

Technical Memorandum

To: Alex Smith, Enbridge Energy
From: Ryan Erickson and Noelle Scelina
Subject: Superior Terminal Tank 5 Valve Release
Date: February 26, 2015
WDNR SERTS #: 20150113N016-1
Barr Project #: 49161305.00

This memorandum summarizes the field screening, analytical sampling, and waste management activities provided by Barr Engineering (Barr) at the request of Enbridge Energy (Enbridge) in response to a crude oil release from a pipeline valve located within the Tank 5 containment basin at the Enbridge Superior Terminal in Superior, Wisconsin in January of 2015 (Figure 1).

Background and Response Activities

On January 13, 2015 at 1:20 PM, Enbridge discovered a crude oil release at valve 221-V314, which is located in the eastern corner of the Tank 5 containment basin (Figure 2; Photos 1 and 2). Approximately 84 gallons of crude oil were released from a broken, buried small diameter pipe. Enbridge Pipe Line Maintenance (PLM) personnel immediately responded to the release by cutting off oil flow to the valves and initiated repair and remediation activities. Remedial activities included: recovering product with a vacuum truck; spreading oil absorbent granules across the ground surface in the release area; and, excavating soil containing crude oil with a hydrovacuum (hydrovac) truck, excavators, and hand tools. Shortly after the release, Terminal personnel notified Enbridge Environment and the Wisconsin Department of Natural Resources (WDNR). The WDNR assigned Substance Release Notification Report (SERTS) number 20150113NO16-1 to the release (Attachment A).

Enbridge requested that Barr assist with the following activities:

- assess and document the environmental site conditions during the response actions and after the completion of remedial activities,
- assist with the coordination of the off-site management of contaminated soil,
- prepare a memorandum summarizing the release response activities and the site environmental conditions upon the completion of cleanup activities.

Field Activities

Barr was onsite on January 13, 14, 16, 20, 21, 22, 23 and 26, 2015 to field screen soil, collect analytical samples, and assist with the contaminated soil management.

Soil samples were collected from the excavation extents and field screened by Barr for the presence of organic vapors using an 11.7eV photoionization detector (PID). Samples were also physically inspected for the presence of other potential indicators of crude oil impacts such as odor, discoloration and sheen. PID readings and physical observations were documented on screening logs (Attachment B).

Soil was classified as contaminated if PID headspace readings were greater than 10 parts per million (ppm), or other physical observations of oil impacts were observed, as outlined in the pending WDNR Enbridge Superior Terminal *Site Investigation and Response Action Plan (SI/RAP)* (2014). If contaminated soil remains in place following remediation activities, soil samples are to be submitted to a laboratory for analyses of petroleum volatile organic compounds (PVOC) and naphthalene to document contaminant concentrations.

Barr collected two analytical samples (*TK5-B-1 and TK5-B-2*) from the excavation base following completion of remedial excavation activities to document the condition of the soil adjacent to the release point. The samples were submitted to Legend Technical Services in St. Paul, Minnesota and analyzed for PVOC and naphthalene. Analyte concentrations were compared to the WDNR Industrial Direct Contact Residual Concentration Limits (RCLs), WDNR Groundwater RCLs and Cumulative Hazard Index criteria.

Excavated soil with field screening evidence of contamination was transported to the Terminal Soil Management Area (SMA) contaminated-soil staging area where it was stockpiled until off-site disposal could be arranged. Two samples of the stockpiled soil were collected and submitted to Legend for characterization as described in the *Waste Disposal Coordination and Documentation* section below.

Results

Barr was onsite during the release response and remedial excavation activities in January of 2015 (Photos 1 through 7). Barr's analytical sampling locations are shown in Figure 2 and field screening data is provided in Attachment B. Laboratory results are summarized in Table 1 and laboratory reports are provided in Attachment C.

Barr observed that soil encountered in the remedial excavations consisted of clay and that the ground was frozen to a depth of approximately 3 feet bgs. Crude oil released from the valve spread across the ground surface and covered an approximately 40-foot by 30-foot area (Photo 1). Initial remedial actions consisted of removal of the top 0.5 feet of soil with a surficial ground scrape. PID headspace readings on soil samples collected from the final surficial scrape on January 16, 2015 were below 10 ppm. A deeper valve repair and maintenance dig was also performed around the valve infrastructure to approximately 10 feet below ground surface (bgs) (Photo 2). Sidewall soil samples collected from the maintenance dig identified soil with headspace readings between 10 and 300 ppm, yellow discoloration, and a petroleum odor at depths of 0.5 to 3 feet bgs (Photos 4 and 5). Additional remedial excavation of the hydrocarbon

contaminated soil found between 0.5 and 3 feet bgs began near the valve on January 16, 2015 and continued for multiple days, guided by field screening results.

The final extents of the subsurface remedial excavation were approximately 36 feet long by 36 feet wide by 5 feet deep (Photos 3 and 6). A total of approximately 285 tons of contaminated soil was removed. PID headspace readings from the final excavation sidewalls and bottom were below 10 ppm and no evidence of residual hydrocarbon contamination was observed (Photos 6 and 7). Barr collected analytical samples *TK5-B-1* (4 feet bgs) and *TK5-B-2* (4 feet bgs) from the base of the excavation on either side of the release source location to document conditions following removal.

Analyte concentrations in *TK5-B-1* were below the WDNR Industrial Contact RCL's and the WDNR Groundwater RCL's and passed the Cumulative Hazard Index criteria. Analyte concentrations in sample *TK5-B-2* were below the WDNR Industrial Contact RCL's and passed the Cumulative Hazard Index criteria, but exceeded WDNR Groundwater RCL's for benzene (Table 1).

TABLE 1: Analytical Soil Sample Results (all analyte concentrations in mg/kg)

Sample ID	Sample Date	Sample Depth (feet)	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Ethyl benzene	Toluene	Xylenes	Naphthalene
Groundwater RCLs			1.3793	1.3793	0.0051	0.785	0.5536	1.97	0.3294
Industrial DC RCLs			219	182	7.41	37	818	258	26
<i>TK5-B-1</i>	01/26/15	4	<0.034	<0.034	<0.0039	0.026	<0.0055	<0.019	<0.68
<i>TK5-B-2</i>	01/26/15	4	0.028	<0.034	0.012	0.030	0.031	0.064	<0.70

BOLD = Analyte detections exceeding WDNR Groundwater RCLs.

The excavation was backfilled with clean fill upon completion of the remedial excavation activity.

Discussion

No residual free-product or petroleum impacted soil was observed at the completion of the remedial excavation activities. PVOC and naphthalene concentrations in samples collected from the excavation bottom near the release location were below WDNR Industrial Direct Contact RCL's and passed the Cumulative Hazard Index criteria. Analyte concentrations in sample *TK5-B-1* were below WDNR Groundwater RCL's. The benzene concentration in sample *TK5-B-2* did exceed WDNR Groundwater RCL's; however, a facility-wide groundwater monitoring program is conducted at the Superior Terminal as part of the hydrogeologic performance standard established in the *WDNR SI/RAP* (2014), therefore, project specific monitoring is not required for this site. No potential vapor receptors were identified as defined in

the *WDNR SI/RAP* (2014). No potential vapor receptors were identified as defined in the *WDNR SI/RAP* (2014).

Waste Disposal Coordination and Documentation

Barr collected two analytical waste characterization soil samples (*TK5-Stockpile-1*, *TK5-Stockpile 2*) from the crude oil impacted stockpile (Photo 8) for laboratory analysis at Legend Technical Services. The samples were analyzed for diesel range organics (DRO) and benzene, toluene, ethyl benzene, and xylenes (BTEX). A waste profile application was submitted to Shamrock Landfill located in Cloquet, Minnesota. Soil was accepted on January 30, 2015 under waste profile #CL15-0004. A total of 289.64 tons of crude oil impacted soil (including approximately 5 tons of soil from Booster Pump 62 remediation) was hauled to the landfill in February of 2015. The waste profile documents, the waste characterization laboratory report, and the landfill summary report are included in Attachment D.

Conclusions

Crude oil contaminated soil excavated from the Tank 5 valve release site was managed off-site at an approved landfill. No soil contamination was identified in the final excavation extents through field screening. Samples collected from the final excavation extents near the release point had PVOC and naphthalene concentrations less than WDNR Industrial Direct Contact RCLs and passed the WDNR Cumulative Hazard Index criteria. One sample had benzene concentration exceeding WDNR Groundwater Criteria; however, groundwater monitoring at the Superior Terminal will be conducted on a facility-wide basis as part of the hydrogeologic performance standard established in the *WDNR SI/RAP* and project specific monitoring is not required for this site.

Barr believes that no further response actions will be required by the WDNR at this site and that site closure can be obtained.

Attachments:

- Photos Site Photos 1 through 8
- Figure 1 Site Location Map
- Figure 2 Site Layout Map
- Attachment A Release Reporting Communications
- Attachment B Enbridge Site Investigation Field Sampling and Screening Logs
- Attachment C Legend Technical Services Laboratory Reports for Excavation Soil Samples
- Attachment D Waste Disposal Documentation

Site Photos



Photo 1



Photo 2

Photo 1: Release location with remedial response personnel and equipment. Photo taken facing west on January 13, 2015.

Photo 2: Valve release source (valve 221-V-314 on left). Photo taken facing northeast on January 14, 2015



Photo 3



Photo 4

Photo 3: Remedial excavation activity. Photo taken facing southeast on January 22, 2015.

Photo 4: Crude oil impacted soil with a yellow discoloration in a sidewall of the remedial excavation. Photo taken facing southwest on January 22, 2015.



Photo 5

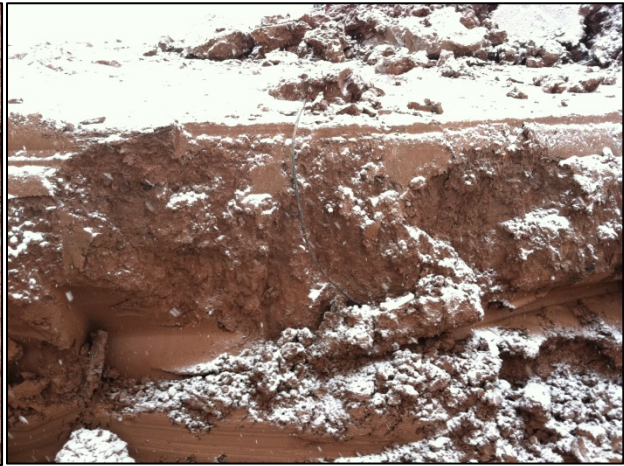


Photo 6

Photo 5: Product leaking from a sidewall of the remedial excavation at a depth 2 feet bgs. Photo taken facing southeast on January 23, 2015.

Photo 6: Soil in the west corner of the final remedial excavation. Photo taken facing west on January 26, 2015.



