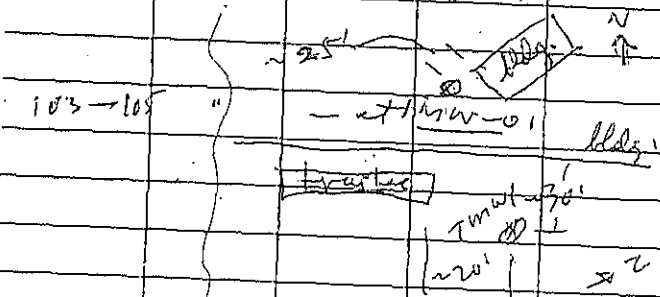
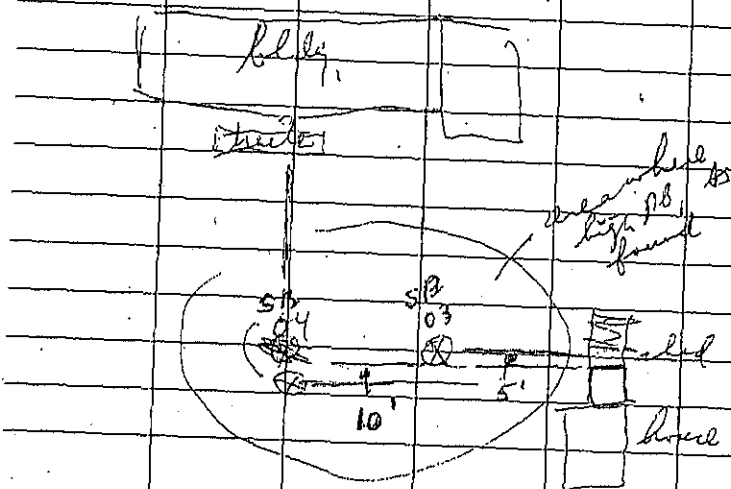


Photo #	Location	Fig. 2 #
82-84	Handwritten at SB-02	1
85-89	" - towards lake	2
90-95	" - at SB-10	3
96-102	Whitewater - at SB-08	4



106-107	Area where w/p collected	
108-120	Area w/ P.P.B. AS-SB-03, 04	5



Located by iPhone + direct obs. 11/8/12

SB-01	✓
2	✓
3	✓
4	✓
5	✓
6	✓
8	✓ iPhone did not seem to record loc.
9	✓
10	✓
11	✓
12	✓

- took a photo of iPhone, which records a location on the map
 - also current location in iPhone map app shows location as aerial. I wrote approx. loc. on Fig 2

SB-01	✓
02	✓
03	✓
05	✓

(Laini also recorded GPS using Trimble hand-held unit. only, as backpack w/ receiver)

Th., 11/8/12

ph #	desc.	hij. 2
121-124	Thw-05	4
125-132	near Thw-03, SB-05	6
133-136	at Thw-02, SB-06	7
137-147	at SB-11	8
148-162	at SB-09	9
163-173	at SB-01	10
174-180	at SB-12	

Fri., 11/9/12

8:45 left for room service

8:40 packing Louis to go w/ vic

8:40 gas in truck, called Ryan May to report cooler shipped

230-250p filled out O&V
let papers in St. Louis

7:20p back Louis - lab,
Triley, Cth office

8p done at Cth

10:5 hrs (51) (comp earned)

IF FOUND PLEASE RETURN TO:

NAME John E. Spielberg
COMPANY Mick DEQ - RRD-SF
STREET 525 W. Allegan
CITY Leansburg STATE MI ZIP 48913
PHONE 517 - 242-6663 DEQ cell
517 - 285-0328 pers cell
517 - 373-4451 office

JOB BOOK

PROJECT NAME C&H-Tamarack Op.
PROJECT NUMBER _____
CREW _____
DATE _____ BOOK # _____ OF _____
WEATHER _____



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Stock No. 49365

Fri. 11/1/12

- ✓ - clean out stuff from TC
- ✓ - check methanol bits (need ~40)
- 400 bottles - load in pickup #
- ✓ Ambers - $(9 \times 2) + 2 + \text{extra}$ 24
- ✓ VOA vials - $(9 \times 2) + 4 + "$ 30
- ✓ plastics - $(9 \times 2) + 2 + "$ 24
- ✓ 8oz. glass - $(33 \times 2) + 6 + \text{extra}$ 80
- ✓ - extra 8oz. jar for waste complex 5
- ✓ - load jars in truck
- ✓ - load flaps " "
- ✓ - DI water
- ✓ - alum. traps
- ✓ - pump
- ~~order with bit of spreader~~ not needed
- ✓ - bubble wrap/bags

Sat.

message

1239 Sat.

- 1) Todd Shields - got mail - OK
- w/ him - OK to stop by + get
- 906 296 2015 signed form
- on red metal circle

Th. 11/1/12 wkg. 1-145p

present - Dr. Antkowiak,

Lewis, Smith, etc

✓ Work plan session:

✓ Scott

✓ Sun. leave

Safety issues

✓ - driving

- breaks

✓ - keeping warm

Call prop. owners

- keep out of way Mr. Tim

- getting Consent forms

Fri.

buy - 1 gal. ziplocks - Pearl

- hip bag

-

Sun

Filly - add enough
~~little for extra seed~~
 for extra soil gas bags
 TAD - ~~extra gas bags for extra~~

8³⁰ am - to meet Leni, Autumn

✓ bring goodies

✓ AT hotel - check in using
 INSURCV debit card

~~700 - Filly - goodies to 3~~
~~700 - check office for boxes~~
~~700 - Filly~~

Mon - 11/5/12

my Van - no new messages

At Miss Dign 1235

ATT - clean

Wash in Wb - no comp.

Water runs

Wash your clean

je - clean

Did not sample any PB or PB

Occ. Tornike - no response

Therapy w/ "no response"

Sun - record

1135p Van - no new messages

Mon

work plan

ice - Devere

flag ~~FS~~ TFW 5.3

9am - meet w/ util. folks

Mon 11/5/12

util -

UPKO - clear

ATT - phone -

Charter - cable TV

USC
 Dinner 15-442-0883
 OK

SEMECO - gas - only along

road + near houses

off Jan. Hill St

906-250-0352 (Bob)

David Shields - got my letters

- OK to access this proj.

- d told to go ahead & mail

the consent forms - he said OK

		date	time	
SB-01	ME3PA9	11/5/12	1005	Luni + NACL
SB-02	B0	"	1435	
SB-02D	B1	"	1435	
SB-03	B2	11/6/12	1450	
SB-04	3	11/6/12	1300	needs photo log
SB-05	4	11/5	1350	L+N
SB-06	5	11/5	1145	L+N
SB-07	6	diep	not	collect
SB-08	7	11/6	1545	
SB-09	8	11/6	1215	
SB-10	9	11/5	15120	
SB-11	C0	11/6	835	
SB-12	1	"	1055 1055	

		date	time	
SS-01		11/6/12	1633	
SS-02		11/5/12	1123	
SS-02D		"	"	
SS-03		"	1223	
SS-04		"	1410	= XRF 43
05		"	1514	
06		11/6/12	906	
07		"	830	
8		"	1100	
9		"	1000	
10		"	1223	
11		"	1251	
12 + D		11/6/12	1030	
13		"	1710	
14		"	1556	
15				
16				
17				
18				
W-1		11/5/12	1510	Waste-1 / Heavy, removed large chunk - for TM
W-2		11/5	1659	Waste-2 sludgy mat.

	insects ↓				
		<u>date</u>	<u>time</u>		
Tmw-01	MB3P02	11/6/12	855	slow well, air	
Tmw-02	3	11/5/12	1350		
Tmw-02D	4	"	1350		
Tmw-03	ms/ms	5	1610		
Tmw-04		did not sample - no well			
Tmw-05	7	11/6/12	1066		
FB-01	8	11/5/12	1310		
FB-02	9	11/6/12	1430		
PB-01	ME3PD0	11/6/12	1240		

Tu 11/6/12

PPN - phone
Prose Contracting - fiber
along road only

John Handrickson, Sr. (son John
own property) stopped
to check if we find some -
they can stay at place.
property - Joe & I explained
yes, that we have not found
a lot on former stamps
wells

W 11/7/12
To 1830 - get Access
Diana from Ben:
1) Anthony Clugget 26231
2) Torch Lake Serv. Auth. - Tam.
Ralph Hager

W. 11/7/12

Bill Hardy

- Lk. Vly. Ground
- said FL backwater
becomes stagnant
no flow - would likely
to create better
fluvial action there

Thurs 11/8/12

- Everybody started 8 am
- Me, Nic + Jan to C&H &
do well survey, etc.
 - Joe, Ant + Jan to Freda/R.

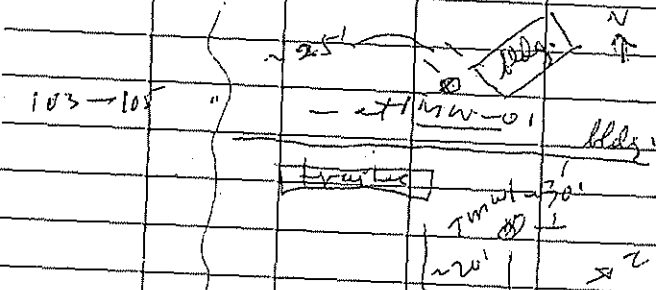
At VAS store ~820 - close
(around 10 am)

At C&H - a bad GPS unit &
no backpack, so used iPhone
to enter 3 or 4 new locations

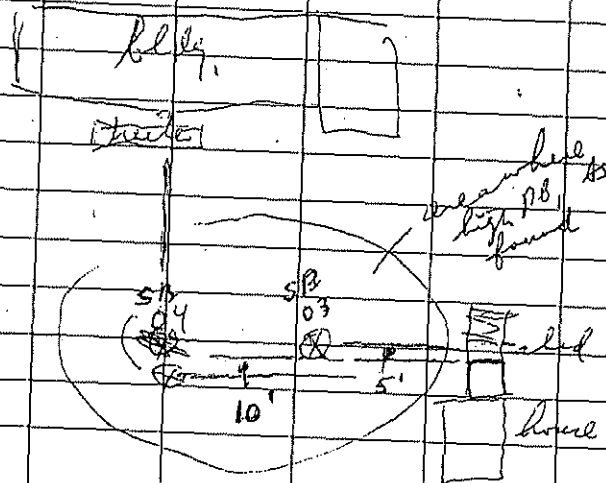
	John	Joe	Ant	Jan	Nic	Jan
Sun.	13	10.5	10.5	11.5	10.5	10.0
Mon.	10.5	10.5	10.5	10.5	10.5	10.5
Tu	10.5	10.5	10.5	10.5	10.5	10.5
	(+ BR Hok I)					
W	10.5	10.5	10.5	10.5	10.5	10.5
Th	6	6	6	6	6	6
F	10	10.5	10.5	10	10.5	10

Th. 11/8/12 photo log (Caro #2)

<u>ph. #</u>	<u>descrip.</u>	<u>Fig. 2</u>
<u>82-84</u>	<u>Handwritten at SB-02</u>	<u>1</u>
<u>85-89</u>	<u>" - towards lake</u>	<u>2</u>
<u>90-95</u>	<u>" - at SB-10</u>	<u>3</u>
<u>96-102</u>	<u>Whitman - at SB-08</u>	<u>4</u>



106-107	Area where w-p collected	
108-120	Area w/ ϕ Pb, As-Sb-Cd, Co	5



Located by iPhone + direct obs. 11/8/12

53-01	✓
2	✓
3	✓
4	✓
5	✓
6	✓
8	✓
9	✓
10	✓
11	✓
12	✓

iPhone did not turn it record loc.

- took a photo of iPhone, which records a location on the map
- also current location in iPhone map app shows location on aerial $\rightarrow$ wrote approx. loc. on Fig 2

Пр.ч. 41	✓
42	✓
03	✓
05	✓

(Laini also recorded GPS using
Tremble hand-held unit only, no
backpack w/ receiver)

Th., 11/8/12

ph. #	descrip.	fig. 2
121-124	Thw-05	6
125-132	near Thw-03, SB-05	7
133-136	at Thw-02, SB-06	8
137-147	at SB-11	9
148-162	at SB-09	10
163-173	at SB-01	
174-180	at SB-12	

Fri., 11/9/12

8:15 left for room service

8:30 packing Louis to go w/ wife

8:40 gas in truck, called Ryan, Union to report coolers shipped

2:30-2:50p filled out OGV
Lab papers in St. Louis

7:20p back Louis - lab,
Drilley, CVD office,

8p done at CVD

10.5 hrs (51) (comp earned)

IF FOUND PLEASE RETURN TO:

NAME _____

COMPANY _____

STREET _____

CITY _____ STATE _____ ZIP _____

PHONE _____

JOB BOOK

PROJECT NAME CH Tamarack

PROJECT NUMBER _____

CREW ND / L52

DATE 11/8/12 BOOK # _____ OF _____

WEATHER Sunny 38°



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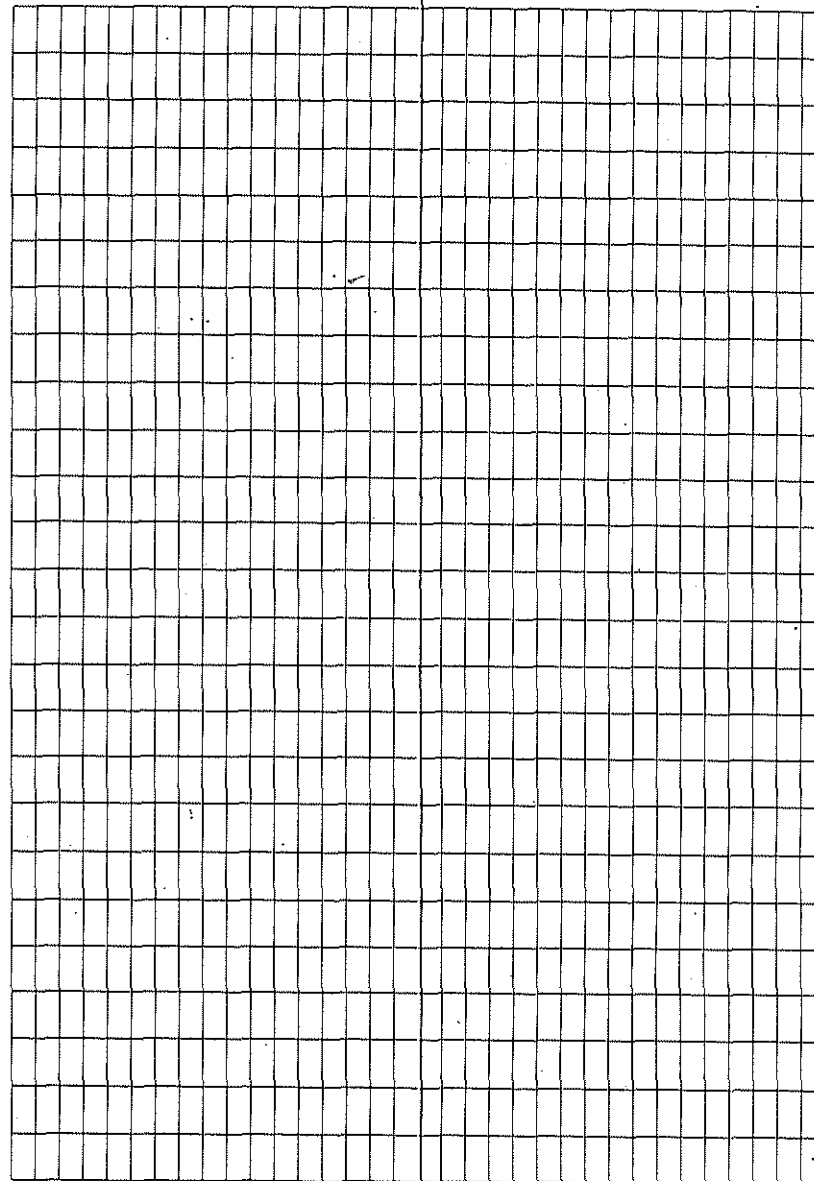
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Ele.	B.S.	I.H.	F.S.	ele.	Sta.
				100'	TMW-1 TOC
100'	5.79'	105.79'	-7.54'	98.25'	TMW-1 GE
			-5.40'	100.39'	TMW-5 TOC
			-6.02'	99.77'	TMW-5 GE
			-11.20'	94.59'	TMW-3 TOC
			-11.88'	93.91'	TMW-3 GE
			-14.10'	91.69'	TMW-2 TOC
			-14.68'	91.11'	TMW-2 GE

Well	TOC ele	Static ele
TMW-1		
→	100'	8.34'
TMW-5	100.39'	20.93'
TMW-3	94.59'	11.51'
TMW-2	91.69'	7.34'



XRF LOCATION INFORMATION for SURFICAIL SOIL SCREENING

Site: C& H Tamarack Operations

Date: 11.5.12

Page 1 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
1	Cal		N/A		
2	Blank				
3	NIST				
4	top of stamp mill	dk brn silty sand		Y	
5	S. of S. mill	brn silty fn. to m sand		↓	
6	top of ridge	brn silty fn to m sand			
7	bottom of highest ridge	" " "			
8	"				
9	Side of highest ridge	" "			
10	bottom of highest ridge	" "			
11	Side of ridge waste	waste black silty sand			19 ppm arsenic Pile
12	"	" "			" Pile
13		waste coal, brick, glass mortar		↓	173 ppm lead Pile

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C& H Tamarack Operations

Date: 11.5.12

Page 2 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
14	below Stamp mill	Sand, gravel w/ S.S. Slag, wood debris		Y	Pile
15	waste pile	brn sand, gravel			23ppm arsenic, 181 ppm lead SS-02 Sampled
16	waste pile	brn sand			
17	Side of ridge	black silty sand			
18	bottom of ridge near valley cliff	bk silty sand, iron scale			476 lead
19	near valley	bk silty sand, iron scale			←
20	near S. mill	Stamp sand			
21	former S. mill	tar, sand, gravel			711 lead
22	S. mill waste	S. sand, sand gravel			Pile
23	S. of S. mill foundation	black, silty sand			
24	foundation	birch tree root dirt black			304 lead
25	Side of hill	brown silty sand fn. gravel			
26	S. of foundation	brown silty sand		Y	

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C& H Tamarack Operations

Date: 11.5.12

Page 3 of 11

Operator: Jac

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
27	Side of ridge	grayish-red sand		✓	arsenic, lead
28	Red metal CR. road	black silty sand			
29	"	" "			93 lead
30	"	"			
31	Near M-26	brown silty sand			
32	Red metal circle	black silty sand			Small pile 3cu yd 482 lead
33	edge of foundation	reddish brown silty sand			12 ppm arsenic
34	Red metal circle	slag, gravel, rock			Pile
35	"	slag, wood, sand metal debris, bones			Pile
36	Laundry	black silty sand			lead 1000 copper SS-03
37	Laundry	"			
38	E. of Laundry	brown silty sand			
39	NE of Laundry	blk gravel, s. sand, slag		↓	

XRF LOCATION INFORMATION for SURFICAIL SOIL SCREENING

Site: C&H Tamarack Operations

Date: 11.5.12

Page 4 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
40	E of bag	tan brown silty/sand		✓	
41	"	brown silty/sand			
42	"	Stamp sand + slag			edge of pile
43	E. of current bag.	Slag			size copper, lead (3003) zinc SS-04 Slag Pile
44	inside foundation	S sand + slag fill			
45	E. of bag	iron + copper scale			Part of Pile ↑ chrome arsenic copper
46	"	brown silty sand			Copper
47	"	basalt S sand			
48	"	brown silty sand			196 lead
49	building door	sparkly sand, rock			appears to have been swept outside from bag.
50	S. of bag	black sand + gravel			47ppm arsenic waste
51	"	"			
52	Steuss foundation backfill	brn silty sand		✓	36 arsenic 256 lead

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C& H Tamarack Operations

Date: 11-5-12

Page 5 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
53		gray ash		✓	390 arsenic waste Pile 1yd ³
54	W of bldg	S. sand			fill pile
55	W of bldg	slag			38 arsenic 343 lead
56	"	slag fill, sand			417 lead 72 arsenic SS-05
57	W. of bldg	slag, concrete			103 arsenic 743 lead
58	NW of bldg	gravel, sand fill			57 ars 256 lead
59	"	dark brn silty sand			
60	" on ridge	black org. topsoil			
61	"	black org topsoil + sand			
62	"	Pile on hill brn sand gravel			
63	Top of ridge	brn silty sand			
64	W of foundation tree trunk	base of tree orange silty sand			11 arsenic
65	Foundation	brown S sand, gravel		✓	99 arsenic 99 lead

photo taken at 16:03 - drums w/ blag ~ 5 drums

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C&H Tamarack Operations

Date: 11.5.12

Page 6 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
66	w of bag in foundation	blk brn silty sand			25 at
67	"	SSand			25 arsenic 160 lead
68	"	black org soil			
69	SW of bag	"			
70	"	"			
71	"	black org matter			
72	NE of bag	gray ashy pile			
73	rail cars	gray SSand, gravel			
74	N. of bag	green copper looking silty sand			70,000 copper 186 lead
75	"	brown silty sand			
76	"	" pile			
77	"	fill. brown silty sand			
78	"	yellow paint			

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C&H Tamarack Operations

Date: 11-5-12

Page 7 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
79	N. of Old Pillars	brn silty sand		✓	
80	b/w concrete Pillars	" "			
81	West of Pillars	black org. soil			
82	N. of bag	" "			Abort
83	"	" "			111 lead
84	"	" Sourishy			1356 lead (SS-07 loc)
85	"	" "			
11.6.12 → 86	CAL				
87	N. of driveway	redish brown s sand + gravel			
88	"	brown topsoil, silty sand			162 lead
89	Near MW 03	redish brn silty sand			143 lead
90	N. of drive inside tree group	brn silty sand			488 lead SS-06
91	N. of drive by truck	brn silty sand + gravel		✓	

JEK
12/17/12

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C& H Tamarack Operations

Date: 11-6-12

Page 8 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
92	NE of Pillars	brn silty sand		✓	
93	"	brn silty sand			
94	"	"			
95	NNE of Pillars	"			111 lead SS-09
96	N of Pillars	gravel, silty sand			
97	"	brn med sand			285 lead SS-12
98	next to crushed drum	blk silty sand			115 lead
99	"	brn silty sand			186 lead
100	next to ss fill piles	"			
101	Small pile N. of Pillars	"			
102	drainage basin	brn "			
103	edge of foundation				144 lead
104	inside foundation	mineral rock silty sand		✓	2237 lead 5779 zinc SS-08

10:09 Photo, Towards West of green abandoned drum. Consists of unknown contents
 10:14 NW Photo - drum
 10:14 NW "

XRF LOCATION INFORMATION for SURFICAIL SOIL SCREENING

Site: C&H Tamarack Operations

Date: 11.6.12

Page 9 of 11

Operator: JCR

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
105	W in foundation	Silty sand, mine rock		Y	666 lead 58 arsenic
106	blw VST's	dark brn silty sand			298 lead
107	W of Pillars	brn silty sand			
108	Fill in foundation	"			153 lead
109	"	"			
110	"	"			
111	top of foundation	green chips <u>WASTE</u> gravel, sand			1036 lead 135 arsenic 1100 zinc 39400 copper
112	fill in foundation	battery (acid) silty sand			305 lead 39 arsenic
113	W of Stamps	dk brn silty sand			250 lead
114	beside stamps	tan silty sand			
115	"	brn gravel + sand			
116	W. of mill	black silty sand twigs, organic			277 lead
117	On Mill foundation	dk brn silty sand		✓	736 lead

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: C & H Tamarack Operations

Date: 11-6-12

Page 10 of 11

Operator: JCR

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Photo #	GPSed?	Comments (SS sample # if collected, high metals, etc.)
118	Mill foundation trench	black silty sand		Y	4334 Lead 238 arsenic SS-10
119	Mill foundation	"			3799 Lead 216 arsenic
120	N. of Mill	dk brn silty sand			268 Lead
121	"	"			
122	N. of mill on ridge	" mine rock			380 lead SS-11
123	W. ridge	brn silty sand			1504 lead 83 arsenic SS-13
124	"	"			
125	"	"			470 pb 45 As
126	N.W. of bldg	dk brn silty sand			
127	"	"			
128	"	"			
129	on ridge	"			
130				↓	

