



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD01

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/7/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 2.66' in 36.42' of water

LOCATION DESCRIPTION: Ahmeek Mill Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand with Silt			CHTC-SD-01-0-6"		
		Silt with Trace Sand					
		Sand			CHTC-SD-01-1-2.66'		
		E.O.B.					
			-5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16984577°

LONGITUDE: -88.43039219°

PROJECTION: MichGeoRef

NORTHING: 738175.01 meters

EASTING: 315665.011 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD02

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/7/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 3.33' in 3.92' of water

LOCATION DESCRIPTION: Ahmeek Mill Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand			CHTC-SD-02-0-6"		
		Sand with Some Silt			CHTC-SD-02-1-3'		
		E.O.B.			CHTC-SD-02-3-3.33'		
			5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16844627°

LONGITUDE: -88.43061019°

PROJECTION: MichGeoRef

NORTHING: 738020.054 meters

EASTING: 315643.686 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD03

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/7/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

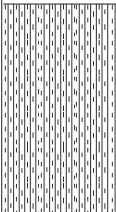
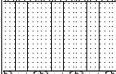
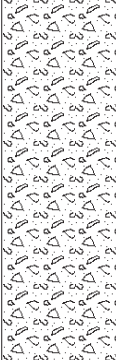
DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 4.66' in 25.83' of water

LOCATION DESCRIPTION: Ahmeek Mill Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt with Organics			CHTC-SD-03-0-6"		
		Silt with Sand					
		Sand with Trace Gravels			CHTC-SD-03-1-3'		
					CHTC-SD-03-3-4.66'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16677327°

LONGITUDE: -88.43072424°

PROJECTION: MichGeoRef

NORTHING: 737834.472 meters

EASTING: 315629.295 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD04

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/8/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

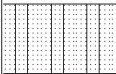

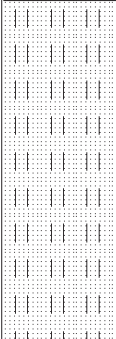

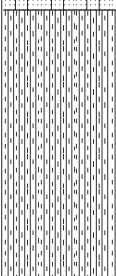


DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 5.00' in 24.08' of water

LOCATION DESCRIPTION: Ahmeek Mill Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt with Some Sand			CHTC-SD-04-0-6"	Sheen observed on water surface when pulling in core.	
		Sand with Silt					
		Silty Clay			CHTC-SD-04-1-3' CHTC-SD-04-1-3' Dup		
					CHTC-SD-04-3-5'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16619997°

LONGITUDE: -88.43283846°

PROJECTION: MichGeoRef

NORTHING: 737775.745 meters

EASTING: 315467.149 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD06

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/11/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

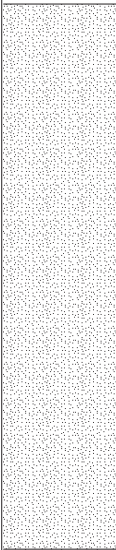

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 3.92' in 4.17' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand			CHTC-SD-06-0-6"		
					CHTC-SD-06-1-3'		
						CHTC-SD-06-3-3.92'	
		E.O.B.					
			-5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16477712°

LONGITUDE: -88.43217863°

PROJECTION: MichGeoRef

NORTHING: 737616.136 meters

EASTING: 315512.244 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD07

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/11/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 6.00' in 19.58' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt			CHTC-SD-07-0-6"		
		Clay with Sand					
		Silt with Sand			CHTC-SD-07-1-3' CHTC-SD-07-1-3' Dup		
					CHTC-SD-07-3-5'		
			5				
		E.O.B.					

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.163722056°

LONGITUDE: -88.429254723°

PROJECTION: MichGeoRef

NORTHING: 737492.078 meters

EASTING: 315730.143 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD09

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/8/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 5.00' in 2.83' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand			CHTC-SD-09-0-6"		
		Sand with Clay					
		Sand with Silt			CHTC-SD-09-1-3'		
					CHTC-SD-09-3-5'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16162313°

LONGITUDE: -88.43148735°

PROJECTION: MichGeoRef

NORTHING: 737264.147 meters

EASTING: 315553.772 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD10

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/10/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 4.75' in 4.00' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand			CHTC-SD-10-0-6"		
		Silt			CHTC-SD-10-1-3'		
		Silt with Sand			CHTC-SD-10-3-4.75' CHTC-SD-10-3-4.75' Dup		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16283852°

LONGITUDE: -88.43440217°

PROJECTION: MichGeoRef

NORTHING: 737406.001 meters

EASTING: 315337.109 meters





Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD11

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/10/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 5.50' in 12.75' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt			CHTC-SD-11-0-6"		
		Clay with Silt			CHTC-SD-11-1-3'		
					CHTC-SD-11-3-5'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.161187441°