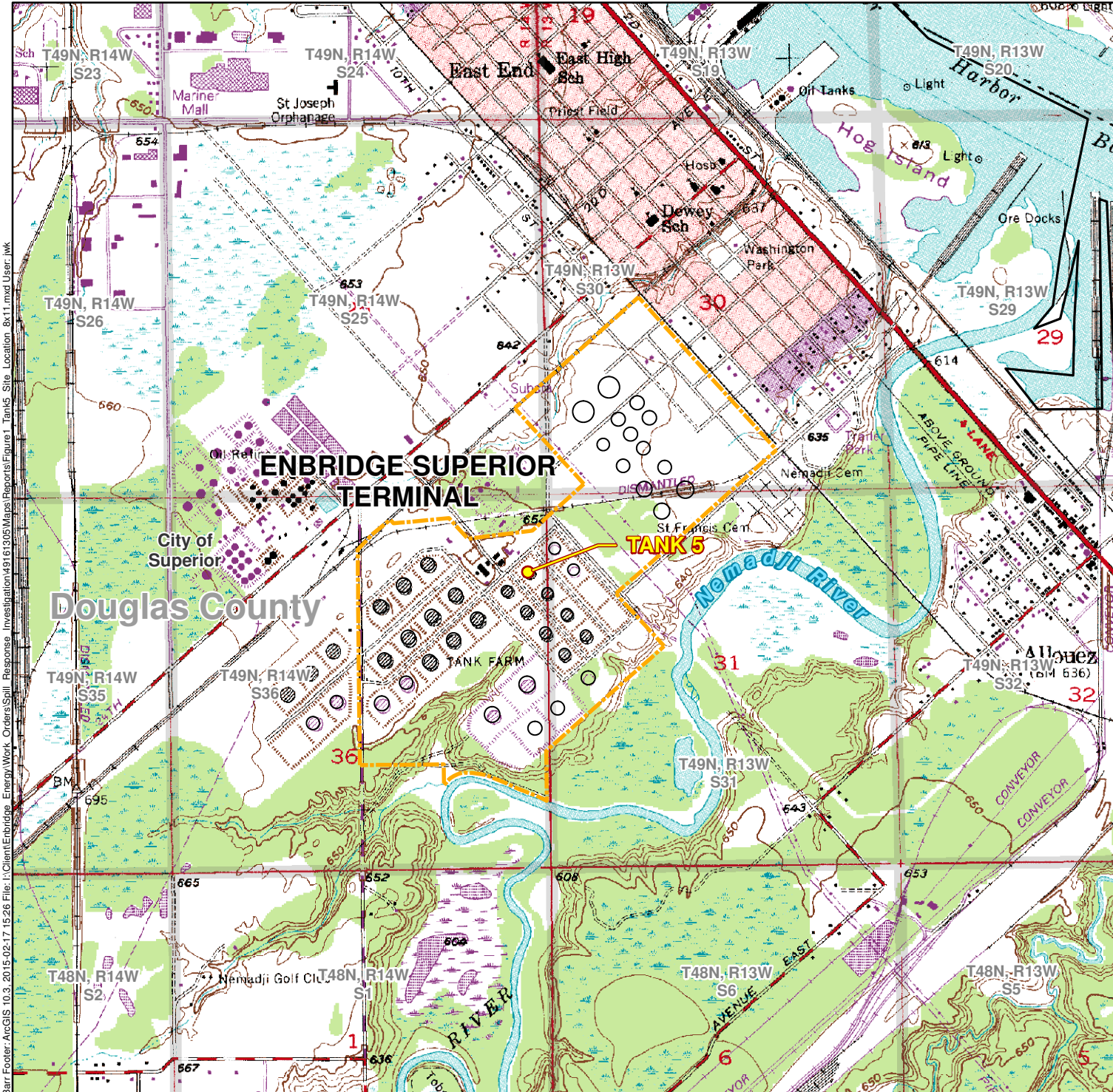
Photo 7



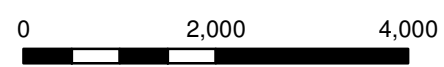
Photo 8

Photo 7: Final extents of the remedial excavation. Photo taken on facing west on January 26, 2015

Photo 8: Tank 5 crude oil release contaminated soil stockpiles (left and right building bays) in the Superior Terminal SMA building on January 26, 2015.



- Tank 5
- Terminal Property Boundary



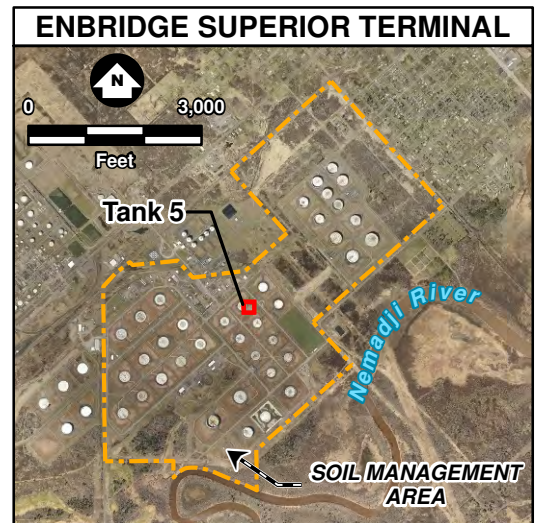
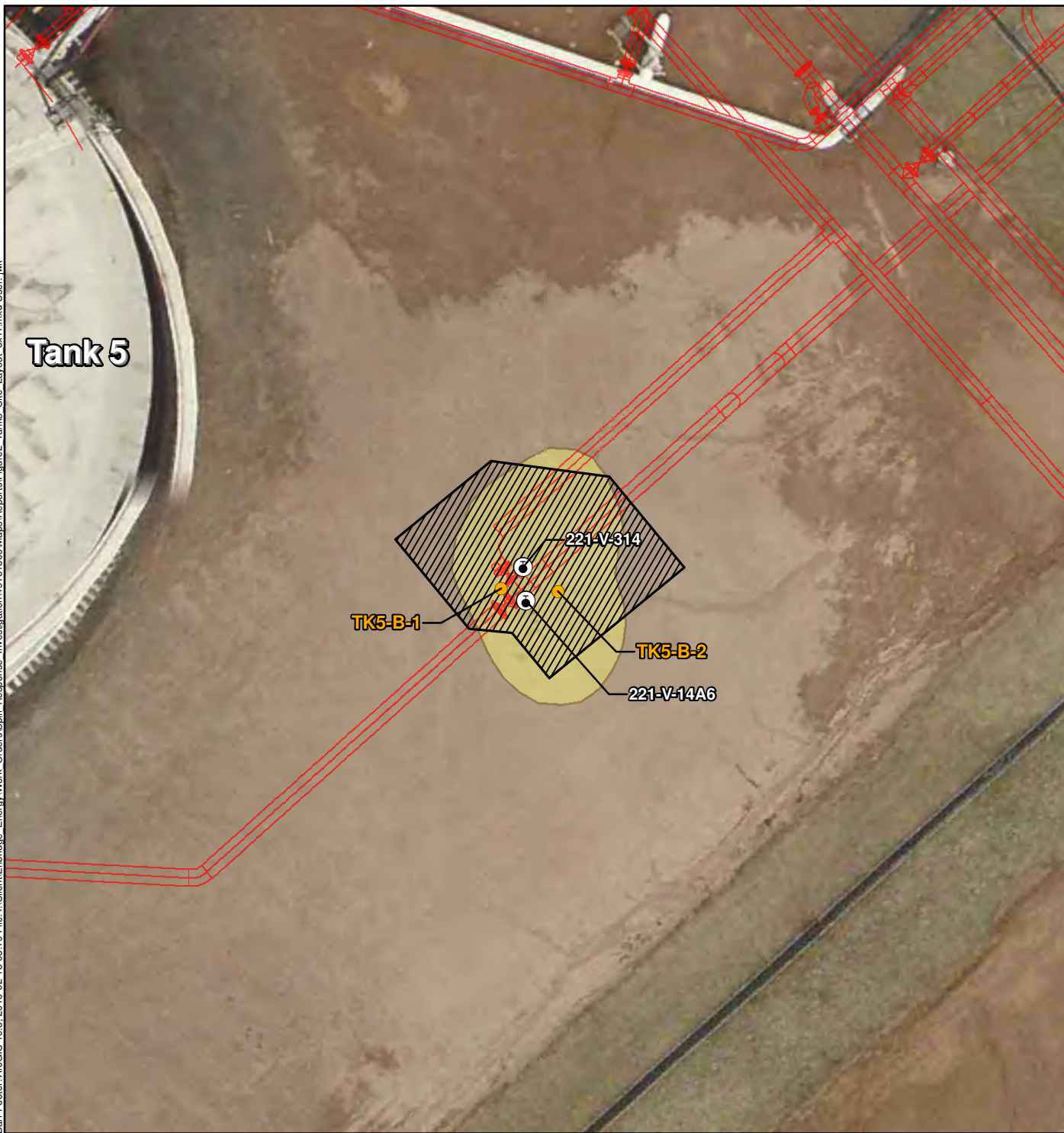
Feet
1 Inch = 2,000 Feet

Figure 1

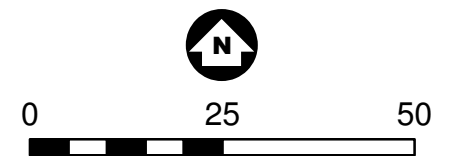
SITE LOCATION
TANK 5 VALVE RESPONSE
SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin



Barr Footer: ArcGIS 10.3, 2015-02-17 15:26 File: I:\Client\Enbridge Energy\Work Orders\Spill Response Investigation\49161305\Maps\Reports\Figure1_Tank5_Site_Location_8x11.mxd User: lmk



- Valves
- Analytical Sample Location
- Subsurface Excavation Extent
- Release Extent & Remedial Scrape Excavation
- Pipeline Infrastructure
- Terminal Property Boundary



Feet
 1 Inch = 25 Feet
 Douglas County Imagery Circa May, 2013

Figure 2

SITE LAYOUT
TANK 5 VALVE RESPONSE
SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin



Attachment A:
Release Reporting Communications

Ryan E. Erickson

From: Alex Smith <alex.smith@enbridge.com>
Sent: Tuesday, January 13, 2015 3:43 PM
To: Ryan E. Erickson
Subject: Fwd: WI SPILL #8879 SERTS ID 20150113NO16-1 - FUEL OIL

Fyi regarding the release today.

Alex Smith

Begin forwarded message:

From: Bill Palmer <Bill.Palmer@enbridge.com>
Date: January 13, 2015 at 3:17:16 PM CST
To: Jerry Christoff <Jerry.Christoff@enbridge.com>, Trent Wetmore <Trent.Wetmore@enbridge.com>, Theresa Picton <Theresa.Picton@enbridge.com>, David Stafford <David.Stafford@enbridge.com>, Carl Larsen <Carl.Larsen@enbridge.com>, Dean Will <Dean.Will@enbridge.com>, Joseph Seacotte <Joe.Seacotte@enbridge.com>, Tom Peterson <tom.peterson@enbridge.com>, Tim Pollock <Tim.Pollock@enbridge.com>, Alex Smith <alex.smith@enbridge.com>, Brad Shamla <brad.shamla@enbridge.com>
Cc: Tony Hommerding <Tony.Hommerding@enbridge.com>, John Pechin <John.Pechin@enbridge.com>, Blake Olson <Blake.Olson@enbridge.com>, Steven Dahnke <Steven.Dahnke@enbridge.com>
Subject: Fwd: WI SPILL #8879 SERTS ID 20150113NO16-1 - FUEL OIL

Begin forwarded message:

From: <stephanie.sailing@wisconsin.gov>
Date: January 13, 2015 at 2:45:05 PM CST
To: <bill.palmer@enbridge.com>
Subject: WI SPILL #8879 SERTS ID 20150113NO16-1 - FUEL OIL

Substance Release Notification from Wisconsin DNR Spill Electronic Reporting and Tracking System (SERTS):

SERTS Spill ID:
20150113NO16-1

Date/Time Reported:
01/13/2015 02:36

Person Reporting (PR):
BILL PALMER
TERMINAL SUPERVISOR
ENBRIDGE

Date/Time Occurred:
01/13/2015 01:20

Location:
NO REGION
DOUGLAS COUNTY
CITY OF SUPERIOR
WITHIN THE CONTAINMENT OF TERMINAL
2800 E 21ST STREET
ON SITE

Responsible Party (RP):
ENBRIDGE

RP Contact:
JERRY CHRISTOFF
AREA MANAGER
(218) 391-6710

Substance:
FUEL OIL (Petroleum)
Released Amt: 84 Gal
Recovered Amt: UNKNOWN

Spill Cause:
NOT KNOWN AT THIS TIME WHAT THE REASON IS.

NO EVACUATION

NO INJURIES

Weather:

Contractor Hired:
NONE ENTERED

Cleanup Method:
CONTAINMENT PROCESS AT THIS TIME.