XRF LOCATION INFORMATION
for
SURFICAIL SOIL SCREENING

Site: CH Tamarack
Freda Redridge

Date: 11.6.12

Page 11 of 11

Operator: Joe

Data Recorder: Autumn

XRF Run #	Location Designation	Material Description	Comments
131			
132			
133			
134	top of hill	waste pile - 20 yards dk brn silty sand, shingles	SS-14
135		dk brn silty sand	
136	"	stamp sand	
137	N. of accessed	blk silty sand	SS-01
138	E of rd. Top of hill	blk " "	
139			
140			
141			
142			
143			
144			
145			
146			
147			

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.6.12

Sample Location: SS 01 Weather: Rain, 38°

Field Personnel: Joe Data Sheet Logger: Autumn

Sampling Time (MT): 16:33 Depth/Interval: VOA - 4" Remainder - 0-8

Soil Cover: leaves, twigs (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials Collected / # of Jars Collected / # of Jars
✓VOA 1 ✓SVOA/Pest/PCB 1 ✓Metals/Cyanide 1

Location Reference Features:

Landmark #1: access road Direction: E Distance: 30'

Landmark #2: Direction: Distance:

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-2	moist dk brn sandy topsoil	
2-8	moist reddish brn silty fn to med sand w/ some gravel, trace rocks	

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 1640 #/Location: 2 Direction of photo: W Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.5.12

Sample Location: SS 02 S. SS02D Weather: Cloudy 37°

Field Personnel: Joe & Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 11:23 Depth/Interval: VOA - 9" Remainder: 0-9

Soil Cover: leaves, sand (sand, grass) # of Samples Per Location: 1

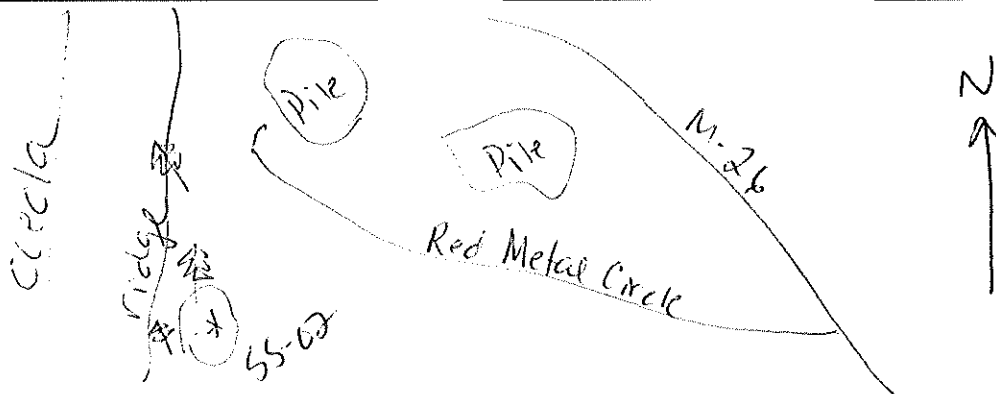
Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☒
Other (explain): ☐

Sample Type/Bottles: Collected / # of Vials ✓ VOA 2 Collected / # of Jars ✓ SVOA/Pest/PCB 4 Collected / # of Jars ✓ Metals/Cyanide 4

Location Reference Features:

Landmark #1: _____ Direction: _____ Distance: _____
Landmark #2: _____ Direction: _____ Distance: _____

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-9" dry dk brown silty finto med sand w/ some ash, wood, slag, roots

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: (Y/N) Time of photo: 11:27 #/Location: 2 Direction of photo: 5 Photographer: Joe

REMARKS: _____

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.5.12

Sample Location: SS 03 MS 1MSD Weather: cloudy 37

Field Personnel: Joe + Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 12.23 Depth/Interval: VOA - 4" Remainder - 0-6

Soil Cover: leaves (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: _____
(Check all Surface Sample: _____
that apply) Trowel: ☒ Deep Sample: _____
Other (explain): _____ Hand Auger: _____

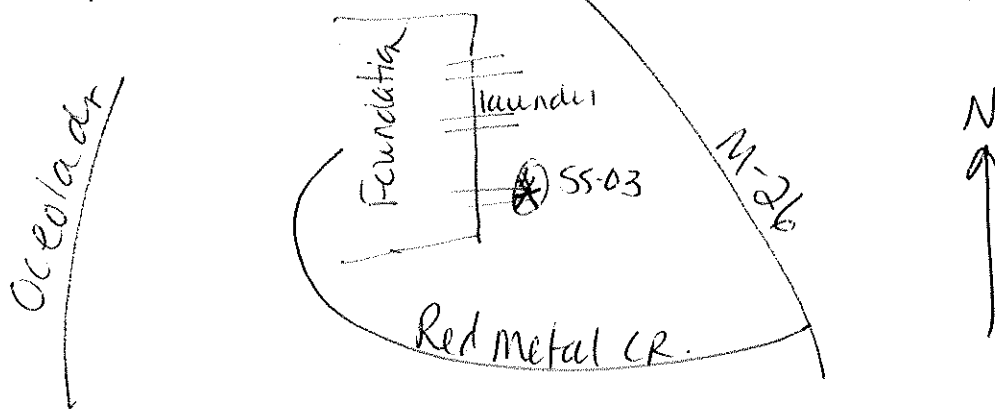
Sample Type/Bottles: Collected / # of Vials Collected / # of Jars Collected / # of Jars
1 VOA 1 ✓ SVOA/Pest/PCB 4 ✓ Metals/Cyanide 4

Location Reference Features:

Landmark #1: M-26 Direction: E Distance: 800 yards

Landmark #2: Red metal CR. Direction: S Distance: 500 yards

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-6 v. moist black organic silt + sand, lots of roots

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: (Y/N) Time of photo: 1232 #/Location: 2 Direction of photo: N Photographer: Joe

REMARKS: _____

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11-5-12

Sample Location: SS 04 Weather: cloudy, 33°

Field Personnel: Joe + Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 14:10 Depth/Interval: VOA - 1" Remainder - 0-1.5

Soil Cover: Slag (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials ☒ VOA 1 Collected / # of Jars ☒ SVOA/Pest/PCB 1 Collected / # of Jars ☒ Metals/Cyanide 1

Location Reference Features:

Landmark #1: M-26 Direction: E Distance: 200 yards

Landmark #2: bldeg Direction: W Distance: 200 yards

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-.5 moist dk redish brn silty sand + gravel
crushed mine rock

.5-1.5 moist greenish gray sludge material
copper wire @ surface

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 1417 #/Location: 3 Direction of photo: W Photographer: Joe

REMARKS: one very close prior to sampling, 2 after
sample was taken.

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.5.12

Sample Location: SS 05 Weather: Cloudy, 34°

Field Personnel: Joe + Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 15:14 Depth/Interval: VOA - 2' Remainder - 0-5

Soil Cover: slay (sand, grass) # of Samples Per Location: 1

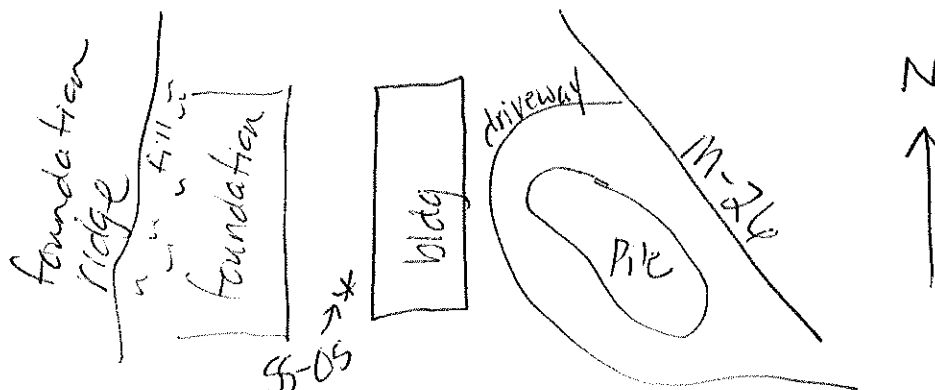
Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☒ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials ☒ VOA 1 Collected / # of Jars ☒ SVOA/Pest/PCB 1 Collected / # of Jars ☒ Metals/Cyanide 1

Location Reference Features:

Landmark #1: blgy Direction: E Distance: 4'
Landmark #2: foundation Direction: W Distance: 60'

Sketch:



Soil Unit Thickness (in. or ft.) Unit Description (continue on back if necessary--->) PID Reading

0-5 V. moist dk brn silty sand, S sand, gravel, crushed mine rock, slas

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: YN Time of photo: 15:20 #/Location: 2 Direction of photo: N Photographer: AL

REMARKS: 1 looking W showing foundation

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11-6-12

Sample Location: SS 06 Weather: Cloudy, Snowing 37°

Field Personnel: Joe & Aut Data Sheet Logger: Autumn

Sampling Time (MT): 0906 Depth/Interval: VOA - 3' Remainder - 0-6

Soil Cover: leaves, weeds (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: _____
(Check all Surface Sample: _____
that apply) Trowel: ☒ Deep Sample: _____
Other (explain): _____ Hand Auger: _____

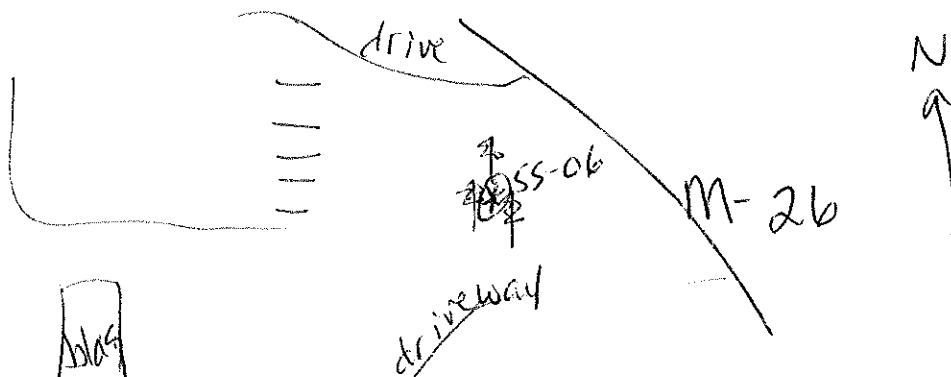
Sample Type/Bottles: Collected / # of Vials Collected / # of Jars Collected / # of Jars
✓ VOA 1 ✓ SVOA/Pest/PCB 1 ✓ Metals/Cyanide 1

Location Reference Features:

Landmark #1: M-26 Direction: E Distance: 500'

Landmark #2: pillars Direction: W Distance: 200'

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-3	moist dk brn silty fn sand, lots roots	
3-6	moist reddish brn Silty fn sand	

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 0909 #/Location: 2 Direction of photo: SE Photographer: Joe

REMARKS: _____

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.6.12

Sample Location: SS 07 Weather: Snowing 37°

Field Personnel: Joe ; Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 0830 Depth/Interval: VOA - 5" Remainder - 0-8

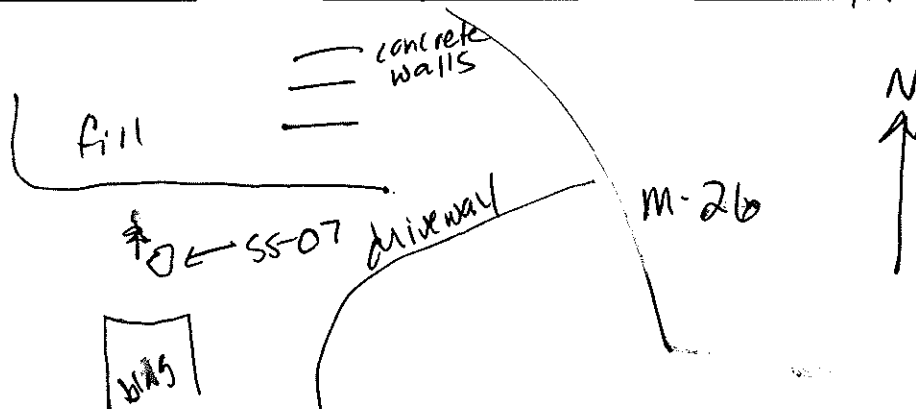
Soil Cover: sand (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: 1 VOA ☒ 1 SVOA/Pest/PCB ☒ 1 Metals/Cyanide ☒

Location Reference Features:
Landmark #1: blag Direction: S Distance: 100 yards
Landmark #2: M-26 Direction: E Distance: 200 yards

Sketch:



Soil Unit Thickness (in. or ft.) Unit Description (continue on back if necessary--->) PID Reading

0-8 moist dk brn silty fn to mud sand
trace gravel, some brick + roots.

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 0840 #/Location: 2 Direction of photo: S Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11-6-12

Sample Location: SS 08 Weather: Rain 33

Field Personnel: Joe & Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 11:00 Depth/Interval: VOA - .5" Remainder - 0-1

Soil Cover: mine rock (sand, grass) # of Samples Per Location: 1

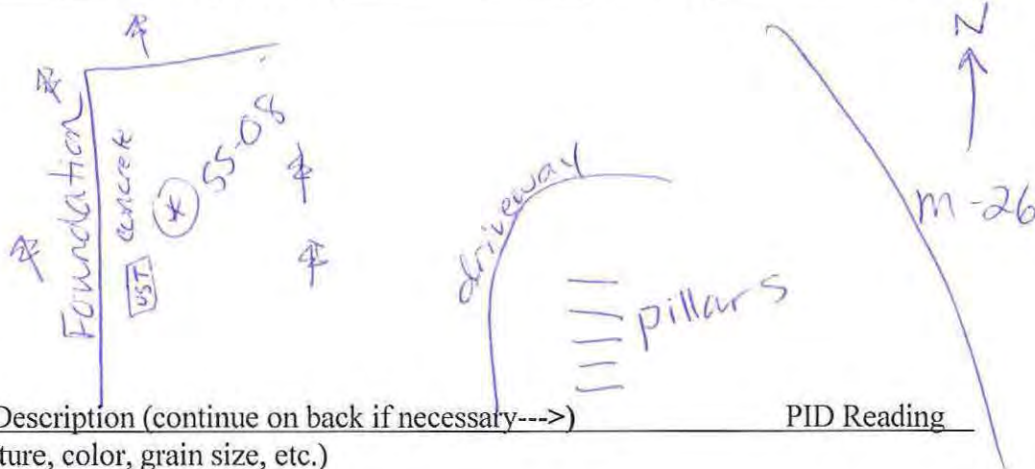
Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials Collected / # of Jars Collected / # of Jars
✓ VOA 1 ✓ SVOA/Pest/PCB 1 ✓ Metals/Cyanide 1

Location Reference Features:

Landmark #1: Direction: Distance:
Landmark #2: Direction: Distance:

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-1	moist brn silty fn to coarse sand some clay, crushed rock & debris, glass metal etc.	
-----	--	--

Concrete floor

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 11:05 #/Location: 2 Direction of photo: SW Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11-6-12

Sample Location: SS - 09 Weather: Cloudy, 33°

Field Personnel: Joe + Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 10.00 Depth/Interval: VOA - 1" Remainder - 0-2

Soil Cover: leaves, twigs (sand, grass) # of Samples Per Location: 1

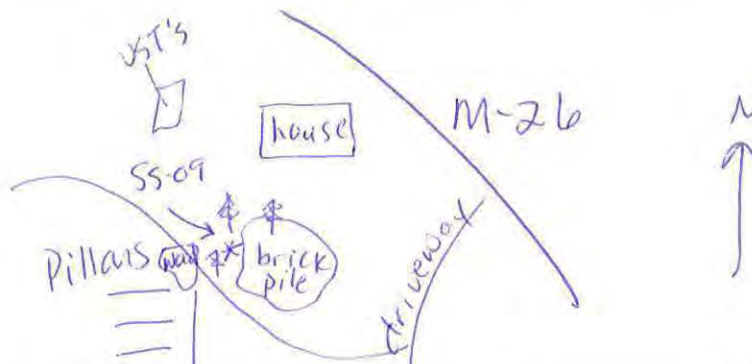
Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials Collected / # of Jars Collected / # of Jars
✓ VOA 1 ✓ SVOA/Pest/PCB 1 ✓ Metals/Cyanide 1

Location Reference Features:

Landmark #1: Concrete Pillars Direction: S Distance: 200'
Landmark #2: M-26 Direction: E Distance: 300'

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-.5	moist dk brn silt	
.5-2	moist brn fn sand	

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 10.03 #/Location: 2 Direction of photo: S Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.6.12

Sample Location: SS 10 Weather: Rain, 34°

Field Personnel: Joe & Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 12:23 Depth/Interval: VOA - 4" Remainder - 0-6

Soil Cover: MOSS (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials Collected / # of Jars Collected / # of Jars
☒ VOA 1 ☒ SVOA/Pest/PCB 1 ☒ Metals/Cyanide 1

Location Reference Features:

Landmark #1: Direction: Distance:
Landmark #2: Direction: Distance:



Soil Unit Thickness (in. or ft.) Unit Description (continue on back if necessary--->) PID Reading

0-6 moist dk brn silty fn to med sand
lots of gravel, mill rock, glass, metal debris
& roots

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 1229 #/Location: 2 Direction of photo: E Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11-6-12

Sample Location: SS 11 Weather: Rain, 34

Field Personnel: Joe & Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 12:51 Depth/Interval: VOA - 5" Remainder - 0.8"

Soil Cover: leaves, twigs (sand, grass) # of Samples Per Location: 1

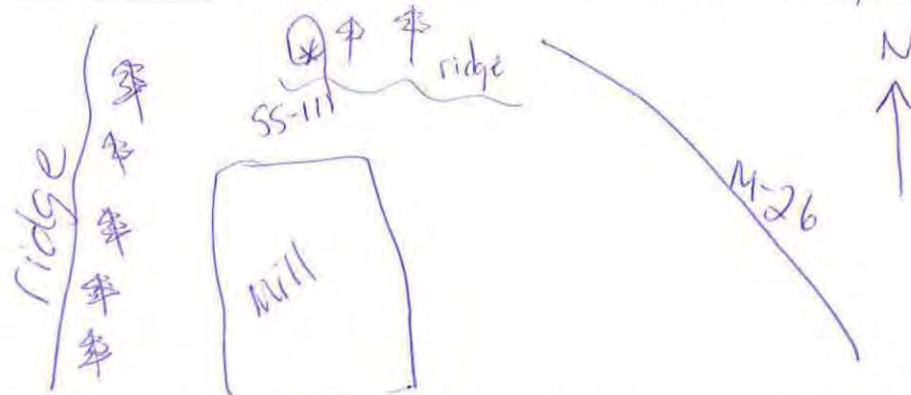
Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials ☒ VOA 1 Collected / # of Jars ☒ SVOA/Pest/PCB 1 Collected / # of Jars ☒ Metals/Cyanide 1

Location Reference Features:

Landmark #1: N. Property boundary Direction: N Distance: ~200' ??
Landmark #2: W. " " Direction: W Distance: 100 yards

Sketch:



Soil Unit Thickness (in. or ft.) Unit Description (continue on back if necessary--->) PID Reading

0-8

moist dk brn silty fm med sand, some gravel, debris, metal, concrete

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 12:54 #/Location: 2 Direction of photo: N Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11/6/12

Sample Location: SS 12 & SS12D Weather: Cloudy, 33°

Field Personnel: Joe & Autumn Data Sheet Logger: Autumn

Sampling Time (MT): 10:30 Depth/Interval: VOA - 5" Remainder - 0-8

Soil Cover: grass (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials ✓ VOA 2 Collected / # of Jars ✓ SVOA/Pest/PCB 2 Collected / # of Jars ✓ Metals/Cyanide 2

Location Reference Features:

Landmark #1: M-26 Direction: E Distance: 400'
Landmark #2: Pillars Direction: S Distance: 250'

Sketch:



Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------

0-1	moist dk brn silty fn sand, some roots	
1-4	moist dk gray silty sand + gravel, some slag + crushed mine rock	
4-8	moist reddish brn silty fn to med sand.	

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 10:42 #/Location: 2 Direction of photo: S Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.6.12

Sample Location: SS 13 Weather: Rain 38°

Field Personnel: Joe Data Sheet Logger: Autumn

Sampling Time (MT): 17.10 Depth/Interval: VOA - 5" Remainder - 0.8"

Soil Cover: leaves, twigs (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

Sample Type/Bottles: Collected / # of Vials ☒ VOA 1 Collected / # of Jars ☒ SVOA/Pest/PCB 1 Collected / # of Jars ☒ Metals/Cyanide 1

Location Reference Features:
Landmark #1: Foundation Direction: SE Distance: 150'
Landmark #2: Direction: Distance:

Sketch:



Soil Unit Thickness (in. or ft.) Unit Description (continue on back if necessary--->) PID Reading

0-8

Moist blk silty f. to med sand. some gravel!
slag, glass, wood

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 17.11.6 #/Location: 2 Direction of photo: S Photographer: Joe

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H T AMAR OPERATIONS MID#: MIN000510835 Date: 11/6/12

Sample Location: SS Weather: Rain 38°

Field Personnel: ✓ Data Sheet Logger: Autumn

Sampling Time (MT): 5:00 Depth/Interval: VOA - 4" Remainder - 0-8

Soil Cover: leaf (sand, grass) # of Samples Per Location: 1

Sampling Method: ✓ Composite:
(Check all Sample: Deep Sample:
that apply) ✓ Hand Auger:
explain):

Sample Type/Bottles: DA 1 / # of Vials 1 Collected / # of Jars ✓ SVOA/Pest/PCB 1 Collected / # of Jars ✓ Metals/Cyanide 1

Location Reference Fe
Landmark #1: Direction: Distance:
Landmark #2: Direction: Distance:

Sketch:

Soil Unit Thickness (in. or ft.) 0-8 Description (continue on back if necessary--->) blk mixed fill w/ silty f. med sand
is slag bricks, glass, metal, shrapnel, etc. PID Reading

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of: 1:00 #/Location: 2 Direction of photo: W Photographer:

REMARKS:

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11/5/12

Sample Location: S8 W-1 Weather: _____

Field Personnel: John Data Sheet Logger: _____

Sampling Time (MT): 1510 Depth/Interval: VOA - Remainder - _____

Soil Cover: sand + gravel (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: X Composite: _____
 (Check all Surface Sample: _____
 that apply) Trowel: X Deep Sample: _____
 Hand Auger: _____
 Other (explain): _____

Sample Type/Bottles: _____ Collected / # of Vials _____ Collected / # of Jars _____ Collected / # of Jars _____
VOA SVOA/Pest/PCB Metals/Cyanide 1

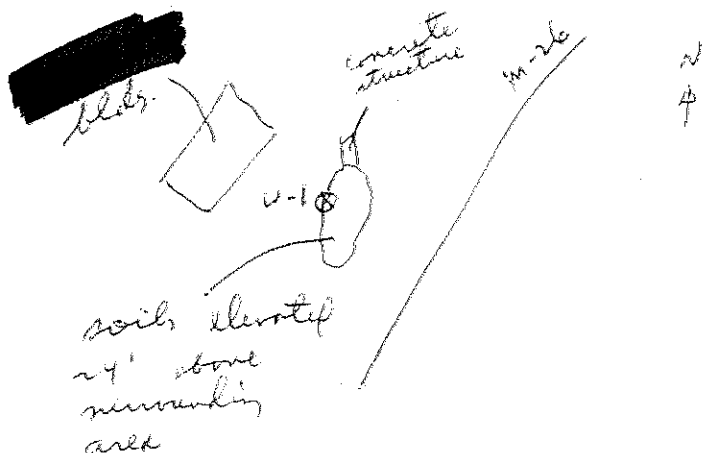
Location Reference Features:

Landmark #1: _____ Direction: _____ Distance: _____

Landmark #2: _____ Direction: _____ Distance: _____

Sketch:

Soil Unit Thickness (in. or ft.)	Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.)	PID Reading
-------------------------------------	---	-------------



0-3" wet brown m-c sand
 w/ f. gravel, pos.
 w/ unappreciated
 (felt heavier than
 soil)

Gravel - coarse 3/4 to 3 in.
 fine 3/16 to 3/4 in.
 Sand - coarse 2 to 4.75 mm.
 medium 0.425 to 2 mm.
 fine 0.074 to 0.425 mm.
 Silt/Clay <0.074 mm. (use plasticity)

Photos: YN Time of photo: _____ #/Location: _____ Direction of photo: _____ Photographer: _____

REMARKS: Data sheet completed in Nov. 2012 by T.H. Spilberg.