LONGITUDE: -88.4335593°

PROJECTION: MichGeoRef

NORTHING: 737220.609 meters

EASTING: 315395.287 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD13

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/11/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W



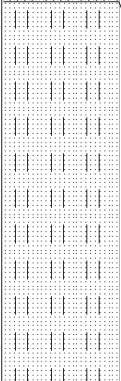

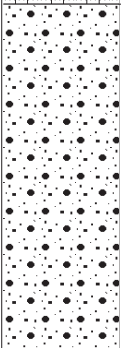

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 5.50' in 29.92' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Clay with Trace Sand			CHTC-SD-13-0-6"		
		Sand with Silt					
		Sand			CHTC-SD-13-1-3'  CHTC-SD-13-3-5'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.159149073°

LONGITUDE: -88.434460927°

PROJECTION: MichGeoRef

NORTHING: 736996.289 meters

EASTING: 315319.955 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD14

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/11/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 2.75' in 72.17' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Clay			CHTC-SD-14-0-6"		
		Sand with Some Silt					
		Sand			CHTC-SD-14-1-2.75' CHTC-SD-14-1-2.75' Dup		
		E.O.B.					
			5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.15891286°

LONGITUDE: -88.43676632°

PROJECTION: MichGeoRef

NORTHING: 736975.465 meters

EASTING: 315144.46 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD15

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/10/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 4.33' in 12.83' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Silt			CHTC-SD-15-0-6"		
					CHTC-SD-15-1-3'		
						CHTC-SD-15-3-4.33'	
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.157458799°

LONGITUDE: -88.439068686°

PROJECTION: MichGeoRef

NORTHING: 736819.352 meters

EASTING: 314964.992 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD17

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/12/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 24

TOTAL DEPTH: 5.25' in 13.75' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Sand			CHTC-SD-17-0-6"		
					CHTC-SD-17-1-3'		
						CHTC-SD-17-3-5'	
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.155188516°

LONGITUDE: -88.441276348°

PROJECTION: MichGeoRef

NORTHING: 736572.35 meters

EASTING: 314789.873 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD18

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/12/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 5.33' in 12.00' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Clay			CHTC-SD-18-0-6"		
		Sand			CHTC-SD-18-1-3'		
		Sand with Silt	5		CHTC-SD-18-3-5'		
		E.O.B.					

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.15614637°

LONGITUDE: -88.44405673°

PROJECTION: MichGeoRef

NORTHING: 736685.307 meters

EASTING: 314582.497 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD19

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/10/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W

DRILL METHOD: Vibracore

SECTION: 14

TOTAL DEPTH: 4.75' in 9.75' of water

LOCATION DESCRIPTION: Tamarack Sands Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Organic Silt			CHTC-SD-19-0-6"		
		Clay			CHTC-SD-19-1-3'		
		Sand			CHTC-SD-19-3-4.75'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.15743049°

LONGITUDE: -88.44784187°

PROJECTION: MichGeoRef

NORTHING: 736836.886 meters

EASTING: 314300.125 meters



Remediation and  
Redevelopment  
Division

BORING/WELL: CHTC-SD20

**SITE: Abandoned Mining Wastes Torch Lake**

COUNTY: Houghton

DATE: 7/12/2015

TOWNSHIP: Osceola

DRILLER: N. Ekel

TOWN: 55N

GEOLOGIST: D. Peabody

RANGE: 33W



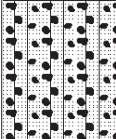

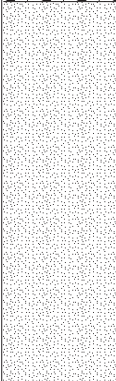

DRILL METHOD: Vibracore

SECTION: 13

TOTAL DEPTH: 4.25' in 19.92' of water

LOCATION DESCRIPTION: Ahmeek Mill Processing Area

ERNIE ID# 31000003

WELL CONSTRUCTION	LITHOLOGIC LOG	DESCRIPTION	DEPTH	SAMPLE TYPE	SAMPLE ID	NOTES	Water Quality Meter
		Lake Bottom	0				
		Clay with Sand			CHTC-SD-20-0-6"		
		Sand with Silt and Trace Gravel					
		Sand			CHTC-SD-20-1-3'		
					CHTC-SD-20-3-4.25'		
		E.O.B.	5				

VERTICAL DATUM: Lake surface

GRD. ELEVATION: NA

T.O.C.: NA

S.W.L.: NM

CASING: NA

SCREEN: NA

WELL DEPTH: NA

COMPLETION NOTES:

LATITUDE: 47.16667333°

LONGITUDE: -88.43100667°

PROJECTION: MichGeoRef

NORTHING: 737824.032 meters

EASTING: 315607.554 meters