Additional Comments:
NONE ENTERED

Notified JOHN SAGER at 02:42 by Phone

Form Completed by:
Stephanie
(608) 264-9254
stephanie.sailing@wisconsin.gov

Notification sent to:
andrew.savagian@wisconsin.gov
anita.smith@wi.gov
beth.olson@wisconsin.gov
danielle.wincentsen@wisconsin.gov
dmawemdutyofficer@wisconsin.gov
dnrledo@wisconsin.gov
dnrlehotline@wisconsin.gov
frank.docimo@wisconsin.gov
halbur.kathy@epa.gov
jason.lowery@wisconsin.gov
john.sager@wisconsin.gov
kkesler@douglascountywi.org
laura.kwilinski@dot.gov
philip.richard@wisconsin.gov
randy.books@wi.gov
robert.clatterbuck@dot.gov
stephanie.krueger@dhs.wisconsin.gov

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Attachment B:

Site Investigation Field Sampling and Screening Logs

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Enbridge Terminal Tank 5 Superior WI

Equipment used: Photo-ionization detector with 11.7 eV lamp

Background Headspace: 0.0 ppm

Date: 1-16-15

Sample Nomenclature (Location - sample type - #): _____

Sampler: NR52

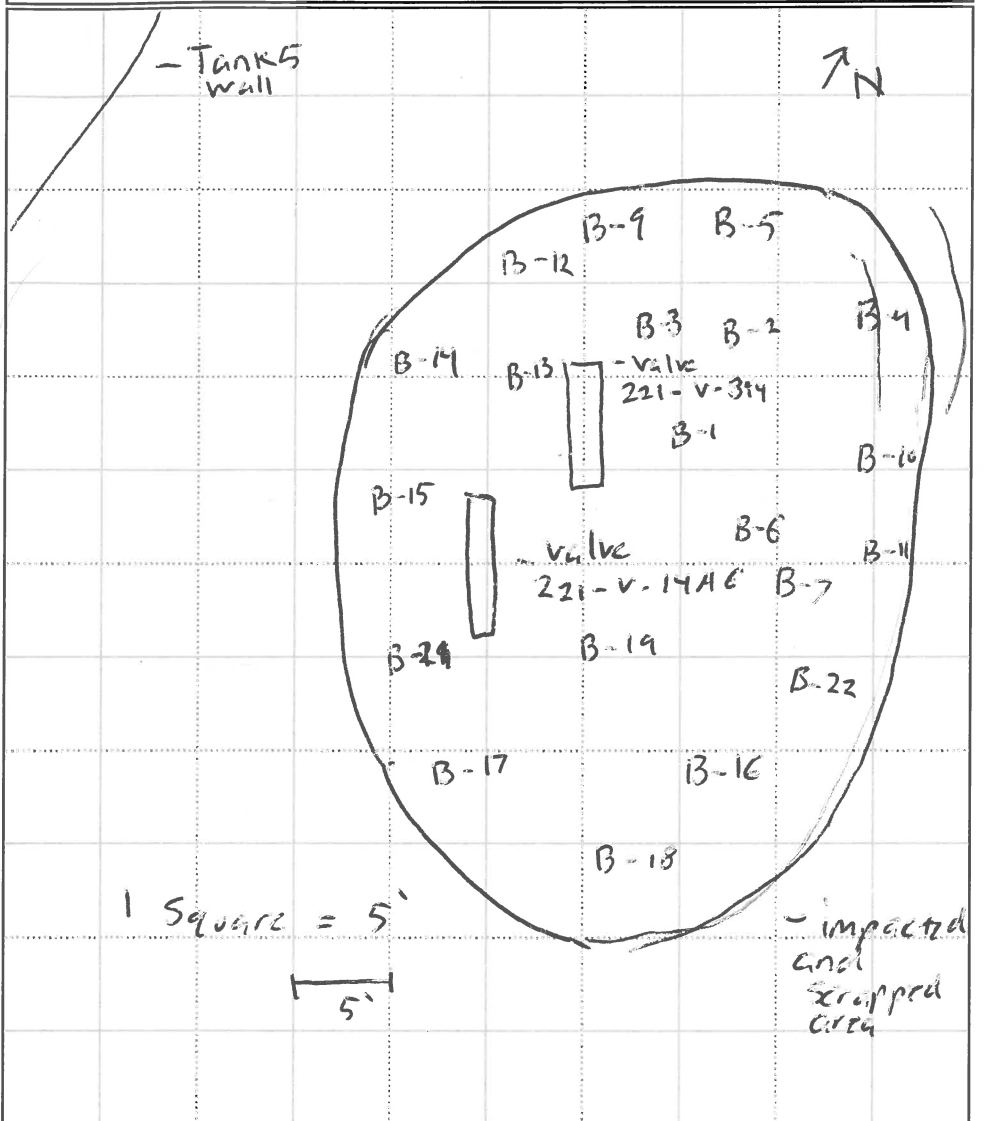
Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

Calibration Time: 0740



Sample ID	Depth (ft) (in)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
B-1	4-6"	10:10	CL	Reddish brown	None/None	0.6
B-2		10:25				5.0
B-3		1				4.7
B-4		10:50				0.1
B-5		1				0.3
B-6		11:15				3.0
B-7		1				0.8
B-8		11:35				0.2
B-9						0.3
B-10						1.3
B-11						0.8
B-12						0.3
B-13		11:45				6.6
B-14		1				1.8
B-15		11:55				0.8
B-16		1				1.3
B-17		12:55				0.7
B-18						0.9
B-14						1.4
B-20		13:30				0.0
B-21						0.0
B-22						0.0

SITE SKETCH: north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features... 1 inch/grid = 10 FEET



SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Enbridge Terminal Superior WI Tank 5

Equipment used: Photo-ionization detector with 11.7 eV lamp

Background Headspace: 0.5 ppm

Date: 1-14-15

Sample Nomenclature (Location - sample type - #): _____

Sampler: NRS2

Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

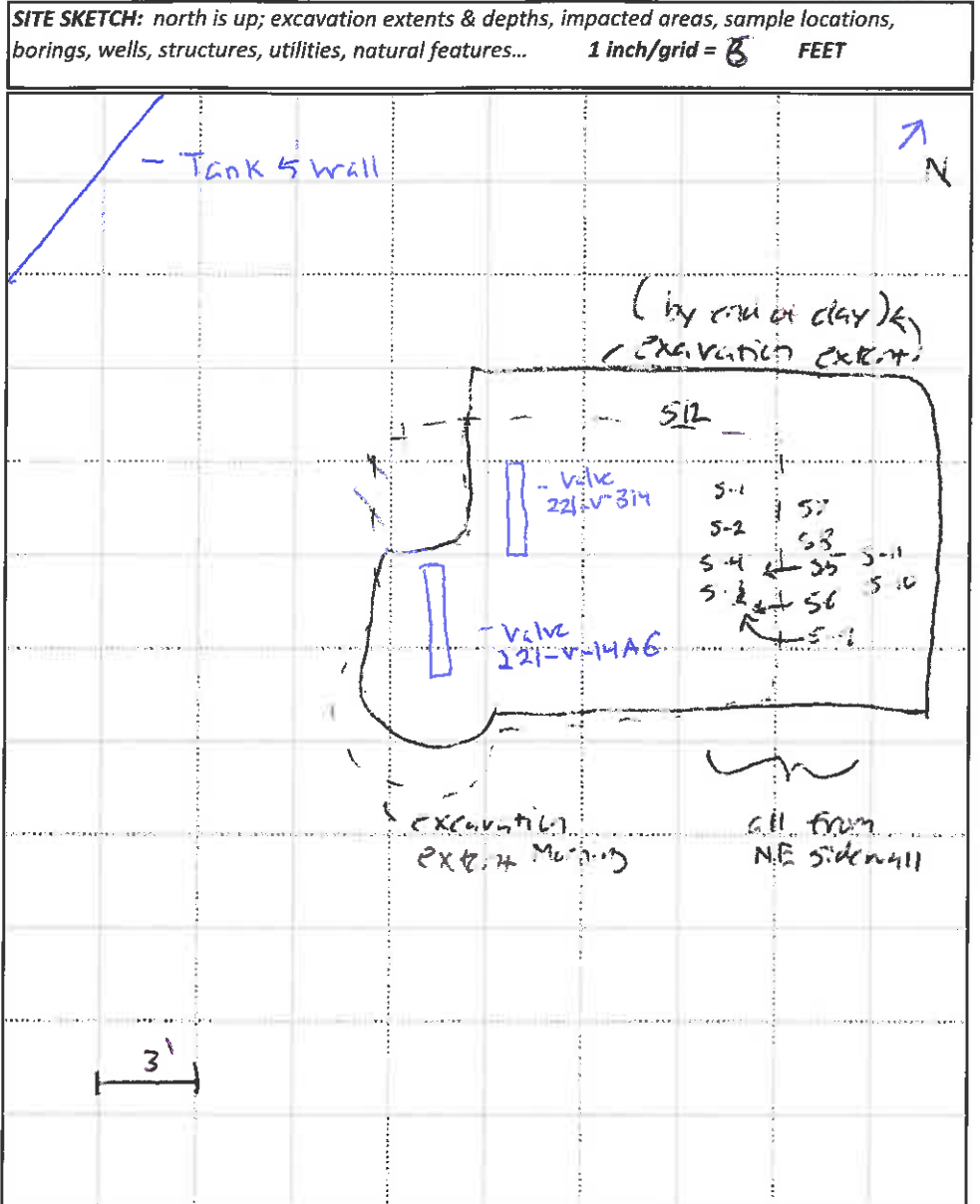
Calibration Time: 080530



Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275
S-1	2.5'	1035	CL	Reddish Brown	no odor	3.2
S-2	3'	1	CL	Brown	1	4.2
S-3	1'	1050	CL	+ Yellow (S-10) Reddish Brown	no odor	1000+
S-4	2'	1055	CL	Brown	no odor	3.5
S-5	1'	11:20	CL	Black (inches)	Strong odor	500+
S-6	.4"	11:30	CL	1	moderate odor	37.1
S-7	1'	1300	CL	Reddish Brown	no odor	70+
S-8	2'	1300	CL	1	Slight odor	90+
S-9	1.35'	1330	CL	1	no odor	100+
S-10	3"	1345	CL	(Black + Yellow) discoloration	odor	56
S-11	2'	1	CL	1	1	100+
S-12	1'	1300	CL	1	Strong odor	500+
S-13	3'	1420	CL	Reddish Brown	no odor	3.5
S-14	1.5'	1435	CL	Black + Yellow	odor	800+
S-15	4'	1	CL	1	Strong odor	21.1

Frozen

Frozen



SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Tank 5 basin Embury Terminal Superior WI

Equipment used: Photo-ionization detector with 11.7 eV lamp

Background Headspace: 0.3 ppm

Date: 1-21-15

Sample Nomenclature (Location - sample type - #): _____

Sampler: NRS2

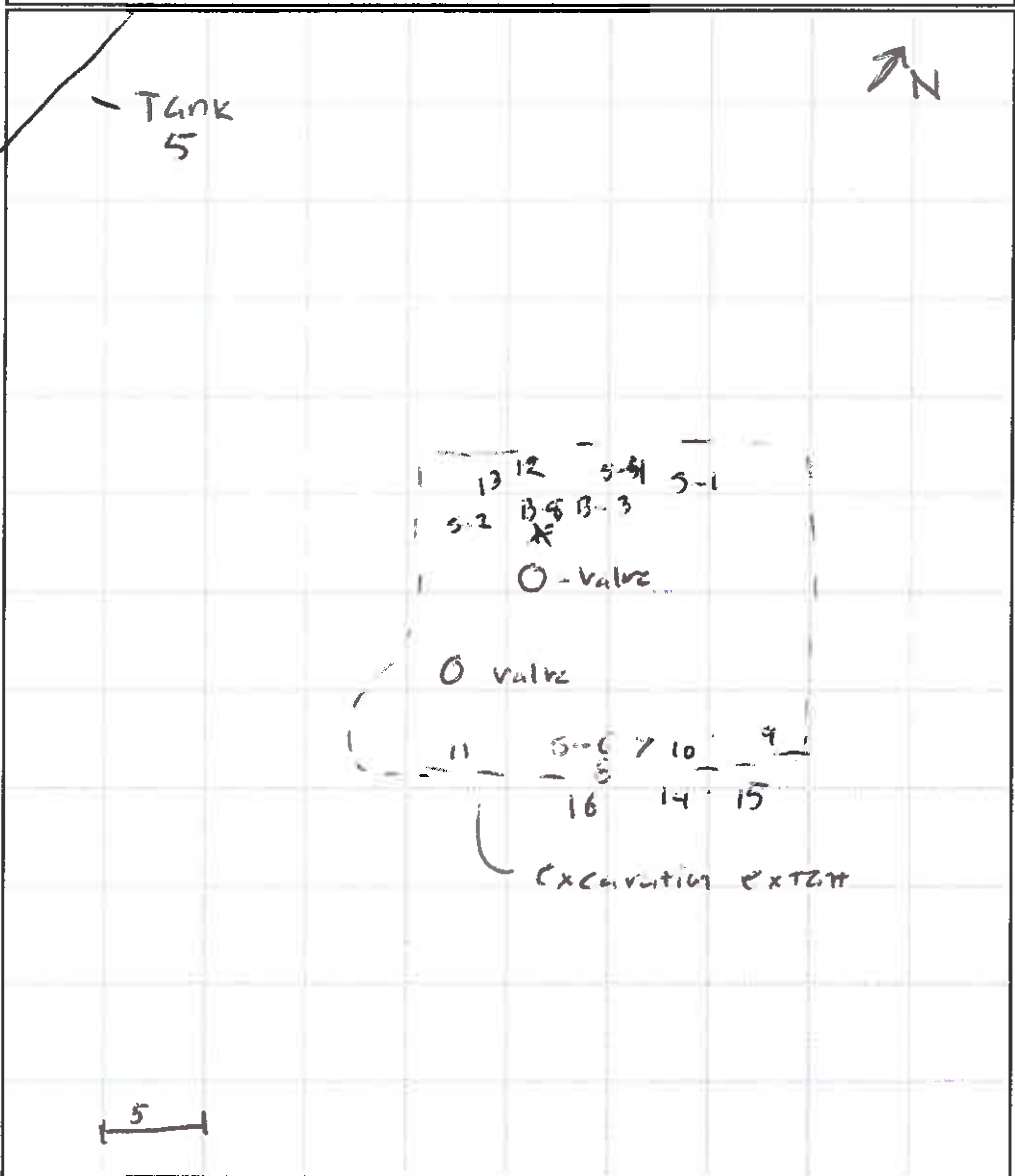
Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