SOIL SAMPLE DATA SHEET

Site: C&H TAMARACK OPERATIONS MID#: MIN000510835 Date: 11.5.12

Sample Location: SS Waste 2 Weather: Cloudy, 34°

Field Personnel: Joe + Autumn Data Sheet Logger: AL

Sampling Time (MT): 1654 Depth/Interval: VOA - Remainder: -

Soil Cover: sand (sand, grass) # of Samples Per Location: 1

Sampling Method: Grab: ☒ Composite: ☐
(Check all Surface Sample: ☐ Deep Sample: ☐
that apply) Trowel: ☒ Hand Auger: ☐
Other (explain):

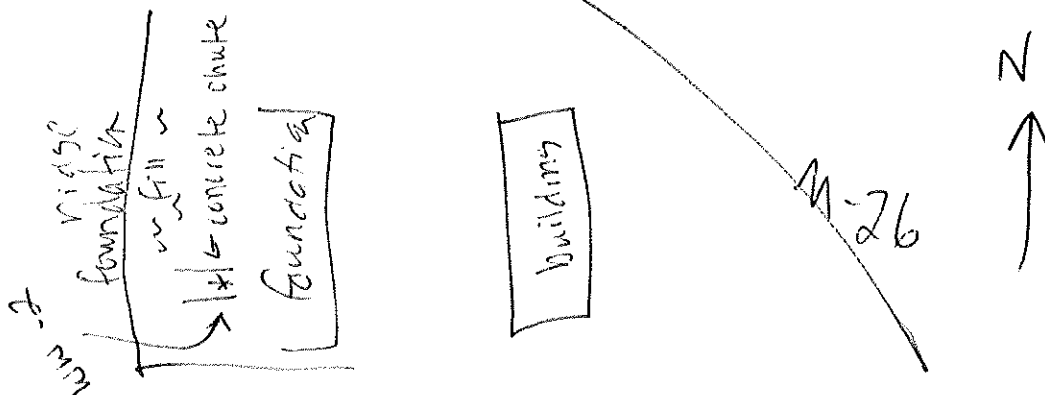
Sample Type/Bottles: VOA Collected / # of Vials ✓ SVOA/Pest/PCB 1 Collected / # of Jars ✓ Metals/Cyanide 1

Location Reference Features:

Landmark #1: blg Direction: E Distance: 30 yds

Landmark #2: Direction: Distance:

Sketch:



Soil Unit Thickness (in. or ft.) Unit Description (continue on back if necessary--->) (moisture, color, grain size, etc.) PID Reading

0-4" moist gray ash

Gravel - coarse 3/4 to 3 in.
fine 3/16 to 3/4 in.
Sand - coarse 2 to 4.75 mm.
medium 0.425 to 2 mm.
fine 0.074 to 0.425 mm.
Silt/Clay <0.074 mm. (use plasticity)

Photos: Y/N Time of photo: 1654 #/Location: 2 Direction of photo: W Photographer: Joe

REMARKS: Clayey consistency + oily smell

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C & H TAMARACK OPERATIONS Date: 11/5/12

EPA ID#: MIN000510835 Sample Location: SB - 01

Operators: Leni Corresponding Well: TMW

Samplers: ND Data Sheet Logger: ND

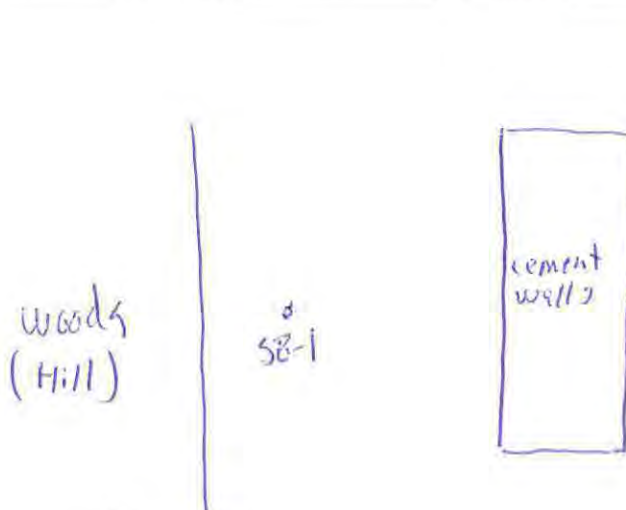
Soil Cover Moss/gravel (sand, grass, staining, etc.) Weather overcast 32°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: X
that apply) GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: Y/N Photographer ND #/Location SB-01 Time 10:05 Direction North

Remarks: _____

Well Installation Information: No well Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: _____ Depth of Well: _____ (below ground level)

Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: C&H TAMARACK OPERATIONS Boring/Well ID: SB /TMW

Sampling Time (MT): 10:05 am VOA Sample Interval: 18" (in.) in. 0'-4' (ft.) core

of Samples/Boring: 1 Remaining Sample Interval: 12'-22" (in.) in. 0'-4' (ft.) core

Sample Type/Bottles: ☒ VOA 1 ☒ SVOA/Pest/PCB 1 ☒ Metals/Cyanide 1

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0		6"	med , med moist, dark brown/black med, sand with trace rock moist, red, med sand, with trace rock	0.0 ppm	
4'		23'	med very moist, red med med sand, trace rock	0.9 ppm @ 12'-22"	
8'		38"		0.0	
9'2"			refusal		

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay		< 0.074 mm. (use plasticity)

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

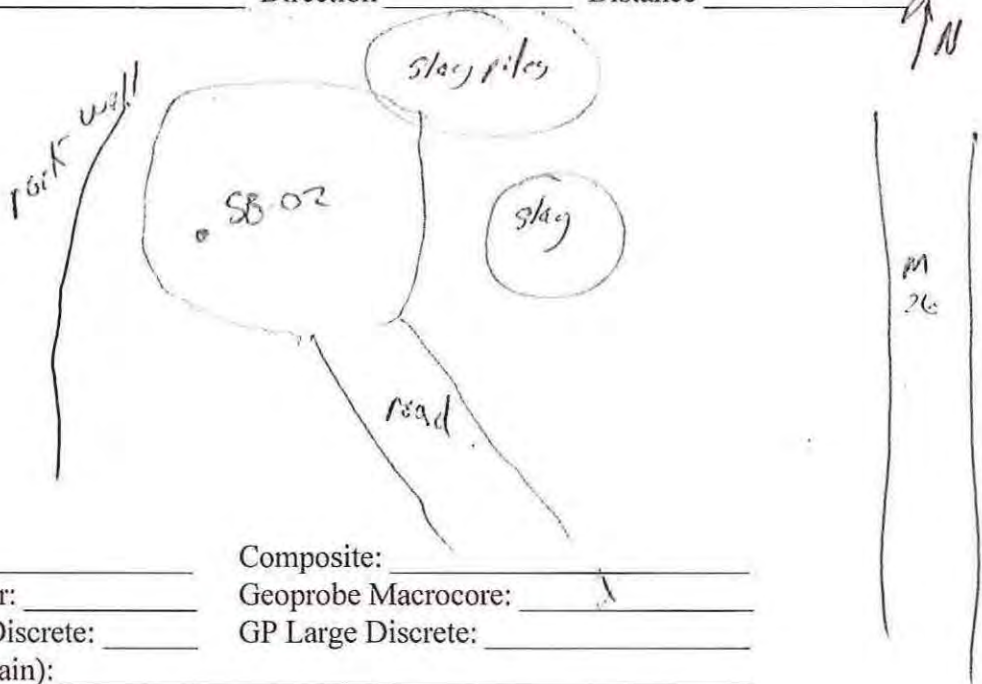
Page 1 of 2

Site: C&H TAMARACK OPERATIONS Date: 11/5/12
 EPA ID#: MIN000510835 Sample Location: SB-02 *Duplicate*
 Operators: Leni Corresponding Well: TMW No well
 Samplers: ND Data Sheet Logger: ND
 Soil Cover grass (sand, grass, staining, etc.) Weather overcast 32°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____
 Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
 (Check all Hand Auger: _____ Geoprobe Macrocore: _____
 that apply) GP Small Discrete: _____ GP Large Discrete: _____
 Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: YN Photographer ND #/Location SB-02 Time 14:35 Direction North

Remarks: _____

Well Installation Information: No well Aquifer Type: Drift or Bedrock (circle one)
 Type of Well Casing: _____ Depth of Well: _____ (below ground level)
 Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: C & H TAMARACK OPERATIONS Boring/Well ID: SB-62 /TMW

Sampling Time (MT): 8:14:35 VOA Sample Interval: 28" (in.) in. 0.4 (ft.) core

of Samples/Boring: 1 Remaining Sample Interval: 22'-34" (in.) in. 0.4 (ft.) core

Sample Type/Bottles: 2 VOA ✓ 2 SVOA/Pest/PCBs ✓ 2 Metals/Cyanide ✓

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0	0"		moist, brown reddish brown med, sand/clay	0.4 ppm	
4'	46"	0"	moist, dark brown, med sand/clay with trace rocks	0.0	
8'	46"	0"	moist to very moist dark brown sand, trace rocks		
		6"	very moist, reddish brown, med sand	6.0	
12'	43'				

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay		< 0.074 mm. (use plasticity)

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C&H TAMARACK OPERATIONS Date: 11/6/12

EPA ID#: MIN000510835 Sample Location: SB-3 MS/MSD

Operators: Leri Corresponding Well: TMW

Samplers: ND Data Sheet Logger: ND

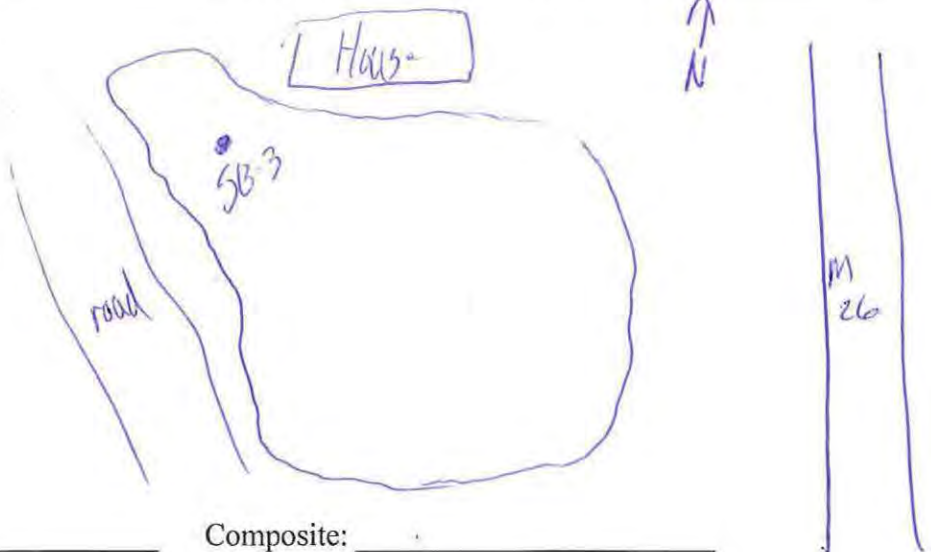
Soil Cover grass (sand, grass, staining, etc.) Weather overcast raining

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
 (Check all Hand Auger: _____ Geoprobe Macrocore: X
 that apply) GP Small Discrete: _____ GP Large Discrete: _____
 Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: YN Photographer ND #/Location SB-3 Time 14:50 Direction North

Remarks: _____

Well Installation Information: None Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: _____ Depth of Well: _____ (below ground level)

Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C & H TAMARACK OPERATIONS**

Boring/Well ID: **SB-3**

MS/M910
/TMFW

Sampling Time (MT): **14:50**

VOA Sample Interval: **20"**

(in.) in. **0'-4'** (ft.) core

of Samples/Boring: **3**

Remaining Sample Interval: **18"-34"**

(in.) in. **0'-4'** (ft.) core

Sample Type/Bottles: ☒ VOA **3**

☒ SVOA/Pest/PCB **2**

☒ Metals/Cyanide **2**

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0"	0"		moist, reddish brown, med sand	0.0 ppm	
4'	40"	0"	moist, reddish brown, med sand	0.0 ppm	
		14"	moist, dark, brown, med, sand	0.0 ppm	
8'	38"	0"	moist, dark, brown, med sand	0.0 ppm	
12"	30"				

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay < 0.074 mm. (use plasticity)		

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C & H TAMARACK OPERATIONS Date: 11/6/12

EPA ID#: MIN000510835 Sample Location: SB-4

Operators: Leni Corresponding Well: TMW

Samplers: ND Data Sheet Logger: ND

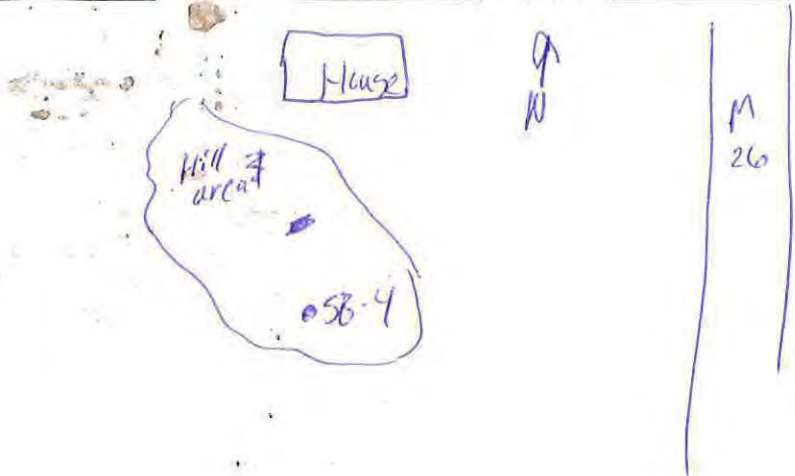
Soil Cover gravel (sand, grass, staining, etc.) Weather overcast/rain/snow
32°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: X
that apply) GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: Y/N Photographer ND #/Location SB-4 Time 13:00 Direction N

Remarks: _____

Well Installation Information: None Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: _____ Depth of Well: _____ (below ground level)

Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C & H TAMARACK OPERATIONS**

Boring/Well ID: **SB 4 - TMW**

Sampling Time (MT): **13:00**

VOA Sample Interval: **25"** (in.) in. **4'-8"** (ft.) core

of Samples/Boring: **1**

Remaining Sample Interval: **22" - 34"** (in.) in. **4'-8"** (ft.) core

Collected / # of Vials

Collected / # of Jars

Collected / # of Jars

Sample Type/Bottles: ☒ VOA **1**

☒ SVOA/Pest/PCB **1**

☒ Metals/Cyanide **1**

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0' - 4'	0' - 38 1/4"	12" - 8"	moist, dark brown, med. sand - med moist brown, med. sand, trace rocks moist, dark brown, med sand with gravel/slag moist, dark brown, med sand	0.0 ppm	
4' - 8'	38 1/4" - 39 1/4"	8" - 6"	moist, reddish brown, med sand	0.0 ppm	
8' - 12'	39 1/4" - 36"	6" - 35"	moist, dark brown, med sand moist, reddish brown, med sand	0.0 ppm	

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay		< 0.074 mm. (use plasticity)

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C & H TAMARACK OPERATIONS Date: 11/5/12

EPA ID#: MIN000510835 Sample Location: SB-05

Operators: Leni Corresponding Well: TMW-3

Samplers: ND Data Sheet Logger: ND

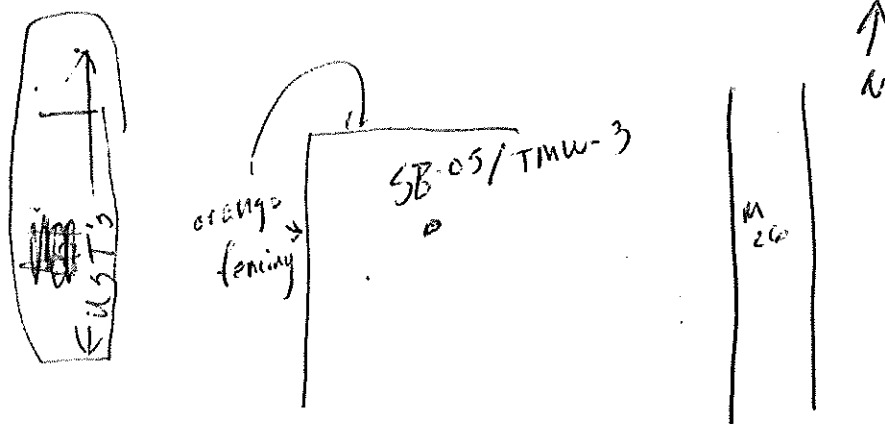
Soil Cover grass (sand, grass, staining, etc.) Weather overcast 32°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
 (Check all Hand Auger: _____ Geoprobe Macrocore: X
 that apply GP Small Discrete: _____ GP Large Discrete: _____
 Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: (Y)N Photographer ND #/Location SB-05 Time 13:50 Direction North

Remarks: _____

Well Installation Information:

Type of Well Casing: 1" PVC riser

Screen Type/Length: 1" PVC 10-2/64

Aquifer Type: Drift or Bedrock (circle one)

Depth of Well: 11.53' (below ground level)

Static Water Level: 14.00' (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: C & H TAMARACK OPERATIONS Boring/Well ID: SB - 05 / TMW - 3

Sampling Time (MT): 13:30 VOA Sample Interval: 33" (in.) in. 0'-4' (ft.) core

of Samples/Boring: 1 Remaining Sample Interval: 26' 4 2" (in.) in. 0'-4' (ft.) core

Sample Type/Bottles: 1 VOA ☒ 1 SVOA/Pest/PCB ☒ 1 Metals/Cyanide ☒

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
-0'	04"	6"	moist, dark brown, med, sand		
			moist, reddish brown, med, sand track rock	0.7 ppm	
4'	42"	01"	moist, dark brown & reddish brown, sand with rock	0.0 ppm	
8'	43"	01"	moist, brown, sand med, sand	0.0	
12'	46"	11"	sat, brown, med, sand,	0.0	

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay < 0.074 mm. (use plasticity)		

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C&H TAMARACK OPERATIONS

Date: 11/5/12

EPA ID#: MIN000510835

Sample Location: SB ~~1~~ OC

Operators: Leri

Corresponding Well: TMW-2

Samplers: ND

Data Sheet Logger: ND

Soil Cover sand

(sand, grass, staining, etc.)

Weather overcast 32°

Location Reference Features:

Landmark #1

Direction

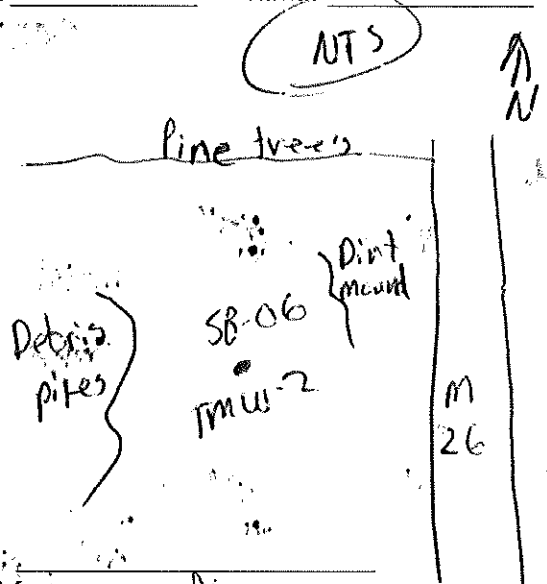
Distance

Landmark #2

Direction

Distance

Sketch:



Sampling Method:

Grab:

Composite:

(Check all that apply)

Hand Auger:

Geoprobe Macrocore:

GP Small Discrete:

GP Large Discrete:

Other (explain):

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: Y/N Photographer ND

#/Location SB-02

Time 11:45

Direction N

Remarks:

Well Installation Information:

TMW-2

Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: 1" riser

Depth of Well: 12' (below ground level)

Screen Type/Length: 1" 16 5/16'

Static Water Level: 6.80' (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C&H TAMARACK OPERATIONS**

Boring/Well ID: **SB-06 /TMW**

Sampling Time (MT): **11:45** VOA Sample Interval: **32"** (in.) in. **0'-4'** (ft.) core

of Samples/Boring: **1** Remaining Sample Interval: **22'-45"** (in.) in. **0'-4'** (ft.) core

Sample Type/Bottles: **1** VOA ☒ **1** SVOA/Pest/PCB ☒ **1** Metals/Cyanide ☒

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0'	0"		moist, reddish brown, med sand	0.0	
4'	45"		moist reddish brown, med sand with trace, rock	0.0	
8'	46"		sat, reddish brown, med. sand, trace rock		
12'	48" 36"		moist, peat moss (organics)		

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay < 0.074 mm. (use plasticity)		

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C&H TAMARACK OPERATIONS Date: 11/6/12

EPA ID#: MIN000510835 Sample Location: SB-8

Operators: Leni Corresponding Well: TMW

Samplers: ND Data Sheet Logger: ND

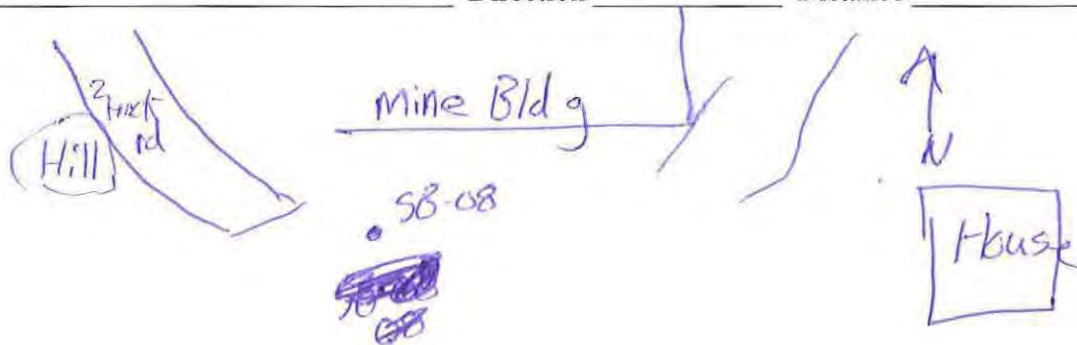
Soil Cover grass (sand, grass, staining, etc.) Weather overcast/raining

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
 (Check all Hand Auger: _____ Geoprobe Macrocore: X
 that apply GP Small Discrete: _____ GP Large Discrete: _____
 Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: YN Photographer ND #/Location SB-08 Time 15:45 Direction North

Remarks: _____

Well Installation Information: None Aquifer Type: Drift or Bedrock (circle one)
 Type of Well Casing: _____ Depth of Well: _____ (below ground level)
 Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C&H TAMARACK OPERATIONS**

Boring/Well ID: **SB-8 /TMW**

Sampling Time (MT): **15:45** VOA Sample Interval: **29"** (in.) in. **0'-4'** (ft.) core

of Samples/Boring: **1** Remaining Sample Interval: **22"-34"** (in.) in. **0'-4'** (ft.) core

Sample Type/Bottles: ☒ VOA ☐ SVOA/Pest/PCB ☒ Metals/Cyanide ☐

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0	0		moist, dark brown, med sand + trace gravel ↓	0.0 ppm	
4'	36"	34"	rock fragments	0.0	
	0"	26"	moist, brown, med, sand ↓	0.0 ppm	
8'	42"	38"	moist, brown, med, sand		
	0"	42"	moist brown, med sand	0.0 ppm	
12'	44"	28"	moist, reddish, brown, sand/clay moist, trace gravel		

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay		< 0.074 mm. (use plasticity)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C&H TAMARACK OPERATIONS Date: 11/6/12

