B5F0308b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			67.5 %-	38.5-115-		06/13/15-	B5F0308b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254p	250p	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	330b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			57.3 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			65.7 %-	30-150-		06/12/15-	B5F0516	8081/8082-	



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Client ID: CHLL-SD-73 1'-3'p
Lab ID: 1506001-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	59.9p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-73 3'-4.9'p

Lab ID: 1506001-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			75.4 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			73.1 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	66.9p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-75 0'-6"p

Lab ID: 1506001-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
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Organics-PCBs as Aroclorsp

See note Y20p

12674-11-2b	Aroclor 1016	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	250b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	

Surrogate: Decachlorobiphenyl-		81.1 %-	30-150-	06/12/15-	B5F0516	8081/8082-			
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Surrogate: Tetrachloro-m-xylene-		69.1 %-	30-150-	06/12/15-	B5F0516	8081/8082-			
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Inorganics-General Chemistry

TSb	% Total Solidsp	79.6p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.13b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	

Inorganics-Metalsp

7429-90-5b	Aluminiump	5000p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	1.3p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	17p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliump	0.4p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	12p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobaltb	6.2p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	480p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	7200p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	8.2p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	3.4p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	4900p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganesep	150p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.06	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	17p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	1.7p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	40p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



**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-75 1'-3'p

Lab ID: 1506001-14p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	570b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
83-32-9b	Acenaphthene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
208-96-8b	Acenaphthylene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
120-12-7b	Anthracene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
56-55-3b	Benz[a]anthracene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	460b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	460b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	460b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	460b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
218-01-9b	Chrysene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	460b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
206-44-0b	Fluoranthene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
86-73-7b	Fluorene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	460b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
91-20-3b	Naphthalene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
85-01-8b	Phenanthrene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
129-00-0b	Pyrene	NDb	230b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
Surrogate: 2-Fluorobiphenyl-			66.8 %-	32.9-115-		06/13/15-	B5F0308b	8270-	
Surrogate: Nitrobenzene-d5-			61.9 %-	31.8-115-		06/13/15-	B5F0308b	8270-	
Surrogate: p-Terphenyl-d14-			65.5 %-	38.5-115-		06/13/15-	B5F0308b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	110b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			84.7 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			75.3 %-	30-150-		06/12/15-	B5F0516	8081/8082-	



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ENVIRONMENTAL LABORATORY

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

Client ID: CHLL-SD-75 1'-3'
Lab ID: 1506001-14

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	87.4	0.1	%	1	06/02/15	B5F0120	2540 B	



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Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SD-75 3'-5'p

Lab ID: 1506001-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	06/11/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			98.0 %-	30-150-		06/11/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			83.5 %-	30-150-		06/11/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	83.4p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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ENVIRONMENTAL LABORATORY

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TEL: (517) 335-98000
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Client ID: CHLL-SD-73 1'-3' DUPp

Lab ID: 1506001-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	2000b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
83-32-9b	Acenaphthene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
208-96-8b	Acenaphthylene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
120-12-7b	Anthracene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
56-55-3b	Benz[a]anthracene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
218-01-9b	Chrysene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
206-44-0b	Fluoranthene	1200p	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
86-73-7b	Fluorene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
91-20-3b	Naphthalene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
85-01-8b	Phenanthrene	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
129-00-0b	Pyrene	890p	810b	ug/kg dryb	1b	06/13/15b	B5F0308b	8270b	
Surrogate: 2-Fluorobiphenyl-			72.0 %-	32.9-115-		06/13/15-	B5F0308b	8270-	
Surrogate: Nitrobenzene-d5-			64.6 %-	31.8-115-		06/13/15-	B5F0308b	8270-	
Surrogate: p-Terphenyl-d14-			68.8 %-	38.5-115-		06/13/15-	B5F0308b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254p	230p	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	320b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
Surrogate: Decachlorobiphenyl-			60.2 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			72.3 %-	30-150-		06/12/15-	B5F0516	8081/8082-	



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ENVIRONMENTAL LABORATORY

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

Client ID: CHLL-SD-73 1'-3' DUP
Lab ID: 1506001-16p

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	61.9	0.1	%	1	06/02/15	B5F0120	2540 B	



Analysis Request Sheet

Lab Work Order Number 1506001	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops	Matrix SEDIMENT		
Site Code/Project Number 31000098	AT 13	CC Email 1 j.binkley@westonsolutions.com	Project IAT Days	Sample Collector AK/JP/AB-DEQ-RRD
Dept-Division-District DEQ-RRD-UP District	Index 44251	CC Email 2 daniel.liebau@westonsolutions.com	Project Due Date	Sample Collector Phone 906-337-0389
State Project Manager Amy Keranen	PCA 30872	CC Email 3 plncumbel@michigan.com	Accept Analysis hold time codes	Contract Firm Weston Solutions
State Project Manager Email keranenam@michigan.gov	Project 456990	Overflow Lab Choice 1		Contract Firm Primary Contact Jeff Binkley
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2		Primary Contact Phone 906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL-SD- 80 0'-6"	5-27-15	13:00	1	
2	02 CHLL-SD- 80 1'-3'	5-27-15	13:00	1	
3	03 CHLL-SD- 80 3'-4.75'	5-27-15	13:00	1	
4	04 CHLL-SD- 81 0'-6"	5-27-15	14:00	1	
5	05 CHLL-SD- 81 1'-3'	5-27-15	14:00	1	
6	06 CHLL-SD- 81 3'-4'	5-27-15	14:00	1	
7	07 CHLL-SD- 74 0'-6"	5-27-15	16:30	1	
8	08 CHLL-SD- 74 1'-3'	5-27-15	16:30	1	
9	09 CHLL-SD- 74 3'-5'	5-27-15	16:30	1	
10	10 CHLL-SD- 73 0'-6"	5-27-15	17:43	1	

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Signature: Aaron Berndt MDEQ	Print Name & Org. Signature: DANIEL LIEBAU WESTON SOLUTIONS	5/29/15 - 1300
	Print Name & Org. Signature: VPS	Print Name & Org. Signature: Joshua Pung MDEQ	6/11/15 938
	Print Name & Org. Signature: J236 145 580 9		
	Print Name & Org. Signature: J236 145 582 7		
	Print Name & Org. Signature: J236 145 581 8		



Analysis Request Sheet

Lab Work Order Number 1506001	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops		Matrix SEDIMENT
Site Code/Project Number 31000098	AT 13	LC Email 1 j.binkley@westonsolutions.com	Project (AI) Days
Dept-Division-District DEQ-RRD-UP District	Index 44251	LC Email 2 daniel.lebau@westonsolutions.com	Project Due Date
State Project Manager Amy Keranen	PCA 30872	LC Email 3 pincumbel@mlchigan.com	Sample Collector AK/JP/AB-DEQ-RRD
State Project Manager Email keranen@mlchigan.gov	Project 456990	Overflow Lab Choice 1 	Sample Collector Phone 906-337-0389
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2 	Contract Firm Weston Solutions
		Accept Analysis hold time codes 	Contract Firm Primary Contact Jeff Binkley
			Primary Contact Phone 906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHLL-SD- 73 1'-3'	5-27-15	17:43	1	
2	CHLL-SD- 73 3'-4.9'	5-27-15	17:43	1	
3	CHLL-SD- 75 0'-6"	5-27-15	18:30	1	
4	CHLL-SD- 75 1'-3'	5-27-15	18:30	1	
5	CHLL-SD- 75 3'-5'	5-27-15	18:30	1	
6	CHLL-SD- 73 1'-3' Dup	5-27-15	17:43	1	
7	CHLL-SD-				
8	CHLL-SD-				
9	CHLL-SD-				
10	CHLL-SD-				

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name Aaron Berndt & Org. MDEQ Signature: <i>Aaron Berndt</i>	Print Name DANIELLE BAU & Org. WESTON SOLUTIONS Signature: <i>Danille Bau</i>	5/29/15-1300
	Print Name UPS & Org. Signature: J236 145 580 9		
	Print Name J236 145 582 7 & Org. Signature: J236 145 581 8	Print Name Joshua R Perry & Org. MDEQ Signature: <i>Joshua R Perry</i>	6/11/15 938



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

19 June 2015

Work Order: 15060030

Price: \$468.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/19/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SW01- 6.7-7.7'b	1506003-01b	Waterb	05/27/2015b	06/01/2015b	
CHLL-SW02-12.5-13.5'b	1506003-02b	Waterb	05/27/2015b	06/01/2015b	
CHLL-SW03-18.4-19.4'b	1506003-03b	Waterb	05/28/2015b	06/01/2015b	
CHLL-SW04-11.5-12.5'b	1506003-04b	Waterb	05/28/2015b	06/01/2015b	

Notes and Definitions p

NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb



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ENVIRONMENTAL LABORATORY

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SW01- 6.7-7.7'p

Lab ID: 1506003-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
Surrogate: Decachlorobiphenyl-			60.9 %-	30-150-		06/12/15-	B5F0512b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			44.9 %-	30-150-		06/12/15-	B5F0512b	8081/8082-	



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SW02-12.5-13.5'p

Lab ID: 1506003-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/12/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			60.9 %-	30-150-	06/12/15-	B5F0512b	8081/8082-		
<i>Surrogate: Tetrachloro-m-xylene-</i>			44.5 %-	30-150-	06/12/15-	B5F0512b	8081/8082-		



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ENVIRONMENTAL LABORATORY**

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

Client ID: CHLL-SW03-18.4-19.4'p

Lab ID: 1506003-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			64.3 %-	30-150-		06/10/15-	B5F0512b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			43.4 %-	30-150-		06/10/15-	B5F0512b	8081/8082-	



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ENVIRONMENTAL LABORATORY**

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

Client ID: CHLL-SW04-11.5-12.5'p

Lab ID: 1506003-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			65.1 %-	30-150-	06/10/15-	B5F0512b	8081/8082-		
<i>Surrogate: Tetrachloro-m-xylene-</i>			44.7 %-	30-150-	06/10/15-	B5F0512b	8081/8082-		



Michigan Department of Environmental Quality
Laboratory Services Section
Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506003

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

WATER

Site Code/Project Number

AY

CC Email 1

Project TAT Days

Sample Collector

31000098

13

j.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.liebau@westonsolutions.com