Calibration Time: 0810



Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example: TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275
S-1	2'	1040	CL	Black lines	Faint Petroleum odor	146+
S-2	2"	1055	CL		mod odor	231+
B-3	4'	1120		Reddish brown	none/rain	70
S-4	3.8'					0.3
B-5	4'					6.1
B-6	1.5'	11:30		Black Fractures	Strong odor	584+
S-7	3'			Reddish Brown	none	2.4
S-8	3.5'				none	25
S-9	0.6'	1345		Yellow Fractures	moderate odor	390+
S-10	1.3'					260+
S-11	1'	1400			Strong odor	188
S-12	2.5'	1425		Reddish Brown	none/rain	1.8
B-13	3.8'					15.9
S-14	1'	14:35				0.1
B-15	4'					1.1
B-16	4'					1.4
B-17	0.8"	1440			Faint odor	20

SITE SKETCH: north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features... 1 inch/grid = 50 FEET



All odors are petroleum odors: slight, moderate, or strong

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Tank 5 Basin Embankment Terminal Superior WI

Equipment used: Photo-ionization detector with 11.7 eV lamp

Background Headspace: 00 ppm

Date: 1-23-15

Sample Nomenclature (Location - sample type - #): _____

Sampler: NBS2

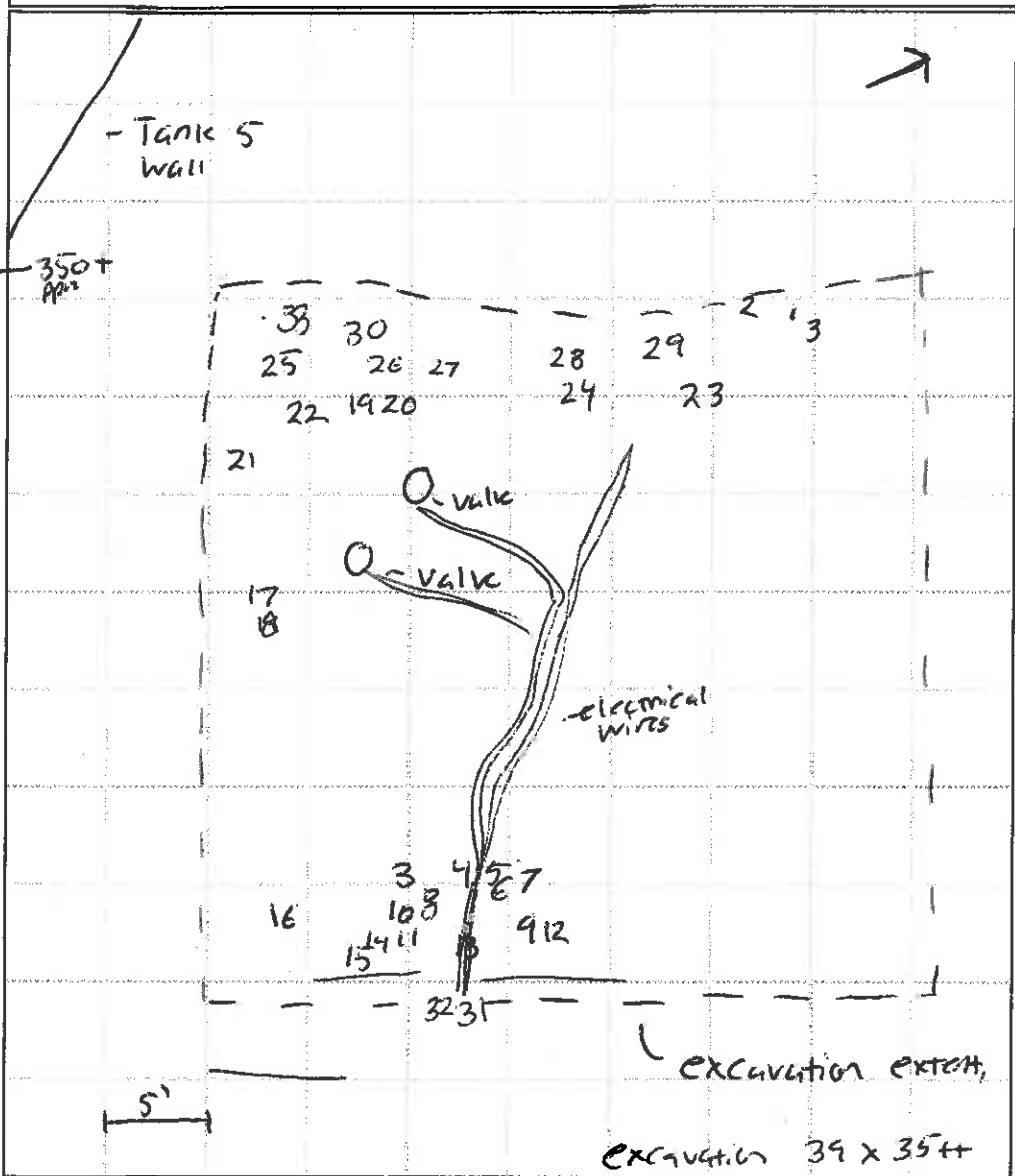
Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

Calibration Time: 0820



Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example: TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
S-1	1	0840	CL	Reddish brown	none/none	1.8
S-2	1.5					0.9
S-3	1.5					5.2
S-3	2.5	0850				20.5
S-4	1.5					20.5
S-5	1	0855				20.5
S-6	2.4					0.8
S-7	1.5	0920			Slight odor	555+
S-8	2'				none/none	0.0
S-9	2.5					3.2
S-10	2	0930			none/none	39.4
S-11	0.8				none/none	6.0
S-12	1'				none/none	6.5
S-13	1					3.6
S-14	1	1100				0.7
S-15	2.5					4.9
S-16	2.2					1.6
S-17	2.5	1335				28.2
S-18	2'					8.4
S-19	1'					537
S-20	2.5					56.4
S-21	1	1355			none	251+
S-22	2				Slight	248+

SITE SKETCH: north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features... 1 inch/grid = 50 FEET



SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Superior Terminal Tank 5 Valve

Equipment used: PID -ionization detector with 11.6 eV lamp

Background Headspace: 0.9 ppm

Date: 1/26/15

Sample Nomenclature (Location - sample type - #): TK5

Sampler: REE

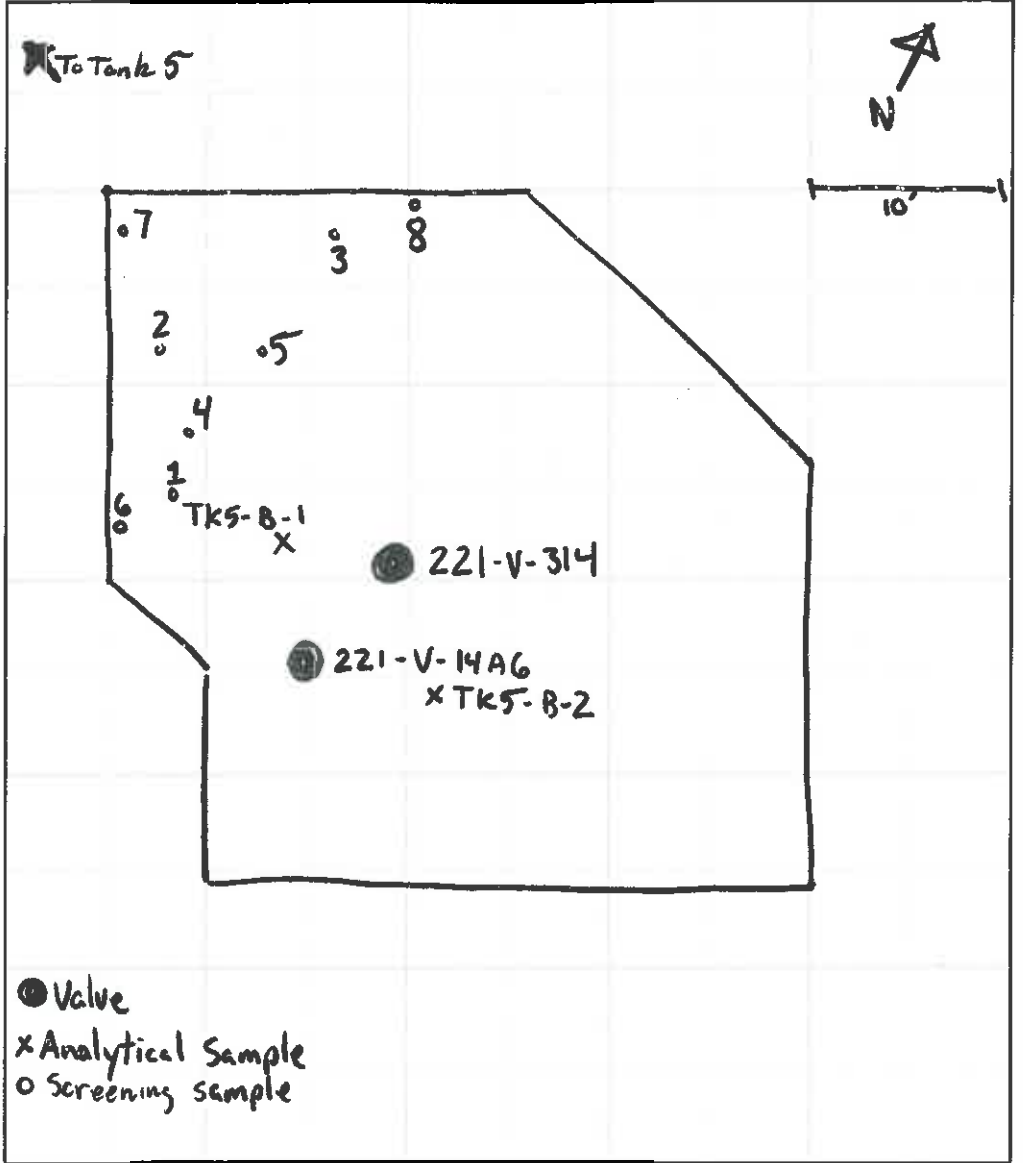
Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

Calibration Time: 815



Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example: TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275
S-1	2-3	895	CL	Reddish Brown	N/-	199+
S-2	2-3				N/-	6.8
S-3	2-3				Atrodum/	188+
B-4	5				N/-	0.5
B-5	5				N/-	0.5
S-6	2-3				N/-	1.7
S-7	2-3				N/-	0.7
S-8	2-3	930			N/-	0.9
TK5-B-1 @	4'	1036		PVOC + Naphthane,		
TK5-B-2	4'	1035		"		
TK5-Stockpile-1	1046			DRG, BTEX, + hold		
TK5-Stockpile-2	1045			"		

SITE SKETCH: north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features... 1 inch/grid = 10 FEET



● Valve
 x Analytical Sample
 ○ Screening sample

Attachment C:

**Legend Technical Services Laboratory Reports for Excavation Soil
Samples**



88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

February 04, 2015

REVISION

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1500310
RE: 49161305

This is a revised report. The details of the revision are listed in the case narrative on the following page.

Enclosed are the results of analyses for samples received by the laboratory on 01/27/15. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

WI Certification #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "Bach Pham", written over a horizontal line.

Bach Pham
Client Manager II
bpham@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500310 Date Reported: 02/04/15
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TK5-B-1_4-4	1500310-01	Soil	01/26/15 10:30	01/27/15 09:15
TK5-B-2_4-4	1500310-02	Soil	01/26/15 10:35	01/27/15 09:15

Shipping Container Information

Default Cooler Temperature (°C): 1.2

Received on ice: Yes Temperature blank was present Received on ice pack: No
 Received on melt water: No Ambient: No Acceptable (IH/ISO only): No
 Custody seals: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

Naphthalene % RPDs in the PVOC analysis batch B5A2822 LCS/LCSD exceeded method acceptance limit. However, both percent recoveries were within acceptance limits.