EPA ID#: MIN000510835 Sample Location: SB - 9

Operators: Leni Corresponding Well: TMW

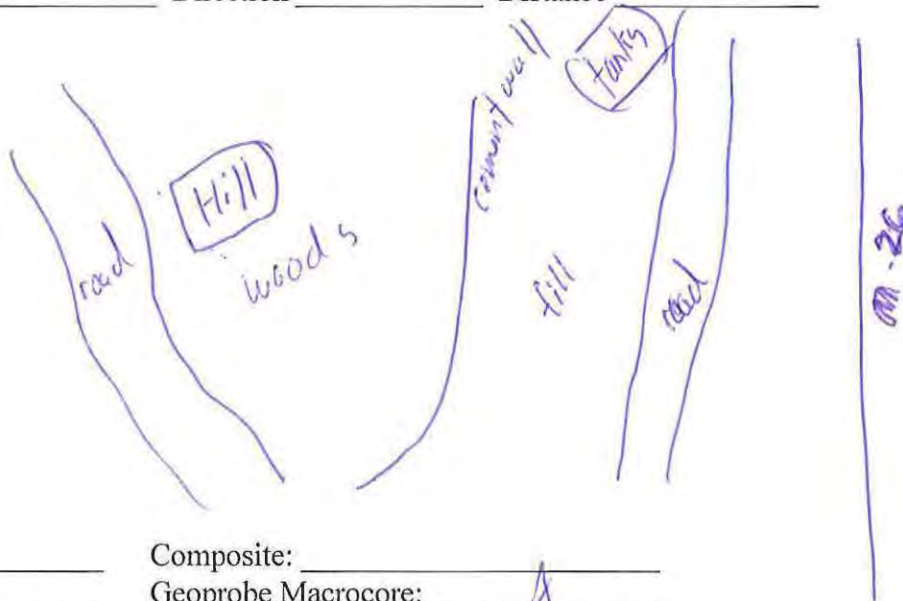
Samplers: ND Data Sheet Logger: ND

Soil Cover grass/moss (sand, grass, staining, etc.) Weather overcast/snow/rain
32°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____
Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: X
that apply GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: Y/N Photographer ND #/Location SB-9 Time 12:15 Direction North

Remarks: _____

Well Installation Information: none Aquifer Type: Drift or Bedrock (circle one)
Type of Well Casing: _____ Depth of Well: _____ (below ground level)
Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: C&H TAMARACK OPERATIONS Boring/Well ID: SB-9 /TMW —

Sampling Time (MT): 12:15 VOA Sample Interval: 36' (in.) in. 4'-8" (ft.) core

of Samples/Boring: 1 Remaining Sample Interval: 20'-40' (in.) in. 4'-8" (ft.) core

Sample Type/Bottles: 1 VOA ✓ 1 SVOA/Pest/PCB ✓ 1 Metals/Cyanide ✓

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0	0"		moist, dark brown, med sand with trace rocks	0.3 ppm	
4	20"	14"	moist, reddish brown, med sand		
	0"	20"	moist reddish brown, med sand	0.7 ppm	
8	40"		moist reddish brown, med sand	0.0 ppm	
	0"	22"	rock		
			very moist, reddish brown med sand	0.0 ppm	
12	36"				

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay		< 0.074 mm. (use plasticity)

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C&H TAMARACK OPERATIONS Date: 11/5/12

EPA ID#: MIN000510835 Sample Location: SB -10

Operators: Leni Corresponding Well: TMW

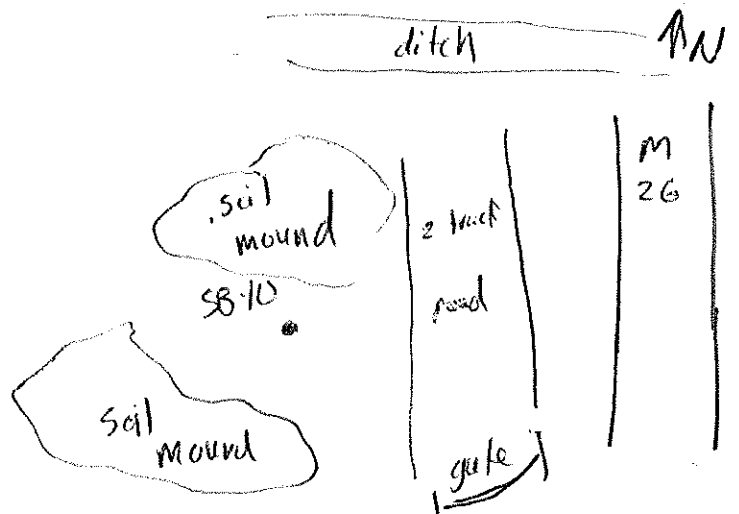
Samplers: ND Data Sheet Logger: ND

Soil Cover Grass/gravel (sand, grass, staining, etc.) Weather overcast 72°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____
Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: X
that apply GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: YN Photographer ND #/Location SB-10 Time 15:20 Direction North

Remarks: _____

Well Installation Information: No well Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: _____ Depth of Well: _____ (below ground level)

Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: C&H TAMARACK OPERATIONS Boring/Well ID: SB-10 /TMW-04

Sampling Time (MT): 1/5/20 VOA Sample Interval: 12" (in.) in. 4'8" (ft.) core

of Samples/Boring: 1 Remaining Sample Interval: 0'-22" (in.) in. 4'8" (ft.) core

Sample Type/Bottles: 1 VOA ☒ Collected / # of Vials 1 SVOA/Pest/PCB ☒ Collected / # of Jars 1 Metals/Cyanide ☒ Collected / # of Jars

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0'		0"	moist, dark brown, med sand	0.0	
		16"	rock		
		16"	moist, dark brown, med, sand		
		36"	trace rock		
4'		0"	moist, dark brown/black, med sand, trace rock	0.0	
		22"	concrete		
		26"	moist, dark brown/black, med sand		
		42"	(rock/gravel)		
8'		0"	moist dark brown, med, sand	0.0	
		15"	trace rock gravel		
		40"	moist brown, med, sand, trace rock trace gravel		
		0"	moist, black, med, sand, trace gravel		
12'		30"	moist, brown, med sand	0.0	
		33"	moist, brown, med, sand/clay		
		43"			
16'					

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay < 0.074 mm. (use plasticity)		

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C&H TAMARACK OPERATIONS Date: 11/6/12

EPA ID#: MIN000510835 Sample Location: SB - 11

Operators: Loni Corresponding Well: TMW ~~SB~~

Samplers: ND Data Sheet Logger: ND

Soil Cover sand (sand, grass, staining, etc.) Weather snowing 30°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: X
that apply) GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: (Y/N) Photographer ND #/Location SB-11 Time 8:35 Direction N

Remarks: _____

Well Installation Information:

Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: NA Depth of Well: NA (below ground level)

Screen Type/Length: NA Static Water Level: NA (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C&H TAMARACK OPERATIONS**

Boring/Well ID: **SB-11** /TMW-**3**

Sampling Time (MT): **8:35**

VOA Sample Interval: **36"** (in.) in. **0-4'** (ft.) core

of Samples/Boring: **1**

Remaining Sample Interval: **22"-36"** (in.) in. **0-4'** (ft.) core

Sample Type/Bottles: **1** VOA ☒

1 SVOA/Pest/PCB ☒

1 Metals/Cyanide ☒

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0'	0"		Moist, brown, med, sand,		
4'	4 1/16"	3 1/8"	moist, dark brown, sand with trace med	0.0 ppm	
			refusal @ 4.20'		

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay	< 0.074 mm. (use plasticity)	

(JW 12/9/09)

SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C & H TAMARACK OPERATIONS Date: 11/16/12

EPA ID#: MIN000510835 Sample Location: SB-12

Operators: Leni Corresponding Well: TMW

Samplers: ND Data Sheet Logger: ND

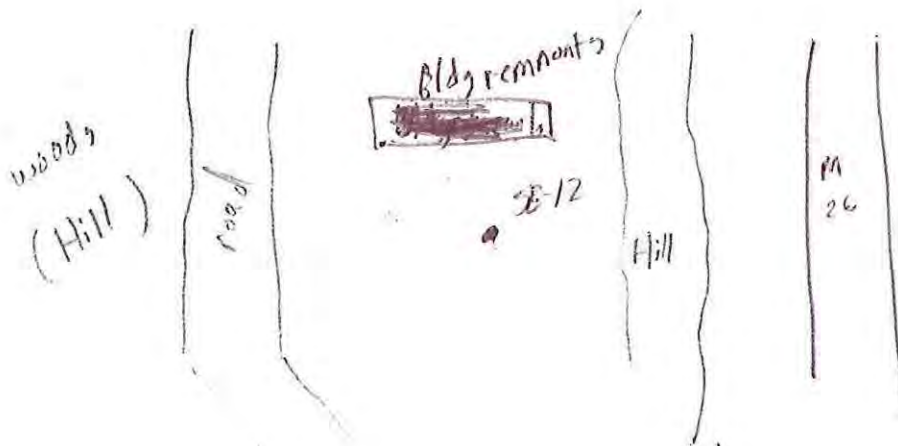
Soil Cover grass (sand, grass, staining, etc.) Weather overcast / snowing
30°

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: K
that apply) GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: YN Photographer ND #/Location SB-12 Time 10:55 Direction North

Remarks: _____

Well Installation Information: Ann Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing: _____ Depth of Well: _____ (below ground level)

Screen Type/Length: _____ Static Water Level: _____ (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: C&H TAMARACK OPERATIONS Boring/Well ID: SB-12 /TMW

Sampling Time (MT): 10:55 ~~10:55~~ ^{on bottles} VOA Sample Interval: 3-11' (in.) in. 4'-8' (ft.) core

of Samples/Boring: 1 Remaining Sample Interval: 24" 36" (in.) in. 4-8' (ft.) core

Sample Type/Bottles: 1 VOA 1 SVOA/Pest/PCB 1 Metals/Cyanide 1

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0'	0"	0"	moist, brown, med, sand addition	0.0 ppm	
4'	36"	0"	moist, reddish brown, med, sand	13 ppm	
8'	36"	30"	reddish, brown, med, sand (very moist)	7 ppm	
	36"	36"	very moist, reddish brown, med sand	3.9 ppm	
10'	40"				

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay < 0.074 mm. (use plasticity)		

(JW 12/9/09)

GROUNDWATER SAMPLING DATA SHEET

Site: C&H TAMARACK OPERATIONS MID # MIN000510835 Date: 11/6/12
 Field Personnel: TAD Data Sheet Logger: TAD Well Number: TMW-01
 Aquifer Type: Drift Bedrock Weather: Overcast 23/°F Corresponding Boring: N/A
 Type of Well (Casing): 1" PVC Stick-up (Ground to TOC (ft.)): 1.65'
 Screen Type & Length: 5ft-1" PVC - 10 slot Top of Casing Elevation (ft.): _____
 Depth of Well (ft.): 14.5' (TOC) Ground Elevation (ft.): _____
 Static Water Level (ft.): (-) 8.36' (TOC) Purge Method: Peristaltic Pump & Disposable
 Length of Water Column (ft.): (=) Purge Start Time: 8:35 Hose
 Volume/Ft. (based on dia): (x) Sampling Method: same
 One Volume (gal.): (=) Sampling Start Time: 8:55
 Sample Type: Grab X Composite _____ In-line Filter: Y/N

Sample Type/Bottles: X VOA 2 X SVOA/Pest/PCB 2 X Metals/Cyanide 1+1
 Collected / # of Vials Collected / # of Jars Collected / # of Jars

TIME	8:50				
Vol. Removed	Vol. 1	Vol. 2	Vol. 3	Vol. 4	Vol. 5
Temperature (°C)	10.5				
pH	7.56				
TDS (PPM)	363				
Conductivity μS	502				
Water Quality	clear				
ORP (mV)	184				

Well Vol./Ft.	
Dia. (in.)	gal./ft.
0.75	0.023
1.0	0.041
1.25	0.064
1.5	0.092
2.0	0.163

Others: $V = 0.041 \times (d)^2 \times h$
 V = volume (gal.)
 d = diameter (in.)
 h = height (ft.)

Location Reference Features:

Landmark #1: _____ Direction: _____ Distance: _____
 Landmark #2: _____ Direction: _____ Distance: _____

Sketch:

Photos: Y/N Time of photo: 10:10 #/Location: 2 Direction of photo: N Photographer: TAD

Remarks: Very Silty, purge dry, very slow recharge
SAMPLE at very slow rate. Place purge H₂O down
Borehole,

well installation info
SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: **C & H TAMARACK OPERATIONS**

Date: 7/15/12

EPA ID#: MIN000510835

Sample Location: SB

Operators: Leni

Corresponding Well: TMW-01

Samplers: NA

Data Sheet Logger: ND

Soil Cover sand/grass (sand, grass, staining, etc.)

Weather overcast 32°

Location Reference Features:

Landmark #1

Direction

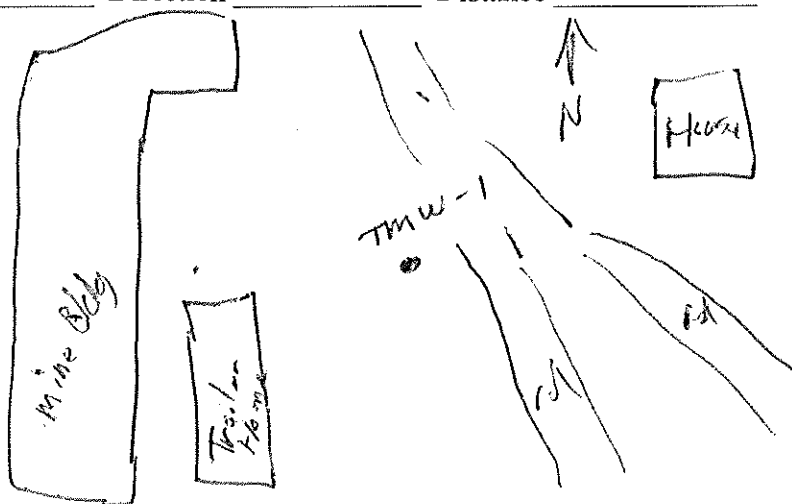
Distance

Landmark #2

Direction

Distance

Sketch:



Sampling Method:

Grab:

Composite:

(Check all
that apply)

Hand Auger:

Geoprobe Macrocore:

GP Small Discrete:

GP Large Discrete:

Other (explain):

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: Y/N Photographer _____ #/Location _____ Time _____ Direction _____

Remarks: _____

Well Installation Information:

Aquifer Type: Drift or Bedrock (circle one)

Type of Well Casing:

1" PVC Riser

Depth of Well:

12.90' (below ground level)

Screen Type/Length:

1" PVC 10-slot

Static Water Level:

6.35' (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C & H TAMARACK OPERATIONS** Boring/Well ID: **SB** /TMW - **01**

Sampling Time (MT): **NA** VOA Sample Interval: **NA** (in.) in. (ft.) core

of Samples/Boring: **NA** Remaining Sample Interval: **NA** (in.) in. (ft.) core

Collected / # of Vials Collected / # of Jars Collected / # of Jars

Sample Type/Bottles: **NA** VOA **NA** SVOA/Pest/PCB Metals/Cyanide

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0		0"	moist, dark brown, med med sand,	0.0 ppm	
4'		46"	moist, brown, med sand,	0.0 ppm	
8'		46"	sat. dark brown, med sand	0.0 ppm	
12'		pre probe	sat, dark brown, med, sand	0.0 ppm	

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay	< 0.074 mm. (use plasticity)	

(JW 12/9/09)

GROUNDWATER SAMPLING DATA SHEET

Site: C&H TAMARACK OPERATIONS MID # MIN000510835 Date: 11-05-12
 Field Personnel: TAD Data Sheet Logger: TAD Well Number: TMW-02-
TMW-02-0UP
 Aquifer Type: Drift / Bedrock Weather: Overcast ~35°F Corresponding Boring: SB-06
 Type of Well (Casing): 1" PVC Stick-up (Ground to TOC (ft.)): 0.46 ft.
 Screen Type & Length: 5 ft.; 1" PVC; 10 slot Top of Casing Elevation(ft.): _____
 Depth of Well (ft.): 11.74 (TOC) Ground Elevation (ft.): _____
 Static Water Level (ft.): (-) 2.09 (TOC) Purge Method: Peristaltic Pump & Disposable
 Length of Water Column (ft.): (=) Purge Start Time: 13:29 / 11/5
 Volume/Ft.(based on dia): (x) Sampling Method: SAME
 One Volume (gal.): (=) Sampling Start Time: 13:50 / 14:50
 Sample Type: Grab X Composite _____ In-line Filter: Y (N)

Sample Type/Bottles: X VOA 4 X SVOA/Pest/PCB 4 X Metals/Cyanide 2+2

TIME	13:40	13:45	13:50		
Vol. Removed	Vol. 1	Vol. 2	Vol. 3	Vol. 4	Vol. 5
Temperature °C	11.8	11.8	11.8		
pH	6.77	6.75	6.76		
Conductivity (uS)	543	540	536		
ORP (mV)	-52	-52	-51		
Water Quality	clear				
TDSP (ppm)	389	390	387		

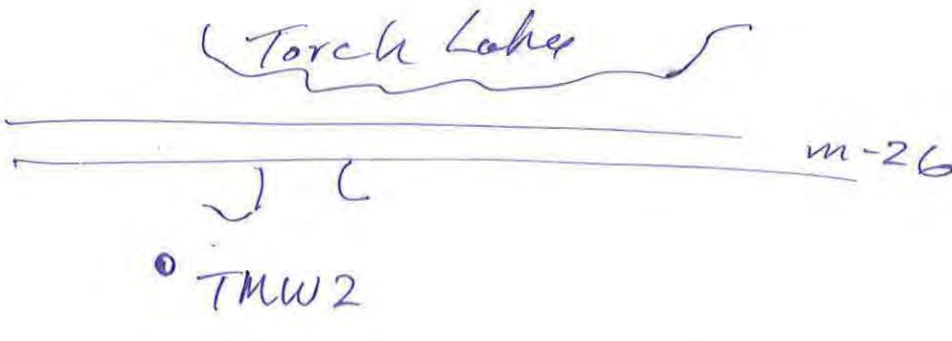
Well Vol./Ft.	
Dia. (in.)	gal./ft.
0.75	0.023
1.0	0.041
1.25	0.064
1.5	0.092
2.0	0.163

Others: $V = 0.041 \times (d)^2 \times h$
 V = volume (gal.)
 d = diameter (in.)
 h = height (ft.)

Location Reference Features:

Landmark #1: _____ Direction: _____ Distance: _____
 Landmark #2: _____ Direction: _____ Distance: _____

Sketch:

Purged ~3gals
 flow rate ~200 ml/min.


Photos: (Y/N) Time of photo: 1445 #/Location: 2 Direction of photo: N Photographer: TAD

Remarks: Purge out sediment & then recharged quickly.
Put purge H2O down well & casing & borehole.

GROUNDWATER SAMPLING DATA SHEET

Site: C&H TAMARACK OPERATIONS MID # MIN000510835 Date: 11-05-12

Field Personnel: TAD Data Sheet Logger: TAD Well Number: TMW-03-MS/MSD

Aquifer Type: Drift/Bedrock Weather: Overcast 25°F Corresponding Boring: SBO 5

Type of Well (Casing): 1" PVC Stick-up (Ground to TOC (ft.)): 0.78'

Screen Type & Length: 5ft - 1" PVC - 10-slot Top of Casing Elevation(ft.): _____

Depth of Well (ft.): 12.5' (TOC) Ground Elevation (ft.): _____

Static Water Level (ft.): (-) 12.07' (TOC) Purge Method: Peristaltic Pump & Disposable Hose

Length of Water Column (ft.): (=) _____ Purge Start Time: 15:29

Volume/Ft.(based on dia): (x) _____ Sampling Method: SAME

One Volume (gal.): (=) _____ Sampling Start Time: 16:10 (16:10)

Sample Type: Grab X Composite _____ In-line Filter: 0.45µm

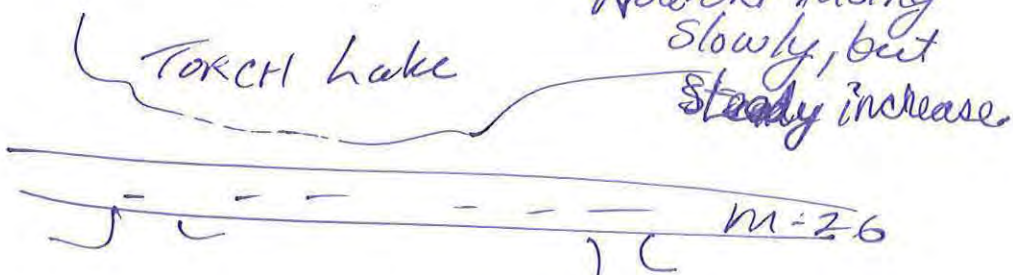
Sample Type/Bottles: X VOA 6 X SVOA/Pest/PCB 4 X Metals/Cyanide 2+2

TIME	15:40	15:45	15:50	15:55	16:00	16:05	Well Vol./Ft.	
Vol. Removed	Vol. 1	Vol. 2	Vol. 3	Vol. 4	Vol. 5	Vol. 6	Dia. (in.)	gal/ft.
Temperature °C	11.0	11.0	11.1	11.0	11.1	11.1	0.75	0.023
pH	6.78	6.78	6.78	6.79	6.76	6.77	1.0	0.041
ORP mV	85	91	94	98	100	103	1.25	0.064
Conductivity (µS)	385	384	384	384	384	384	1.5	0.092
Water Quality	Clear	→	→	→	→	→	2.0	0.163
TDS	276	276	276	276	276	276	Others: V = 0.041 x (d) ² x h V = volume (gal.) d = diameter (in.) h = height (ft.)	
Location Reference Features:								

Landmark #1: _____ Direction: _____ Distance: _____

Landmark #2: _____ Direction: _____ Distance: _____

Sketch: Rate 2
1000ml/3min.



TMW-2

TMW-3

Photos: (Y)N Time of photo: 16:45 #/Location: 2 Direction of photo: W Photographer: TAD

Remarks: Please purge water down well/borehole -
~ 5 gal.

GROUNDWATER SAMPLING DATA SHEET

Site: C&H TAMARACK OPERATIONS MID # MIN000510835 Date: 11-06-12

Field Personnel: TAD Data Sheet Logger: TAD Well Number: TMW-05

Aquifer Type: Drift Bedrock Weather: overcast 231°F Corresponding Boring: N/A

Type of Well (Casing): 1" PVC Stick-up (Ground to TOC (ft.)): 0.6 ft.

Screen Type & Length: 5 ft, 1" PVC, 10-slot Top of Casing Elevation (ft.): _____

Depth of Well (ft.): (TOC) 23.85' Ground Elevation (ft.): _____

Static Water Level (ft.): (TOC) 20.78' Purge Method: Peristaltic Pump & Disposable Hosp

Length of Water Column (ft.): (=) _____ Purge Start Time: 09:13

Volume/Ft. (based on dia): (x) _____ Sampling Method: SAME

One Volume (gal.): (=) _____ Sampling Start Time: 10:06

Sample Type: Grab X Composite _____ In-line Filter: V/N

Sample Type/Bottles: X VOA 2 X SVOA/Pest/PCB 2 X Metals/Cyanide 1+1

TIME	09:50	09:55	10:00	10:03	10:06
Vol. Removed	Vol. 1	Vol. 2	Vol. 3	Vol. 4	Vol. 5
Temperature (°C)	9.8	9.7	9.8	9.9	9.8
pH	6.47	6.49	6.46	6.46	6.49
TDS (ppm)	375	375	371	370	371
Conductivity (µS)	500	499	494	493	495
Water Quality	Clear	→	→	→	→
<u>OPPMV</u>	<u>58</u>	<u>38↓</u>	<u>28</u>	<u>29</u>	<u>22</u>

Well Vol./Ft.	
Dia. (in.)	gal./ft.
0.75	0.023
1.0	0.041
1.25	0.064
1.5	0.092
2.0	0.163

Others: $V = 0.041 \times (d)^2 \times h$
 V = volume (gal.)
 d = diameter (in.)
 h = height (ft.)