906-337-0389

State Project Manager

PCA

CC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

pincumbej@michigan.gov

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranena@michigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments	Field Cond	Field D.O.	Field pH	Field Secchi	Field Temp																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1	01 CHLL-SW01-6.7'-7.7'	5/27/2015	12:27	2	@7.2'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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3	03 CHLL-SW03-18.4'-19.4'	5/28/2015	8:45	2	@18.9'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
4	CHLL-SW03-18.4'-19.4'-DUP	5/28/2015	8:45	1	@18.9'	Sample NOT received																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
5	04 CHLL-SW04-11.5'-12.5'	5/28/2015	10:07	1	@12'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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<table><tr><th colspan="5">ORGANIC CHEMISTRY</th><th colspan="5">MAD - DISSOLVED METALS</th><th colspan="5">MA - TOTAL METALS</th><th colspan="5">GENERAL CHEMISTRY</th></tr><tr><td colspan="5">VOA - Volatile Organic Acidic</td><td colspan="5">Diss - Silver - Ag</td><td colspan="5">Silver - Ag</td><td colspan="5">GB Total Cyanide - CN</td></tr><tr><td colspan="5">Volatiles - Full List</td><td colspan="5">Diss - Aluminum - Al</td><td colspan="5">Aluminum - Al</td><td colspan="5">GB Amenable Cyanide - CN</td></tr><tr><td colspan="5">BTEX/MTBE/TMB only</td><td colspan="5">Diss - Arsenic - As</td><td colspan="5">Arsenic - As</td><td colspan="5">GCN Available Cyanide - CN</td></tr><tr><td colspan="5">Chlorinated only</td><td colspan="5">Diss - Boron - B</td><td colspan="5">Boron - B</td><td colspan="5">CA Chlorophyll</td></tr><tr><td colspan="5">GRO</td><td colspan="5">Diss - Barium - Ba</td><td colspan="5">Barium - Ba</td><td colspan="5">GN Ortho Phosphate - OP</td></tr><tr><td colspan="5">1,4 Dioxane</td><td colspan="5">Diss - Beryllium - Be</td><td colspan="5">Beryllium - Be</td><td colspan="5">GN Nitrite - NO₂</td></tr><tr><td colspan="5">METH - Methane, Ethane, Ethene</td><td colspan="5">Diss - Cadmium - Cd</td><td colspan="5">Cadmium - Cd</td><td colspan="5">GN Nitrate - NO₃ (Calc.)</td></tr><tr><td colspan="5">Methane, Ethane, Ethene</td><td colspan="5">Diss - Cobalt - Co</td><td colspan="5">Cobalt - Co</td><td colspan="5">GN Suspended Solids - SS</td></tr><tr><td colspan="5">ON - Pesticides, PCBs</td><td colspan="5">Diss - Chromium - Cr</td><td colspan="5">Chromium - Cr</td><td colspan="5">GN Dissolved Solids - TDS</td></tr><tr><td colspan="5">Pesticides & PCBs</td><td colspan="5">Diss - Copper - Cu</td><td colspan="5">Copper - Cu</td><td colspan="5">MN Diss Solids - TDS (Calc.)</td></tr><tr><td colspan="5">Pesticides only</td><td colspan="5">Diss - Iron - Fe</td><td colspan="5">Iron - Fe</td><td colspan="5">GN Turbidity</td></tr><tr><td colspan="5">PCBs only</td><td colspan="5">Diss - Mercury - Hg</td><td colspan="5">Mercury - Hg</td><td colspan="5">MN Total Alkalinity</td></tr><tr><td colspan="5">Toxaphene</td><td colspan="5">Diss - Lithium - Li</td><td colspan="5">Lithium - Li</td><td colspan="5">MN Bicarb/Carb Alkalinity</td></tr><tr><td colspan="5">Chlordane</td><td colspan="5">Diss - Manganese - Mn</td><td colspan="5">Manganese - Mn</td><td colspan="5">(includes Total Alkalinity)</td></tr><tr><td colspan="5">BNA - Base Neutral Acids</td><td colspan="5">Diss - Molybdenum - Mo</td><td colspan="5">Molybdenum - Mo</td><td colspan="5">MN Chloride - Cl</td></tr><tr><td colspan="5">BNAs</td><td colspan="5">Diss - Nickel - Ni</td><td colspan="5">Nickel - Ni</td><td colspan="5">MN Fluoride - F</td></tr><tr><td colspan="5">Benzidines</td><td colspan="5">Diss - Lead - Pb</td><td colspan="5">Lead - Pb</td><td colspan="5">MN Sulfate - SO₄</td></tr><tr><td colspan="5">BNAs only</td><td colspan="5">Diss - Antimony - Sb</td><td colspan="5">Antimony - Sb</td><td colspan="5">MN Chromium 6 - Cr+6</td></tr><tr><td colspan="5">BNs only</td><td colspan="5">Diss - Selenium - Se</td><td colspan="5">Selenium - Se</td><td colspan="5">MN Conductivity</td></tr><tr><td colspan="5">Acids only</td><td colspan="5">Diss - Strontium - Sr</td><td colspan="5">Strontium - Sr</td><td colspan="5">MN pH</td></tr><tr><td colspan="5">Organic Specialty Requests</td><td colspan="5">Diss - Titanium - Ti</td><td colspan="5">Titanium - Ti</td><td colspan="5">GA Chem Oxyg Dem - COD</td></tr><tr><td colspan="5">Library search - Volatiles</td><td colspan="5">Diss - Thallium - Tl</td><td colspan="5">Thallium - Tl</td><td colspan="5">GA Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)</td></tr><tr><td colspan="5">Library search - SemiVolts</td><td colspan="5">Diss - Uranium - U</td><td colspan="5">Uranium - U</td><td colspan="5">GN Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)</td></tr><tr><td colspan="5">Finger Print</td><td colspan="5">Diss - Vanadium - V</td><td colspan="5">Vanadium - V</td><td colspan="5">GA Total Org Carbon - TOC</td></tr><tr><td colspan="5">ORO / ORO</td><td colspan="5">Diss - Zinc - Zn</td><td colspan="5">Zinc - Zn</td><td colspan="5">GA Ammonia - NH₃</td></tr><tr><td colspan="5">METALS CHEMISTRY PACKAGES</td><td colspan="5">Diss - Calcium - Ca</td><td colspan="5">Calcium - Ca</td><td colspan="5">GA Nitrate+Nitrite - NO₃+NO₂</td></tr><tr><td colspan="5">OpMemo2 - Total</td><td colspan="5">Diss - Potassium - K</td><td colspan="5">Potassium - K</td><td colspan="5">GA Kjeldahl Nitrogen - KN</td></tr><tr><td colspan="5">OpMemo2 - Dissolved</td><td colspan="5">Diss - Magnesium - Mg</td><td colspan="5">Magnesium - Mg</td><td colspan="5">GA Total Phosphorus - TP</td></tr><tr><td colspan="5">(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)</td><td colspan="5">Diss - Sodium - Na</td><td colspan="5">Sodium - Na</td><td colspan="5"></td></tr><tr><td colspan="5">Michigan10 - Total</td><td colspan="5">Diss - Hardness - Ca, Mg</td><td colspan="5">Hardness - Ca, Mg</td><td colspan="5"></td></tr><tr><td colspan="5">Michigan10 - Dissolved</td><td colspan="5">MD - Metals Dissolved</td><td colspan="5">LHG - Low Level Mercury</td><td colspan="5"></td></tr><tr><td colspan="5">(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)</td><td colspan="5">Lab Filtration</td><td colspan="5">Mercury Low Level - Hg</td><td colspan="5"></td></tr></table>											ORGANIC CHEMISTRY					MAD - DISSOLVED METALS					MA - TOTAL METALS					GENERAL CHEMISTRY					VOA - Volatile Organic Acidic					Diss - Silver - Ag					Silver - Ag					GB Total Cyanide - CN					Volatiles - Full List					Diss - Aluminum - Al					Aluminum - Al					GB Amenable Cyanide - CN					BTEX/MTBE/TMB only					Diss - Arsenic - As					Arsenic - As					GCN Available Cyanide - CN					Chlorinated only					Diss - Boron - B					Boron - B					CA Chlorophyll					GRO					Diss - Barium - Ba					Barium - Ba					GN Ortho Phosphate - OP					1,4 Dioxane					Diss - Beryllium - Be					Beryllium - Be					GN Nitrite - NO ₂					METH - Methane, Ethane, Ethene					Diss - Cadmium - Cd					Cadmium - Cd					GN Nitrate - NO ₃ (Calc.)					Methane, Ethane, Ethene					Diss - Cobalt - Co					Cobalt - Co					GN Suspended Solids - SS					ON - Pesticides, PCBs					Diss - Chromium - Cr					Chromium - Cr					GN Dissolved Solids - TDS					Pesticides & PCBs					Diss - Copper - Cu					Copper - Cu					MN Diss Solids - TDS (Calc.)					Pesticides only					Diss - Iron - Fe					Iron - Fe					GN Turbidity					PCBs only					Diss - Mercury - Hg					Mercury - Hg					MN Total Alkalinity					Toxaphene					Diss - Lithium - Li					Lithium - Li					MN Bicarb/Carb Alkalinity					Chlordane					Diss - Manganese - Mn					Manganese - Mn					(includes Total Alkalinity)					BNA - Base Neutral Acids					Diss - Molybdenum - Mo					Molybdenum - Mo					MN Chloride - Cl					BNAs					Diss - Nickel - Ni					Nickel - Ni					MN Fluoride - F					Benzidines					Diss - Lead - Pb					Lead - Pb					MN Sulfate - SO ₄					BNAs only					Diss - Antimony - Sb					Antimony - Sb					MN Chromium 6 - Cr+6					BNs only					Diss - Selenium - Se					Selenium - Se					MN Conductivity					Acids only					Diss - Strontium - Sr					Strontium - Sr					MN pH					Organic Specialty Requests					Diss - Titanium - Ti					Titanium - Ti					GA Chem Oxyg Dem - COD					Library search - Volatiles					Diss - Thallium - Tl					Thallium - Tl					GA Diss Org Carbon - DOC (FF) (Field - Filtered & Preserved)					Library search - SemiVolts					Diss - Uranium - U					Uranium - U					GN Diss Org Carbon - DOC (LF) (Lab - Filtered & Preserved)					Finger Print					Diss - Vanadium - V					Vanadium - V					GA Total Org Carbon - TOC					ORO / ORO					Diss - Zinc - Zn					Zinc - Zn					GA Ammonia - NH ₃					METALS CHEMISTRY PACKAGES					Diss - Calcium - Ca					Calcium - Ca					GA Nitrate+Nitrite - NO ₃ +NO ₂					OpMemo2 - Total					Diss - Potassium - K					Potassium - K					GA Kjeldahl Nitrogen - KN					OpMemo2 - Dissolved					Diss - Magnesium - Mg					Magnesium - Mg					GA Total Phosphorus - TP					(Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn)					Diss - Sodium - Na					Sodium - Na										Michigan10 - Total					Diss - Hardness - Ca, Mg					Hardness - Ca, Mg										Michigan10 - Dissolved					MD - Metals Dissolved					LHG - Low Level Mercury										(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)					Lab Filtration					Mercury Low Level - Hg									
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Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org.		
	Signature:		
	Print Name & Org.		
	Signature:		
	Print Name & Org.		



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

19 June 2015

Work Order: 1506038

Price: \$468.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director

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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/19/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SW07-70.2-71.2'b	1506038-01b	Waterb	06/01/2015b	06/03/2015b	
CHLL-SW06-75.6-76.6'b	1506038-02b	Waterb	06/01/2015b	06/03/2015b	
CHLL-SW06-75.6-76.6'- DUPb	1506038-03b	Waterb	06/01/2015b	06/03/2015b	
CHLL-SW05-41.8-42.8'b	1506038-04b	Waterb	06/01/2015b	06/03/2015b	

Notes and Definitions p

NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb



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TEL: (517) 335-98000
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Client ID: CHLL-SW07-70.2-71.2'p

Lab ID: 1506038-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			65.2 %-	30-150-		06/10/15-	B5F0512b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			39.8 %-	30-150-		06/10/15-	B5F0512b	8081/8082-	



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ENVIRONMENTAL LABORATORY**

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TEL: (517) 335-98000
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Client ID: CHLL-SW06-75.6-76.6'p

Lab ID: 1506038-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/10/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			69.2 %-	30-150-		06/10/15-	B5F0512b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			44.5 %-	30-150-		06/10/15-	B5F0512b	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-SW06-75.6-76.6'- DUPp

Lab ID: 1506038-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.9 %-	30-150-		06/11/15-	B5F0512b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			47.3 %-	30-150-		06/11/15-	B5F0512b	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-SW05-41.8-42.8'p

Lab ID: 1506038-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			63.8 %-	30-150-	06/11/15-	B5F0512b	8081/8082-		
<i>Surrogate: Tetrachloro-m-xylene-</i>			43.6 %-	30-150-	06/11/15-	B5F0512b	8081/8082-		



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506038

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

WATER

Site Code/Project Number

AY

CC Email 1

Project TAT Days

Sample Collector

31000098

13

j.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.liebau@westonsolutions.com