This report was revised on February 4, 2015 to report 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene; and Naphthalene analytes to the MDL. This report supersedes the report dated February 3, 2015.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500310 Date Reported: 02/04/15
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WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-B-1_4-4 (1500310-01) Soil Sampled: 01/26/15 10:30 Received: 01/27/15 9:15										
1,2,4-Trimethylbenzene	<0.0036	0.034	0.0036	mg/kg dry	1	B5A2822	01/28/15	01/29/15	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0084	0.034	0.0084	mg/kg dry	1	"	"	"	"	
Benzene	<0.0039	0.034	0.0039	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.026	0.034	0.0086	mg/kg dry	1	"	"	"	"	B-01, J
Naphthalene	<0.030	0.68	0.030	mg/kg dry	1	"	"	"	"	
Toluene	<0.0055	0.034	0.0055	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.019	0.10	0.019	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	93.3			80-150 %		"	"	"	"	
TK5-B-2_4-4 (1500310-02) Soil Sampled: 01/26/15 10:35 Received: 01/27/15 9:15										
1,2,4-Trimethylbenzene	0.028	0.035	0.0038	mg/kg dry	1	B5A2822	01/28/15	01/29/15	WI(95) GRO	J
1,3,5-Trimethylbenzene	<0.0087	0.035	0.0087	mg/kg dry	1	"	"	"	"	
Benzene	0.012	0.035	0.0041	mg/kg dry	1	"	"	"	"	J
Ethylbenzene	0.030	0.035	0.0090	mg/kg dry	1	"	"	"	"	B-01, J
Naphthalene	<0.031	0.70	0.031	mg/kg dry	1	"	"	"	"	
Toluene	0.031	0.035	0.0058	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	0.064	0.11	0.020	mg/kg dry	1	"	"	"	"	J
Surrogate: 4-Fluorochlorobenzene	94.1			80-150 %		"	"	"	"	



88 Empire Drive
 St Paul, MN 55103
 Tel: 651-642-1150
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Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500310 Date Reported: 02/04/15
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PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-B-1_4-4 (1500310-01) Soil Sampled: 01/26/15 10:30 Received: 01/27/15 9:15										
% Solids	74			%	1	B5B0306	02/03/15	02/03/15	%	calculation
TK5-B-2_4-4 (1500310-02) Soil Sampled: 01/26/15 10:35 Received: 01/27/15 9:15										
% Solids	71			%	1	B5B0306	02/03/15	02/03/15	%	calculation

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500310 Date Reported: 02/04/15
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WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B5A2822 - EPA 5035 Soil (Purge and Trap)

Blank (B5A2822-BLK1)

Prepared & Analyzed: 01/28/15

1,2,4-Trimethylbenzene	< 0.0027	0.025	0.0027	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.0062	0.025	0.0062	mg/kg wet							
Benzene	< 0.0029	0.025	0.0029	mg/kg wet							
Ethylbenzene	0.0164	0.025	0.0064	mg/kg wet							B-02, J
Naphthalene	< 0.022	0.50	0.022	mg/kg wet							
Toluene	< 0.0041	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.0			ug/L	25.0		92.1	80-150			

LCS (B5A2822-BS1)

Prepared & Analyzed: 01/28/15

1,2,4-Trimethylbenzene	105			ug/L	100		105	80-120			
1,3,5-Trimethylbenzene	104			ug/L	100		104	80-120			
Benzene	99.0			ug/L	100		99.0	80-120			
Ethylbenzene	106			ug/L	100		106	80-120			
Naphthalene	113			ug/L	100		113	80-120			
Toluene	101			ug/L	100		101	80-120			
Xylenes (total)	316			ug/L	300		105	80-120			
Surrogate: 4-Fluorochlorobenzene	25.5			ug/L	25.0		102	80-150			

LCS Dup (B5A2822-BSD1)

Prepared: 01/28/15 Analyzed: 01/29/15

1,2,4-Trimethylbenzene	99.3			ug/L	100		99.3	80-120	5.58	20	
1,3,5-Trimethylbenzene	101			ug/L	100		101	80-120	3.27	20	
Benzene	103			ug/L	100		103	80-120	3.87	20	
Ethylbenzene	106			ug/L	100		106	80-120	0.00	20	
Naphthalene	84.1			ug/L	100		84.1	80-120	29.4	20	R6
Toluene	104			ug/L	100		104	80-120	2.44	20	
Xylenes (total)	317			ug/L	300		106	80-120	0.376	20	
Surrogate: 4-Fluorochlorobenzene	25.8			ug/L	25.0		103	80-150			

Matrix Spike (B5A2822-MS1)

Source: 1500310-01

Prepared: 01/28/15 Analyzed: 01/29/15

1,2,4-Trimethylbenzene	102			ug/L	100	<	102	80-120			
1,3,5-Trimethylbenzene	102			ug/L	100	<	102	80-120			
Benzene	98.8			ug/L	100	<	98.8	80-120			
Ethylbenzene	102			ug/L	100	0.384	101	80-120			
Naphthalene	85.7			ug/L	100	<	85.7	80-120			
Toluene	99.2			ug/L	100	<	99.2	80-120			
Xylenes (total)	301			ug/L	300	0.143	100	80-120			
Surrogate: 4-Fluorochlorobenzene	26.1			ug/L	25.0		105	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500310 Date Reported: 02/04/15
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PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5B0306 - General Preparation											
Duplicate (B5B0306-DUP1)		Source: 1500379-04				Prepared & Analyzed: 02/03/15					
% Solids	94.0			%		94.0			0.00	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500310 Date Reported: 02/04/15
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Notes and Definitions

R6	LFB/LFBD (LCS/LCSD) RPD exceeded the method acceptance limit. Recoveries met acceptance criteria.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

BARR Chain of Custody
 4700 West 77th Street
 Minneapolis, MN 55435-4803
 (952) 832-2600

1500310

Project Number: 49161305
 Project Name: Enbridge Tank 5 Excavation
 Sample Origination State: WI (use two letter postal state abbreviation)
 COC Number: No 44761

Location	Start Depth	Stop Depth	Depth Unit (m, ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type	VOCs (HC) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO ₃)	Total Metals (HNO ₃)	General (unpreserved) #3	Pesticide Range Organics (HC)	Nutrients (H ₂ SO ₄) #4	VOCs (Iared MeOH) #7	GRO, BTEX (Iared MeOH) #1	DRO (Iared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	Total Number Of Containers	COC	Project Manager	Project QC Contact	Sampled by	Laboratory	
						Water	Soil																					
1. TK5-B-1	4	4	FT	1/26/2015	1030	X	X									2	1					3	1	REE	JET	REE	Legend	
2. TK5-B-2	4	4	FT	1/26/2015	1035	X	X									2	1					3	1	REE	JET	REE	Legend	
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
9.																												
10.																												

Common Parameter/Container - Preservation Key
 #1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
 #2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/BBs
 #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
 #4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By: *[Signature]* On Ice? N Date: 1/26/15 Time: 1500 Received by: *[Signature]* Date: 1/27/15 Time: 915
 Relinquished By: *[Signature]* On Ice? N Date: Date: Time: Received by: *[Signature]*
 Samples Shipped VIA: Air Freight Federal Express Sampler Air Bill Number: 1206
 Other: _____

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Attachment D:
Waste Disposal Documentation

P.O. Number	Customer Code	SKB Representative	CL
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I. Generator Information

Generator Name: Enbridge Pipelines Limited Partnership, LLC		Generator EPA ID Number	SIC Code
Generator Location: Enbridge Superior Terminal -150113 Tank 5 Valve Release	County: Douglas	Generator Contact: Alex Smith	
		Phone: 715-398-4795	Fax: 832-325-5511
Generator Mailing Address (if different: 1320 Grand Ave, Superior, WI 54880)		Generator Email Address: alex.smith@enbridge.com	
Bill To Name & Address: Enbridge Energy, 1100 Louisiana Ave, STE. 3300, Houston, TX 77002	Bill To #:	Billing Contact: Alex Smith	
		Phone: 715-398-4795	Fax: 832-325-5511
		Billing Email Address: alex.smith@enbridge.com	
Invoice Contact:			

II. Waste Generation Information

Waste Name: 150113 Tank 5 Valve Release Contaminated Soil	Estimated rate of waste generation: <u>300</u> <input type="checkbox"/> Lbs. <input type="checkbox"/> tons <input checked="" type="checkbox"/> cy <input type="checkbox"/> drums	<input checked="" type="checkbox"/> one time <input type="checkbox"/> yearly
Generator Facility Operations and/or Site History: Enbridge Pipeline Terminal		
Describe the generating process or source of contaminated soil/debris and/or waste: Release Response		

III. Waste Composition and Constituents (list all known)

	Actual Range	
	%	ppm
Crude contaminated soil	100	

IV. Waste Properties

Physical state: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Sludge <input type="checkbox"/> Gas	Free Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Content %	pH Range: <input type="checkbox"/> <2 <input type="checkbox"/> 2-4 <input type="checkbox"/> 5-8 <input type="checkbox"/> 8-12.4 <input type="checkbox"/> >12.5	Flash point: <input type="checkbox"/> ≤ 140°F <input type="checkbox"/> > 140°F to < 200°F <input type="checkbox"/> > 200°F	Color: Brown	Odor (describe): petroleum odor
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V. Waste Classification

Waste stream properties (answer ALL questions)	Does this waste contain absorbents? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste stream contain any D, F, K, U or P listed as hazardous waste, either in pure form, as a mixture, or treatment residue? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste lethal (by Minn. Rules 7045.0131 Subp. 6)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste stream contain PCB material <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, concentration: _____ ppm	Is this waste recyclable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste stream contain fuming acids? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste explosive? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste contain asbestos? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste infectious? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste contain oxidizers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this putrescible waste? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste contain radioactive material? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste demolition debris? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Is this waste sewer sludge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Please attach any available information or analytical test results that have previously been performed on this waste that substantiates these determinations. Include MSDS's and any information from other agencies (i.e., MPCA, USEPA)	

VI. Shipping Information

Proper DOT Shipping Name (per CFR 172.101) where applicable			
Reportable Quantity	DOT Hazard Class	UN/NA Number	Packing Group
Method of packaging: <input type="checkbox"/> drums (size _____) <input checked="" type="checkbox"/> Bulk Solids <input type="checkbox"/> boxes (size _____)		Method of shipment <input type="checkbox"/> Roll-off <input checked="" type="checkbox"/> End dump <input type="checkbox"/> Rail <input type="checkbox"/> Other (Specify) _____	

VII. Certification of Non Hazardous Waste & Approval Conditions

I hereby certify and warrant, on behalf of the generator and myself that, to the best of my knowledge and belief, the information contained herein is accurate, and true and that the waste is nonhazardous as defined in Title 42, Unites States Code Section 6903, Minnesota Statute Section 116.06, Subdivision 13, and/or any rules adopted by the Minnesota Pollution Control Agency under Minnesota Statute Section 116.07.

I understand that any approval is no longer valid if there are any changes in the process generating the waste or there have been changes in the composition of the waste. Therefore, if the composition of the waste stream changes or potentially changes, I or someone representing the generator, will immediately notify SKB Environmental. I, on behalf of the generator, hereby agree to fully indemnify SKB Environmental for any damages and/or costs incurred as a result of this certification being inaccurate or untrue.

Signature 	Alex Smith Printed Name	Environmental Analyst Title	1/30/15 Date
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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

January 30, 2015

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1500308
RE: 49161305

Enclosed are the results of analyses for samples received by the laboratory on 01/27/15. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "BACH PHAM".