Location Reference Features:

Landmark #1: _____ Direction: _____ Distance: _____
 Landmark #2: Rail Direction: _____ Distance: _____

Sketch: 2 500ml / 2.5 min.
Torch Lake

Lake Hindern

M-26

Dollar Bay

Brown House (100 ft) TMW-05

Photos: Y/N Time of photo: 10:45 #/Location: 2 Direction of photo: N Photographer: TAD

Remarks: Myron Meter Not Stable - Switch out twice
25 ft. of casing & screen - sediment in screen
Purge about 3 gals. - Place purge water down borehole.

well install. info.
SOIL BORING SAMPLE DATA SHEET

Page 1 of 2

Site: C & H TAMARACK OPERATIONS Date: 11/5/12

EPA ID#: MIN000510835 Sample Location: SB

Operators: Lewi Corresponding Well: TMW-5

Samplers: ND Data Sheet Logger: ND

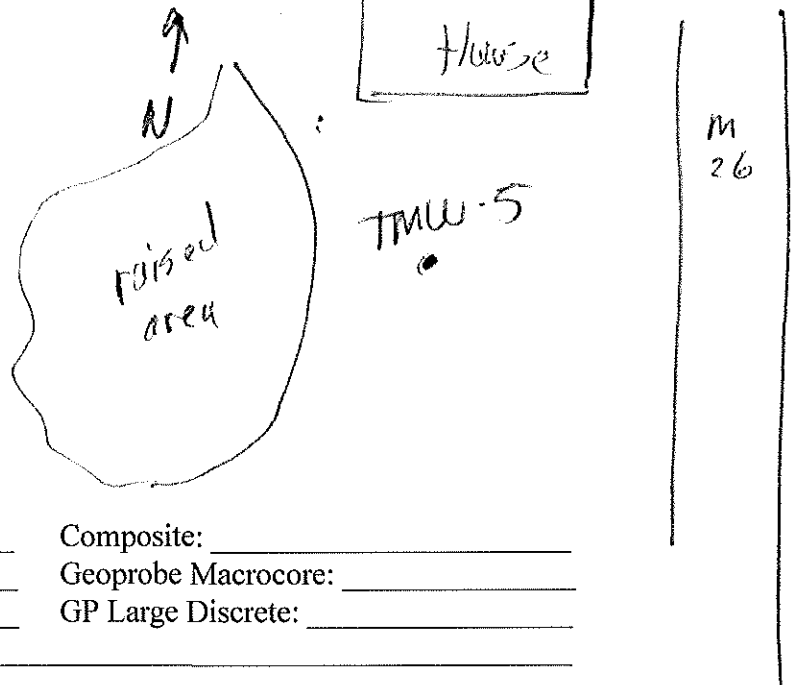
Soil Cover grass/grass (sand, grass, staining, etc.) Weather overcast 32

Location Reference Features:

Landmark #1 _____ Direction _____ Distance _____

Landmark #2 _____ Direction _____ Distance _____

Sketch:



Sampling Method: Grab: _____ Composite: _____
(Check all Hand Auger: _____ Geoprobe Macrocore: _____
that apply) GP Small Discrete: _____ GP Large Discrete: _____
Other (explain): _____

SOIL BORING LOG WITH SAMPLE DESCRIPTION ON PAGE 2

Photos: Y/N Photographer _____ #/Location _____ Time _____ Direction _____

Remarks: _____

Well Installation Information:

Type of Well Casing: 1" PVC riser Aquifer Type: Drift or Bedrock (circle one)
Depth of Well: 23.90' (below ground level)
Screen Type/Length: 1" PVC 16' 5 1/2' Static Water Level: 20.41' (bgl)

SOIL BORING SAMPLE DATA SHEET

Page 2 of 2

Site: **C&H TAMARACK OPERATIONS**

Boring/Well ID: **SB NA /TMW-5**

Sampling Time (MT): **NA** VOA Sample Interval: **NA** (in.) in. **NA** (ft.) core

of Samples/Boring: **NA** Remaining Sample Interval: (in.) in. (ft.) core

Collected / # of Vials

Collected / # of Jars

Collected / # of Jars

Sample Type/Bottles: **VOA**

SVOA/Pest/PCB

Metals/Cyanide

Spoon Interval (ft.)	Recovery (in.)	Lithological Description*		PID/FID Reading	Comments
		Unit Thickness (in.)	Unit Description		
0		0"	moist, brown sand med	0.0	
4		47"	moist, brown sand med	0.0	
8		40"	moist, dark brown, gravelly material		
		0"	moist dark brown, gravelly		
		40"	moist, brown, sand med	0.0	
12		45"	moist, brown, med, sand	0.0	
16		46"			
20					

* - Lithological description must include:

- Moisture content - (dry, moist, very moist, or wet)
- Color - (black, gray, brown, tan, etc., others as necessary)
- Grain size - (clay, silt, sand, gravel, etc., see table to right)
- Other materials - (debris (type), organics, etc.)
- Special characteristics - (staining, streaking, etc.)

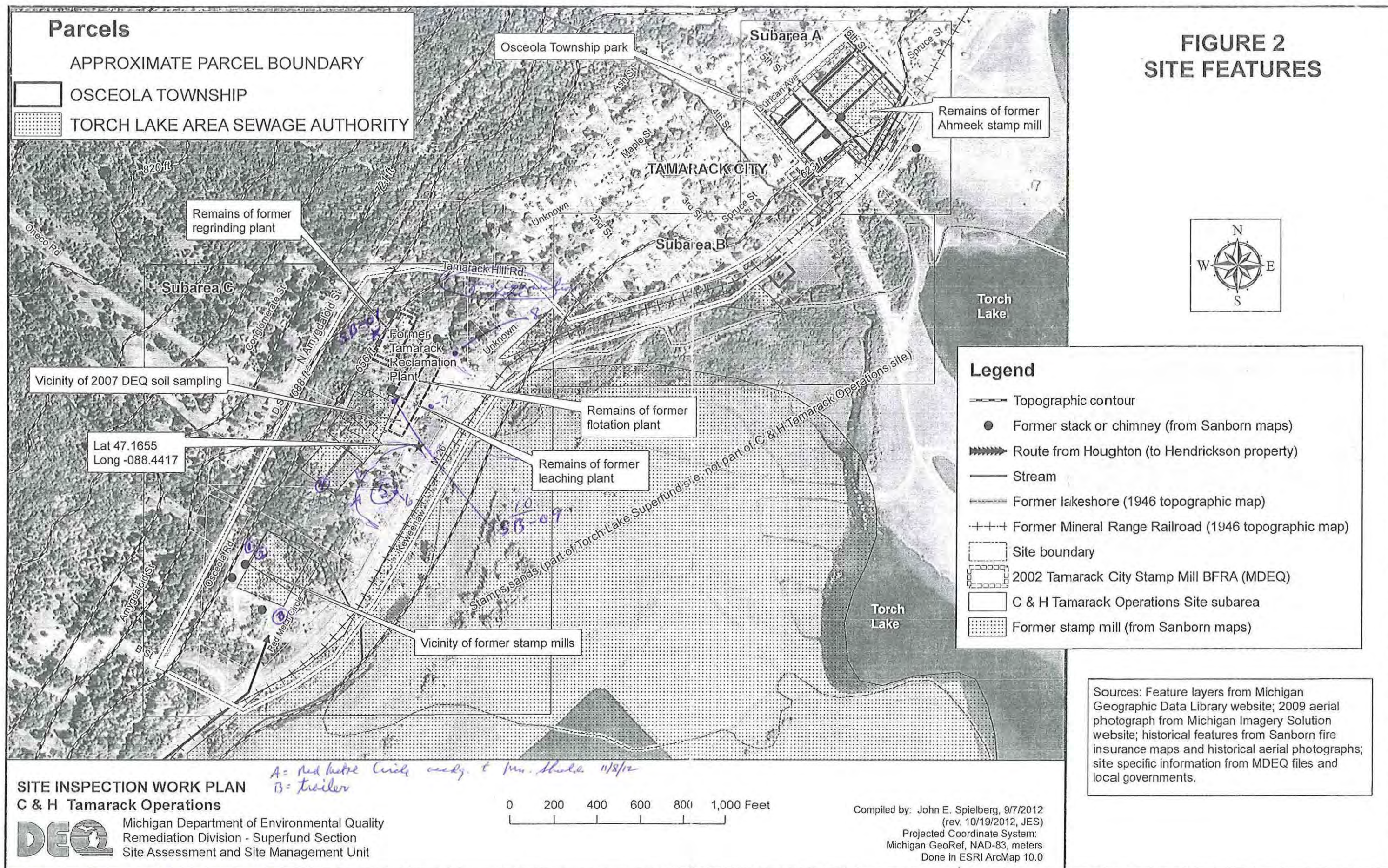
Grain size chart

Gravel	coarse	3/4 in. to 3 in.
	fine	3/16 in. to 3/4 in.
Sand	coarse	2 mm. to 4.75 mm.
	med.	0.425 mm. to 2 mm.
	fine	0.074 mm. to 0.425 mm.
Silt/Clay		< 0.074 mm. (use plasticity)

(JW 12/9/09)

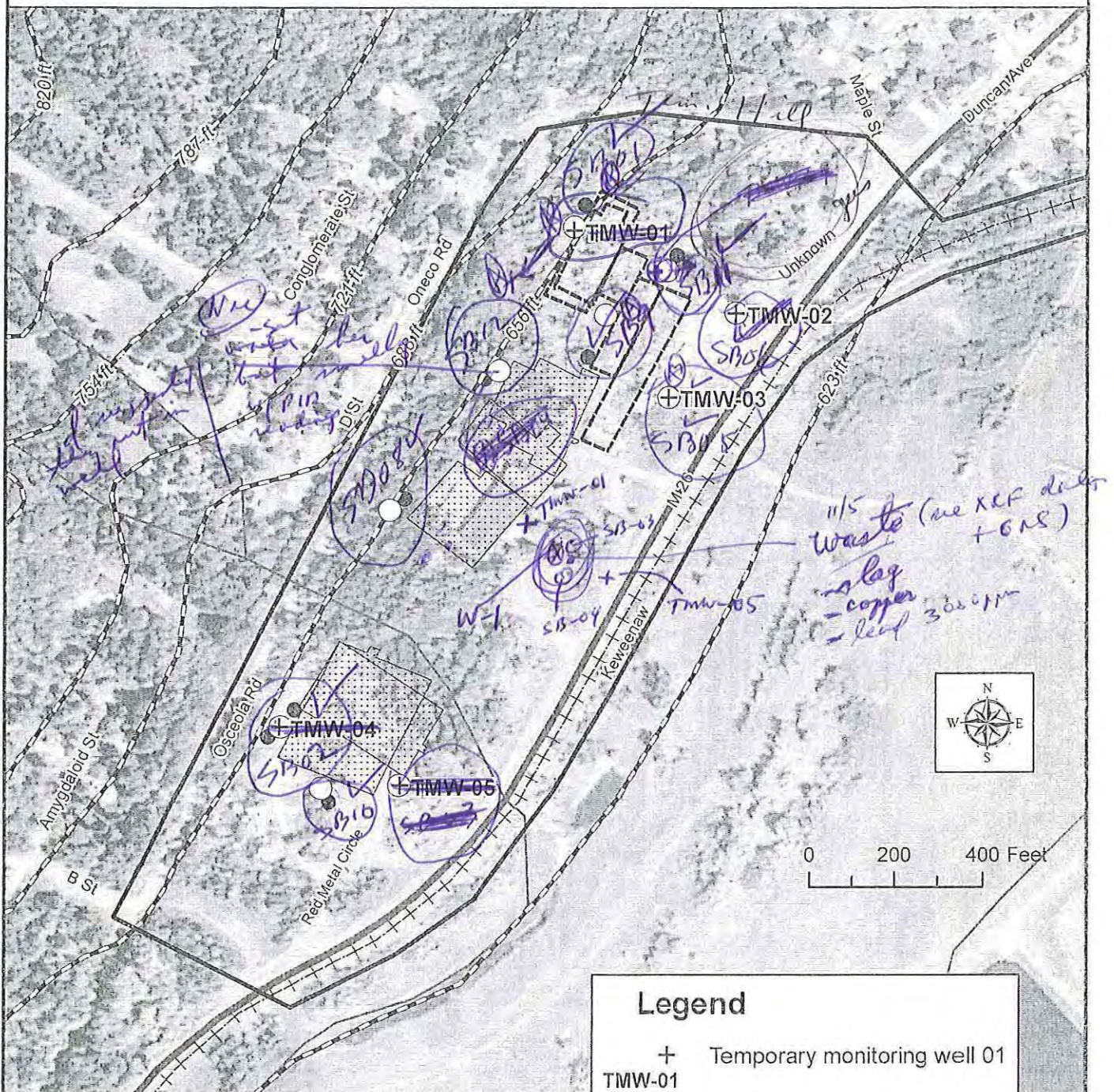
July 11/8/12 notes

FIGURE 2
SITE FEATURES



M, 11/5/12
 (A) = tried TMs - all refusal
 (B) five hydrants near here

FIGURE 3 GROUNDWATER SAMPLE LOCATIONS



Sources: Feature layers from Michigan Geographic Data Library website; site specific information from MDEQ files

SITE INSPECTION WORK PLAN C & H Tamarack Operations

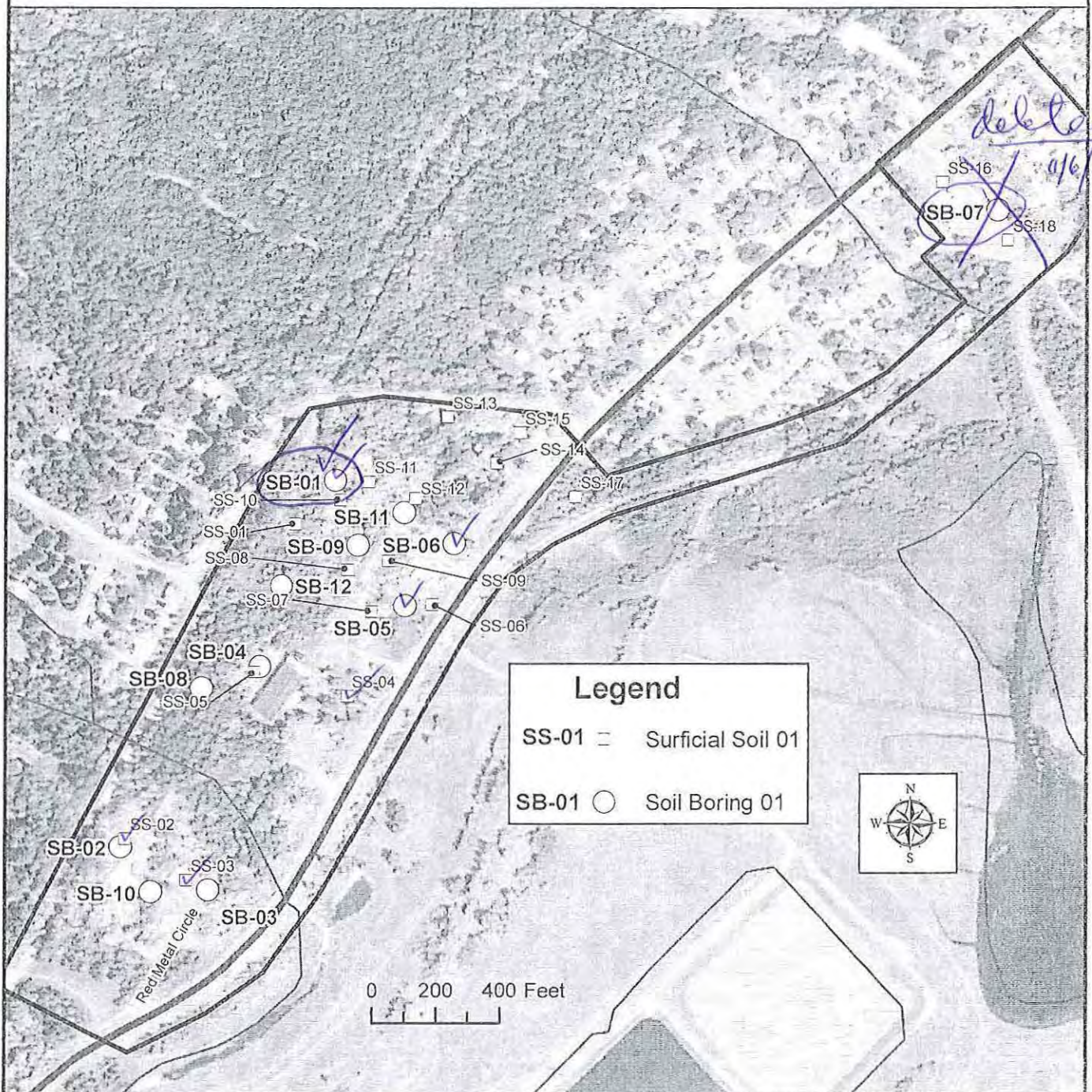


Michigan Department of Environmental Quality
 Remediation Division - Superfund Section
 Site Assessment and Site Management Unit

- Legend**
- + Temporary monitoring well 01
TMW-01
 - Co-located soil boring
 - Topographic contour

Compiled by: John E. Spielberg, 10/12
 Projected Coordinate System:
 Michigan GeoRef, NAD-83, meters
 Done in ESRI ArcMap 10.1

FIGURE 4 SOIL/WASTE SAMPLE LOCATIONS



Sources: Feature layers from Michigan Geographic Data Library; site specific information from MDEQ files

SITE INSPECTION WORK PLAN C & H Tamarack Operations



Michigan Department of Environmental Quality
Remediation Division - Superfund Section
Site Assessment and Site Management Unit

Compiled by: John E. Spielberg, 10/12
Projected Coordinate System:
Michigan GeoRef, NAD-83, meters
Done in ESRI ArcMap 10.1

Appendix E

Chemical Analysis Data
of
Site Inspection Collected Samples



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

Division: RRD
Report to: JOHN SPIELBERG
MDEQ-RRD-LANSING
CONSTITUTION HALL
525 W. ALLEGAN, LANSING, MI 48909

Total: \$5,410.00

Lab Work Order # : 21100087
Work Site ID : LB041244
Site Name : C & H TAMARACK OPERATIONS
Received: 11/13/2012
Reported: 12/18/2012
Collected By: JOHN SPIELBERG

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AC08207	SS-01	SEDIMENT	11/06/2012
02	AC08208	SS-02	SEDIMENT	11/05/2012
03	AC08209	SS-02 D	SEDIMENT	11/05/2012
04	AC08210	SS-03	SEDIMENT	11/05/2012
05	AC08211	SS-03 MS	SEDIMENT	11/05/2012
06	AC08212	SS-03 MSD	SEDIMENT	11/05/2012
07	AC08213	SS-04	SEDIMENT	11/05/2012
08	AC08214	SS-05	SEDIMENT	11/05/2012
09	AC08215	SS-06	SEDIMENT	11/06/2012
10	AC08216	SS-07	SEDIMENT	11/06/2012
11	AC08217	SS-08	SEDIMENT	11/06/2012
12	AC08218	SS-09	SEDIMENT	11/06/2012
13	AC08219	SS-10	SEDIMENT	11/06/2012
14	AC08220	SS-11	SEDIMENT	11/06/2012
15	AC08221	SS-12	SEDIMENT	11/06/2012
16	AC08222	SS-12 D	SEDIMENT	11/06/2012
17	AC08223	SS-13	SEDIMENT	11/06/2012
18	AC08224	SS-14	SEDIMENT	11/06/2012
19	AC08225	SB-01	SEDIMENT	11/05/2012
20	AC08226	SB-02	SEDIMENT	11/05/2012
21	AC08227	SB-02 D	SEDIMENT	11/05/2012
22	AC08228	SB-03	SEDIMENT	11/06/2012
23	AC08229	SB-03 MS	SEDIMENT	11/06/2012
24	AC08230	SB-03 MSD	SEDIMENT	11/06/2012
25	AC08231	SB-04	SEDIMENT	11/06/2012
26	AC08232	SB-05	SEDIMENT	11/05/2012
27	AC08233	SB-06	SEDIMENT	11/05/2012
28	AC08234	SB-08	SEDIMENT	11/06/2012
29	AC08235	SB-09	SEDIMENT	11/06/2012
30	AC08236	SB-10	SEDIMENT	11/05/2012
31	AC08237	SB-11	SEDIMENT	11/06/2012
32	AC08238	SB-12	SEDIMENT	11/06/2012
33	AC08239	W-1	SEDIMENT	11/05/2012
34	AC08240	W-2	SEDIMENT	11/05/2012



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY**

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

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

George L. Krisztian,
Laboratory Director

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts

Inorganic Unit Mgr: Kirby Shane

Organic Unit Mgr: Carol Smith

Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08207 SS-01

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.26			
SURROGATE	#Bromofluorobenzene#	116			
SURROGATE	#Dibromofluoromethane#	136			
SURROGATE	#Toluene-d8#	127			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	59		50
71-55-6	1,1,1-Trichloroethane	Not Detected	59		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	59		50
79-00-5	1,1,2-Trichloroethane	Not Detected	59		50
75-34-3	1,1-Dichloroethane	Not Detected	59		50
75-35-4	1,1-Dichloroethylene	Not Detected	59		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	300	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	59		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	59		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	300	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	59		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	300		50
106-93-4	1,2-Dibromoethane	Not Detected	59	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	59		50
107-06-2	1,2-Dichloroethane	Not Detected	59		50
78-87-5	1,2-Dichloropropane	Not Detected	59		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	59		50
541-73-1	1,3-Dichlorobenzene	Not Detected	59		50
106-46-7	1,4-Dichlorobenzene	Not Detected	59		50
78-93-3	2-Butanone (MEK)	Not Detected	300		50
591-78-6	2-Hexanone	Not Detected	300		50
91-57-6	2-Methylnaphthalene	Not Detected	300	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1200	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	300		50
107-13-1	Acrylonitrile	Not Detected	300	Z	50
71-43-2	Benzene	Not Detected	59		50
108-86-1	Bromobenzene	Not Detected	59		50
74-97-5	Bromochloromethane	Not Detected	59		50
75-27-4	Bromodichloromethane	Not Detected	59		50
75-25-2	Bromoform	Not Detected	59		50
74-83-9	Bromomethane	Not Detected	240		50
75-15-0	Carbon disulfide	Not Detected	59		50
56-23-5	Carbon tetrachloride	Not Detected	59		50
108-90-7	Chlorobenzene	Not Detected	59		50
75-00-3	Chloroethane	Not Detected	300		50
67-66-3	Chloroform	Not Detected	59		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08207 SS-01

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	300		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	59		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	59		50
110-82-7	Cyclohexane	Not Detected	300		50
124-48-1	Dibromochloromethane	Not Detected	59		50
74-95-3	Dibromomethane	Not Detected	59		50
75-71-8	Dichlorodifluoromethane	Not Detected	300		50
60-29-7	Diethyl ether	Not Detected	240		50
108-20-3	Diisopropyl Ether	Not Detected	300		50
100-41-4	Ethylbenzene	Not Detected	59		50
637-92-3	Ethyltertiarybutylether	Not Detected	300		50
67-72-1	Hexachloroethane	Not Detected	300		50
98-82-8	Isopropylbenzene	Not Detected	59		50
108383,106423	m & p - Xylene	Not Detected	120		50
74-88-4	Methyl iodide	Not Detected	59		50
75-09-2	Methylene chloride	Not Detected	120		50
1634-04-4	Methyltertiarybutylether	Not Detected	59		50
91-20-3	Naphthalene	Not Detected	300	X 7	50
104-51-8	n-Butylbenzene	Not Detected	59		50
103-65-1	n-Propylbenzene	Not Detected	59		50
95-47-6	o-Xylene	Not Detected	59		50
99-87-6	p-Isopropyl toluene	Not Detected	59		50
135-98-8	sec-Butylbenzene	Not Detected	59		50
100-42-5	Styrene	Not Detected	59		50
98-06-6	tert-Butylbenzene	Not Detected	59		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3000		50
994-05-8	tertiaryAmylmethylether	Not Detected	300		50
127-18-4	Tetrachloroethylene	Not Detected	59		50
109-99-9	Tetrahydrofuran	Not Detected	300		50
108-88-3	Toluene	Not Detected	59		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	59		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	59		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	300	Z	50
79-01-6	Trichloroethylene	Not Detected	59		50
75-69-4	Trichlorofluoromethane	Not Detected	59		50
75-01-4	Vinyl chloride	Not Detected	59	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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TEL: (517) 335-9800
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Sample Number: AC08207 SS-01

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	90.4	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08208 SS-02

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.44			
SURROGATE	#Bromofluorobenzene#	143			
SURROGATE	#Dibromofluoromethane#	189			
SURROGATE	#Toluene-d8#	169			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	55		50
71-55-6	1,1,1-Trichloroethane	Not Detected	55		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	55		50
79-00-5	1,1,2-Trichloroethane	Not Detected	55		50
75-34-3	1,1-Dichloroethane	Not Detected	55		50
75-35-4	1,1-Dichloroethylene	Not Detected	55		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	280	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	55		50
526-73-8	1,2,3-Trimethylbenzene	79	55		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	280	7	50
95-63-6	1,2,4-Trimethylbenzene	150	55		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	280		50
106-93-4	1,2-Dibromoethane	Not Detected	55	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	55		50
107-06-2	1,2-Dichloroethane	Not Detected	55		50
78-87-5	1,2-Dichloropropane	Not Detected	55		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	55		50
541-73-1	1,3-Dichlorobenzene	Not Detected	55		50
106-46-7	1,4-Dichlorobenzene	Not Detected	55		50
78-93-3	2-Butanone (MEK)	Not Detected	280		50
591-78-6	2-Hexanone	Not Detected	280		50
91-57-6	2-Methylnaphthalene	Not Detected	280	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1100	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	280		50
107-13-1	Acrylonitrile	Not Detected	280	Z	50
71-43-2	Benzene	Not Detected	55		50
108-86-1	Bromobenzene	Not Detected	55		50
74-97-5	Bromochloromethane	Not Detected	55		50
75-27-4	Bromodichloromethane	Not Detected	55		50
75-25-2	Bromoform	Not Detected	55		50
74-83-9	Bromomethane	Not Detected	220		50
75-15-0	Carbon disulfide	Not Detected	55		50
56-23-5	Carbon tetrachloride	Not Detected	55		50
108-90-7	Chlorobenzene	Not Detected	55		50
75-00-3	Chloroethane	Not Detected	280		50
67-66-3	Chloroform	Not Detected	55		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number: AC08208 SS-02