906-337-0389

State Project Manager

PCA

CC Email 3

Accept Analysis

Contract Firm

Amy Keranen

30872

pincumbej@michigan.gov

hold time codes

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranena@michigan.gov

456990

Overflow Lab Choice 2

Jeff Binkley

State Project Manager Phone

Phase

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments	Field Cond	Field D.O.	Field pH	Field Secchi	Field Temp
1	01 CHLL-SW07-70.2'-71.2'	6/1/2015	9:17	2	@70.7'					
2	02 CHLL-SW06-75.6'-76.6'	6/1/2015	10:35	2	@76.1'					
3	03 CHLL-SW06-75.6'-76.6'-DUP	6/1/2015	10:36	2	@76.1'					
4	04 CHLL-SW05-41.8'-42.8'	6/1/2015	14:45	2	@42.3'					
5										
6										
7										
8										
9										
10										
ORGANIC CHEMISTRY		MAD - DISSOLVED METALS			MA - TOTAL METALS		GENERAL CHEMISTRY			
VOA - Volatile Organic Acidic		Diss - Silver - Ag 1 2 3 4 5 6 7 8 9 10			Silver - Ag 1 2 3 4 5 6 7 8 9 10		GB Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10			
Volatiles - Full List 1 2 3 4 5 6 7 8 9 10		Diss - Aluminum - Al 1 2 3 4 5 6 7 8 9 10			Aluminum - Al 1 2 3 4 5 6 7 8 9 10		GB Amenable 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		Diss - Arsenic - As 1 2 3 4 5 6 7 8 9 10			Arsenic - As 1 2 3 4 5 6 7 8 9 10		GCN 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		Diss - Boron - B 1 2 3 4 5 6 7 8 9 10			Boron - B 1 2 3 4 5 6 7 8 9 10		CA Chlorophyll 1 2 3 4 5 6 7 8 9 10			
GRO 1 2 3 4 5 6 7 8 9 10		Diss - Barium - Ba 1 2 3 4 5 6 7 8 9 10			Barium - Ba 1 2 3 4 5 6 7 8 9 10		GN Ortho Phosphate - OP 1 2 3 4 5 6 7 8 9 10			
1,4 Dioxane 1 2 3 4 5 6 7 8 9 10		Diss - Beryllium - Be 1 2 3 4 5 6 7 8 9 10			Beryllium - Be 1 2 3 4 5 6 7 8 9 10		GN Nitrite - NO ₂ 1 2 3 4 5 6 7 8 9 10			
METH - Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10		Diss - Cadmium - Cd 1 2 3 4 5 6 7 8 9 10			Cadmium - Cd 1 2 3 4 5 6 7 8 9 10		GN Nitrate - NO ₃ (Calc.) 1 2 3 4 5 6 7 8 9 10			
Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10		Diss - Cobalt - Co 1 2 3 4 5 6 7 8 9 10			Cobalt - Co 1 2 3 4 5 6 7 8 9 10		GN Suspended Solids - SS 1 2 3 4 5 6 7 8 9 10			
ON - Pesticides, PCBs 1 2 3 4 5 6 7 8 9 10		Diss - Chromium - Cr 1 2 3 4 5 6 7 8 9 10			Chromium - Cr 1 2 3 4 5 6 7 8 9 10		GN Dissolved Solids - TDS 1 2 3 4 5 6 7 8 9 10			
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10		Diss - Copper - Cu 1 2 3 4 5 6 7 8 9 10			Copper - Cu 1 2 3 4 5 6 7 8 9 10		MN Diss Solids - TDS (Calc.) 1 2 3 4 5 6 7 8 9 10			
Pesticides only 1 2 3 4 5 6 7 8 9 10		Diss - Iron - Fe 1 2 3 4 5 6 7 8 9 10			Iron - Fe 1 2 3 4 5 6 7 8 9 10		GN Turbidity 1 2 3 4 5 6 7 8 9 10			
PCBs only 1 2 3 4 5 6 7 8 9 10		Diss - Mercury - Hg 1 2 3 4 5 6 7 8 9 10			Mercury - Hg 1 2 3 4 5 6 7 8 9 10		MN Total Alkalinity 1 2 3 4 5 6 7 8 9 10			
Toxaphene 1 2 3 4 5 6 7 8 9 10		Diss - Lithium - Li 1 2 3 4 5 6 7 8 9 10			Lithium - Li 1 2 3 4 5 6 7 8 9 10		MN Bicarb/Carb Alkalinity 1 2 3 4 5 6 7 8 9 10			
Chlordane 1 2 3 4 5 6 7 8 9 10		Diss - Manganese - Mn 1 2 3 4 5 6 7 8 9 10			Manganese - Mn 1 2 3 4 5 6 7 8 9 10		(Includes Total Alkalinity) 1 2 3 4 5 6 7 8 9 10			
BNA - Base Neutral Acids 1 2 3 4 5 6 7 8 9 10		Diss - Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10			Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10		MN Chloride - Cl 1 2 3 4 5 6 7 8 9 10			
BNAs 1 2 3 4 5 6 7 8 9 10		Diss - Nickel - Ni 1 2 3 4 5 6 7 8 9 10			Nickel - Ni 1 2 3 4 5 6 7 8 9 10		MN Fluoride - F 1 2 3 4 5 6 7 8 9 10			
Benzidines 1 2 3 4 5 6 7 8 9 10		Diss - Lead - Pb 1 2 3 4 5 6 7 8 9 10			Lead - Pb 1 2 3 4 5 6 7 8 9 10		MN Sulfate - SO ₄ 1 2 3 4 5 6 7 8 9 10			
PNAs only 1 2 3 4 5 6 7 8 9 10		Diss - Antimony - Sb 1 2 3 4 5 6 7 8 9 10			Antimony - Sb 1 2 3 4 5 6 7 8 9 10		MN Chromium 6 - Cr+6 1 2 3 4 5 6 7 8 9 10			
BNs only 1 2 3 4 5 6 7 8 9 10		Diss - Selenium - Se 1 2 3 4 5 6 7 8 9 10			Selenium - Se 1 2 3 4 5 6 7 8 9 10		MN Conductivity 1 2 3 4 5 6 7 8 9 10			
Acids only 1 2 3 4 5 6 7 8 9 10		Diss - Strontium - Sr 1 2 3 4 5 6 7 8 9 10			Strontium - Sr 1 2 3 4 5 6 7 8 9 10		MN pH 1 2 3 4 5 6 7 8 9 10			
Organic Specialty Requests		Diss - Titanium - Ti 1 2 3 4 5 6 7 8 9 10			Titanium - Ti 1 2 3 4 5 6 7 8 9 10		GA Chem Oxy Dem - COD 1 2 3 4 5 6 7 8 9 10			
Library search - Volatiles 1 2 3 4 5 6 7 8 9 10		Diss - Thallium - Tl 1 2 3 4 5 6 7 8 9 10			Thallium - Tl 1 2 3 4 5 6 7 8 9 10		GA Diss Org Carbon - DOC (FF)1 2 3 4 5 6 7 8 9 10			
Library search - SemiVols 1 2 3 4 5 6 7 8 9 10		Diss - Uranium - U 1 2 3 4 5 6 7 8 9 10			Uranium - U 1 2 3 4 5 6 7 8 9 10		{Field - Filtered & Preserved}			
Finger Print 1 2 3 4 5 6 7 8 9 10		Diss - Vanadium - V 1 2 3 4 5 6 7 8 9 10			Vanadium - V 1 2 3 4 5 6 7 8 9 10		GN Diss Org Carbon - DOC (LF)1 2 3 4 5 6 7 8 9 10			
DRO / ORO 1 2 3 4 5 6 7 8 9 10		Diss - Zinc - Zn 1 2 3 4 5 6 7 8 9 10			Zinc - Zn 1 2 3 4 5 6 7 8 9 10		{Lab - Filtered & Preserved}			
METALS CHEMISTRY PACKAGES		Diss - Calcium - Ca 1 2 3 4 5 6 7 8 9 10			Calcium - Ca 1 2 3 4 5 6 7 8 9 10		GA Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10			
OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10		Diss - Potassium - K 1 2 3 4 5 6 7 8 9 10			Potassium - K 1 2 3 4 5 6 7 8 9 10		GA Ammonia - NH ₃ 1 2 3 4 5 6 7 8 9 10			
OpMemo2 - Dissolved 1 2 3 4 5 6 7 8 9 10		Diss - Magnesium - Mg 1 2 3 4 5 6 7 8 9 10			Magnesium - Mg 1 2 3 4 5 6 7 8 9 10		GA Nitrate+Nitrite - NO ₃ +NO ₂ 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)		Diss - Sodium - Na 1 2 3 4 5 6 7 8 9 10			Sodium - Na 1 2 3 4 5 6 7 8 9 10		GA Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10			
Michigan10 - Total 1 2 3 4 5 6 7 8 9 10		Diss - Hardness - Ca, Mg1 2 3 4 5 6 7 8 9 10			Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10		GA Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10			
Michigan10 - Dissolved 1 2 3 4 5 6 7 8 9 10		MD - Metals Dissolved			LHG - Low Level Mercury					
(As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)		Lab Filtration 1 2 3 4 5 6 7 8 9 10			Mercury Low Level - Hg 1 2 3 4 5 6 7 8 9 10					

Chain of Custody	Relinquished by		Received By		Date / Time	
	Print Name & Org.		Print Name & Org.			
	Signature:		Signature:			
	Print Name & Org.		Print Name & Org.			
	Signature:		Signature:			
	Print Name & Org.		Print Name & Org.			



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

19 June 2015

Work Order: 15060490

Price: \$117.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORYP.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
FAX: (517) 335-96000MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855bProject:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb**Reported:p**
06/19/2015b**Analytical Report for Samplesp**

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SW08-6.5-7.5'b	1506049-01b	Waterb	06/02/2015b	06/04/2015b	

Notes and Definitions p

NDb Indicates compound analyzed for but not detectedb
RLb Reporting Limitb
NAb Not Applicableb



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

P.O. Box 302700
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TEL: (517) 335-98000
FAX: (517) 335-96000

Client ID: CHLL-SW08-6.5-7.5'p

Lab ID: 1506049-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	0.10b	ug/Lb	1b	06/11/15b	B5F0512b	8081/8082b	
Surrogate: Decachlorobiphenyl-			68.4 %-	30-150-		06/11/15-	B5F0512b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			44.2 %-	30-150-		06/11/15-	B5F0512b	8081/8082-	



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506049

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

WATER

Site Code/Project Number

AY

CC Email 1

Project TAT Days

Sample Collector

31000098

13

j.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.liebau@westonsolutions.com

906-337-0389

State Project Manager

PCA

CC Email 3

Accept Analysis hold time codes

Contract Firm

Amy Keranen

30872

pincumbej@michigan.gov

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranena@michigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments	Field Cond	Field D.O.	Field pH	Field Secchi	Field Temp
1	CHLL-SW08-6.5'-7.5'	6/2/2015	14:45	2	@7'					
2										
3										
4										
5										
6										
7										
8										
9										
10										

ORGANIC CHEMISTRY	MAD - DISSOLVED METALS	MA - 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 METH - Methane, Ethane, Ethene Methane, Ethane, Ethene 1 2 3 4 5 6 7 8 9 10 ON - 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 Chlordane 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 Benzidines 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 Acids 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 - SemiVolts 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 METALS CHEMISTRY PACKAGES OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 OpMemo2 - Dissolved 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Bi,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 Michigan10 - Dissolved 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Diss - Silver - Ag 1 2 3 4 5 6 7 8 9 10 Diss - Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Diss - Arsenic - As 1 2 3 4 5 6 7 8 9 10 Diss - Boron - B 1 2 3 4 5 6 7 8 9 10 Diss - Barium - Ba 1 2 3 4 5 6 7 8 9 10 Diss - Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Diss - Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Diss - Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Diss - Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Diss - Copper - Cu 1 2 3 4 5 6 7 8 9 10 Diss - Iron - Fe 1 2 3 4 5 6 7 8 9 10 Diss - Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Diss - Lithium - Li 1 2 3 4 5 6 7 8 9 10 Diss - Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Diss - Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Diss - Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Diss - Lead - Pb 1 2 3 4 5 6 7 8 9 10 Diss - Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Diss - Selenium - Se 1 2 3 4 5 6 7 8 9 10 Diss - Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Diss - Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Diss - Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Diss - Uranium - U 1 2 3 4 5 6 7 8 9 10 Diss - Vanadium - V 1 2 3 4 5 6 7 8 9 10 Diss - Zinc - Zn 1 2 3 4 5 6 7 8 9 10 Diss - Calcium - Ca 1 2 3 4 5 6 7 8 9 10 Diss - Potassium - K 1 2 3 4 5 6 7 8 9 10 Diss - Magnesium - Mg 1 2 3 4 5 6 7 8 9 10 Diss - Sodium - Na 1 2 3 4 5 6 7 8 9 10 Diss - Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 MD - Metals Dissolved Lab Filtration 1 2 3 4 5 6 7 8 9 10	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 Boron - B 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 Uranium - U 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 Hardness - Ca, Mg 1 2 3 4 5 6 7 8 9 10 LHG - Low Level Mercury Mercury Low Level - Hg 1 2 3 4 5 6 7 8 9 10	G8 Total Cyanide - CN 1 2 3 4 5 6 7 8 9 10 GB Amenable Cyanide - CN 1 2 3 4 5 6 7 8 9 10 GCN Available Cyanide - CN 1 2 3 4 5 6 7 8 9 10 CA Chlorophyll 1 2 3 4 5 6 7 8 9 10 GN Ortho Phosphate - OP 1 2 3 4 5 6 7 8 9 10 GN Nitrite - NO ₂ 1 2 3 4 5 6 7 8 9 10 GN Nitrate - NO ₃ (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Suspended Solids - SS 1 2 3 4 5 6 7 8 9 10 GN Dissolved Solids - TDS 1 2 3 4 5 6 7 8 9 10 MN Diss Solids - TDS (Calc.) 1 2 3 4 5 6 7 8 9 10 GN Turbidity 1 2 3 4 5 6 7 8 9 10 MN Total Alkalinity 1 2 3 4 5 6 7 8 9 10 MN Bicarb/Carb Alkalinity 1 2 3 4 5 6 7 8 9 10 (Includes Total Alkalinity) MN Chloride - Cl 1 2 3 4 5 6 7 8 9 10 MN Fluoride - F 1 2 3 4 5 6 7 8 9 10 MN Sulfate - SO ₄ 1 2 3 4 5 6 7 8 9 10 MN Chromium 6 - Cr+6 1 2 3 4 5 6 7 8 9 10 MN Conductivity 1 2 3 4 5 6 7 8 9 10 MN pH 1 2 3 4 5 6 7 8 9 10 GA Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 GA Diss Org Carbon - DOC (FF) 1 2 3 4 5 6 7 8 9 10 (Field - Filtered & Preserved) GN Diss Org Carbon - DOC (LF) 1 2 3 4 5 6 7 8 9 10 (Lab - Filtered & Preserved) GA Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 GA Ammonia - NH ₃ 1 2 3 4 5 6 7 8 9 10 GA Nitrate+Nitrite - NO ₃ +NO ₂ 1 2 3 4 5 6 7 8 9 10 GA Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 GA Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org.		
	Signature:		
	Print Name & Org.		
	Signature:		
	Print Name & Org.		



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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Lansing, MI 48909
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22 June 2015

Work Order: 15060020

Price: \$6,640.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/22/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifiersp
CHLL-SD-77 0-6"b	1506002-01b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-77 1'-3"b	1506002-02b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-77 3'-5"b	1506002-03b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-78 0-6"b	1506002-04b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-78 1'-3"b	1506002-05b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-78 3'-5"b	1506002-06b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-76 0-6"b	1506002-07b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-76 1'-3"b	1506002-08b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-76 1'-3' DUPb	1506002-09b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-76 3'-5"b	1506002-10b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-79 0-6"b	1506002-11b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-79 1'-3"b	1506002-12b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-79 1'-3' DUPb	1506002-13b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-79 3'-4.75"b	1506002-14b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-82 0"-6"b	1506002-15b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-82 1'-3"b	1506002-16b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-82 3'-4.75"b	1506002-17b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-26 0"-6"b	1506002-18b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-26 1'-3"b	1506002-19b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-26 3'-4.75"b	1506002-20b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-83 0"-6"b	1506002-21b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-83 1'-3"b	1506002-22b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-83 1'-3' DUPb	1506002-23b	Soil/Sedimentb	05/28/2015b	06/01/2015b	
CHLL-SD-83 3'-4.5"b	1506002-24b	Soil/Sedimentb	05/28/2015b	06/01/2015b	



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Notes and Definitions

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
JDb	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.b
JAb	Result is estimated due to multiple Aroclors present.b
Ib	Dilution required due to matrix interference; reporting limit (RL) raised.b
A03b	Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.b
100b	Value estimated, above linear range.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-77 0-6''p

Lab ID: 1506002-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	140b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			76.5 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.9 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	70.8p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.14b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	
Inorganics-Metalsp									
7429-90-5b	Aluminiump	6600p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	1.5p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	32p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliump	0.7p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	17p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt p	9.3p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	490p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	10000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	3.7p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	4.7p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	7800p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganesep	230p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.07b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	24p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	2.2p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	65p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



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ENVIRONMENTAL LABORATORYC**

P.O. Box 302700
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Client ID: CHLL-SD-77 1'-3'p

Lab ID: 1506002-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	640b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	510b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	510b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	510b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	510b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	510b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	510b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	260b	ug/kg dryb	1b	06/09/15b	B5F0413b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			91.3 %-	32.9-115-		06/09/15-	B5F0413b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			66.4 %-	31.8-115-		06/09/15-	B5F0413b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			93.1 %-	38.5-115-		06/09/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			73.0 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			65.7 %-	30-150-		06/12/15-	B5F0516	8081/8082-	