Bach Pham
Client Manager II
bpham@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TK5-Stockpile-1	1500308-01	Soil	01/26/15 10:40	01/27/15 09:15
TK5-Stockpile-2	1500308-02	Soil	01/26/15 10:45	01/27/15 09:15

Shipping Container Information

Default Cooler Temperature (°C): 1.2

Received on ice: Yes Temperature blank was present Received on ice pack: No
 Received on melt water: No Ambient: No Acceptable (IH/ISO only): No
 Custody seals: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

The DRO chromatograms for both samples are attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-Stockpile-1 (1500308-01) Soil Sampled: 01/26/15 10:40 Received: 01/27/15 9:15										
Diesel Range Organics	27	11	2.3	mg/kg dry	1	B5A2801	01/28/15	01/28/15	WI(95) DRO	D-04
<i>Surrogate: Triacontane (C-30)</i>	<i>85.1</i>			<i>70-130 %</i>		"	"	"	"	
TK5-Stockpile-2 (1500308-02) Soil Sampled: 01/26/15 10:45 Received: 01/27/15 9:15										
Diesel Range Organics	850	130	28	mg/kg dry	10	B5A2801	01/28/15	01/29/15	WI(95) DRO	D-04
<i>Surrogate: Triacontane (C-30)</i>	<i>89.1</i>			<i>70-130 %</i>		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-Stockpile-1 (1500308-01) Soil Sampled: 01/26/15 10:40 Received: 01/27/15 9:15										
Benzene	<0.035	0.035	0.0041	mg/kg dry	1	B5A2822	01/28/15	01/29/15	WI(95) GRO	
Ethylbenzene	0.038	0.035	0.0090	mg/kg dry	1	"	"	"	"	B-01
Toluene	<0.035	0.035	0.0058	mg/kg dry	1	"	"	"	"	
Xylenes (total)	0.11	0.11	0.020	mg/kg dry	1	"	"	"	"	
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>97.1</i>			<i>80-150 %</i>		"	"	"	"	
TK5-Stockpile-2 (1500308-02) Soil Sampled: 01/26/15 10:45 Received: 01/27/15 9:15										
Benzene	<0.039	0.039	0.0045	mg/kg dry	1	B5A2822	01/28/15	01/29/15	WI(95) GRO	W-03
Ethylbenzene	<0.039	0.039	0.010	mg/kg dry	1	"	"	"	"	B-01, W-03
Toluene	<0.039	0.039	0.0064	mg/kg dry	1	"	"	"	"	W-03
Xylenes (total)	<0.12	0.12	0.022	mg/kg dry	1	"	"	"	"	W-03
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>96.9</i>			<i>80-150 %</i>		"	"	"	"	W-03

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-Stockpile-1 (1500308-01) Soil Sampled: 01/26/15 10:40 Received: 01/27/15 9:15										
% Solids	75			%	1	B5A2809	01/28/15	01/28/15	%	calculation
TK5-Stockpile-2 (1500308-02) Soil Sampled: 01/26/15 10:45 Received: 01/27/15 9:15										
% Solids	86			%	1	B5A2809	01/28/15	01/28/15	%	calculation

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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DRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5A2801 - Sonication (Wisc DRO)											
Blank (B5A2801-BLK1)											
						Prepared & Analyzed: 01/28/15					
Diesel Range Organics	< 8.0	8.0	1.7	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	13.2			mg/kg wet	16.0		82.6	70-130			
LCS (B5A2801-BS1)											
						Prepared & Analyzed: 01/28/15					
Diesel Range Organics	60.4	8.0	1.7	mg/kg wet	64.0		94.4	70-120			
Surrogate: <i>Triacontane (C-30)</i>	13.0			mg/kg wet	16.0		81.3	70-130			
LCS Dup (B5A2801-BSD1)											
						Prepared: 01/28/15 Analyzed: 01/29/15					
Diesel Range Organics	61.1	8.0	1.7	mg/kg wet	64.0		95.5	70-120	1.14	20	
Surrogate: <i>Triacontane (C-30)</i>	11.6			mg/kg wet	16.0		72.6	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5A2822 - EPA 5035 Soil (Purge and Trap)											
Blank (B5A2822-BLK1)						Prepared & Analyzed: 01/28/15					
Benzene	< 0.025	0.025	0.0029	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0064	mg/kg wet							B-02
Toluene	< 0.025	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.0			ug/L	25.0		92.1	80-150			
LCS (B5A2822-BS1)						Prepared & Analyzed: 01/28/15					
Benzene	99.0			ug/L	100		99.0	80-120			
Ethylbenzene	106			ug/L	100		106	80-120			
Toluene	101			ug/L	100		101	80-120			
Xylenes (total)	316			ug/L	300		105	80-120			
Surrogate: 4-Fluorochlorobenzene	25.5			ug/L	25.0		102	80-150			
LCS Dup (B5A2822-BSD1)						Prepared: 01/28/15 Analyzed: 01/29/15					
Benzene	103			ug/L	100		103	80-120	3.87	20	
Ethylbenzene	106			ug/L	100		106	80-120	0.00	20	
Toluene	104			ug/L	100		104	80-120	2.44	20	
Xylenes (total)	317			ug/L	300		106	80-120	0.376	20	
Surrogate: 4-Fluorochlorobenzene	25.8			ug/L	25.0		103	80-150			
Matrix Spike (B5A2822-MS1)						Source: 1500310-01 Prepared: 01/28/15 Analyzed: 01/29/15					
Benzene	98.8			ug/L	100	<	98.8	80-120			
Ethylbenzene	102			ug/L	100	0.384	101	80-120			
Toluene	99.2			ug/L	100	<	99.2	80-120			
Xylenes (total)	301			ug/L	300	0.143	100	80-120			
Surrogate: 4-Fluorochlorobenzene	26.1			ug/L	25.0		105	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5A2809 - General Preparation											
Duplicate (B5A2809-DUP1)											
	Source: 1500277-01		Prepared & Analyzed: 01/28/15								
% Solids	84.0			%		84.0			0.00	20	
Duplicate (B5A2809-DUP2)											
	Source: 1500309-01		Prepared & Analyzed: 01/28/15								
% Solids	71.0			%		69.0			2.86	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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Notes and Definitions

W-03 The initial sample weight was less than 8.0 grams.

D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.

B-02 Target analyte was present in the method blank between the MDL and RL.

B-01 Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.

< Less than value listed

dry Sample results reported on a dry weight basis

NA Not applicable. The %RPD is not calculated from values less than the reporting limit.

MDL Method Detection Limit

RL Reporting Limit

RPD Relative Percent Difference

LCS Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)

MS Matrix Spike = Laboratory Fortified Matrix (LFM)

Data File: \\lts-target\targetdata\chem\FID5.i\150128.b\020.d

Date : 28-JAN-2015 18:38

Client ID:

Sample Info: 1500308-01

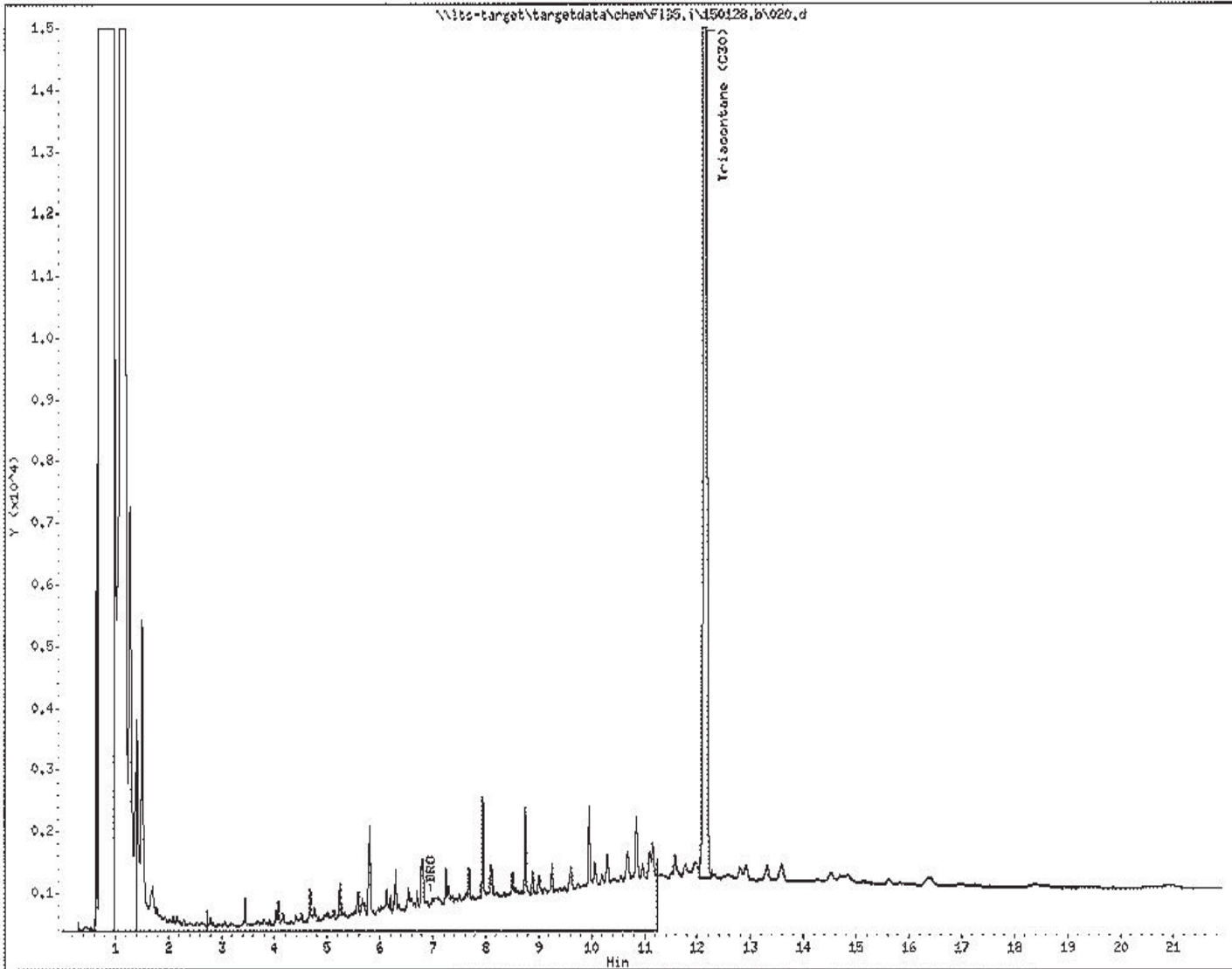
TK5 - Stockpile - 1

Instrument: FID5.i

Operator: sp

Column diameter: 0.53

Column phase:



Data File: \\lts-target\targetdata\chem\FID5.i\150128.b\054.d

Date : 29-JAN-2016 09:56

Client ID:

Sample Info: 1500308-02 cc x10

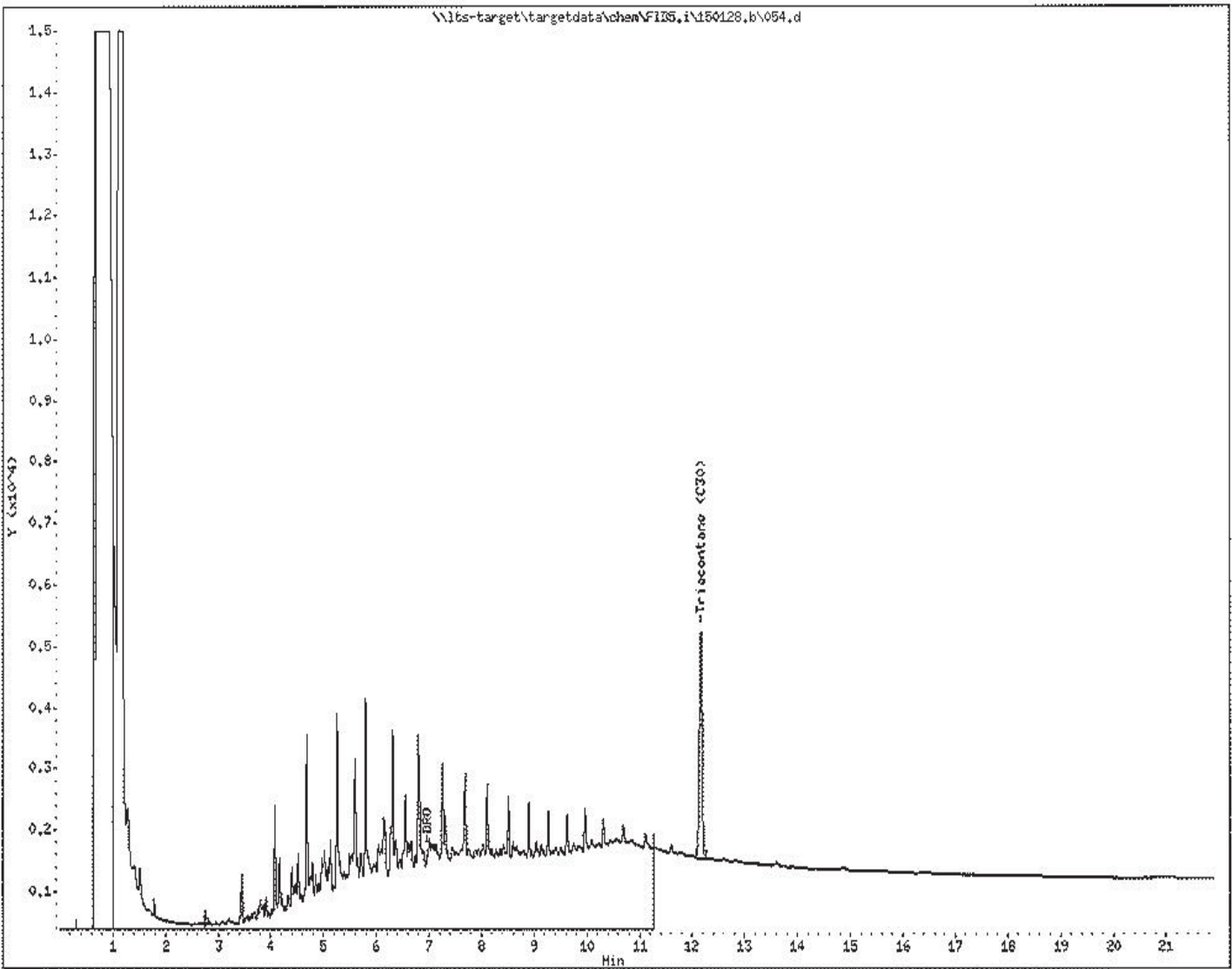
TKS - Stockpile - 2

Instrument: FID5.i

Operator: yp

Column diameter: 0.53

Column phase:





88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

January 30, 2015

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1500308
RE: 49161305

Enclosed are the results of analyses for samples received by the laboratory on 01/27/15. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "BACH PHAM".

Bach Pham
Client Manager II
bpham@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TK5-Stockpile-1	1500308-01	Soil	01/26/15 10:40	01/27/15 09:15
TK5-Stockpile-2	1500308-02	Soil	01/26/15 10:45	01/27/15 09:15

Shipping Container Information

Default Cooler Temperature (°C): 1.2

Received on ice: Yes Temperature blank was present Received on ice pack: No
 Received on melt water: No Ambient: No Acceptable (IH/ISO only): No
 Custody seals: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

The DRO chromatograms for both samples are attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-Stockpile-1 (1500308-01) Soil Sampled: 01/26/15 10:40 Received: 01/27/15 9:15										
Diesel Range Organics	27	11	2.3	mg/kg dry	1	B5A2801	01/28/15	01/28/15	WI(95) DRO	D-04
<i>Surrogate: Triacontane (C-30)</i>	<i>85.1</i>			<i>70-130 %</i>		"	"	"	"	
TK5-Stockpile-2 (1500308-02) Soil Sampled: 01/26/15 10:45 Received: 01/27/15 9:15										
Diesel Range Organics	850	130	28	mg/kg dry	10	B5A2801	01/28/15	01/29/15	WI(95) DRO	D-04
<i>Surrogate: Triacontane (C-30)</i>	<i>89.1</i>			<i>70-130 %</i>		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-Stockpile-1 (1500308-01) Soil Sampled: 01/26/15 10:40 Received: 01/27/15 9:15										
Benzene	<0.035	0.035	0.0041	mg/kg dry	1	B5A2822	01/28/15	01/29/15	WI(95) GRO	
Ethylbenzene	0.038	0.035	0.0090	mg/kg dry	1	"	"	"	"	B-01
Toluene	<0.035	0.035	0.0058	mg/kg dry	1	"	"	"	"	
Xylenes (total)	0.11	0.11	0.020	mg/kg dry	1	"	"	"	"	
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>97.1</i>			<i>80-150 %</i>		"	"	"	"	
TK5-Stockpile-2 (1500308-02) Soil Sampled: 01/26/15 10:45 Received: 01/27/15 9:15										
Benzene	<0.039	0.039	0.0045	mg/kg dry	1	B5A2822	01/28/15	01/29/15	WI(95) GRO	W-03
Ethylbenzene	<0.039	0.039	0.010	mg/kg dry	1	"	"	"	"	B-01, W-03
Toluene	<0.039	0.039	0.0064	mg/kg dry	1	"	"	"	"	W-03
Xylenes (total)	<0.12	0.12	0.022	mg/kg dry	1	"	"	"	"	W-03
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>96.9</i>			<i>80-150 %</i>		"	"	"	"	W-03

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TK5-Stockpile-1 (1500308-01) Soil Sampled: 01/26/15 10:40 Received: 01/27/15 9:15										
% Solids	75			%	1	B5A2809	01/28/15	01/28/15	%	calculation
TK5-Stockpile-2 (1500308-02) Soil Sampled: 01/26/15 10:45 Received: 01/27/15 9:15										
% Solids	86			%	1	B5A2809	01/28/15	01/28/15	%	calculation

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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DRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5A2801 - Sonication (Wisc DRO)											
Blank (B5A2801-BLK1)											
						Prepared & Analyzed: 01/28/15					
Diesel Range Organics	< 8.0	8.0	1.7	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	13.2			mg/kg wet	16.0		82.6	70-130			
LCS (B5A2801-BS1)											
						Prepared & Analyzed: 01/28/15					
Diesel Range Organics	60.4	8.0	1.7	mg/kg wet	64.0		94.4	70-120			
Surrogate: <i>Triacontane (C-30)</i>	13.0			mg/kg wet	16.0		81.3	70-130			
LCS Dup (B5A2801-BSD1)											
						Prepared: 01/28/15 Analyzed: 01/29/15					
Diesel Range Organics	61.1	8.0	1.7	mg/kg wet	64.0		95.5	70-120	1.14	20	
Surrogate: <i>Triacontane (C-30)</i>	11.6			mg/kg wet	16.0		72.6	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5A2822 - EPA 5035 Soil (Purge and Trap)											
Blank (B5A2822-BLK1)						Prepared & Analyzed: 01/28/15					
Benzene	< 0.025	0.025	0.0029	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0064	mg/kg wet							B-02
Toluene	< 0.025	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.0			ug/L	25.0		92.1	80-150			
LCS (B5A2822-BS1)						Prepared & Analyzed: 01/28/15					
Benzene	99.0			ug/L	100		99.0	80-120			
Ethylbenzene	106			ug/L	100		106	80-120			
Toluene	101			ug/L	100		101	80-120			
Xylenes (total)	316			ug/L	300		105	80-120			
Surrogate: 4-Fluorochlorobenzene	25.5			ug/L	25.0		102	80-150			
LCS Dup (B5A2822-BSD1)						Prepared: 01/28/15 Analyzed: 01/29/15					
Benzene	103			ug/L	100		103	80-120	3.87	20	
Ethylbenzene	106			ug/L	100		106	80-120	0.00	20	
Toluene	104			ug/L	100		104	80-120	2.44	20	
Xylenes (total)	317			ug/L	300		106	80-120	0.376	20	
Surrogate: 4-Fluorochlorobenzene	25.8			ug/L	25.0		103	80-150			
Matrix Spike (B5A2822-MS1)						Source: 1500310-01 Prepared: 01/28/15 Analyzed: 01/29/15					
Benzene	98.8			ug/L	100	<	98.8	80-120			
Ethylbenzene	102			ug/L	100	0.384	101	80-120			
Toluene	99.2			ug/L	100	<	99.2	80-120			
Xylenes (total)	301			ug/L	300	0.143	100	80-120			
Surrogate: 4-Fluorochlorobenzene	26.1			ug/L	25.0		105	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B5A2809 - General Preparation											
Duplicate (B5A2809-DUP1)											
	Source: 1500277-01		Prepared & Analyzed: 01/28/15								
% Solids	84.0			%		84.0			0.00	20	
Duplicate (B5A2809-DUP2)											
	Source: 1500309-01		Prepared & Analyzed: 01/28/15								
% Solids	71.0			%		69.0			2.86	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161305 Project Number: 49161305 Project Manager: Mr. James E. Taraldsen	Work Order #: 1500308 Date Reported: 01/30/15
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Notes and Definitions

W-03	The initial sample weight was less than 8.0 grams.
D-04	The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)



Chain of Custody

4700 West 77th Street
 Minneapolis, MN 55435-4803
 (952) 832-2600

1500308

Project Number: 49161305

Project Name: Enbridge Tank 5 Stockpile

Sample Origination State: WI (use two letter postal state abbreviation)

COC Number: **No 44760**

Number of Containers/Preservative		COC <u>1</u> of <u>1</u>
Water	Soil	
<input type="checkbox"/>	<input type="checkbox"/>	Project Manager: <u>REE</u> Project QC Contact: <u>JET</u> Sampled by: <u>REE</u> Laboratory: <u>Legend</u>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
Total Number Of Containers		

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type		VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO ₃)	Total Metals (HNO ₃)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H ₂ SO ₄) #4	VOCs (Iared-MeOH) #1	GRQ (Iared-MeOH) #1	DRO (Iared unpreserved) Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	HOLD	Total Number Of Containers	
						Water	Soil	Grab	Comp															QC
1. TK5-STOCKPILE-1				1/26/2015	1040	X	X																	5
2. TK5-STOCKPILE-2				↓	1045	X	X																	5
3.																								
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								

DRG, BTEX, Moisture
 ↓
 ASAP TAT
 Hold 2 Jars

- Common Parameter/Container - Preservation Key**
- #1 - Volatile Organics = BTEX, GRQ, TPH, 8260 Full List
 - #2 - Semivolatile Organics = PAHs, PCB, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
 - #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
 - #4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By: [Signature] On Ice? Y N Date: 1/26/15 Time: 1500

Received by: [Signature] Date: 1/27/15 Time: 915

Samples Shipped VIA: Air Freight Federal Express Sampler Other: 122 Air Bill Number: 122

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Data File: \\lts-target\targetdata\chem\FID5.i\150128.b\020.d

Date : 28-JAN-2015 18:38

Client ID:

Sample Info: 1500308-01

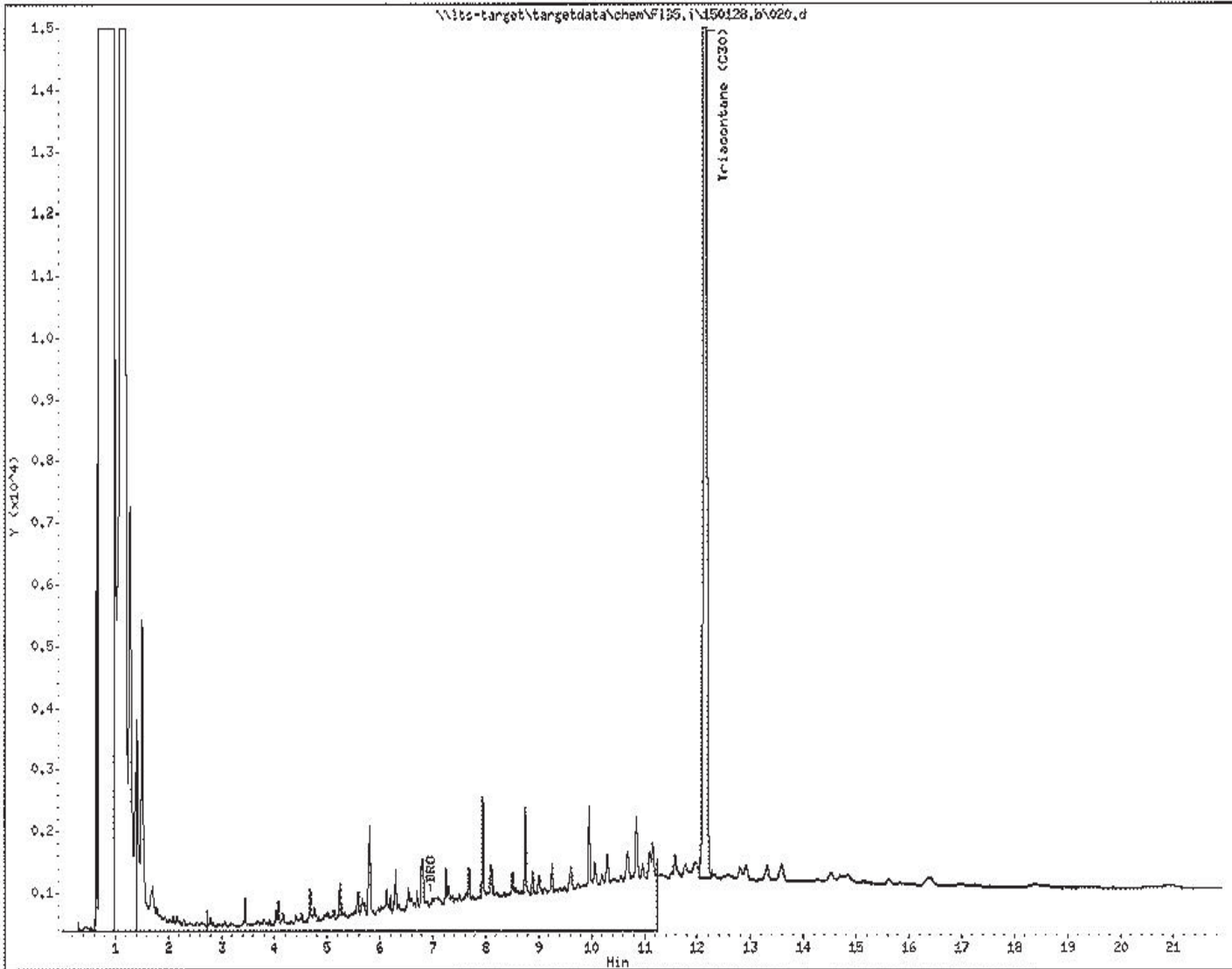
TK5 - Stockpile - 1

Instrument: FID5.i

Operator: sp

Column diameter: 0.53

Column phase:



Data File: \\lts-target\targetdata\chem\FID5.i\150128.b\054.d

Date : 29-JAN-2016 09:56

Client ID:

Sample Info: 1500308-02 cc x10

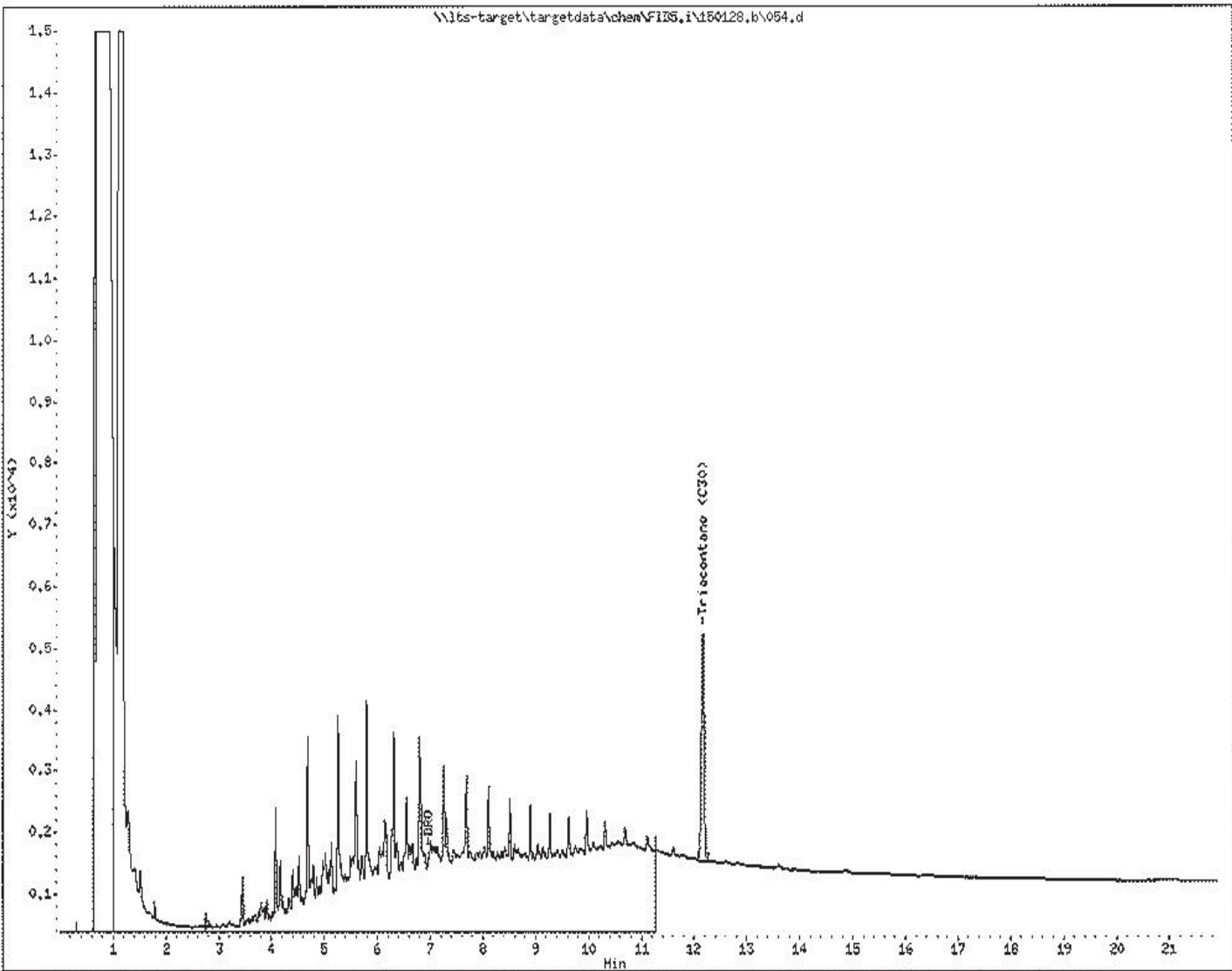
TKS - Stockpile - 2

Instrument: FID5.i

Operator: yp

Column diameter: 0.53

Column phase:



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Notification of Waste Acceptance

1/30/2015

CUSTOMER INFORMATION

EPA ID#:
Enbridge Superior Terminal
150113 Tank 5 Valve Release

Enbridge Superior Terminal
150113 Tank 5 Valve Release
Superior, WI 54880
Contact: Alax Smith
Phone: (715) 398-4795

Profile Sheet #:
Waste Stream #: CL15-0004
Waste Name: 150113 Tank 5 Valve Release Contaminated Soil

INVOICE INFORMATION

Bill #: 2133
Enbridge Pipelines Limited Partnership,
Accounts Payable

1100 Louisiana Ave, Ste 3300
Houston, TX 77002
Contact: Alex Smith
Phone: (715) 398-4795

Thank you for selecting SHAMROCK LANDFILL for your waste management requirements. Your waste stream has been reviewed and is acceptable for management at our facility based on the information provided in the profile sheet number listed above and conditions below. Our facility has the necessary permits to allow the storage, treatment, or disposal of this waste. The above referenced acceptance number should be listed on all shipping documents and correspondence. Please retain these documents for your records and future reference.

To schedule a shipment, or should you have any questions, please contact the facility at (218) 878-0112.

ACCEPTANCE INFORMATION

The waste stream identified by the reference above is acceptable for disposal.
The anticipated frequency of shipment is 300 YARDS / ONE TIME ONLY

This waste is acceptable for delivery beginning on 1/30/2015 thru 1/30/2016 at which time the material will need to be reanalyzed and recertified.

PCB Statement: The Minnesota Pollution Control Agency encourages generators of non-hazardous PCB waste to voluntarily manage the waste as hazardous waste or to seek an alternative to land disposal such as incineration

Spill Reporting Reminder: Proper County and MPCA spill reporting procedures must be followed.

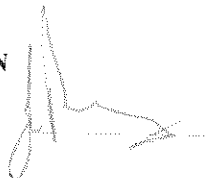
Empty Container Statement: Each shipment containing empty containers must be accompanied with a completed 'EMPTY CONTAINER CERTIFICATION FORM'.

Free Liquid Statement: Free liquids will not be placed in cells at Shamrock Landfill. Free liquids must be solidified either prior to shipment to Shamrock Landfill or at Shamrock Landfill.

Shipping Requirements A NON-HAZARDOUS certificate is required to be on file, certifying the waste is non-hazardous as specified per 40 CFR 261.4. The shipment must be accompanied with an Shamrock Landfill manifest.

AUTHORIZATION

Approval:



Date:

1/30/15

January 30, 2015

Alex Smith
Enbridge Pipelines Limited Partnership, LLC
Accounts Payable
1100 Louisiana Ave, Ste 3300
Houston, TX 77002

RE: CL15-0004 150113 Tank 5 Valve Release Contaminated Soil

Dear Mr. Smith,

This agreement will confirm the price and length of service for disposal and /or transportation of your non-hazardous industrial material at our facility. This agreement is for the term of the Waste Approval granted by Shamrock Landfill and is for all services ordered and performance initiated within such period and does include the disposal surcharge fees which you are obligated to pay as of the date of this agreement. Shamrock Landfill may incur additional costs including but not limited to increases in state and local taxes. Shamrock Landfill may pass these costs on to the customer only after notification to the Customer. This agreement grants Shamrock Landfill the exclusive right to dispose of the referenced waste for the term of this agreement. This agreement shall automatically renew thereafter for an additional term of 24 months "Renewal Term" unless either party gives the other party written notification of termination at least 90 days prior to the termination of the then-existing term. Shamrock Landfill will notify the customer prior to the expiration of the agreement of any rate changes prior to the start of the Renewal Term

Payment and terms are net thirty (30) days. Interest will be charged at a rate of 1 1/2% per month (18% annually) on any unpaid balance 30 days after the date of the invoice. In the event Customer terminates this Agreement prior to its expiration other than as a result of a breach by Shamrock Landfill or Shamrock Landfill terminates this agreement for Customer's breach (including nonpayment) Customer agrees to pay to Shamrock Landfill as liquidated damages a sum calculated as follows: (1) if the remaining term under this agreement is six or more months Customer shall pay its average monthly charges multiplied by six; or (2) if the remaining term under this agreement is less than six months Customer shall pay its average monthly charge multiplied by the number of months remaining in the term. Customer expressly acknowledges that in the event of an unauthorized termination of this agreement the anticipated loss to Shamrock Landfill in such event is estimated to be the amount set forth in the foregoing liquidated damages provision and such estimated value is reasonable and is not imposed as a penalty.

These prices are based on an approved waste stream composition. In the event that a non-conforming waste is received, you will be notified of additional charges, when applicable.

To accept this agreement, please sign one copy and return it to our St. Paul, MN office at Shamrock Landfill, 251 Starkey St., St. Paul, MN 55107 or Via Fax at 651-223-8197 or email to jonp@shamrocklandfill.com.

Shamrock Landfill


Jon Penheiter

Customer ACCEPTED BY: (name, position)

DATE:

WASTE APPROVAL Period: 1/30/2015 to 1/30/2016

Bill To Customer

Enbridge Pipelines Limited Partnership, LLC
Accounts Payable
1100 Louisiana Ave, Ste 3300
Houston, TX 77002

Service For Generator

Enbridge Superior Terminal
Enbridge Superior Terminal
150113 Tank 5 Valve Release
Superior, WI 54880

Disposal

Waste Description: 150113 Tank 5 Valve Release Contaminated Soil

Estimated Volume: 300 YARDS / ONE TIME ONLY

Disposal Method: Secure Non-Hazardous Landfill

Treatment Method: None Expected For Conforming Waste

Pricing

Disposal	\$16.00	Per Ton	150113 Tank 5 Valve Release Contaminated
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REPORT NAME: Tons Each Load By WSID
DESCRIPTION: Tonnage for EACH LOAD, grouped by customer
DATE RANGE: 01/01/2015 to 02/09/2015
PRINTED ON (DATE): Monday, February 09, 2015

ENB26

Enbridge Superior Terminal
 Enbridge Superior Terminal
 Superior WI 54880

LOAD #	MANIFEST	ARRIVED	WASTE STREAM	WASTE NAME	CELL	SPOT.	LIFT	TONS
28484 (A)	7748	2/4/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	12.49
28493 (A)	7762&7763	2/4/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	15.02
28505 (A)	007761	2/4/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	15.87
28511 (A)	7760	2/4/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	15.11
28551 (A)	50925	2/5/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	8.29
28558 (A)	50926	2/5/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	7.38
28567 (A)	50927	2/5/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	8.04
28585 (A)	50928	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	12.60
28591 (A)	50930	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	11.30
28592 (A)	50929	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	9.63
28596 (A)	50933	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	15.01
28599 (A)	50934	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	17.66
28602 (A)	50932	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	17.41
28608 (A)	50938	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	16.38
28611 (A)	50937	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	17.88
28612 (A)	50935	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	14.88
28619 (A)	50942	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	13.54
28620 (A)	50943	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	15.31
28621 (A)	50940	2/6/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	15.59
28640 (A)	50939	2/9/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	13.70
28645 (A)	50931	2/9/2015	CL15-0004	150113 Tank 5 Valve Release Cont	2A	Y44	1190	16.55

Total # of Loads: 21 **Total Tons: 289.64**

Grand Total (Tons): 289.64
Grand Total (Loads): 21