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	280		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	55		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	55		50
110-82-7	Cyclohexane	Not Detected	280		50
124-48-1	Dibromochloromethane	Not Detected	55		50
74-95-3	Dibromomethane	Not Detected	55		50
75-71-8	Dichlorodifluoromethane	Not Detected	280		50
60-29-7	Diethyl ether	Not Detected	220		50
108-20-3	Diisopropyl Ether	Not Detected	280		50
100-41-4	Ethylbenzene	Not Detected	55		50
637-92-3	Ethyltertiarybutylether	Not Detected	280		50
67-72-1	Hexachloroethane	Not Detected	280		50
98-82-8	Isopropylbenzene	Not Detected	55		50
108383,106423	m & p - Xylene	240	110		50
74-88-4	Methyl iodide	Not Detected	55		50
75-09-2	Methylene chloride	Not Detected	110		50
1634-04-4	Methyltertiarybutylether	Not Detected	55		50
91-20-3	Naphthalene	Not Detected	280	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	55		50
103-65-1	n-Propylbenzene	Not Detected	55		50
95-47-6	o-Xylene	180	55		50
99-87-6	p-Isopropyl toluene	Not Detected	55		50
135-98-8	sec-Butylbenzene	Not Detected	55		50
100-42-5	Styrene	Not Detected	55		50
98-06-6	tert-Butylbenzene	Not Detected	55		50
75-65-0	tertiary Butyl Alcohol	Not Detected	2800		50
994-05-8	tertiaryAmylmethylether	Not Detected	280		50
127-18-4	Tetrachloroethylene	Not Detected	55		50
109-99-9	Tetrahydrofuran	Not Detected	280		50
108-88-3	Toluene	170	55		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	55		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	55		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	280	Z	50
79-01-6	Trichloroethylene	Not Detected	55		50
75-69-4	Trichlorofluoromethane	Not Detected	55		50
75-01-4	Vinyl chloride	Not Detected	55	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08208 SS-02

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	93.0	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08209 SS-02 D

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.19			
SURROGATE	#Bromofluorobenzene#	140			
SURROGATE	#Dibromofluoromethane#	171			
SURROGATE	#Toluene-d8#	160			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	56		50
71-55-6	1,1,1-Trichloroethane	Not Detected	56		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	56		50
79-00-5	1,1,2-Trichloroethane	Not Detected	56		50
75-34-3	1,1-Dichloroethane	Not Detected	56		50
75-35-4	1,1-Dichloroethylene	Not Detected	56		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	280	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	56		50
526-73-8	1,2,3-Trimethylbenzene	78	56		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	280	7	50
95-63-6	1,2,4-Trimethylbenzene	180	56		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	280		50
106-93-4	1,2-Dibromoethane	Not Detected	56	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	56		50
107-06-2	1,2-Dichloroethane	Not Detected	56		50
78-87-5	1,2-Dichloropropane	Not Detected	56		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	56		50
541-73-1	1,3-Dichlorobenzene	Not Detected	56		50
106-46-7	1,4-Dichlorobenzene	Not Detected	56		50
78-93-3	2-Butanone (MEK)	Not Detected	280		50
591-78-6	2-Hexanone	Not Detected	280		50
91-57-6	2-Methylnaphthalene	520	280	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1100	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	280		50
107-13-1	Acrylonitrile	Not Detected	280	Z	50
71-43-2	Benzene	Not Detected	56		50
108-86-1	Bromobenzene	Not Detected	56		50
74-97-5	Bromochloromethane	Not Detected	56		50
75-27-4	Bromodichloromethane	Not Detected	56		50
75-25-2	Bromoform	Not Detected	56		50
74-83-9	Bromomethane	Not Detected	220		50
75-15-0	Carbon disulfide	Not Detected	56		50
56-23-5	Carbon tetrachloride	Not Detected	56		50
108-90-7	Chlorobenzene	Not Detected	56		50
75-00-3	Chloroethane	Not Detected	280		50
67-66-3	Chloroform	Not Detected	56		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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ENVIRONMENTAL LABORATORY

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

Sample Number: AC08209 SS-02 D

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	280		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	56		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	56		50
110-82-7	Cyclohexane	Not Detected	280		50
124-48-1	Dibromochloromethane	Not Detected	56		50
74-95-3	Dibromomethane	Not Detected	56		50
75-71-8	Dichlorodifluoromethane	Not Detected	280		50
60-29-7	Diethyl ether	Not Detected	220		50
108-20-3	Diisopropyl Ether	Not Detected	280		50
100-41-4	Ethylbenzene	Not Detected	56		50
637-92-3	Ethyltertiarybutylether	Not Detected	280		50
67-72-1	Hexachloroethane	Not Detected	280		50
98-82-8	Isopropylbenzene	Not Detected	56		50
108383,106423	m & p - Xylene	290	110		50
74-88-4	Methyl iodide	Not Detected	56		50
75-09-2	Methylene chloride	Not Detected	110		50
1634-04-4	Methyltertiarybutylether	Not Detected	56		50
91-20-3	Naphthalene	300	280	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	56		50
103-65-1	n-Propylbenzene	Not Detected	56		50
95-47-6	o-Xylene	200	56		50
99-87-6	p-Isopropyl toluene	Not Detected	56		50
135-98-8	sec-Butylbenzene	Not Detected	56		50
100-42-5	Styrene	Not Detected	56		50
98-06-6	tert-Butylbenzene	Not Detected	56		50
75-65-0	tertiary Butyl Alcohol	Not Detected	2800		50
994-05-8	tertiaryAmylmethylether	Not Detected	280		50
127-18-4	Tetrachloroethylene	Not Detected	56		50
109-99-9	Tetrahydrofuran	Not Detected	280		50
108-88-3	Toluene	240	56		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	56		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	56		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	280	Z	50
79-01-6	Trichloroethylene	Not Detected	56		50
75-69-4	Trichlorofluoromethane	Not Detected	56		50
75-01-4	Vinyl chloride	Not Detected	56	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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ENVIRONMENTAL LABORATORY

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

Sample Number: **AC08209** **SS-02 D**

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	93.9	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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Organic Unit Mgr: Carol Smith

Systems Mgmt Unit: George Krisztian



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

Sample Number: AC08210 SS-03

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier: P

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.06			
SURROGATE	#Bromofluorobenzene#	178		9	
SURROGATE	#Dibromofluoromethane#	237		9	
SURROGATE	#Toluene-d8#	209		9	
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	150		50
71-55-6	1,1,1-Trichloroethane	Not Detected	150		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	150		50
79-00-5	1,1,2-Trichloroethane	Not Detected	150		50
75-34-3	1,1-Dichloroethane	Not Detected	150		50
75-35-4	1,1-Dichloroethylene	Not Detected	150		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	740	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	150		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	150		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	740	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	150		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	740		50
106-93-4	1,2-Dibromoethane	Not Detected	150	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	150		50
107-06-2	1,2-Dichloroethane	Not Detected	150		50
78-87-5	1,2-Dichloropropane	Not Detected	150		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	150		50
541-73-1	1,3-Dichlorobenzene	Not Detected	150		50
106-46-7	1,4-Dichlorobenzene	Not Detected	150		50
78-93-3	2-Butanone (MEK)	Not Detected	740		50
591-78-6	2-Hexanone	Not Detected	740		50
91-57-6	2-Methylnaphthalene	Not Detected	740	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	2900	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	740		50
107-13-1	Acrylonitrile	Not Detected	740	Z	50
71-43-2	Benzene	Not Detected	150		50
108-86-1	Bromobenzene	Not Detected	150		50
74-97-5	Bromochloromethane	Not Detected	150		50
75-27-4	Bromodichloromethane	Not Detected	150		50
75-25-2	Bromoform	Not Detected	150		50
74-83-9	Bromomethane	Not Detected	590		50
75-15-0	Carbon disulfide	Not Detected	150		50
56-23-5	Carbon tetrachloride	Not Detected	150		50
108-90-7	Chlorobenzene	Not Detected	150		50
75-00-3	Chloroethane	Not Detected	740		50
67-66-3	Chloroform	Not Detected	150		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08210 SS-03

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier: P

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	740		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	150		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	150		50
110-82-7	Cyclohexane	Not Detected	740		50
124-48-1	Dibromochloromethane	Not Detected	150		50
74-95-3	Dibromomethane	Not Detected	150		50
75-71-8	Dichlorodifluoromethane	Not Detected	740		50
60-29-7	Diethyl ether	Not Detected	590		50
108-20-3	Diisopropyl Ether	Not Detected	740		50
100-41-4	Ethylbenzene	Not Detected	150		50
637-92-3	Ethyltertiarybutylether	Not Detected	740		50
67-72-1	Hexachloroethane	Not Detected	740		50
98-82-8	Isopropylbenzene	Not Detected	150		50
108383,106423	m & p - Xylene	Not Detected	290		50
74-88-4	Methyl iodide	Not Detected	150		50
75-09-2	Methylene chloride	Not Detected	290		50
1634-04-4	Methyltertiarybutylether	Not Detected	150		50
91-20-3	Naphthalene	Not Detected	740	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	150		50
103-65-1	n-Propylbenzene	Not Detected	150		50
95-47-6	o-Xylene	Not Detected	150		50
99-87-6	p-Isopropyl toluene	Not Detected	150		50
135-98-8	sec-Butylbenzene	Not Detected	150		50
100-42-5	Styrene	Not Detected	150		50
98-06-6	tert-Butylbenzene	Not Detected	150		50
75-65-0	tertiary Butyl Alcohol	Not Detected	7400		50
994-05-8	tertiaryAmylmethylether	Not Detected	740		50
127-18-4	Tetrachloroethylene	Not Detected	150		50
109-99-9	Tetrahydrofuran	Not Detected	740		50
108-88-3	Toluene	Not Detected	150		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	150		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	150		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	740	Z	50
79-01-6	Trichloroethylene	Not Detected	150		50
75-69-4	Trichlorofluoromethane	Not Detected	150		50
75-01-4	Vinyl chloride	Not Detected	150	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08210 SS-03

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	50.6	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08211 SS-03 MS

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier: P

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.06			
SURROGATE	#Bromofluorobenzene#	169			
SURROGATE	#Dibromofluoromethane#	223		9	
SURROGATE	#Toluene-d8#	213		9	
630-20-6	1,1,1,2-Tetrachloroethane	7900	150		50
71-55-6	1,1,1-Trichloroethane	7400	150		50
79-34-5	1,1,2,2-Tetrachloroethane	7300	150		50
79-00-5	1,1,2-Trichloroethane	7400	150		50
75-34-3	1,1-Dichloroethane	7100	150		50
75-35-4	1,1-Dichloroethylene	8600	150		50
87-61-6	1,2,3-Trichlorobenzene	7000	740	7	50
96-18-4	1,2,3-Trichloropropane	7800	150		50
526-73-8	1,2,3-Trimethylbenzene	6800	150		50
120-82-1	1,2,4-Trichlorobenzene	6500	740	7	50
95-63-6	1,2,4-Trimethylbenzene	7100	150		50
96-12-8	1,2-Dibromo-3-chloropropane	7200	740		50
106-93-4	1,2-Dibromoethane	7200	150	Z	50
95-50-1	1,2-Dichlorobenzene	6900	150		50
107-06-2	1,2-Dichloroethane	7500	150		50
78-87-5	1,2-Dichloropropane	6900	150		50
108-67-8	1,3,5-Trimethylbenzene	6900	150		50
541-73-1	1,3-Dichlorobenzene	6800	150		50
106-46-7	1,4-Dichlorobenzene	6900	150		50
78-93-3	2-Butanone (MEK)	5700	740		50
591-78-6	2-Hexanone	6600	740		50
91-57-6	2-Methylnaphthalene	6700	740	X 6 7	50
67-64-1	2-Propanone (acetone)	6500	2900	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	7400	740		50
107-13-1	Acrylonitrile	7300	740	Z	50
71-43-2	Benzene	7000	150		50
108-86-1	Bromobenzene	7000	150		50
74-97-5	Bromochloromethane	7900	150		50
75-27-4	Bromodichloromethane	7200	150		50
75-25-2	Bromoform	7400	150		50
74-83-9	Bromomethane	7700	590		50
75-15-0	Carbon disulfide	8900	150	4	50
56-23-5	Carbon tetrachloride	7200	150		50
108-90-7	Chlorobenzene	7400	150		50
75-00-3	Chloroethane	7900	740		50
67-66-3	Chloroform	7200	150		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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Systems Mgmt Unit: George Krisztian



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FAX: (517) 335-9600

Sample Number: AC08211 SS-03 MS

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier: P

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	6600	740		50
156-59-2	cis-1,2-Dichloroethylene	7100	150		50
10061-01-5	cis-1,3-Dichloropropylene	7000	150		50
110-82-7	Cyclohexane	6600	740		50
124-48-1	Dibromochloromethane	8000	150		50
74-95-3	Dibromomethane	7700	150		50
75-71-8	Dichlorodifluoromethane	5500	740		50
60-29-7	Diethyl ether	7000	590		50
108-20-3	Diisopropyl Ether	6900	740		50
100-41-4	Ethylbenzene	7400	150		50
637-92-3	Ethyltertiarybutylether	7000	740		50
67-72-1	Hexachloroethane	6700	740		50
98-82-8	Isopropylbenzene	7000	150		50
108383,106423	m & p - Xylene	15000	290		50
74-88-4	Methyl iodide	8400	150		50
75-09-2	Methylene chloride	6900	290		50
1634-04-4	Methyltertiarybutylether	7300	150		50
91-20-3	Naphthalene	5300	740	X 5 7	50
104-51-8	n-Butylbenzene	7100	150		50
103-65-1	n-Propylbenzene	6900	150		50
95-47-6	o-Xylene	7400	150		50
99-87-6	p-Isopropyl toluene	7100	150		50
135-98-8	sec-Butylbenzene	7000	150		50
100-42-5	Styrene	7600	150		50
98-06-6	tert-Butylbenzene	7100	150		50
75-65-0	tertiary Butyl Alcohol	31000	7400		50
994-05-8	tertiaryAmylmethylether	7200	740		50
127-18-4	Tetrachloroethylene	7700	150		50
109-99-9	Tetrahydrofuran	6700	740		50
108-88-3	Toluene	7100	150		50
156-60-5	trans-1,2-Dichloroethylene	6900	150		50
10061-02-6	trans-1,3-Dichloropropylene	7100	150		50
110-57-6	trans-1,4-Dichloro-2-butene	5900	740	Z	50
79-01-6	Trichloroethylene	7200	150		50
75-69-4	Trichlorofluoromethane	7600	150		50
75-01-4	Vinyl chloride	6400	150	Z	50

Results are estimated due to high surrogate recovery. Sample is a matrix spike.

Compounds spiked at 7350 ug/Kg, except tertiary butyl alcohol spiked at 36800 ug/Kg & m&p-xylene spiked at 14700 ug/Kg.

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts

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

Sample Number: AC08211 SS-03 MS

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	50.6	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts

Inorganic Unit Mgr: Kirby Shane

Organic Unit Mgr: Carol Smith

Systems Mgmt Unit: George Krisztian



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

Sample Number: AC08212 SS-03 MSD

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier: P

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.06			
SURROGATE	#Bromofluorobenzene#	165			
SURROGATE	#Dibromofluoromethane#	204		9	
SURROGATE	#Toluene-d8#	198		9	
630-20-6	1,1,1,2-Tetrachloroethane	7900	150		50
71-55-6	1,1,1-Trichloroethane	7300	150		50
79-34-5	1,1,2,2-Tetrachloroethane	7900	150		50
79-00-5	1,1,2-Trichloroethane	7700	150		50
75-34-3	1,1-Dichloroethane	7300	150		50
75-35-4	1,1-Dichloroethylene	8900	150	4	50
87-61-6	1,2,3-Trichlorobenzene	8700	740	7	50
96-18-4	1,2,3-Trichloropropane	8400	150		50
526-73-8	1,2,3-Trimethylbenzene	7600	150		50
120-82-1	1,2,4-Trichlorobenzene	8000	740	7	50
95-63-6	1,2,4-Trimethylbenzene	7700	150		50
96-12-8	1,2-Dibromo-3-chloropropane	8100	740		50
106-93-4	1,2-Dibromoethane	8000	150	Z	50
95-50-1	1,2-Dichlorobenzene	7800	150		50
107-06-2	1,2-Dichloroethane	7800	150		50
78-87-5	1,2-Dichloropropane	7000	150		50
108-67-8	1,3,5-Trimethylbenzene	7600	150		50
541-73-1	1,3-Dichlorobenzene	7400	150		50
106-46-7	1,4-Dichlorobenzene	7500	150		50
78-93-3	2-Butanone (MEK)	5800	740		50
591-78-6	2-Hexanone	7200	740		50
91-57-6	2-Methylnaphthalene	9200	740	X 6 7	50
67-64-1	2-Propanone (acetone)	7000	2900	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	7600	740		50
107-13-1	Acrylonitrile	7600	740	Z	50
71-43-2	Benzene	7200	150		50
108-86-1	Bromobenzene	7400	150		50
74-97-5	Bromochloromethane	7800	150		50
75-27-4	Bromodichloromethane	7700	150		50
75-25-2	Bromoform	7500	150		50
74-83-9	Bromomethane	7800	590		50
75-15-0	Carbon disulfide	9000	150	4	50
56-23-5	Carbon tetrachloride	7100	150		50
108-90-7	Chlorobenzene	7600	150		50
75-00-3	Chloroethane	8400	740		50
67-66-3	Chloroform	7400	150		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08212 SS-03 MSD

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier: P

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	6800	740		50
156-59-2	cis-1,2-Dichloroethylene	7300	150		50
10061-01-5	cis-1,3-Dichloropropylene	7400	150		50
110-82-7	Cyclohexane	6700	740		50
124-48-1	Dibromochloromethane	8200	150		50
74-95-3	Dibromomethane	8000	150		50
75-71-8	Dichlorodifluoromethane	6200	740		50
60-29-7	Diethyl ether	7300	590		50
108-20-3	Diisopropyl Ether	7100	740		50
100-41-4	Ethylbenzene	7500	150		50
637-92-3	Ethyltertiarybutylether	7400	740		50
67-72-1	Hexachloroethane	7300	740		50
98-82-8	Isopropylbenzene	7500	150		50
108383,106423	m & p - Xylene	15000	290		50
74-88-4	Methyl iodide	8500	150		50
75-09-2	Methylene chloride	7200	290		50
1634-04-4	Methyltertiarybutylether	7500	150		50
91-20-3	Naphthalene	7100	740	X 5 7	50
104-51-8	n-Butylbenzene	7800	150		50
103-65-1	n-Propylbenzene	7400	150		50
95-47-6	o-Xylene	7500	150		50
99-87-6	p-Isopropyl toluene	7700	150		50
135-98-8	sec-Butylbenzene	7500	150		50
100-42-5	Styrene	7700	150		50
98-06-6	tert-Butylbenzene	7600	150		50
75-65-0	tertiary Butyl Alcohol	30000	7400		50
994-05-8	tertiaryAmylmethylether	7900	740		50
127-18-4	Tetrachloroethylene	7600	150		50
109-99-9	Tetrahydrofuran	7000	740		50
108-88-3	Toluene	7300	150		50
156-60-5	trans-1,2-Dichloroethylene	7000	150		50
10061-02-6	trans-1,3-Dichloropropylene	7600	150		50
110-57-6	trans-1,4-Dichloro-2-butene	6500	740	Z	50
79-01-6	Trichloroethylene	7600	150		50
75-69-4	Trichlorofluoromethane	7500	150		50
75-01-4	Vinyl chloride	6900	150	Z	50

Results are estimated due to high surrogate recovery. Sample is a matrix spike duplicate.

Compounds spiked at 7350 ug/Kg, except tertiary butyl alcohol spiked at 36800 ug/Kg & m&p-xylene spiked at 14700 ug/Kg.

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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FAX: (517) 335-9600

Sample Number: AC08212 SS-03 MSD

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	50.6	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts

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Organic Unit Mgr: Carol Smith

Systems Mgmt Unit: George Krisztian



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

Sample Number: AC08213 SS-04

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	10.70			
SURROGATE	#Bromofluorobenzene#	108			
SURROGATE	#Dibromofluoromethane#	132			
SURROGATE	#Toluene-d8#	114			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	65		50
71-55-6	1,1,1-Trichloroethane	Not Detected	65		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	65		50
79-00-5	1,1,2-Trichloroethane	Not Detected	65		50
75-34-3	1,1-Dichloroethane	Not Detected	65		50
75-35-4	1,1-Dichloroethylene	Not Detected	65		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	320	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	65		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	65		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	320	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	65		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	320		50
106-93-4	1,2-Dibromoethane	Not Detected	65	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	65		50
107-06-2	1,2-Dichloroethane	Not Detected	65		50
78-87-5	1,2-Dichloropropane	Not Detected	65		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	65		50
541-73-1	1,3-Dichlorobenzene	Not Detected	65		50
106-46-7	1,4-Dichlorobenzene	Not Detected	65		50
78-93-3	2-Butanone (MEK)	Not Detected	320		50
591-78-6	2-Hexanone	Not Detected	320		50
91-57-6	2-Methylnaphthalene	Not Detected	320	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1300	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	320		50
107-13-1	Acrylonitrile	Not Detected	320	Z	50
71-43-2	Benzene	Not Detected	65		50
108-86-1	Bromobenzene	Not Detected	65		50
74-97-5	Bromochloromethane	Not Detected	65		50
75-27-4	Bromodichloromethane	Not Detected	65		50
75-25-2	Bromoform	Not Detected	65		50
74-83-9	Bromomethane	Not Detected	260		50
75-15-0	Carbon disulfide	Not Detected	65		50
56-23-5	Carbon tetrachloride	Not Detected	65		50
108-90-7	Chlorobenzene	Not Detected	65		50
75-00-3	Chloroethane	Not Detected	320		50
67-66-3	Chloroform	Not Detected	65		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08213 SS-04

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	320		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	65		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	65		50
110-82-7	Cyclohexane	Not Detected	320		50
124-48-1	Dibromochloromethane	Not Detected	65		50
74-95-3	Dibromomethane	Not Detected	65		50
75-71-8	Dichlorodifluoromethane	Not Detected	320		50
60-29-7	Diethyl ether	Not Detected	260		50
108-20-3	Diisopropyl Ether	Not Detected	320		50
100-41-4	Ethylbenzene	Not Detected	65		50
637-92-3	Ethyltertiarybutylether	Not Detected	320		50
67-72-1	Hexachloroethane	Not Detected	320		50
98-82-8	Isopropylbenzene	Not Detected	65		50
108383,106423	m & p - Xylene	Not Detected	130		50
74-88-4	Methyl iodide	Not Detected	65		50
75-09-2	Methylene chloride	Not Detected	130		50
1634-04-4	Methyltertiarybutylether	Not Detected	65		50
91-20-3	Naphthalene	Not Detected	320	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	65		50
103-65-1	n-Propylbenzene	Not Detected	65		50
95-47-6	o-Xylene	Not Detected	65		50
99-87-6	p-Isopropyl toluene	Not Detected	65		50
135-98-8	sec-Butylbenzene	Not Detected	65		50
100-42-5	Styrene	Not Detected	65		50
98-06-6	tert-Butylbenzene	Not Detected	65		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3200		50
994-05-8	tertiaryAmylmethylether	Not Detected	320		50
127-18-4	Tetrachloroethylene	Not Detected	65		50
109-99-9	Tetrahydrofuran	Not Detected	320		50
108-88-3	Toluene	Not Detected	65		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	65		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	65		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	320	Z	50
79-01-6	Trichloroethylene	Not Detected	65		50
75-69-4	Trichlorofluoromethane	Not Detected	65		50
75-01-4	Vinyl chloride	Not Detected	65	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08213 SS-04