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Client ID: CHLL-SD-77 1'-3'p
Lab ID: 1506002-02p

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	77.8	0.1	%	1	06/02/15	B5F0120	2540 B	



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Client ID: CHLL-SD-77 3'-5'p

Lab ID: 1506002-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
11104-28-2b	Aroclor 1221b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
11141-16-5b	Aroclor 1232b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
53469-21-9b	Aroclor 1242b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
12672-29-6	Aroclor 1248b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
11097-69-1b	Aroclor 1254p	88p	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082b	T b
11096-82-5b	Aroclor 1260b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
37324-23-5b	Aroclor 1262b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
11100-14-4b	Aroclor 1268b	NDb	280b	ug/kg dryb	1b	06/12/15b	B5F0516	8081/8082 b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.0 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			75.6 %-	30-150-		06/12/15-	B5F0516	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids	70.7p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-78 0-6''p

Lab ID: 1506002-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
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Organics-PCBs as Aroclorsp

See note Y20p

12674-11-2b	Aroclor 1016	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	350b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	

Surrogate: Decachlorobiphenyl-

94.3 %-

30-150-

06/13/15-

B5F0912b

8081/8082-

Surrogate: Tetrachloro-m-xylene-

88.1 %-

30-150-

06/13/15-

B5F0912b

8081/8082-

Inorganics-General Chemistry

TSb	% Total Solidsp	56.9p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.18b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	

Inorganics-Metalsp

7429-90-5b	Aluminiump	12000p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyp	1.5p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	10p	5.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	77p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiump	0.6p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	32p	20b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobaltb	17p	5.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	1900p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	23000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	330p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	7.5p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	12000p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganesep	410p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryp	0.1p	0.09b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	46p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	2.0b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	5.5p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	150p	10b	mg/kg dryb	100b	06/08/15b	B5F0503b	6020/200.8b	



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Client ID: CHLL-SD-78 1'-3'p

Lab ID: 1506002-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	1800b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1400b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1400b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1400b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1400b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	1400b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno[1,2,3-c,d]pyreneb	NDb	1400b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	720b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
Surrogate: 2-Fluorobiphenyl-			76.0 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
Surrogate: Nitrobenzene-d5-			59.3 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
Surrogate: p-Terphenyl-d14-			92.4 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			79.4 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			77.7 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	



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Client ID: CHLL-SD-78 1'-3'p
Lab ID: 1506002-05p

Analyzed b									
CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	69.8p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	


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Client ID: CHLL-SD-78 3'-5'p

Lab ID: 1506002-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			88.6 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			68.0 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	67.8p	0.1b	%b	1b	06/02/15b	B5F0120b	2540 Bb	



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Client ID: CHLL-SD-76 0-6''p

Lab ID: 1506002-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			83.7 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			81.0 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	78.0p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.13b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	
Inorganics-Metalsp									
7429-90-5b	Aluminiump	7400p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	1.8p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	20p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliump	0.7p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	18p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt p	9.4p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	490p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	11000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	16p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	5.0p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	7900p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganesep	240p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.06	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	25p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	3.0p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	68p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



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Client ID: CHLL-SD-76 1'-3'p

Lab ID: 1506002-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	580b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	460b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	460b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	460b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	460b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	460b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	460b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	230b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			76.3 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			56.9 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			71.9 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			82.6 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			74.1 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	



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Client ID: CHLL-SD-76 1'-3'p
Lab ID: 1506002-08p

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	86.5	0.1	%	1	06/02/15	B5F0215	2540 B	



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Client ID: CHLL-SD-76 1'-3' DUPp

Lab ID: 1506002-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	620b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	490b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	490b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	490b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	490b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	490b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	490b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	250b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
Surrogate: 2-Fluorobiphenyl-			90.1 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
Surrogate: Nitrobenzene-d5-			70.7 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
Surrogate: p-Terphenyl-d14-			116 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			90.9 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			83.0 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	



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P.O. Box 302700
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TEL: (517) 335-98000
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Client ID: CHLL-SD-76 1'-3' DUP
Lab ID: 1506002-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	81.3	0.1	%	1	06/02/15	B5F0215	2540 B	



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Client ID: CHLL-SD-76 3'-5'p

Lab ID: 1506002-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			82.7 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			74.2 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	80.9p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-79 0-6''p

Lab ID: 1506002-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
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Organics-PCBs as Aroclorsp

See note Y20p

12674-11-2b	Aroclor 1016	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
11104-28-2b	Aroclor 1221b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
11141-16-5b	Aroclor 1232b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
53469-21-9b	Aroclor 1242b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
12672-29-6	Aroclor 1248b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
11097-69-1b	Aroclor 1254p	140p	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	T b
11096-82-5b	Aroclor 1260b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
37324-23-5b	Aroclor 1262b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
11100-14-4b	Aroclor 1268b	NDb	440b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	

Surrogate: Decachlorobiphenyl-

85.8 %-

30-150-

06/13/15-

B5F0912b

8081/8082-

Surrogate: Tetrachloro-m-xylene-

87.3 %-

30-150-

06/13/15-

B5F0912b

8081/8082-

Inorganics-General Chemistry

TSb	% Total Solids	45.3p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.22b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	

Inorganics-Metals

7429-90-5b	Aluminiump	17000p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyp	14p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	14p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	1000p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliump	1.2p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiump	3.8p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	40p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt	21p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Copper	11000p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Iron	27000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Lead	2800p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithium	15p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesium	16000p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganese	480p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercury	0.2p	0.1b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickel	53p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Selenium	0.5p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silver	28p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zinc	330p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



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Client ID: CHLL-SD-79 1'-3'p

Lab ID: 1506002-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	1800b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno[1,2,3-c,d]pyreneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			85.5 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			66.6 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			85.3 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	290b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			80.5 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			84.4 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	



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Client ID: CHLL-SD-79 1'-3'p
Lab ID: 1506002-12p

Analyzed b									
CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	67.9p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-79 1'-3' DUPp

Lab ID: 1506002-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	1800b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno[1,2,3-c,d]pyreneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	740b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
Surrogate: 2-Fluorobiphenyl-			82.4 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
Surrogate: Nitrobenzene-d5-			63.9 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
Surrogate: p-Terphenyl-d14-			83.6 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			80.7 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			79.6 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	



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Client ID: CHLL-SD-79 1'-3' DUP
Lab ID: 1506002-13

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	67.8	0.1	%	1	06/02/15	B5F0215	2540 B	



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Client ID: CHLL-SD-79 3'-4.75'p

Lab ID: 1506002-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			94.8 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			97.4 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	67.2p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-82 0"-6"p

Lab ID: 1506002-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	430b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			95.0 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			85.9 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	46.5p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-82 1'-3'p

Lab ID: 1506002-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	Y21 b
11104-28-2b	Aroclor 1221b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	Y21 b
11141-16-5b	Aroclor 1232b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	Y21 b
53469-21-9b	Aroclor 1242b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	Y21 b
12672-29-6	Aroclor 1248p	400p	320b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	JA, JD b
11097-69-1b	Aroclor 1254p	500p	320b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	JA b
11096-82-5b	Aroclor 1260b	NDb	320b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
37324-23-5b	Aroclor 1262b	NDb	320b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
11100-14-4b	Aroclor 1268b	NDb	320b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082 b	
<i>Surrogate: Decachlorobiphenyl-</i>			60.0 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			71.6 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids	63.3p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-82 3'-4.75'p

Lab ID: 1506002-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	120b	ug/kg dryb	1b	06/13/15b	B5F0912b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			85.5 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			81.0 %-	30-150-		06/13/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	81.3p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-26 0''-6''p

Lab ID: 1506002-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	510b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			81.9 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			84.8 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	39.1p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-26 1'-3'p

Lab ID: 1506002-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			80.2 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			89.0 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	64.6p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-26 3'-4.75'p

Lab ID: 1506002-20p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			76.9 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			79.5 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	66.1p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-83 0"-6"p

Lab ID: 1506002-21p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	610b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			86.7 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			88.6 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	32.8p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	



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Client ID: CHLL-SD-83 1'-3'p

Lab ID: 1506002-22p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	1900b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno[1,2,3-c,d]pyreneb	NDb	1500b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	760b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
Surrogate: 2-Fluorobiphenyl-			85.4 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
Surrogate: Nitrobenzene-d5-			67.2 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
Surrogate: p-Terphenyl-d14-			85.7 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	310b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			83.3 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			84.5 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	



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Client ID: CHLL-SD-83 1'-3'p

Lab ID: 1506002-22p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
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Inorganics-General Chemistry

TSb	% Total Solids	65.6p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.15b	mg/kg dryb	1b	06/03/15b	B5F0213b	ASTM D7284b	

Inorganics-Metals

7429-90-5b	Aluminium	18000p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenic	7.3p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Barium	35p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Beryllium	0.8p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromium	45p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt	25p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Copper	3800p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Iron	25000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Lead	12p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithium	9.3p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesium	20000p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganese	480p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercury	0.1p	0.08b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickel	67p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silver	8.1p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zinc	120p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	



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-83 1'-3' DUPp

Lab ID: 1506002-23p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0912b	8081/8082b	
Surrogate: Decachlorobiphenyl-			83.2 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			74.7 %-	30-150-		06/14/15-	B5F0912b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	65.8p	0.1b	%b	1b	06/02/15b	B5F0215b	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-83 3'-4.5'p

Lab ID: 1506002-24p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	1600b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
83-32-9b	Acenaphtheneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
208-96-8b	Acenaphthyleneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
120-12-7b	Anthraceneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1300b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1300b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1300b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1300b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
218-01-9b	Chryseneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	1300b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
206-44-0b	Fluorantheneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
86-73-7b	Fluoreneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	1300b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
91-20-3b	Naphthaleneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
85-01-8b	Phenanthreneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
129-00-0b	Pyreneb	NDb	630b	ug/kg dryb	1b	06/10/15b	B5F0413b	8270b	
Surrogate: 2-Fluorobiphenyl-			81.3 %-	32.9-115-		06/10/15-	B5F0413b	8270-	
Surrogate: Nitrobenzene-d5-			62.3 %-	31.8-115-		06/10/15-	B5F0413b	8270-	
Surrogate: p-Terphenyl-d14-			74.8 %-	38.5-115-		06/10/15-	B5F0413b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	250b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			73.3 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			60.2 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	



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P.O. Box 302700
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TEL: (517) 335-98000
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Client ID: CHLL-SD-83 3'-4.5'p

Lab ID: 1506002-24p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
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Inorganics-General Chemistry

TSb	% Total Solids	79.5p	0.1b	%b	1b	06/02/15b	B5F0215b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.63b	mg/kg dryb	5b	06/03/15b	B5F0213b	ASTM D7284b	1b

Inorganics-Metals

7429-90-5b	Aluminiump	2800p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	1.4p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-39-3b	Bariump	10p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-41-7b	Berylliump	0.4p	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-47-3b	Chromiump	9.6p	2.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-48-4b	Cobalt	4.4p	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-50-8b	Cop erp	9500p	100b	mg/kg dryb	1000b	06/08/15b	B5F0503b	6020/200.8b	
7439-89-6	Ironp	8100p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-92-1b	Leadp	4.0p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-93-2b	Lithiump	4.7p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0503b	6010/200.7b	
7439-95-4b	Magnesiump	4300p	50b	mg/kg dryb	10b	06/18/15b	B5F0503b	6010/200.7b	
7439-96-5b	Manganese	91p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7439-97-6	Mercuryp	0.09p	0.06	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	10p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.2b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-22-4b	Silverp	12p	0.1b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	0.5b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	
7440-66-6	Zincp	43p	1.0b	mg/kg dryb	10b	06/08/15b	B5F0503b	6020/200.8b	

Analysis Request Sheet

Lab Work Order Number		Project Name		Matrix	
1506002		Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops		SEDIMENT	
Site Code/Project Number	AY	CC Email 1	Project IAT Days	Sample Collector	
31000098	13	j.binkley@westonsolutions.com		AK/JP/AB-DEQ-RRD	
Dept/Division/District	Index	CC Email 2	Project Due Date	Sample Collector Phone	
DEQ-RRD-UP District	44251	daniel.llebau@westonsolutions.com		906-337-0389	
State Project Manager	PCA	CC Email 3	Accept Analysis hold time codes	Contract Firm	
Amy Keranen	30872	plincumbel@michigan.com		Weston Solutions	
State Project Manager Email	Project	Overflow Lab Choice 1		Contract Firm Primary Contact	
keranenam@michigan.gov	456990			Jeff Binkley	
State Project Manager Phone	Phase	Overflow Lab Choice 2		Primary Contact Phone	
906-337-0389	00			906-523-5457	

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	01 CHLL-SD-77-0-6"	5/28/15	1305	1	
2	02 CHLL-SD-77-1'-3'		1306		
3	03 CHLL-SD-77-3'-5'		1307		
4	04 CHLL-SD-78-0'-6"		1134		
5	05 CHLL-SD-78-1'-3'		1135		
6	06 CHLL-SD-78-3'-5'		1136		
7	07 CHLL-SD-76-0'-6"		1354		
8	08 CHLL-SD-76-1'-3'		1355		
9	09 CHLL-SD-76-1'-3' dup		1355		
10	10 CHLL-SD-76-3'-5'		1356		

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		Silver - Ag 1 2 3 4 5 6 7 8 9 10		GS - General Chemistry	
Volatiles - Full List 1 2 3 4 5 6 7 8 9 10		(Sb,As,Ba,Bc,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn)		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/TMB 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,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)		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	
				Cobalt - Co 1 2 3 4 5 6 7 8 9 10		Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10	
				Chromium - Cr 1 2 3 4 5 6 7 8 9 10			
OS - Pesticides, PCBs				Copper - Cu 1 2 3 4 5 6 7 8 9 10			
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10				Iron - Fe 1 2 3 4 5 6 7 8 9 10			
Pesticides only 1 2 3 4 5 6 7 8 9 10				Mercury - Hg 1 2 3 4 5 6 7 8 9 10			
PCBs only 1 2 3 4 5 6 7 8 9 10				Lithium - Li 1 2 3 4 5 6 7 8 9 10			
Toxaphene 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			
BNA - Base Neutral Acids				Nickel - Ni 1 2 3 4 5 6 7 8 9 10			
BNAs 1 2 3 4 5 6 7 8 9 10				Lead - Pb 1 2 3 4 5 6 7 8 9 10			
PHAs only 1 2 3 4 5 6 7 8 9 10				Antimony - Sb 1 2 3 4 5 6 7 8 9 10			
BNs only 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			
Organic Specialty Requests				Titanium - Ti 1 2 3 4 5 6 7 8 9 10			
Library search - Volatiles 1 2 3 4 5 6 7 8 9 10				Thallium - Tl 1 2 3 4 5 6 7 8 9 10			
Library search - SemiVols 1 2 3 4 5 6 7 8 9 10				Uranium - U 1 2 3 4 5 6 7 8 9 10			
Finger Print 1 2 3 4 5 6 7 8 9 10				Vanadium - V 1 2 3 4 5 6 7 8 9 10			
DRO / ORO 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 DEQ	DANIEL LIEBAU WESTON SOLUTIONS	
	Signature:	Aaron J. Berndt			
	Print Name & Org.	VPS			
	Signature:	J236 145 5809			
	Print Name & Org.	J236 145 5827	Joshua Pung MDEQ		6/11/15 941
	Signature:	J236 145 5818	Joshua R Pung		



Analysis Request Sheet

Lab Work Order Number 1506002	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops	Matrix SEDIMENT
Site Code/Project Number 31000098	AY 13	CC Email 1 [binkley@westonsolutions.com]
Dept-Division-District DEQ-RRD-UP District	Index 44251	CC Email 2 [daniel.liebau@westonsolutions.com]
State Project Manager Amy Keranen	PLA 30872	CC Email 3 [pincumbel@michigan.com]
State Project Manager Email keranenam@michigan.gov	Project 456990	Overflow Lab Choice 1
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2
		Project JAI Days
		Project Due Date
		Accept Analysis hold time codes
		Sample Collector AK/JP/AB-DEQ-RRD
		Sample Collector Phone 906-337-0389
		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	11 CHLL-SD-79-0'-6"	5/28/15	0900		
2	12 CHLL-SD-79-1'-3'		0901		
3	13 CHLL-SD-79-1'-3' dup		0902		
4	14 CHLL-SD-79-3'-4.75'		0903		
5	15 CHLL-SD-82-0'-6"		1032		
6	16 CHLL-SD-82-1'-3'		1033		
7	17 CHLL-SD-82-3'-4.75'		1034		
8	18 CHLL-SD-26-0'-6"		1508		
9	19 CHLL-SD-26-1'-3'		1509		
10	20 CHLL-SD-26-3'-4.75'		1510		

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

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Aaron Berndt DEQ	DANIEL LIEBAU WESTONSOLUTIONS	5/28/15 - 1300
	Signature: <i>Aaron Berndt</i>	<i>[Signature]</i>	
	Print Name & Org. UPS		
Signature: J236 145 580 9			
Print Name & Org. J236 145 582 7	Joshua Pung MDEQ	6/1/15 941	
Signature: J236 145 581 8	<i>Joshua Pung</i>		



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506002

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

SEDIMENT

Site Code/Project Number

AY

CC Email 1

Project IAI Days

Sample Collector

31000098

13

j.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.liebau@westonsolutions.com

906-337-0389

State Project Manager

PLA

CC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

pincumbej@michigan.com

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranenana@michigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	21 CHLL-SD-83-0'-6"	5/28/15	1615		
2	22 CHLL-SD-83-1'-3'		1616		
3	23 CHLL-SD-83-1'-3' deep		1616		
4	24 CHLL-SD-83-3'-4.5'		1617		
5	CHLL-SD-				
6	CHLL-SD-				
7	CHLL-SD-				
8	CHLL-SD-				
9	CHLL-SD-				
10	CHLL-SD-				

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,Bi,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,NI,Se,Ag,Tl,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Uranium - U 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	BNA - Base Neutral Acids	Organic Specialty Requests
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	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	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 ORO / ORO 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Aaron Binkley, DEQ	DANIEL LIEBAU, WESTONSOLUTIONS	5/29/15 - 1300
	Signature: Aaron Binkley		
	Print Name & Org. UPS	Joshua Pung, MDEQ	6/1/15 941
	Signature: 3236 145 580 9	Joshua R Pung	
	Print Name & Org. 3236 145 582 7		
	Signature: 3236 145 581 8		



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

24 June 2015

Work Order: 1506039

Price: \$6,705.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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TEL: (517) 335-98000
FAX: (517) 335-96000

MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/24/2015b

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SD-01-0-6"b	1506039-01b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-01-1'-3"b	1506039-02b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-01-3'-3.75"b	1506039-03b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-02-0-6"b	1506039-04b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-02-1'-1.5"b	1506039-05b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-03-0-6"b	1506039-06	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-03-1'-1.5"b	1506039-07b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-04-0-6"b	1506039-08b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-04-1-3"b	1506039-09b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-04-3'-4"b	1506039-10b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-05-0-6"b	1506039-11b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-05-1-3"b	1506039-12b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-05-1-3' dupb	1506039-13b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-05-3'-5"b	1506039-14b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-06-0-6"b	1506039-15b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-06-1'-1.25"b	1506039-16	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-72-0-6"b	1506039-17b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-72-1-3"b	1506039-18b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-72-3'-4.9"b	1506039-19b	Soil/Sedimentb	05/29/2015b	06/03/2015b	
CHLL-SD-86-1-3' dupb	1506039-20b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-86-3-5"b	1506039-21b	Soil/Sedimentb	06/01/2015b	06/03/2015b	

Notes and Definitions p

Y25b	Sample extract would not concentrate to the normal volume causing raised reporting limits.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
Nb	Result is estimated due to Non-homogeneous sample.b
A03b	Result(s) and reporting limit(s) are estimated due to low matrix spike recovery.b
NDb	Indicates compound analyzed for but not detected b
RLb	Reporting Limit b
NAb	Not Applicable b
dry	Sample results reported on a dry weight basisb



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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-01-0-6''p

Lab ID: 1506039-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
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Organics-PCBs as Aroclorsp

See note Y20p

12674-11-2b	Aroclor 1016	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	810b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	

Surrogate: Decachlorobiphenyl-

68.9 %-

30-150-

06/13/15-

B5F0913b

8081/8082-

Surrogate: Tetrachloro-m-xylene-

75.9 %-

30-150-

06/13/15-

B5F0913b

8081/8082-

Inorganics-General Chemistrysp

TSb	% Total Solidsp	24.6p	0.1b	%b	1b	06/04/15b	B5F0404b	2540 Bb	
57-12-5b	Total Cyanidep	0.83p	0.41b	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	

Inorganics-Metalsp

7429-90-5b	Aluminiump	19000p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimonyp	0.7p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	6.1p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Bariump	140p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliump	0.9p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmiump	0.9p	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromiump	37p	4.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobaltsp	15p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop erp	1700p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Ironp	41000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Leadp	74p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithiump	17p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesiump	12000p	50b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganesep	490p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercuryp	0.6p	0.2b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	34p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniump	0.6p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silverp	1.8p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zincp	230p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	


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ENVIRONMENTAL LABORATORY**

P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SD-01-1'-3'p

Lab ID: 1506039-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20, Y25p
91-57-6	2-Methylnaphthaleneb	NDb	22000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
83-32-9b	Acenaphtheneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
208-96-8b	Acenaphthyleneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
120-12-7b	Anthraceneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	17000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	17000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	17000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	17000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
218-01-9b	Chryseneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	17000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
206-44-0b	Fluorantheneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
86-73-7b	Fluoreneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	17000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
91-20-3b	Naphthaleneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
85-01-8b	Phenanthreneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
129-00-0b	Pyreneb	NDb	8600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
Surrogate: 2-Fluorobiphenyl-			59.8 %-	32.9-115-		06/13/15-	B5F0813b	8270-	
Surrogate: Nitrobenzene-d5-			44.7 %-	31.8-115-		06/13/15-	B5F0813b	8270-	
Surrogate: p-Terphenyl-d14-			68.8 %-	38.5-115-		06/13/15-	B5F0813b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	690b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			56.4 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			70.0 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	



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ENVIRONMENTAL LABORATORY

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Client ID: CHLL-SD-01-1'-3'p
Lab ID: 1506039-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	29.0p	0.1b	%b	1b	06/04/15b	B5F0404b	2540 Bb	



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Client ID: CHLL-SD-01-3'-3.75'p

Lab ID: 1506039-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	370b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			65.6 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.9 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	53.3p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SD-02-0-6"p

Lab ID: 1506039-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
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Organics-PCBs as Aroclorsp

See note Y20p

12674-11-2b	Aroclor 1016	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	920b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	

Surrogate: Decachlorobiphenyl-

69.8 %-

30-150-

06/13/15-

B5F0913b

8081/8082-

Surrogate: Tetrachloro-m-xylene-

66.3 %-

30-150-

06/13/15-

B5F0913b

8081/8082-

Inorganics-General Chemistry

TSb	% Total Solids ^p	21.6 ^p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	Nb
57-12-5b	Total Cyanide ^p	0.56 ^p	0.46	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	

Inorganics-Metals^p

7429-90-5b	Aluminium ^p	14000 ^p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimony ^p	0.5 ^p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenic ^p	6.6 ^p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Barium ^p	110 ^p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-41-7b	Beryllium ^p	0.9 ^p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmium ^p	0.7 ^p	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromium ^p	31 ^p	4.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobalt ^p	14 ^p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Copper ^p	1600 ^p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Iron ^p	35000 ^p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Lead ^p	56 ^p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithium ^p	13 ^p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesium ^p	10000 ^p	50b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganese ^p	430 ^p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercury ^p	0.4 ^p	0.2b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickel ^p	30 ^p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Selenium ^p	0.6 ^p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silver ^p	2.1 ^p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zinc ^p	190 ^p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	



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Client ID: CHLL-SD-02-1'-1.5'p

Lab ID: 1506039-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles^p									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	3200b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
83-32-9b	Acenaphthene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
208-96-8b	Acenaphthylene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
120-12-7b	Anthracene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
56-55-3b	Benz[a]anthracene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
218-01-9b	Chrysene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
206-44-0b	Fluoranthene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
86-73-7b	Fluorene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
91-20-3b	Naphthalene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
85-01-8b	Phenanthrene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
129-00-0b	Pyrene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			<i>60.8 %-</i>	<i>32.9-115-</i>		<i>06/13/15-</i>	B5F0813b	<i>8270-</i>	
<i>Surrogate: Nitrobenzene-d5-</i>			<i>61.8 %-</i>	<i>31.8-115-</i>		<i>06/13/15-</i>	B5F0813b	<i>8270-</i>	
<i>Surrogate: p-Terphenyl-d14-</i>			<i>75.0 %-</i>	<i>38.5-115-</i>		<i>06/13/15-</i>	B5F0813b	<i>8270-</i>	
Organics-PCBs as Aroclors^p									See note Y20p
12674-11-2b	Aroclor 1016	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	510b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			<i>75.4 %-</i>	<i>30-150-</i>		<i>06/13/15-</i>	B5F0913b	<i>8081/8082-</i>	
<i>Surrogate: Tetrachloro-m-xylene-</i>			<i>71.6 %-</i>	<i>30-150-</i>		<i>06/13/15-</i>	B5F0913b	<i>8081/8082-</i>	



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Client ID: CHLL-SD-02-1'-1.5'p
Lab ID: 1506039-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	39.0p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	Nb



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Client ID: CHLL-SD-03-0-6"p

Lab ID: 1506039-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
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Organics-PCBs as Aroclorsp**See note Y20p**

12674-11-2b	Aroclor 1016	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	340b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	

Surrogate: Decachlorobiphenyl-

86.9 %-

30-150-

06/13/15-

B5F0913b

8081/8082-

Surrogate: Tetrachloro-m-xylene-

72.3 %-

30-150-

06/13/15-

B5F0913b

8081/8082-

Inorganics-General Chemistry

TSb	% Total Solidsp	59.2p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	Nb
57-12-5b	Total Cyanideb	NDb	0.17b	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	

Inorganics-Metalsp

7429-90-5b	Aluminiump	2100p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	1.0p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Bariump	12p	1.0b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromiump	6.0p	4.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobalt p	2.5p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop erp	210p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Ironp	7400p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Leadp	3.5p	1.0b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithiump	2.0p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesiump	1600p	5.0b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganesep	64p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.08b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	4.8p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silverp	0.2p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zincp	25p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	


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Client ID: CHLL-SD-03-1'-1.5'p

Lab ID: 1506039-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	1600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
83-32-9b	Acenaphthene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
208-96-8b	Acenaphthylene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
120-12-7b	Anthracene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
56-55-3b	Benz[a]anthracene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
218-01-9b	Chrysene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
206-44-0b	Fluoranthene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
86-73-7b	Fluorene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1300b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
91-20-3b	Naphthalene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
85-01-8b	Phenanthrene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
129-00-0b	Pyrene	NDb	640b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
Surrogate: 2-Fluorobiphenyl-			69.0 %-	32.9-115-		06/13/15-	B5F0813b	8270-	
Surrogate: Nitrobenzene-d5-			63.0 %-	31.8-115-		06/13/15-	B5F0813b	8270-	
Surrogate: p-Terphenyl-d14-			63.2 %-	38.5-115-		06/13/15-	B5F0813b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			88.2 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			70.1 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	



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Client ID: CHLL-SD-03-1'-1.5'p
Lab ID: 1506039-07p

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	77.9	0.1	%	1	06/04/15	B5F0411	2540 B	



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ENVIRONMENTAL LABORATORY**

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**Client ID: CHLL-SD-04-0-6"p
Lab ID: 1506039-08p**

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	610b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.9 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.1 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	32.7p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	
57-12-5b	Total Cyanidep	0.37p	0.31b	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	
Inorganics-Metalsp									
7429-90-5b	Aluminiump	16000p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimonyp	0.4p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	5.1p	5.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Bariump	110p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	2.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmiump	0.6p	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromiump	32p	20b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobaltp	14p	5.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop erp	1100p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Ironp	32000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Leadp	51p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithiump	18p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesiump	9100p	50b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganesep	440p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercuryp	0.2p	0.2b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	31p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	2.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silverp	1.3p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zincp	180p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	



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Client ID: CHLL-SD-04-1-3'p

Lab ID: 1506039-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	2600b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
83-32-9b	Acenaphthene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
208-96-8b	Acenaphthylene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
120-12-7b	Anthracene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
56-55-3b	Benz[a]anthracene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
218-01-9b	Chrysene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
206-44-0b	Fluoranthene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
86-73-7b	Fluorene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	2100b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
91-20-3b	Naphthalene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
85-01-8b	Phenanthrene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
129-00-0b	Pyrene	NDb	1000b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			<i>60.3 %-</i>	<i>32.9-115-</i>		<i>06/13/15-</i>	B5F0813b	<i>8270-</i>	
<i>Surrogate: Nitrobenzene-d5-</i>			<i>57.7 %-</i>	<i>31.8-115-</i>		<i>06/13/15-</i>	B5F0813b	<i>8270-</i>	
<i>Surrogate: p-Terphenyl-d14-</i>			<i>69.1 %-</i>	<i>38.5-115-</i>		<i>06/13/15-</i>	B5F0813b	<i>8270-</i>	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	410b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			<i>64.7 %-</i>	<i>30-150-</i>		<i>06/13/15-</i>	B5F0913b	<i>8081/8082-</i>	
<i>Surrogate: Tetrachloro-m-xylene-</i>			<i>65.6 %-</i>	<i>30-150-</i>		<i>06/13/15-</i>	B5F0913b	<i>8081/8082-</i>	



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Client ID: CHLL-SD-04-1-3'p
Lab ID: 1506039-09p

Analyzed b									
CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	48.4p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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Client ID: CHLL-SD-04-3'-4'p

Lab ID: 1506039-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			84.9 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			64.5 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	67.5p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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Client ID: CHLL-SD-05-0-6"p

Lab ID: 1506039-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifierb
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			86.1 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			71.5 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	73.0p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.14b	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	
Inorganics-Metalsp									
7429-90-5b	Aluminiump	5600p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	1.4p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Bariump	24p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliump	0.9p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromiump	18p	4.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobalt p	8.1p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop erp	1800p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Ironp	15000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Leadp	6.5p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithiump	4.3p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesiump	6400p	50b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganesep	230p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.07b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	19p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silverp	1.6p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zincp	79p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	



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Client ID: CHLL-SD-05-1-3'p

Lab ID: 1506039-12p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	650b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
83-32-9b	Acenaphthene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
208-96-8b	Acenaphthylene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
120-12-7b	Anthracene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
56-55-3b	Benz[a]anthracene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
218-01-9b	Chrysene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
206-44-0b	Fluoranthene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
86-73-7b	Fluorene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
91-20-3b	Naphthalene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
85-01-8b	Phenanthrene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
129-00-0b	Pyrene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
Surrogate: 2-Fluorobiphenyl-			70.9 %-	32.9-115-		06/13/15-	B5F0813b	8270-	
Surrogate: Nitrobenzene-d5-			67.8 %-	31.8-115-		06/13/15-	B5F0813b	8270-	
Surrogate: p-Terphenyl-d14-			73.1 %-	38.5-115-		06/13/15-	B5F0813b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			83.8 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			67.1 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	



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Client ID: CHLL-SD-05-1-3'p
Lab ID: 1506039-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	77.1p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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Client ID: CHLL-SD-05-1-3' dup

Lab ID: 1506039-13p

CAS #b	Analyte	Resultb	RLb	Unitsb	Dilution	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	650b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
83-32-9b	Acenaphthene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
208-96-8b	Acenaphthylene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
120-12-7b	Anthracene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
56-55-3b	Benz[a]anthracene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
218-01-9b	Chrysene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
206-44-0b	Fluoranthene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
86-73-7b	Fluorene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	520b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
91-20-3b	Naphthalene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
85-01-8b	Phenanthrene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
129-00-0b	Pyrene	NDb	260b	ug/kg dryb	1b	06/13/15b	B5F0813b	8270b	
Surrogate: 2-Fluorobiphenyl-			68.5 %-	32.9-115-		06/13/15-	B5F0813b	8270-	
Surrogate: Nitrobenzene-d5-			63.2 %-	31.8-115-		06/13/15-	B5F0813b	8270-	
Surrogate: p-Terphenyl-d14-			77.3 %-	38.5-115-		06/13/15-	B5F0813b	8270-	
Organics-PCBs as Aroclors									
12674-11-2b	Aroclor 1016	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	130b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			87.5 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			70.0 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	



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Client ID: CHLL-SD-05-1-3' dup
Lab ID: 1506039-13p

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	76.6	0.1	%	1	06/04/15	B5F0411	2540 B	


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Client ID: CHLL-SD-05-3'-5'p

Lab ID: 1506039-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	140b	ug/kg dryb	1b	06/13/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			80.6 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			64.9 %-	30-150-		06/13/15-	B5F0913b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	73.0p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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Client ID: CHLL-SD-06-0-6"p

Lab ID: 1506039-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
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Organics-PCBs as Aroclorsp

See note Y20p

12674-11-2b	Aroclor 1016	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	

Surrogate: Decachlorobiphenyl-

89.5 %-

30-150-

06/14/15-

B5F0913b

8081/8082-

Surrogate: Tetrachloro-m-xylene-

77.0 %-

30-150-

06/14/15-

B5F0913b

8081/8082-

Inorganics-General Chemistry

TSb	% Total Solidsp	75.3p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.13b	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	

Inorganics-Metalsp

7429-90-5b	Aluminiump	2400p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Bariump	11p	1.0b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmiumb	NDb	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromiump	6.8p	4.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobalt p	3.2p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop erp	150p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Ironp	7100p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Leadp	5.3p	1.0b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithiump	2.7p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesiump	1900p	5.0b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganesep	63p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.07b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	6.1p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silverp	0.2p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zincp	33p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	



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Client ID: CHLL-SD-06-1'-1.25'p

Lab ID: 1506039-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	1700b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
83-32-9b	Acenaphthene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
208-96-8b	Acenaphthylene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
120-12-7b	Anthracene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
56-55-3b	Benz[a]anthracene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
218-01-9b	Chrysene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
206-44-0b	Fluoranthene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
86-73-7b	Fluorene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
91-20-3b	Naphthalene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
85-01-8b	Phenanthrene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
129-00-0b	Pyrene	NDb	660b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
Surrogate: 2-Fluorobiphenyl-			80.7 %-	32.9-115-		06/16/15-	B5F1024b	8270-	
Surrogate: Nitrobenzene-d5-			61.4 %-	31.8-115-		06/16/15-	B5F1024b	8270-	
Surrogate: p-Terphenyl-d14-			69.8 %-	38.5-115-		06/16/15-	B5F1024b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	270b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
Surrogate: Decachlorobiphenyl-			88.2 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			73.3 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	



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Client ID: CHLL-SD-06-1'-1.25'
Lab ID: 1506039-16

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
Inorganics-General Chemistry									
TS	% Total Solids	75.4	0.1	%	1	06/04/15	B5F0411	2540 B	



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Client ID: CHLL-SD-72-0-6"p

Lab ID: 1506039-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	500b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			77.0 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			69.2 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	39.9p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	
57-12-5b	Total Cyanideb	NDb	0.25b	mg/kg dryb	1b	06/10/15b	B5F0410b	ASTM D7284b	
Inorganics-Metalsp									
7429-90-5b	Aluminiump	7000p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7440-36-0b	Antimonyb	NDb	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	
7440-38-2b	Arsenicp	3.2p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Bariump	48p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliump	0.9p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmiump	0.3p	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromiump	20p	4.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobaltb	9.4p	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop erp	1400p	100b	mg/kg dryb	1000b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Ironp	18000p	5.0b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Leadp	17p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-93-2b	Lithiump	5.6p	0.2b	mg/kg dryb	1b	06/18/15b	B5F0802b	6010/200.7b	
7439-95-4b	Magnesiump	7100p	50b	mg/kg dryb	10b	06/18/15b	B5F0802b	6010/200.7b	
7439-96-5b	Manganesep	280p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercuryb	NDb	0.1b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7440-02-0b	Nickelp	22p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniump	0.4p	0.4b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silverp	1.8p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zincp	110p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	



**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-72-1-3'p

Lab ID: 1506039-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthaleneb	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
83-32-9b	Acenaphtheneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
208-96-8b	Acenaphthyleneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
120-12-7b	Anthraceneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
56-55-3b	Benz[a]anthraceneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
50-32-8b	Benzo[a]pyreneb	NDb	1500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
205-99-2b	Benzo[b]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
191-24-2b	Benzo[g,h,i]peryleneb	NDb	1500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
207-08-9b	Benzo[k]fluorantheneb	NDb	1500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
218-01-9b	Chryseneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
53-70-3b	Dibenz[a,h]anthraceneb	NDb	1500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
206-44-0b	Fluorantheneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
86-73-7b	Fluoreneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyreneb	NDb	1500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
91-20-3b	Naphthaleneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
85-01-8b	Phenanthrene	1400p	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
129-00-0b	Pyreneb	NDb	760b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			78.3 %-	32.9-115-		06/16/15-	B5F1024b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			59.2 %-	31.8-115-		06/16/15-	B5F1024b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			63.0 %-	38.5-115-		06/16/15-	B5F1024b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	300b	ug/kg dryb	1b	06/14/15b	B5F0913b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			78.5 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.1 %-	30-150-		06/14/15-	B5F0913b	8081/8082-	



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Client ID: CHLL-SD-72-1-3'p
Lab ID: 1506039-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids	65.8p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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Client ID: CHLL-SD-72-3'-4.9'p

Lab ID: 1506039-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Organics-PCBs as Aroclorsp									
12674-11-2b	Aroclor 1016	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	150b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
Surrogate: Decachlorobiphenyl-			68.7 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			63.4 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	66.9p	0.1b	%b	1b	06/04/15b	B5F0411b	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-86-1-3' dup

Lab ID: 1506039-20p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
Surrogate: Decachlorobiphenyl-			61.0 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			63.0 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	49.6p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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**Client ID: CHLL-SD-86-3-5'p
Lab ID: 1506039-21p**

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	350b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			61.0 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			69.2 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	57.5p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number 1506039	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops	Matrix SEDIMENT
Site Code/Project Number 31000098	AY 13	CC Email 1 lbinkley@westonsolutions.com
Dept-Division-District DEQ-RRD-UP District	Index 44251	CC Email 2 daniel.liebau@westonsolutions.com
State Project Manager Amy Keranen	PCA 30872	CC Email 3 plncumbel@michigan.com
State Project Manager Email keranenam@michigan.gov	Project 456990	Overflow Lab Choice 1
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2
		Accept Analysis hold time codes
		Sample Collector AK/JP/AB-DEQ-RRD
		Sample Collector Phone 906-337-0389
		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-SD-01-0-6"	5/29/15	1046		
2	02 CHLL-SD-01-1-3'		1047		
3	03 CHLL-SD-01-3'-3.75'		1048		
4	04 CHLL-SD-02-0-6"		1206		
5	05 CHLL-SD-02-1-1.5'		1207		
6	06 CHLL-SD-03-0-6"		1330		
7	07 CHLL-SD-03-1-1.5'		1331		
8	08 CHLL-SD-04-0-6"		1604		
9	09 CHLL-SD-04-1-3'		1605		
10	10 CHLL-SD-04-3'-4'		1606		

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		Silver - Ag 1 2 3 4 5 6 7 8 9 10		GS - General Chemistry	
Volatiles - Full List 1 2 3 4 5 6 7 8 9 10		(Sb,As,Ba,Bc,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn)		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/TMS 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,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)		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	
				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	
OS - Pesticides, PCBs				Chromium - Cr 1 2 3 4 5 6 7 8 9 10			
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10				Copper - Cu 1 2 3 4 5 6 7 8 9 10			
Pesticides only 1 2 3 4 5 6 7 8 9 10				Iron - Fe 1 2 3 4 5 6 7 8 9 10			
PCBs only 1 2 3 4 5 6 7 8 9 10				Mercury - Hg 1 2 3 4 5 6 7 8 9 10			
Toxaphene 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			
BNA - Base Neutral Acids				Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10			
BNAs 1 2 3 4 5 6 7 8 9 10				Nickel - Ni 1 2 3 4 5 6 7 8 9 10			
PNAs only 1 2 3 4 5 6 7 8 9 10				Lead - Pb 1 2 3 4 5 6 7 8 9 10			
BNs only 1 2 3 4 5 6 7 8 9 10				Antimony - Sb 1 2 3 4 5 6 7 8 9 10			
Organic Specialty Requests				Selenium - Se 1 2 3 4 5 6 7 8 9 10			
Library search - Volatiles 1 2 3 4 5 6 7 8 9 10				Strontium - Sr 1 2 3 4 5 6 7 8 9 10			
Library search - SemiVols 1 2 3 4 5 6 7 8 9 10				Titanium - Ti 1 2 3 4 5 6 7 8 9 10			
Finger Print 1 2 3 4 5 6 7 8 9 10				Thallium - Tl 1 2 3 4 5 6 7 8 9 10			
DRO / ORO 1 2 3 4 5 6 7 8 9 10				Uranium - U 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, DEQ	DANIEL LIEBAU / WESTON SOLUTIONS	6-2-15 / 1100
	Signature: <i>Aaron Berndt</i>	<i>Daniel Liebau</i>	
	Print Name & Org. UPS 323169000-6	Jordan Handley DEQ	6/3/15
	Signature: <i>Jordan Handley</i>		1322
	Print Name & Org.		
	Signature:		



Analysis Request Sheet

Lab Work Order Number 1506039	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops	Matrix SEDIMENT		
Site Label/Project Number 31000098	AY 13	CC Email 1 jblinkley@westonsolutions.com	Project IAT Days 	Sample Collector AK/JP/AB-DEQ-RRD
Super-Division-District DEQ-RRD-UP District	Index 44251	CC Email 2 daniel.liebau@westonsolutions.com	Project Due Date 	Sample Collector Phone 906-337-0389
State Project Manager Amy Keranen	PCA 30872	CC Email 3 plncumbel@michigan.com	Accept Analysis hold time codes 	Contract Firm Weston Solutions
State Project Manager Email keranen@mi.gov	Project 456990	Overflow Lab Choice 1 	Contract Firm Primary Contact Jeff Binkley	Primary Contact Phone 906-523-5457
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2 		

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	11 CHLL-SD-05-0-6"	5/29/15	1515		
2	12 CHLL-SD-05-1-3'		1516		
3	13 CHLL-SD-05-1-3' dup		1517		
4	14 CHLL-SD-05-3'-5'		1518		
5	15 CHLL-SD-06-0-6"		1352		
6	16 CHLL-SD-06-1'-1.25'		1353		time labeled 1352
7	17 CHLL-SD-72-0-6"		1540		
8	18 CHLL-SD-72-1-3'		1541		time labeled 1540
9	19 CHLL-SD-72-3'-4.9'		1542		time labeled 1540
10	20 CHLL-SD-				

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

Chain of Custody	Relinquished by	Received By	Date / Time
Print Name & Org.	Aaron Bernat DEQ	DANIEL LIEBAU / WESTON SOLUTIONS	6-2-15 / 1100
Signature:			
Print Name & Org.	UPS 523169460-6	Jordan Hendley DEQ	6/3/15
Signature:			1322
Print Name & Org.			
Signature:			



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506039

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

SEDIMENT

Site Code/Project Number

AY

CC Email 1

Project IAI Days

Sample Collector

31000098

13

l.binkley@westonsolutions.com

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.liebau@westonsolutions.com

State Project Manager

PCA

CC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

pincumbet@michigan.com

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranen@nichigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	20 CHLL-SD- 86-1-31 deep	6-1-15	1612		time labeled 1616
2	32 CHLL-SD- 86-3-5'	6-1-15	1613		" " "
3	CHLL-SD-				
4	CHLL-SD-				
5	CHLL-SD-				
6	CHLL-SD-				
7	CHLL-SD-				
8	CHLL-SD-				
9	CHLL-SD-				
10	CHLL-SD-				

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/TM8 only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10 OS - Pesticides, PCBs Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10 BNA - Base Neutral Acids BNAs 1 2 3 4 5 6 7 8 9 10 PHAs only 1 2 3 4 5 6 7 8 9 10 BNs only 1 2 3 4 5 6 7 8 9 10 Organic Specialty Requests Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO / ORO 1 2 3 4 5 6 7 8 9 10	OpMemo2 - Total 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Bc,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Uranium - U 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 - CH 1 2 3 4 5 6 7 8 9 10 Chem Oxyg Dem - COD 1 2 3 4 5 6 7 8 9 10 Total Org Carbon - TOC 1 2 3 4 5 6 7 8 9 10 Kjeldahl Nitrogen - KN 1 2 3 4 5 6 7 8 9 10 Total Phosphorus - TP 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. Aaron Berendt, DEQ Signature: Aaron Berendt	DANIEL LIEBAU / WESTON SOLUTIONS Signature: [Signature]	6.2.15/1100
	Print Name & Org. UPS 323690960-6 Signature: [Signature]	Jordan Handley DEQ Signature: [Signature]	6/3/15
	Print Name & Org. Signature:		1322



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

26 June 2015

Work Order: 15060400

Price: \$3,554.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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

MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/26/2015

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifiersp
CHLL-SD-91-0-6"b	1506040-01b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-91-1'-3"b	1506040-02b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-91-3'-5"b	1506040-03b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-90-0-6"b	1506040-04b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-90-1-3"b	1506040-05b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-90-3'-5"b	1506040-06	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-90-3'-5' dupb	1506040-07b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-89-0-6"b	1506040-08b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-89-0.7'-0.9"b	1506040-09b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-89-1'-3"b	1506040-10b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-89-3'-5"b	1506040-11b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-88-0-6"b	1506040-12b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-88-1-3"b	1506040-13b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-88-3-5"b	1506040-14b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-87-0-6"b	1506040-15b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-87-1-3"b	1506040-16	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-87-1-3' dupb	1506040-17b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-87-3-5"b	1506040-18b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-86-0-6"b	1506040-19b	Soil/Sedimentb	06/01/2015b	06/03/2015b	
CHLL-SD-86-1-3"b	1506040-20b	Soil/Sedimentb	06/01/2015b	06/03/2015b	

Notes and Definitions p

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
A07b	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
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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ENVIRONMENTAL LABORATORY**

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

Client ID: CHLL-SD-91-0-6"p

Lab ID: 1506040-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11104-28-2b	Aroclor 1221	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11141-16-5b	Aroclor 1232	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
53469-21-9b	Aroclor 1242	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
12672-29-6	Aroclor 1248	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11097-69-1b	Aroclor 1254p	160p	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	Tb
11096-82-5b	Aroclor 1260	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
37324-23-5b	Aroclor 1262	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
11100-14-4b	Aroclor 1268	NDb	400b	ug/kg dryb	1b	06/17/15b	B5F1118b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			61.0 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			59.8 %-	30-150-		06/17/15-	B5F1118b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solids	49.9p	0.1b	%b	1b	06/04/15b	B5F0411b	2540 Bb	



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

Client ID: CHLL-SD-91-1'-3'p

Lab ID: 1506040-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	420b	ug/kg dryb	1b	06/18/15b	B5F1118b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			70.6 %-	30-150-		06/18/15-	B5F1118b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			65.1 %-	30-150-		06/18/15-	B5F1118b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	47.9p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SD-91-3'-5'p

Lab ID: 1506040-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	360b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			70.2 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			80.0 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	55.9p	0.1b	%b	1b	06/04/15b	B5F0412b	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-90-0-6"p

Lab ID: 1506040-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254p	190p	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	450b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			62.2 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			66.2 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	44.9p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



**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-90-1-3'p

Lab ID: 1506040-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	410b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			72.9 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			77.2 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	49.1p	0.1b	%b	1b	06/04/15b	B5F0412b	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-90-3'-5'p

Lab ID: 1506040-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			63.3 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			69.3 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	54.4p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	


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Client ID: CHLL-SD-90-3'-5' dup

Lab ID: 1506040-07p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	370b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
Surrogate: Decachlorobiphenyl-			66.8 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			70.5 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	54.7p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-89-0-6"p

Lab ID: 1506040-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	4700b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
83-32-9b	Acenaphthene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
208-96-8b	Acenaphthylene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
120-12-7b	Anthracene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
56-55-3b	Benz[a]anthracene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	3800b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	3800b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	3800b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	3800b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
218-01-9b	Chrysene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	3800b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
206-44-0b	Fluoranthene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
86-73-7b	Fluorene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	3800b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
91-20-3b	Naphthalene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
85-01-8b	Phenanthrene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
129-00-0b	Pyrene	NDb	1900b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
Surrogate: 2-Fluorobiphenyl-			82.6 %-	32.9-115-		06/16/15-	B5F1024b	8270-	
Surrogate: Nitrobenzene-d5-			64.2 %-	31.8-115-		06/16/15-	B5F1024b	8270-	
Surrogate: p-Terphenyl-d14-			70.6 %-	38.5-115-		06/16/15-	B5F1024b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254p	270p	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	Tb
11096-82-5b	Aroclor 1260b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	760b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
Surrogate: Decachlorobiphenyl-			68.1 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			71.0 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	



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Client ID: CHLL-SD-89-0-6"p

Lab ID: 1506040-08p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
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Inorganics-General Chemistry

TSb	% Total Solids ^p	26.4 ^p	0.1 ^b	% ^b	1 ^b	06/04/15 ^b	B5F0412 ^b	2540 B ^b	
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Inorganics-Metals

7440-36-0 ^b	Antimony ^p	1.9 ^p	0.3 ^b	mg/kg dry ^b	10 ^b	06/11/15 ^b	B5F0801 ^b	6020/200.8 ^b	
7440-38-2 ^b	Arsenic ^p	32 ^p	5.0 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-39-3 ^b	Barium ^p	120 ^p	2.0 ^b	mg/kg dry ^b	20 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-41-7 ^b	Beryllium ^b	ND ^b	2.0 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-43-9 ^b	Cadmium ^p	1.4 ^p	0.2 ^b	mg/kg dry ^b	10 ^b	06/15/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-47-3 ^b	Chromium ^p	96 ^p	20 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-48-4 ^b	Cobalt ^p	55 ^p	5.0 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-50-8 ^b	Cop er ^p	2900 ^p	10 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7439-89-6	Iron ^p	59000 ^p	50 ^b	mg/kg dry ^b	100 ^b	06/18/15 ^b	B5F0802 ^b	6010/200.7 ^b	
7439-92-1 ^b	Lead ^p	180 ^p	2.0 ^b	mg/kg dry ^b	20 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7439-96-5 ^b	Manganese ^p	1700 ^p	10 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7439-97-6	Mercury ^p	0.4 ^p	0.2 ^b	mg/kg dry ^b	1 ^b	06/18/15 ^b	B5F1705 ^b	7471/245.5 ^b	
7439-98-7 ^b	Molybdenum ^p	1.7 ^p	1.0 ^b	mg/kg dry ^b	10 ^b	06/15/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-02-0 ^b	Nickel ^p	110 ^p	10 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7782-49-2 ^b	Selenium ^b	ND ^b	2.0 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-22-4 ^b	Silver ^p	3.8 ^p	0.1 ^b	mg/kg dry ^b	10 ^b	06/15/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-28-0 ^b	Thallium ^b	ND ^b	1.0 ^b	mg/kg dry ^b	20 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-62-2 ^b	Vanadium ^p	150 ^p	10 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	
7440-66-6	Zinc ^p	320 ^p	10 ^b	mg/kg dry ^b	100 ^b	06/16/15 ^b	B5F0802 ^b	6020/200.8 ^b	



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Client ID: CHLL-SD-89-0.7'-0.9'p

Lab ID: 1506040-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-Semivolatiles									See note Y20p
91-57-6	2-Methylnaphthalene	NDb	3200b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
83-32-9b	Acenaphthene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
208-96-8b	Acenaphthylene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
120-12-7b	Anthracene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
56-55-3b	Benz[a]anthracene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
50-32-8b	Benzo[a]pyrene	NDb	2500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
205-99-2b	Benzo[b]fluoranthene	NDb	2500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
191-24-2b	Benzo[g,h,i]perylene	NDb	2500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
207-08-9b	Benzo[k]fluoranthene	NDb	2500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
218-01-9b	Chrysene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
53-70-3b	Dibenz[a,h]anthracene	NDb	2500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
206-44-0b	Fluoranthene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
86-73-7b	Fluorene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
193-39-5b	Indeno(1,2,3-c,d)pyrene	NDb	2500b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
91-20-3b	Naphthalene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
85-01-8b	Phenanthrene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
129-00-0b	Pyrene	NDb	1300b	ug/kg dryb	1b	06/16/15b	B5F1024b	8270b	
<i>Surrogate: 2-Fluorobiphenyl-</i>			83.6 %-	32.9-115-		06/16/15-	B5F1024b	8270-	
<i>Surrogate: Nitrobenzene-d5-</i>			64.8 %-	31.8-115-		06/16/15-	B5F1024b	8270-	
<i>Surrogate: p-Terphenyl-d14-</i>			76.0 %-	38.5-115-		06/16/15-	B5F1024b	8270-	
Organics-PCBs as Aroclors									See note Y20p
12674-11-2b	Aroclor 1016	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	500b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			70.0 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.2 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	



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Client ID: CHLL-SD-89-0.7'-0.9'p

Lab ID: 1506040-09p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzed b Dateb	QC Batchb	Methodb	Qualifier b
Inorganics-General Chemistry									
TSb	% Total Solids ^p	39.6p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	
Inorganics-Metals									
7440-36-0b	Antimony^p	1.0p	0.3b	mg/kg dryb	10b	06/11/15b	B5F0801b	6020/200.8b	A03b
7440-38-2b	Arsenic^p	28p	5.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-39-3b	Barium^p	75p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-41-7b	Berylliumb	NDb	2.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-43-9b	Cadmium^p	0.7p	0.2b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-47-3b	Chromium^p	95p	20b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-48-4b	Cobalt^p	63p	5.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-50-8b	Cop er^p	1800p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7439-89-6	Iron^p	58000p	50b	mg/kg dryb	100b	06/18/15b	B5F0802b	6010/200.7b	
7439-92-1b	Lead^p	100p	2.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7439-96-5b	Manganese^p	1200p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7439-97-6	Mercury^p	0.2p	0.1b	mg/kg dryb	1b	06/18/15b	B5F1705b	7471/245.5b	
7439-98-7b	Molybdenum^p	2.4p	1.0b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-02-0b	Nickel^p	130p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7782-49-2b	Seleniumb	NDb	2.0b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-22-4b	Silver^p	2.2p	0.1b	mg/kg dryb	10b	06/15/15b	B5F0802b	6020/200.8b	
7440-28-0b	Thalliumb	NDb	1.0b	mg/kg dryb	20b	06/16/15b	B5F0802b	6020/200.8b	
7440-62-2b	Vanadium^p	150p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	
7440-66-6	Zinc^p	290p	10b	mg/kg dryb	100b	06/16/15b	B5F0802b	6020/200.8b	



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Client ID: CHLL-SD-89-1'-3'p

Lab ID: 1506040-10p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	460b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
Surrogate: Decachlorobiphenyl-			64.1 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			55.2 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	44.0p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-89-3'-5'p

Lab ID: 1506040-11p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	400b	ug/kg dryb	1b	06/18/15b	B5F1510b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			68.5 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			76.8 %-	30-150-		06/18/15-	B5F1510b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	50.6p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-88-0-6"p

Lab ID: 1506040-12p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	750b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			73.1 %-	30-150-		06/24/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			71.3 %-	30-150-		06/24/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	26.8p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-88-1-3'p

Lab ID: 1506040-13p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	440b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			76.0 %-	30-150-		06/24/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			76.0 %-	30-150-		06/24/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	45.3p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-88-3-5'p
Lab ID: 1506040-14p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	350b	ug/kg dryb	1b	06/24/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			82.0 %-	30-150-		06/24/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			78.2 %-	30-150-		06/24/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	56.6p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-87-0-6"p

Lab ID: 1506040-15p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	560b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			69.5 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	35.8p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-87-1-3'p

Lab ID: 1506040-16p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
Surrogate: Decachlorobiphenyl-			70.1 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			71.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	50.4p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-87-1-3' dup

Lab ID: 1506040-17p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	400b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.2 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			76.2 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	50.4p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-87-3-5'p

Lab ID: 1506040-18p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	370b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			66.3 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			66.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	53.8p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-86-0-6"p

Lab ID: 1506040-19p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	740b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.5 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			73.3 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	27.0p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



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Client ID: CHLL-SD-86-1-3'p

Lab ID: 1506040-20p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	410b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			59.0 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			59.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	48.9p	0.1b	%b	1b	06/04/15b	B5F0412b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number 1506040	Project Name Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops	Matrix SEDIMENT		
Site Code/Project Number 31000098	AY 13	CC Email 1 j.blinkley@westonsolutions.com	Project IAT Days 	Sample Collector AK/JP/AB-DEQ-RRD
Dept-Division-District DEQ-RRD-UP District	Index 44251	CC Email 2 daniel.liebau@westonsolutions.com	Project Due Date 	Sample Collector Phone 906-337-0389
State Project Manager Amy Keranen	PCA 30872	CC Email 3 pincumbej@michigan.com	Accept Analysis hold time codes 	Contract Firm Weston Solutions
State Project Manager Email keranenam@michigan.gov	Project 456990	Overflow Lab Choice 1 	Contract Firm Primary Contact Jeff Blinkley	Primary Contact Phone 906-523-5457
State Project Manager Phone 906-337-0389	Phase 00	Overflow Lab Choice 2 		

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments		
1	CHLL-SD- 91-0-6"	6/1/15	0945				
2	CHLL-SD- 91-1-3'		0946		time labeled 0945		
3	CHLL-SD- 91-3'-5'		0947		" " "		
4	CHLL-SD- 90-0-6"		1105				
5	CHLL-SD- 90-1-3'		1106		time labeled 1115		
6	CHLL-SD- 90-3'-5'		1107		" " "		
7	CHLL-SD- 90-3'-5' dup		1107		" " "		
8	CHLL-SD- 89-0-6"		1215				
9	CHLL-SD- 89-0.7'-0.9'		1216		time labeled 1215		
10	CHLL-SD- 89-1'-3'		1217		" " "		
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,Bi,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		GS - General Chemistry	
Volatiles - Full List 1 2 3 4 5 6 7 8 9 10		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 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			
BNAs 1 2 3 4 5 6 7 8 9 10				Manganese - Mn 1 2 3 4 5 6 7 8 9 10			
PNAAs 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				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			
				Uranium - U 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: Aaron Berndt	DANIEL LIEBAU / WESTON SOLUTIONS	6-2-15 / 1100
	Print Name & Org. Signature: UPS 523169060-6	Jordan Hendley, DEQ	6/3/15
	Print Name & Org. Signature:		1323



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506040

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

SEDIMENT

Site Code/Project Number

AY

CC Email 1

Project IAT Days

Sample Collector

31000098

13

j.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

CC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.liebau@westonsolutions.com

906-337-0389

State Project Manager

PLA

CC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

plncumbel@michigan.com

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranen@miichigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	11 CHLL-SD- 89 - 3'-5'	6-1-15	1218		time labeled 1215
2	12 CHLL-SD- 88 - 0-6"		1330		
3	13 CHLL-SD- 88 - 1-3'		1331		time labeled 1330
4	14 CHLL-SD- 88 - 3-5'		1332		" " "
5	15 CHLL-SD- 87 - 0-6"		1430		
6	16 CHLL-SD- 87 - 1-3'		1431		time labeled 1430
7	17 CHLL-SD- 87 - 1-3' deep		1432		" " "
8	18 CHLL-SD- 87 - 3-5'		1433		" " "
9	19 CHLL-SD- 86 - 0-6"		1610		
10	20 CHLL-SD- 86 - 1-3'		1611		time labeled 1610

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

Chain of Custody	Relinquished by		Received By		Date / Time
	Print Name & Org.	Aaron Berndt / DEQ	DANIEL LIEBAU / WESTON SOLUTIONS		6-2-15 / 1100
	Signature:				
	Print Name & Org.	UPS / J231640000 - 6	Jordan Hardley / DEQ		6/3/15
Signature:				1323	
Print Name & Org.					
Signature:					



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

26 June 2015

Work Order: 15060480

Price: \$810.00

Amy Keranen
MDEQ-RRD-UPO
1504 W. Washington St.
Marquette, MI 49855
RE: ABANDONED MINING WASTES-TORCH LAKE NSO

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

Sincerely,

George Krisztian
Laboratory Director



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MDEQ-RRD-UPb
1504 W. Washington St.b
Marquette MI, 49855b

Project:bABANDONED MINING WASTES-TORCH LAKE NSb
Site Code:b31000098b
Project Manager:bAmy Keranenb

Reported:p
06/26/2015

Analytical Report for Samplesp

Sample IDp	Laboratory IDp	Matrixp	Date Sampledp	Date Receivedp	Qualifierp
CHLL-SD-84-0-6"b	1506048-01b	Soil/Sedimentb	06/02/2015b	06/04/2015b	
CHLL-SD-84-1-3"b	1506048-02b	Soil/Sedimentb	06/02/2015b	06/04/2015b	
CHLL-SD-84-3-3.5"b	1506048-03b	Soil/Sedimentb	06/02/2015b	06/04/2015b	
CHLL-SD-97-0-6"b	1506048-04b	Soil/Sedimentb	06/02/2015b	06/04/2015b	
CHLL-SD-97-1-3"b	1506048-05b	Soil/Sedimentb	06/02/2015b	06/04/2015b	
CHLL-SD-97-3-5"b	1506048-06	Soil/Sedimentb	06/02/2015b	06/04/2015b	

Notes and Definitions p

Y20b Reporting Limits (RL) raised due to matrix.b
A07b Result(s) and reporting limit(s) are estimated due to poor precision.b
NDb Indicates compound analyzed for but not detected b
RLb Reporting Limit b
NAb Not Applicable b
dry Sample results reported on a dry weight basis b



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P.O. Box 302700
Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SD-84-0-6"p

Lab ID: 1506048-01p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifyb
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	360b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			65.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			61.8 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	55.6p	0.1b	%b	1b	06/04/15b	B5F0417b	2540 Bb	



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Lansing, MI 48909
TEL: (517) 335-98000
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Client ID: CHLL-SD-84-1-3'p

Lab ID: 1506048-02p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	260b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			83.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			67.5 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	77.0p	0.1b	%b	1b	06/04/15b	B5F0417b	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-84-3-3.5'p

Lab ID: 1506048-03p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	220b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
Surrogate: Decachlorobiphenyl-			76.3 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Surrogate: Tetrachloro-m-xylene-			69.9 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	89.9p	0.1b	%b	1b	06/04/15b	B5F0417b	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-97-0-6"p

Lab ID: 1506048-04p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	640b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			74.5 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			69.8 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	31.1p	0.1b	%b	1b	06/04/15b	B5F0417b	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-97-1-3'p

Lab ID: 1506048-05p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	420b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			77.3 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			73.6 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	47.2p	0.1b	%b	1b	06/04/15b	B5F0417b	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-97-3-5'p

Lab ID: 1506048-06p

CAS #b	Analyteb	Resultb	RLb	Unitsb	Dilutionb	Analyzedb Dateb	QC Batchb	Methodb	Qualifiert
Organics-PCBs as Aroclorsp									See note Y20p
12674-11-2b	Aroclor 1016	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11104-28-2b	Aroclor 1221b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11141-16-5b	Aroclor 1232b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
53469-21-9b	Aroclor 1242b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
12672-29-6	Aroclor 1248b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11097-69-1b	Aroclor 1254b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11096-82-5b	Aroclor 1260b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
37324-23-5b	Aroclor 1262b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
11100-14-4b	Aroclor 1268b	NDb	390b	ug/kg dryb	1b	06/25/15b	B5F1909b	8081/8082b	
<i>Surrogate: Decachlorobiphenyl-</i>			72.4 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
<i>Surrogate: Tetrachloro-m-xylene-</i>			70.7 %-	30-150-		06/25/15-	B5F1909b	8081/8082-	
Inorganics-General Chemistry									
TSb	% Total Solidsp	51.1p	0.1b	%b	1b	06/04/15b	B5F0417b	2540 Bb	



Analysis Request Sheet

Lab Work Order Number

Project Name

Matrix

1506048

Abandoned Mining Wastes - Torch Lake PCB C&H Lake Linden Ops

SEDIMENT

Site Code/Project Number

AY

LC Email 1

Project IAI Days

Sample Collector

31000098

13

j.binkley@westonsolutions.com

AK/JP/AB-DEQ-RRD

Dept-Division-District

Index

LC Email 2

Project Due Date

Sample Collector Phone

DEQ-RRD-UP District

44251

daniel.lee@westonsolutions.com

906-337-0389

State Project Manager

PCA

LC Email 3

Accept Analysis
hold time codes

Contract Firm

Amy Keranen

30872

pincumbel@michigan.com

Weston Solutions

State Project Manager Email

Project

Overflow Lab Choice 1

Contract Firm Primary Contact

keranen@miichigan.gov

456990

Jeff Binkley

State Project Manager Phone

Phase

Overflow Lab Choice 2

Primary Contact Phone

906-337-0389

00

906-523-5457

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHLL-SD- 80008	6-2-15	1000	1	
2	CHLL-SD- 84-0-6"				
3	CHLL-SD- 84-1-3'		1001	1	Jar Time 1000
4	CHLL-SD- 84-3-3.5'		1002	1	Jar time 1000
5	CHLL-SD- 97-0-6"		1305	1	
6	CHLL-SD- 97-1-3'		1306	1	
7	CHLL-SD- 97-3-5'		1307	1	Jar time 1305
8	CHLL-SD-				
9	CHLL-SD-				
10	CHLL-SD-				

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,Bi,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn) Michigan10 - Total 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	Silver - Ag 1 2 3 4 5 6 7 8 9 10 Aluminum - Al 1 2 3 4 5 6 7 8 9 10 Arsenic - As 1 2 3 4 5 6 7 8 9 10 Barium - Ba 1 2 3 4 5 6 7 8 9 10 Beryllium - Be 1 2 3 4 5 6 7 8 9 10 Cadmium - Cd 1 2 3 4 5 6 7 8 9 10 Cobalt - Co 1 2 3 4 5 6 7 8 9 10 Chromium - Cr 1 2 3 4 5 6 7 8 9 10 Copper - Cu 1 2 3 4 5 6 7 8 9 10 Iron - Fe 1 2 3 4 5 6 7 8 9 10 Mercury - Hg 1 2 3 4 5 6 7 8 9 10 Lithium - Li 1 2 3 4 5 6 7 8 9 10 Manganese - Mn 1 2 3 4 5 6 7 8 9 10 Molybdenum - Mo 1 2 3 4 5 6 7 8 9 10 Nickel - Ni 1 2 3 4 5 6 7 8 9 10 Lead - Pb 1 2 3 4 5 6 7 8 9 10 Antimony - Sb 1 2 3 4 5 6 7 8 9 10 Selenium - Se 1 2 3 4 5 6 7 8 9 10 Strontium - Sr 1 2 3 4 5 6 7 8 9 10 Titanium - Ti 1 2 3 4 5 6 7 8 9 10 Thallium - Tl 1 2 3 4 5 6 7 8 9 10 Uranium - U 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	BNA - Base Neutral Acids	Organic Specialty Requests
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	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	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: Amy Keranen, mPEA Op Keranen	DANIEL LEEBAU / WESTON SOLUTIONS [Signature]	6.3.15 / 0830
	Print Name & Org. Signature: UPS 52316900635	[Signature] [Signature]	6/4/15 11/8
	Print Name & Org. Signature:		