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	88.3	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08214 SS-05

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.14			
SURROGATE	#Bromofluorobenzene#	105			
SURROGATE	#Dibromofluoromethane#	128			
SURROGATE	#Toluene-d8#	114			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	59		50
71-55-6	1,1,1-Trichloroethane	Not Detected	59		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	59		50
79-00-5	1,1,2-Trichloroethane	Not Detected	59		50
75-34-3	1,1-Dichloroethane	Not Detected	59		50
75-35-4	1,1-Dichloroethylene	Not Detected	59		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	300	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	59		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	59		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	300	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	59		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	300		50
106-93-4	1,2-Dibromoethane	Not Detected	59	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	59		50
107-06-2	1,2-Dichloroethane	Not Detected	59		50
78-87-5	1,2-Dichloropropane	Not Detected	59		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	59		50
541-73-1	1,3-Dichlorobenzene	Not Detected	59		50
106-46-7	1,4-Dichlorobenzene	Not Detected	59		50
78-93-3	2-Butanone (MEK)	Not Detected	300		50
591-78-6	2-Hexanone	Not Detected	300		50
91-57-6	2-Methylnaphthalene	300	300	X 6 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1200	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	300		50
107-13-1	Acrylonitrile	Not Detected	300	Z	50
71-43-2	Benzene	Not Detected	59		50
108-86-1	Bromobenzene	Not Detected	59		50
74-97-5	Bromochloromethane	Not Detected	59		50
75-27-4	Bromodichloromethane	Not Detected	59		50
75-25-2	Bromoform	Not Detected	59		50
74-83-9	Bromomethane	Not Detected	240		50
75-15-0	Carbon disulfide	Not Detected	59		50
56-23-5	Carbon tetrachloride	Not Detected	59		50
108-90-7	Chlorobenzene	Not Detected	59		50
75-00-3	Chloroethane	Not Detected	300		50
67-66-3	Chloroform	Not Detected	59		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number: AC08214 SS-05

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	300		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	59		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	59		50
110-82-7	Cyclohexane	Not Detected	300		50
124-48-1	Dibromochloromethane	Not Detected	59		50
74-95-3	Dibromomethane	Not Detected	59		50
75-71-8	Dichlorodifluoromethane	Not Detected	300		50
60-29-7	Diethyl ether	Not Detected	240		50
108-20-3	Diisopropyl Ether	Not Detected	300		50
100-41-4	Ethylbenzene	Not Detected	59		50
637-92-3	Ethyltertiarybutylether	Not Detected	300		50
67-72-1	Hexachloroethane	Not Detected	300		50
98-82-8	Isopropylbenzene	Not Detected	59		50
108383,106423	m & p - Xylene	Not Detected	120		50
74-88-4	Methyl iodide	Not Detected	59		50
75-09-2	Methylene chloride	Not Detected	120		50
1634-04-4	Methyltertiarybutylether	Not Detected	59		50
91-20-3	Naphthalene	Not Detected	300	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	59		50
103-65-1	n-Propylbenzene	Not Detected	59		50
95-47-6	o-Xylene	Not Detected	59		50
99-87-6	p-Isopropyl toluene	Not Detected	59		50
135-98-8	sec-Butylbenzene	Not Detected	59		50
100-42-5	Styrene	Not Detected	59		50
98-06-6	tert-Butylbenzene	Not Detected	59		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3000		50
994-05-8	tertiaryAmylmethylether	Not Detected	300		50
127-18-4	Tetrachloroethylene	Not Detected	59		50
109-99-9	Tetrahydrofuran	Not Detected	300		50
108-88-3	Toluene	Not Detected	59		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	59		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	59		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	300	Z	50
79-01-6	Trichloroethylene	Not Detected	59		50
75-69-4	Trichlorofluoromethane	Not Detected	59		50
75-01-4	Vinyl chloride	Not Detected	59	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08214 SS-05

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	91.1	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08215 SS-06

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.36			
SURROGATE	#Bromofluorobenzene#	141			
SURROGATE	#Dibromofluoromethane#	165			
SURROGATE	#Toluene-d8#	150			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	74		50
71-55-6	1,1,1-Trichloroethane	Not Detected	74		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	74		50
79-00-5	1,1,2-Trichloroethane	Not Detected	74		50
75-34-3	1,1-Dichloroethane	Not Detected	74		50
75-35-4	1,1-Dichloroethylene	Not Detected	74		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	370	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	74		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	74		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	370	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	74		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	370		50
106-93-4	1,2-Dibromoethane	Not Detected	74	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	74		50
107-06-2	1,2-Dichloroethane	Not Detected	74		50
78-87-5	1,2-Dichloropropane	Not Detected	74		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	74		50
541-73-1	1,3-Dichlorobenzene	Not Detected	74		50
106-46-7	1,4-Dichlorobenzene	Not Detected	74		50
78-93-3	2-Butanone (MEK)	Not Detected	370		50
591-78-6	2-Hexanone	Not Detected	370		50
91-57-6	2-Methylnaphthalene	Not Detected	370	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1500	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	370		50
107-13-1	Acrylonitrile	Not Detected	370	Z	50
71-43-2	Benzene	Not Detected	74		50
108-86-1	Bromobenzene	Not Detected	74		50
74-97-5	Bromochloromethane	Not Detected	74		50
75-27-4	Bromodichloromethane	Not Detected	74		50
75-25-2	Bromoform	Not Detected	74		50
74-83-9	Bromomethane	Not Detected	300		50
75-15-0	Carbon disulfide	Not Detected	74		50
56-23-5	Carbon tetrachloride	Not Detected	74		50
108-90-7	Chlorobenzene	Not Detected	74		50
75-00-3	Chloroethane	Not Detected	370		50
67-66-3	Chloroform	Not Detected	74		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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ENVIRONMENTAL LABORATORY

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

Sample Number: AC08215 SS-06

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	370		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	74		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	74		50
110-82-7	Cyclohexane	Not Detected	370		50
124-48-1	Dibromochloromethane	Not Detected	74		50
74-95-3	Dibromomethane	Not Detected	74		50
75-71-8	Dichlorodifluoromethane	Not Detected	370		50
60-29-7	Diethyl ether	Not Detected	300		50
108-20-3	Diisopropyl Ether	Not Detected	370		50
100-41-4	Ethylbenzene	Not Detected	74		50
637-92-3	Ethyltertiarybutylether	Not Detected	370		50
67-72-1	Hexachloroethane	Not Detected	370		50
98-82-8	Isopropylbenzene	Not Detected	74		50
108383,106423	m & p - Xylene	Not Detected	150		50
74-88-4	Methyl iodide	Not Detected	74		50
75-09-2	Methylene chloride	Not Detected	150		50
1634-04-4	Methyltertiarybutylether	Not Detected	74		50
91-20-3	Naphthalene	Not Detected	370	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	74		50
103-65-1	n-Propylbenzene	Not Detected	74		50
95-47-6	o-Xylene	Not Detected	74		50
99-87-6	p-Isopropyl toluene	Not Detected	74		50
135-98-8	sec-Butylbenzene	Not Detected	74		50
100-42-5	Styrene	Not Detected	74		50
98-06-6	tert-Butylbenzene	Not Detected	74		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3700		50
994-05-8	tertiaryAmylmethylether	Not Detected	370		50
127-18-4	Tetrachloroethylene	Not Detected	74		50
109-99-9	Tetrahydrofuran	Not Detected	370		50
108-88-3	Toluene	Not Detected	74		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	74		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	74		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	370	Z	50
79-01-6	Trichloroethylene	Not Detected	74		50
75-69-4	Trichlorofluoromethane	Not Detected	74		50
75-01-4	Vinyl chloride	Not Detected	74	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08215 SS-06

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	79.5	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Organic Unit Mgr: Carol Smith
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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number: AC08216 SS-07

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.04			
SURROGATE	#Bromofluorobenzene#	112			
SURROGATE	#Dibromofluoromethane#	132			
SURROGATE	#Toluene-d8#	120			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	68		50
71-55-6	1,1,1-Trichloroethane	Not Detected	68		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	68		50
79-00-5	1,1,2-Trichloroethane	Not Detected	68		50
75-34-3	1,1-Dichloroethane	Not Detected	68		50
75-35-4	1,1-Dichloroethylene	Not Detected	68		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	340	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	68		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	68		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	340	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	68		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	340		50
106-93-4	1,2-Dibromoethane	Not Detected	68	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	68		50
107-06-2	1,2-Dichloroethane	Not Detected	68		50
78-87-5	1,2-Dichloropropane	Not Detected	68		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	68		50
541-73-1	1,3-Dichlorobenzene	Not Detected	68		50
106-46-7	1,4-Dichlorobenzene	Not Detected	68		50
78-93-3	2-Butanone (MEK)	Not Detected	340		50
591-78-6	2-Hexanone	Not Detected	340		50
91-57-6	2-Methylnaphthalene	Not Detected	340	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1400	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	340		50
107-13-1	Acrylonitrile	Not Detected	340	Z	50
71-43-2	Benzene	Not Detected	68		50
108-86-1	Bromobenzene	Not Detected	68		50
74-97-5	Bromochloromethane	Not Detected	68		50
75-27-4	Bromodichloromethane	Not Detected	68		50
75-25-2	Bromoform	Not Detected	68		50
74-83-9	Bromomethane	Not Detected	270		50
75-15-0	Carbon disulfide	Not Detected	68		50
56-23-5	Carbon tetrachloride	Not Detected	68		50
108-90-7	Chlorobenzene	Not Detected	68		50
75-00-3	Chloroethane	Not Detected	340		50
67-66-3	Chloroform	Not Detected	68		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08216 SS-07

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	340		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	68		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	68		50
110-82-7	Cyclohexane	Not Detected	340		50
124-48-1	Dibromochloromethane	Not Detected	68		50
74-95-3	Dibromomethane	Not Detected	68		50
75-71-8	Dichlorodifluoromethane	Not Detected	340		50
60-29-7	Diethyl ether	Not Detected	270		50
108-20-3	Diisopropyl Ether	Not Detected	340		50
100-41-4	Ethylbenzene	Not Detected	68		50
637-92-3	Ethyltertiarybutylether	Not Detected	340		50
67-72-1	Hexachloroethane	Not Detected	340		50
98-82-8	Isopropylbenzene	Not Detected	68		50
108383,106423	m & p - Xylene	Not Detected	140		50
74-88-4	Methyl iodide	Not Detected	68		50
75-09-2	Methylene chloride	Not Detected	140		50
1634-04-4	Methyltertiarybutylether	Not Detected	68		50
91-20-3	Naphthalene	Not Detected	340	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	68		50
103-65-1	n-Propylbenzene	Not Detected	68		50
95-47-6	o-Xylene	Not Detected	68		50
99-87-6	p-Isopropyl toluene	Not Detected	68		50
135-98-8	sec-Butylbenzene	Not Detected	68		50
100-42-5	Styrene	Not Detected	68		50
98-06-6	tert-Butylbenzene	Not Detected	68		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3400		50
994-05-8	tertiaryAmylmethylether	Not Detected	340		50
127-18-4	Tetrachloroethylene	Not Detected	68		50
109-99-9	Tetrahydrofuran	Not Detected	340		50
108-88-3	Toluene	Not Detected	68		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	68		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	68		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	340	Z	50
79-01-6	Trichloroethylene	Not Detected	68		50
75-69-4	Trichlorofluoromethane	Not Detected	68		50
75-01-4	Vinyl chloride	Not Detected	68	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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TEL: (517) 335-9800
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Sample Number: AC08216 SS-07

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	84.5	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08217 SS-08

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	10.42			
SURROGATE	#Bromofluorobenzene#	116			
SURROGATE	#Dibromofluoromethane#	140			
SURROGATE	#Toluene-d8#	129			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	81		50
71-55-6	1,1,1-Trichloroethane	Not Detected	81		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	81		50
79-00-5	1,1,2-Trichloroethane	Not Detected	81		50
75-34-3	1,1-Dichloroethane	Not Detected	81		50
75-35-4	1,1-Dichloroethylene	Not Detected	81		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	400	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	81		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	81		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	400	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	81		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	400		50
106-93-4	1,2-Dibromoethane	Not Detected	81	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	81		50
107-06-2	1,2-Dichloroethane	Not Detected	81		50
78-87-5	1,2-Dichloropropane	Not Detected	81		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	81		50
541-73-1	1,3-Dichlorobenzene	Not Detected	81		50
106-46-7	1,4-Dichlorobenzene	Not Detected	81		50
78-93-3	2-Butanone (MEK)	Not Detected	400		50
591-78-6	2-Hexanone	Not Detected	400		50
91-57-6	2-Methylnaphthalene	Not Detected	400	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1600	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	400		50
107-13-1	Acrylonitrile	Not Detected	400	Z	50
71-43-2	Benzene	Not Detected	81		50
108-86-1	Bromobenzene	Not Detected	81		50
74-97-5	Bromochloromethane	Not Detected	81		50
75-27-4	Bromodichloromethane	Not Detected	81		50
75-25-2	Bromoform	Not Detected	81		50
74-83-9	Bromomethane	Not Detected	320		50
75-15-0	Carbon disulfide	Not Detected	81		50
56-23-5	Carbon tetrachloride	Not Detected	81		50
108-90-7	Chlorobenzene	Not Detected	81		50
75-00-3	Chloroethane	Not Detected	400		50
67-66-3	Chloroform	Not Detected	81		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08217 SS-08

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	400		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	81		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	81		50
110-82-7	Cyclohexane	Not Detected	400		50
124-48-1	Dibromochloromethane	Not Detected	81		50
74-95-3	Dibromomethane	Not Detected	81		50
75-71-8	Dichlorodifluoromethane	Not Detected	400		50
60-29-7	Diethyl ether	Not Detected	320		50
108-20-3	Diisopropyl Ether	Not Detected	400		50
100-41-4	Ethylbenzene	Not Detected	81		50
637-92-3	Ethyltertiarybutylether	Not Detected	400		50
67-72-1	Hexachloroethane	Not Detected	400		50
98-82-8	Isopropylbenzene	Not Detected	81		50
108383,106423	m & p - Xylene	Not Detected	160		50
74-88-4	Methyl iodide	Not Detected	81		50
75-09-2	Methylene chloride	Not Detected	160		50
1634-04-4	Methyltertiarybutylether	Not Detected	81		50
91-20-3	Naphthalene	Not Detected	400	X 7	50
104-51-8	n-Butylbenzene	Not Detected	81		50
103-65-1	n-Propylbenzene	Not Detected	81		50
95-47-6	o-Xylene	Not Detected	81		50
99-87-6	p-Isopropyl toluene	Not Detected	81		50
135-98-8	sec-Butylbenzene	Not Detected	81		50
100-42-5	Styrene	Not Detected	81		50
98-06-6	tert-Butylbenzene	Not Detected	81		50
75-65-0	tertiary Butyl Alcohol	Not Detected	4000		50
994-05-8	tertiaryAmylmethylether	Not Detected	400		50
127-18-4	Tetrachloroethylene	Not Detected	81		50
109-99-9	Tetrahydrofuran	Not Detected	400		50
108-88-3	Toluene	Not Detected	81		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	81		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	81		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	400	Z	50
79-01-6	Trichloroethylene	Not Detected	81		50
75-69-4	Trichlorofluoromethane	Not Detected	81		50
75-01-4	Vinyl chloride	Not Detected	81	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08217 SS-08

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	75.0	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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P.O. Box 30270
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TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number: AC08218 SS-09

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.54			
SURROGATE	#Bromofluorobenzene#	106			
SURROGATE	#Dibromofluoromethane#	129			
SURROGATE	#Toluene-d8#	114			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	55		50
71-55-6	1,1,1-Trichloroethane	Not Detected	55		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	55		50
79-00-5	1,1,2-Trichloroethane	Not Detected	55		50
75-34-3	1,1-Dichloroethane	Not Detected	55		50
75-35-4	1,1-Dichloroethylene	Not Detected	55		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	270	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	55		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	55		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	270	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	55		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	270		50
106-93-4	1,2-Dibromoethane	Not Detected	55	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	55		50
107-06-2	1,2-Dichloroethane	Not Detected	55		50
78-87-5	1,2-Dichloropropane	Not Detected	55		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	55		50
541-73-1	1,3-Dichlorobenzene	Not Detected	55		50
106-46-7	1,4-Dichlorobenzene	Not Detected	55		50
78-93-3	2-Butanone (MEK)	Not Detected	270		50
591-78-6	2-Hexanone	Not Detected	270		50
91-57-6	2-Methylnaphthalene	Not Detected	270	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1100	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	270		50
107-13-1	Acrylonitrile	Not Detected	270	Z	50
71-43-2	Benzene	Not Detected	55		50
108-86-1	Bromobenzene	Not Detected	55		50
74-97-5	Bromochloromethane	Not Detected	55		50
75-27-4	Bromodichloromethane	Not Detected	55		50
75-25-2	Bromoform	Not Detected	55		50
74-83-9	Bromomethane	Not Detected	220		50
75-15-0	Carbon disulfide	Not Detected	55		50
56-23-5	Carbon tetrachloride	Not Detected	55		50
108-90-7	Chlorobenzene	Not Detected	55		50
75-00-3	Chloroethane	Not Detected	270		50
67-66-3	Chloroform	Not Detected	55		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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Sample Number: AC08218 SS-09

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	270		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	55		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	55		50
110-82-7	Cyclohexane	Not Detected	270		50
124-48-1	Dibromochloromethane	Not Detected	55		50
74-95-3	Dibromomethane	Not Detected	55		50
75-71-8	Dichlorodifluoromethane	Not Detected	270		50
60-29-7	Diethyl ether	Not Detected	220		50
108-20-3	Diisopropyl Ether	Not Detected	270		50
100-41-4	Ethylbenzene	Not Detected	55		50
637-92-3	Ethyltertiarybutylether	Not Detected	270		50
67-72-1	Hexachloroethane	Not Detected	270		50
98-82-8	Isopropylbenzene	Not Detected	55		50
108383,106423	m & p - Xylene	Not Detected	110		50
74-88-4	Methyl iodide	Not Detected	55		50
75-09-2	Methylene chloride	Not Detected	110		50
1634-04-4	Methyltertiarybutylether	Not Detected	55		50
91-20-3	Naphthalene	Not Detected	270	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	55		50
103-65-1	n-Propylbenzene	Not Detected	55		50
95-47-6	o-Xylene	Not Detected	55		50
99-87-6	p-Isopropyl toluene	Not Detected	55		50
135-98-8	sec-Butylbenzene	Not Detected	55		50
100-42-5	Styrene	Not Detected	55		50
98-06-6	tert-Butylbenzene	Not Detected	55		50
75-65-0	tertiary Butyl Alcohol	Not Detected	2700		50
994-05-8	tertiaryAmylmethylether	Not Detected	270		50
127-18-4	Tetrachloroethylene	Not Detected	55		50
109-99-9	Tetrahydrofuran	Not Detected	270		50
108-88-3	Toluene	Not Detected	55		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	55		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	55		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	270	Z	50
79-01-6	Trichloroethylene	Not Detected	55		50
75-69-4	Trichlorofluoromethane	Not Detected	55		50
75-01-4	Vinyl chloride	Not Detected	55	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08218 SS-09

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	97.6	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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Organic Unit Mgr: Carol Smith

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P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
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Sample Number: AC08219 SS-10

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	10.97			
SURROGATE	#Bromofluorobenzene#	121			
SURROGATE	#Dibromofluoromethane#	146			
SURROGATE	#Toluene-d8#	128			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	99		50
71-55-6	1,1,1-Trichloroethane	Not Detected	99		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	99		50
79-00-5	1,1,2-Trichloroethane	Not Detected	99		50
75-34-3	1,1-Dichloroethane	Not Detected	99		50
75-35-4	1,1-Dichloroethylene	Not Detected	99		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	500	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	99		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	99		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	500	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	99		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	500		50
106-93-4	1,2-Dibromoethane	Not Detected	99	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	99		50
107-06-2	1,2-Dichloroethane	Not Detected	99		50
78-87-5	1,2-Dichloropropane	Not Detected	99		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	99		50
541-73-1	1,3-Dichlorobenzene	Not Detected	99		50
106-46-7	1,4-Dichlorobenzene	Not Detected	99		50
78-93-3	2-Butanone (MEK)	Not Detected	500		50
591-78-6	2-Hexanone	Not Detected	500		50
91-57-6	2-Methylnaphthalene	Not Detected	500	X	50
67-64-1	2-Propanone (acetone)	Not Detected	2000	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	500		50
107-13-1	Acrylonitrile	Not Detected	500	Z	50
71-43-2	Benzene	Not Detected	99		50
108-86-1	Bromobenzene	Not Detected	99		50
74-97-5	Bromochloromethane	Not Detected	99		50
75-27-4	Bromodichloromethane	Not Detected	99		50
75-25-2	Bromoform	Not Detected	99		50
74-83-9	Bromomethane	Not Detected	400		50
75-15-0	Carbon disulfide	Not Detected	99		50
56-23-5	Carbon tetrachloride	Not Detected	99		50
108-90-7	Chlorobenzene	Not Detected	99		50
75-00-3	Chloroethane	Not Detected	500		50
67-66-3	Chloroform	Not Detected	99		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08219 SS-10

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	500		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	99		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	99		50
110-82-7	Cyclohexane	Not Detected	500		50
124-48-1	Dibromochloromethane	Not Detected	99		50
74-95-3	Dibromomethane	Not Detected	99		50
75-71-8	Dichlorodifluoromethane	Not Detected	500		50
60-29-7	Diethyl ether	Not Detected	400		50
108-20-3	Diisopropyl Ether	Not Detected	500		50
100-41-4	Ethylbenzene	Not Detected	99		50
637-92-3	Ethyltertiarybutylether	Not Detected	500		50
67-72-1	Hexachloroethane	Not Detected	500		50
98-82-8	Isopropylbenzene	Not Detected	99		50
108383,106423	m & p - Xylene	Not Detected	200		50
74-88-4	Methyl iodide	Not Detected	99		50
75-09-2	Methylene chloride	Not Detected	200		50
1634-04-4	Methyltertiarybutylether	Not Detected	99		50
91-20-3	Naphthalene	Not Detected	500	X 7	50
104-51-8	n-Butylbenzene	Not Detected	99		50
103-65-1	n-Propylbenzene	Not Detected	99		50
95-47-6	o-Xylene	Not Detected	99		50
99-87-6	p-Isopropyl toluene	Not Detected	99		50
135-98-8	sec-Butylbenzene	Not Detected	99		50
100-42-5	Styrene	Not Detected	99		50
98-06-6	tert-Butylbenzene	Not Detected	99		50
75-65-0	tertiary Butyl Alcohol	Not Detected	5000		50
994-05-8	tertiaryAmylmethylether	Not Detected	500		50
127-18-4	Tetrachloroethylene	Not Detected	99		50
109-99-9	Tetrahydrofuran	Not Detected	500		50
108-88-3	Toluene	Not Detected	99		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	99		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	99		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	500	Z	50
79-01-6	Trichloroethylene	Not Detected	99		50
75-69-4	Trichlorofluoromethane	Not Detected	99		50
75-01-4	Vinyl chloride	Not Detected	99	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08219 SS-10

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	67.1	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08220 SS-11

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.38			
SURROGATE	#Bromofluorobenzene#	129			
SURROGATE	#Dibromofluoromethane#	159			
SURROGATE	#Toluene-d8#	141			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	64		50
71-55-6	1,1,1-Trichloroethane	Not Detected	64		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	64		50
79-00-5	1,1,2-Trichloroethane	Not Detected	64		50
75-34-3	1,1-Dichloroethane	Not Detected	64		50
75-35-4	1,1-Dichloroethylene	Not Detected	64		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	320	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	64		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	64		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	320	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	64		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	320		50
106-93-4	1,2-Dibromoethane	Not Detected	64	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	64		50
107-06-2	1,2-Dichloroethane	Not Detected	64		50
78-87-5	1,2-Dichloropropane	Not Detected	64		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	64		50
541-73-1	1,3-Dichlorobenzene	Not Detected	64		50
106-46-7	1,4-Dichlorobenzene	Not Detected	64		50
78-93-3	2-Butanone (MEK)	Not Detected	320		50
591-78-6	2-Hexanone	Not Detected	320		50
91-57-6	2-Methylnaphthalene	Not Detected	320	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1300	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	320		50
107-13-1	Acrylonitrile	Not Detected	320	Z	50
71-43-2	Benzene	Not Detected	64		50
108-86-1	Bromobenzene	Not Detected	64		50
74-97-5	Bromochloromethane	Not Detected	64		50
75-27-4	Bromodichloromethane	Not Detected	64		50
75-25-2	Bromoform	Not Detected	64		50
74-83-9	Bromomethane	Not Detected	260		50
75-15-0	Carbon disulfide	Not Detected	64		50
56-23-5	Carbon tetrachloride	Not Detected	64		50
108-90-7	Chlorobenzene	Not Detected	64		50
75-00-3	Chloroethane	Not Detected	320		50
67-66-3	Chloroform	Not Detected	64		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Lansing, MI 48909
TEL: (517) 335-9800
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Sample Number: AC08220 SS-11

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	320		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	64		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	64		50
110-82-7	Cyclohexane	Not Detected	320		50
124-48-1	Dibromochloromethane	Not Detected	64		50
74-95-3	Dibromomethane	Not Detected	64		50
75-71-8	Dichlorodifluoromethane	Not Detected	320		50
60-29-7	Diethyl ether	Not Detected	260		50
108-20-3	Diisopropyl Ether	Not Detected	320		50
100-41-4	Ethylbenzene	Not Detected	64		50
637-92-3	Ethyltertiarybutylether	Not Detected	320		50
67-72-1	Hexachloroethane	Not Detected	320		50
98-82-8	Isopropylbenzene	Not Detected	64		50
108383,106423	m & p - Xylene	Not Detected	130		50
74-88-4	Methyl iodide	Not Detected	64		50
75-09-2	Methylene chloride	Not Detected	130		50
1634-04-4	Methyltertiarybutylether	Not Detected	64		50
91-20-3	Naphthalene	Not Detected	320	X 7	50
104-51-8	n-Butylbenzene	Not Detected	64		50
103-65-1	n-Propylbenzene	Not Detected	64		50
95-47-6	o-Xylene	Not Detected	64		50
99-87-6	p-Isopropyl toluene	Not Detected	64		50
135-98-8	sec-Butylbenzene	Not Detected	64		50
100-42-5	Styrene	Not Detected	64		50
98-06-6	tert-Butylbenzene	Not Detected	64		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3200		50
994-05-8	tertiaryAmylmethylether	Not Detected	320		50
127-18-4	Tetrachloroethylene	Not Detected	64		50
109-99-9	Tetrahydrofuran	Not Detected	320		50
108-88-3	Toluene	Not Detected	64		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	64		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	64		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	320	Z	50
79-01-6	Trichloroethylene	Not Detected	64		50
75-69-4	Trichlorofluoromethane	Not Detected	64		50
75-01-4	Vinyl chloride	Not Detected	64	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: AC08220 SS-11

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	86.3	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08221 SS-12

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.04			
SURROGATE	#Bromofluorobenzene#	105			
SURROGATE	#Dibromofluoromethane#	130			
SURROGATE	#Toluene-d8#	111			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	60		50
71-55-6	1,1,1-Trichloroethane	Not Detected	60		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	60		50
79-00-5	1,1,2-Trichloroethane	Not Detected	60		50
75-34-3	1,1-Dichloroethane	Not Detected	60		50
75-35-4	1,1-Dichloroethylene	Not Detected	60		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	300	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	60		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	60		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	300	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	60		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	300		50
106-93-4	1,2-Dibromoethane	Not Detected	60	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	60		50
107-06-2	1,2-Dichloroethane	Not Detected	60		50
78-87-5	1,2-Dichloropropane	Not Detected	60		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	60		50
541-73-1	1,3-Dichlorobenzene	Not Detected	60		50
106-46-7	1,4-Dichlorobenzene	Not Detected	60		50
78-93-3	2-Butanone (MEK)	Not Detected	300		50
591-78-6	2-Hexanone	Not Detected	300		50
91-57-6	2-Methylnaphthalene	Not Detected	300	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1200	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	300		50
107-13-1	Acrylonitrile	Not Detected	300	Z	50
71-43-2	Benzene	Not Detected	60		50
108-86-1	Bromobenzene	Not Detected	60		50
74-97-5	Bromochloromethane	Not Detected	60		50
75-27-4	Bromodichloromethane	Not Detected	60		50
75-25-2	Bromoform	Not Detected	60		50
74-83-9	Bromomethane	Not Detected	240		50
75-15-0	Carbon disulfide	Not Detected	60		50
56-23-5	Carbon tetrachloride	Not Detected	60		50
108-90-7	Chlorobenzene	Not Detected	60		50
75-00-3	Chloroethane	Not Detected	300		50
67-66-3	Chloroform	Not Detected	60		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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ENVIRONMENTAL LABORATORY

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
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Sample Number: AC08221 SS-12

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	300		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	60		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	60		50
110-82-7	Cyclohexane	Not Detected	300		50
124-48-1	Dibromochloromethane	Not Detected	60		50
74-95-3	Dibromomethane	Not Detected	60		50
75-71-8	Dichlorodifluoromethane	Not Detected	300		50
60-29-7	Diethyl ether	Not Detected	240		50
108-20-3	Diisopropyl Ether	Not Detected	300		50
100-41-4	Ethylbenzene	Not Detected	60		50
637-92-3	Ethyltertiarybutylether	Not Detected	300		50
67-72-1	Hexachloroethane	Not Detected	300		50
98-82-8	Isopropylbenzene	Not Detected	60		50
108383,106423	m & p - Xylene	Not Detected	120		50
74-88-4	Methyl iodide	Not Detected	60		50
75-09-2	Methylene chloride	Not Detected	120		50
1634-04-4	Methyltertiarybutylether	Not Detected	60		50
91-20-3	Naphthalene	Not Detected	300	X 7	50
104-51-8	n-Butylbenzene	Not Detected	60		50
103-65-1	n-Propylbenzene	Not Detected	60		50
95-47-6	o-Xylene	Not Detected	60		50
99-87-6	p-Isopropyl toluene	Not Detected	60		50
135-98-8	sec-Butylbenzene	Not Detected	60		50
100-42-5	Styrene	Not Detected	60		50
98-06-6	tert-Butylbenzene	Not Detected	60		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3000		50
994-05-8	tertiaryAmylmethylether	Not Detected	300		50
127-18-4	Tetrachloroethylene	Not Detected	60		50
109-99-9	Tetrahydrofuran	Not Detected	300		50
108-88-3	Toluene	Not Detected	60		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	60		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	60		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	300	Z	50
79-01-6	Trichloroethylene	Not Detected	60		50
75-69-4	Trichlorofluoromethane	Not Detected	60		50
75-01-4	Vinyl chloride	Not Detected	60	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08221 SS-12

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	90.9	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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

Sample Number: AC08222 SS-12 D

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	11.07			
SURROGATE	#Bromofluorobenzene#	109			
SURROGATE	#Dibromofluoromethane#	127			
SURROGATE	#Toluene-d8#	119			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	57		50
71-55-6	1,1,1-Trichloroethane	Not Detected	57		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	57		50
79-00-5	1,1,2-Trichloroethane	Not Detected	57		50
75-34-3	1,1-Dichloroethane	Not Detected	57		50
75-35-4	1,1-Dichloroethylene	Not Detected	57		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	280	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	57		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	57		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	280	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	57		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	280		50
106-93-4	1,2-Dibromoethane	Not Detected	57	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	57		50
107-06-2	1,2-Dichloroethane	Not Detected	57		50
78-87-5	1,2-Dichloropropane	Not Detected	57		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	57		50
541-73-1	1,3-Dichlorobenzene	Not Detected	57		50
106-46-7	1,4-Dichlorobenzene	Not Detected	57		50
78-93-3	2-Butanone (MEK)	Not Detected	280		50
591-78-6	2-Hexanone	Not Detected	280		50
91-57-6	2-Methylnaphthalene	Not Detected	280	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1100	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	280		50
107-13-1	Acrylonitrile	Not Detected	280	Z	50
71-43-2	Benzene	Not Detected	57		50
108-86-1	Bromobenzene	Not Detected	57		50
74-97-5	Bromochloromethane	Not Detected	57		50
75-27-4	Bromodichloromethane	Not Detected	57		50
75-25-2	Bromoform	Not Detected	57		50
74-83-9	Bromomethane	Not Detected	230		50
75-15-0	Carbon disulfide	Not Detected	57		50
56-23-5	Carbon tetrachloride	Not Detected	57		50
108-90-7	Chlorobenzene	Not Detected	57		50
75-00-3	Chloroethane	Not Detected	280		50
67-66-3	Chloroform	Not Detected	57		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

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

Sample Number: AC08222 SS-12 D

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	280		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	57		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	57		50
110-82-7	Cyclohexane	Not Detected	280		50
124-48-1	Dibromochloromethane	Not Detected	57		50
74-95-3	Dibromomethane	Not Detected	57		50
75-71-8	Dichlorodifluoromethane	Not Detected	280		50
60-29-7	Diethyl ether	Not Detected	230		50
108-20-3	Diisopropyl Ether	Not Detected	280		50
100-41-4	Ethylbenzene	Not Detected	57		50
637-92-3	Ethyltertiarybutylether	Not Detected	280		50
67-72-1	Hexachloroethane	Not Detected	280		50
98-82-8	Isopropylbenzene	Not Detected	57		50
108383,106423	m & p - Xylene	Not Detected	110		50
74-88-4	Methyl iodide	Not Detected	57		50
75-09-2	Methylene chloride	Not Detected	110		50
1634-04-4	Methyltertiarybutylether	Not Detected	57		50
91-20-3	Naphthalene	Not Detected	280	X 7	50
104-51-8	n-Butylbenzene	Not Detected	57		50
103-65-1	n-Propylbenzene	Not Detected	57		50
95-47-6	o-Xylene	Not Detected	57		50
99-87-6	p-Isopropyl toluene	Not Detected	57		50
135-98-8	sec-Butylbenzene	Not Detected	57		50
100-42-5	Styrene	Not Detected	57		50
98-06-6	tert-Butylbenzene	Not Detected	57		50
75-65-0	tertiary Butyl Alcohol	Not Detected	2800		50
994-05-8	tertiaryAmylmethylether	Not Detected	280		50
127-18-4	Tetrachloroethylene	Not Detected	57		50
109-99-9	Tetrahydrofuran	Not Detected	280		50
108-88-3	Toluene	Not Detected	57		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	57		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	57		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	280	Z	50
79-01-6	Trichloroethylene	Not Detected	57		50
75-69-4	Trichlorofluoromethane	Not Detected	57		50
75-01-4	Vinyl chloride	Not Detected	57	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Lansing, MI 48909
TEL: (517) 335-9800
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Sample Number: AC08222 SS-12 D

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	93.3	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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TEL: (517) 335-9800
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Sample Number: AC08223 SS-13

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	9.97			
SURROGATE	#Bromofluorobenzene#	191		9	
SURROGATE	#Dibromofluoromethane#	227		9	
SURROGATE	#Toluene-d8#	200		9	
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	65		50
71-55-6	1,1,1-Trichloroethane	Not Detected	65		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	65		50
79-00-5	1,1,2-Trichloroethane	Not Detected	65		50
75-34-3	1,1-Dichloroethane	Not Detected	65		50
75-35-4	1,1-Dichloroethylene	Not Detected	65		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	320	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	65		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	65		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	320	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	65		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	320		50
106-93-4	1,2-Dibromoethane	Not Detected	65	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	65		50
107-06-2	1,2-Dichloroethane	Not Detected	65		50
78-87-5	1,2-Dichloropropane	Not Detected	65		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	65		50
541-73-1	1,3-Dichlorobenzene	Not Detected	65		50
106-46-7	1,4-Dichlorobenzene	Not Detected	65		50
78-93-3	2-Butanone (MEK)	Not Detected	320		50
591-78-6	2-Hexanone	Not Detected	320		50
91-57-6	2-Methylnaphthalene	Not Detected	320	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1300	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	320		50
107-13-1	Acrylonitrile	Not Detected	320	Z	50
71-43-2	Benzene	Not Detected	65		50
108-86-1	Bromobenzene	Not Detected	65		50
74-97-5	Bromochloromethane	Not Detected	65		50
75-27-4	Bromodichloromethane	Not Detected	65		50
75-25-2	Bromoform	Not Detected	65		50
74-83-9	Bromomethane	Not Detected	260		50
75-15-0	Carbon disulfide	Not Detected	65		50
56-23-5	Carbon tetrachloride	Not Detected	65		50
108-90-7	Chlorobenzene	Not Detected	65		50
75-00-3	Chloroethane	Not Detected	320		50
67-66-3	Chloroform	Not Detected	65		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08223 SS-13

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	320		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	65		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	65		50
110-82-7	Cyclohexane	Not Detected	320		50
124-48-1	Dibromochloromethane	Not Detected	65		50
74-95-3	Dibromomethane	Not Detected	65		50
75-71-8	Dichlorodifluoromethane	Not Detected	320		50
60-29-7	Diethyl ether	Not Detected	260		50
108-20-3	Diisopropyl Ether	Not Detected	320		50
100-41-4	Ethylbenzene	Not Detected	65		50
637-92-3	Ethyltertiarybutylether	Not Detected	320		50
67-72-1	Hexachloroethane	Not Detected	320		50
98-82-8	Isopropylbenzene	Not Detected	65		50
108383,106423	m & p - Xylene	Not Detected	130		50
74-88-4	Methyl iodide	Not Detected	65		50
75-09-2	Methylene chloride	Not Detected	130		50
1634-04-4	Methyltertiarybutylether	Not Detected	65		50
91-20-3	Naphthalene	Not Detected	320	X 7	50
104-51-8	n-Butylbenzene	Not Detected	65		50
103-65-1	n-Propylbenzene	Not Detected	65		50
95-47-6	o-Xylene	Not Detected	65		50
99-87-6	p-Isopropyl toluene	Not Detected	65		50
135-98-8	sec-Butylbenzene	Not Detected	65		50
100-42-5	Styrene	Not Detected	65		50
98-06-6	tert-Butylbenzene	Not Detected	65		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3200		50
994-05-8	tertiaryAmylmethylether	Not Detected	320		50
127-18-4	Tetrachloroethylene	Not Detected	65		50
109-99-9	Tetrahydrofuran	Not Detected	320		50
108-88-3	Toluene	90	65	2	50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	65		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	65		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	320	Z	50
79-01-6	Trichloroethylene	Not Detected	65		50
75-69-4	Trichlorofluoromethane	Not Detected	65		50
75-01-4	Vinyl chloride	Not Detected	65	Z	50

Methanol spilled out of vial during extraction, results and reporting limits are estimated.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
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Sample Number: **AC08223** **SS-13**

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	87.1	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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P.O. Box 30270
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TEL: (517) 335-9800
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Sample Number: AC08224 SS-14

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	10.33			
SURROGATE	#Bromofluorobenzene#	151			
SURROGATE	#Dibromofluoromethane#	176			
SURROGATE	#Toluene-d8#	160			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	88		50
71-55-6	1,1,1-Trichloroethane	Not Detected	88		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	88		50
79-00-5	1,1,2-Trichloroethane	Not Detected	88		50
75-34-3	1,1-Dichloroethane	Not Detected	88		50
75-35-4	1,1-Dichloroethylene	Not Detected	88		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	440	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	88		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	88		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	440	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	88		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	440		50
106-93-4	1,2-Dibromoethane	Not Detected	88	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	88		50
107-06-2	1,2-Dichloroethane	Not Detected	88		50
78-87-5	1,2-Dichloropropane	Not Detected	88		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	88		50
541-73-1	1,3-Dichlorobenzene	Not Detected	88		50
106-46-7	1,4-Dichlorobenzene	Not Detected	88		50
78-93-3	2-Butanone (MEK)	Not Detected	440		50
591-78-6	2-Hexanone	Not Detected	440		50
91-57-6	2-Methylnaphthalene	Not Detected	440	X	50
67-64-1	2-Propanone (acetone)	Not Detected	1800	5 7	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	440		50
107-13-1	Acrylonitrile	Not Detected	440	Z	50
71-43-2	Benzene	Not Detected	88		50
108-86-1	Bromobenzene	Not Detected	88		50
74-97-5	Bromochloromethane	Not Detected	88		50
75-27-4	Bromodichloromethane	Not Detected	88		50
75-25-2	Bromoform	Not Detected	88		50
74-83-9	Bromomethane	Not Detected	350		50
75-15-0	Carbon disulfide	Not Detected	88		50
56-23-5	Carbon tetrachloride	Not Detected	88		50
108-90-7	Chlorobenzene	Not Detected	88		50
75-00-3	Chloroethane	Not Detected	440		50
67-66-3	Chloroform	Not Detected	88		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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Sample Number: AC08224 SS-14

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/17/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	440		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	88		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	88		50
110-82-7	Cyclohexane	Not Detected	440		50
124-48-1	Dibromochloromethane	Not Detected	88		50
74-95-3	Dibromomethane	Not Detected	88		50
75-71-8	Dichlorodifluoromethane	Not Detected	440		50
60-29-7	Diethyl ether	Not Detected	350		50
108-20-3	Diisopropyl Ether	Not Detected	440		50
100-41-4	Ethylbenzene	Not Detected	88		50
637-92-3	Ethyltertiarybutylether	Not Detected	440		50
67-72-1	Hexachloroethane	Not Detected	440		50
98-82-8	Isopropylbenzene	Not Detected	88		50
108383,106423	m & p - Xylene	340	180		50
74-88-4	Methyl iodide	Not Detected	88		50
75-09-2	Methylene chloride	Not Detected	180		50
1634-04-4	Methyltertiarybutylether	Not Detected	88		50
91-20-3	Naphthalene	Not Detected	440	X 7	50
104-51-8	n-Butylbenzene	Not Detected	88		50
103-65-1	n-Propylbenzene	Not Detected	88		50
95-47-6	o-Xylene	160	88		50
99-87-6	p-Isopropyl toluene	Not Detected	88		50
135-98-8	sec-Butylbenzene	Not Detected	88		50
100-42-5	Styrene	Not Detected	88		50
98-06-6	tert-Butylbenzene	Not Detected	88		50
75-65-0	tertiary Butyl Alcohol	Not Detected	4400		50
994-05-8	tertiaryAmylmethylether	Not Detected	440		50
127-18-4	Tetrachloroethylene	Not Detected	88		50
109-99-9	Tetrahydrofuran	Not Detected	440		50
108-88-3	Toluene	430	88		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	88		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	88		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	440	Z	50
79-01-6	Trichloroethylene	Not Detected	88		50
75-69-4	Trichlorofluoromethane	Not Detected	88		50
75-01-4	Vinyl chloride	Not Detected	88	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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Sample Number: AC08224 SS-14

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	% Total Solids	71.4	%	0.1		11/19/2012	2540B SM	JW

CAS# : Chemical Abstract Service Registry Number

RL : Reporting Limit

ND : Not Detected

ug / L : microgram / liter (ppb)

mg / L : milligram / liter (ppm)

ug / Kg : microgram / kilogram (ppb)

mg / Kg : milligram / kilogram (ppm)

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TEL: (517) 335-9800
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Sample Number: AC08225 SB-01

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
	##Weight of sample(grams)	10.81			
SURROGATE	#Bromofluorobenzene#	120			
SURROGATE	#Dibromofluoromethane#	141			
SURROGATE	#Toluene-d8#	129			
630-20-6	1,1,1,2-Tetrachloroethane	Not Detected	74		50
71-55-6	1,1,1-Trichloroethane	Not Detected	74		50
79-34-5	1,1,2,2-Tetrachloroethane	Not Detected	74		50
79-00-5	1,1,2-Trichloroethane	Not Detected	74		50
75-34-3	1,1-Dichloroethane	Not Detected	74		50
75-35-4	1,1-Dichloroethylene	Not Detected	74		50
87-61-6	1,2,3-Trichlorobenzene	Not Detected	370	7	50
96-18-4	1,2,3-Trichloropropane	Not Detected	74		50
526-73-8	1,2,3-Trimethylbenzene	Not Detected	74		50
120-82-1	1,2,4-Trichlorobenzene	Not Detected	370	7	50
95-63-6	1,2,4-Trimethylbenzene	Not Detected	74		50
96-12-8	1,2-Dibromo-3-chloropropane	Not Detected	370		50
106-93-4	1,2-Dibromoethane	Not Detected	74	Z	50
95-50-1	1,2-Dichlorobenzene	Not Detected	74		50
107-06-2	1,2-Dichloroethane	Not Detected	74		50
78-87-5	1,2-Dichloropropane	Not Detected	74		50
108-67-8	1,3,5-Trimethylbenzene	Not Detected	74		50
541-73-1	1,3-Dichlorobenzene	Not Detected	74		50
106-46-7	1,4-Dichlorobenzene	Not Detected	74		50
78-93-3	2-Butanone (MEK)	Not Detected	370		50
591-78-6	2-Hexanone	Not Detected	370		50
91-57-6	2-Methylnaphthalene	Not Detected	370	X 7	50
67-64-1	2-Propanone (acetone)	Not Detected	1500	5	50
108-10-1	4-Methyl-2-pentanone (MIBK)	Not Detected	370		50
107-13-1	Acrylonitrile	Not Detected	370	Z	50
71-43-2	Benzene	Not Detected	74		50
108-86-1	Bromobenzene	Not Detected	74		50
74-97-5	Bromochloromethane	Not Detected	74		50
75-27-4	Bromodichloromethane	Not Detected	74		50
75-25-2	Bromoform	Not Detected	74		50
74-83-9	Bromomethane	Not Detected	290		50
75-15-0	Carbon disulfide	Not Detected	74		50
56-23-5	Carbon tetrachloride	Not Detected	74		50
108-90-7	Chlorobenzene	Not Detected	74		50
75-00-3	Chloroethane	Not Detected	370		50
67-66-3	Chloroform	Not Detected	74		50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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Sample Number: AC08225 SB-01

Volatile Compounds

Analytical Method: 8260
Extraction Method: 5035

Date Tested: 11/16/2012
Extraction Date: 11/15/2012

Analyst: SJR
Qualifier:

CAS #	Compound	Result ug/Kg dry	RL	Qualifier	Dilution Factor
74-87-3	Chloromethane	Not Detected	370		50
156-59-2	cis-1,2-Dichloroethylene	Not Detected	74		50
10061-01-5	cis-1,3-Dichloropropylene	Not Detected	74		50
110-82-7	Cyclohexane	Not Detected	370		50
124-48-1	Dibromochloromethane	Not Detected	74		50
74-95-3	Dibromomethane	Not Detected	74		50
75-71-8	Dichlorodifluoromethane	Not Detected	370		50
60-29-7	Diethyl ether	Not Detected	290		50
108-20-3	Diisopropyl Ether	Not Detected	370		50
100-41-4	Ethylbenzene	Not Detected	74		50
637-92-3	Ethyltertiarybutylether	Not Detected	370		50
67-72-1	Hexachloroethane	Not Detected	370		50
98-82-8	Isopropylbenzene	Not Detected	74		50
108383,106423	m & p - Xylene	Not Detected	150		50
74-88-4	Methyl iodide	Not Detected	74		50
75-09-2	Methylene chloride	Not Detected	150		50
1634-04-4	Methyltertiarybutylether	Not Detected	74		50
91-20-3	Naphthalene	Not Detected	370	X 5 7	50
104-51-8	n-Butylbenzene	Not Detected	74		50
103-65-1	n-Propylbenzene	Not Detected	74		50
95-47-6	o-Xylene	Not Detected	74		50
99-87-6	p-Isopropyl toluene	Not Detected	74		50
135-98-8	sec-Butylbenzene	Not Detected	74		50
100-42-5	Styrene	Not Detected	74		50
98-06-6	tert-Butylbenzene	Not Detected	74		50
75-65-0	tertiary Butyl Alcohol	Not Detected	3700		50
994-05-8	tertiaryAmylmethylether	Not Detected	370		50
127-18-4	Tetrachloroethylene	Not Detected	74		50
109-99-9	Tetrahydrofuran	Not Detected	370		50
108-88-3	Toluene	Not Detected	74		50
156-60-5	trans-1,2-Dichloroethylene	Not Detected	74		50
10061-02-6	trans-1,3-Dichloropropylene	Not Detected	74		50
110-57-6	trans-1,4-Dichloro-2-butene	Not Detected	370	Z	50
79-01-6	Trichloroethylene	Not Detected	74		50
75-69-4	Trichlorofluoromethane	Not Detected	74		50
75-01-4	Vinyl chloride	Not Detected	74	Z	50

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Kirby Shane
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian