02-16-560716 ENBRIDGE ENERGY - TANK 8

Location Name: ENBRIDGE ENERGY CO
Activity Start Date: 2013-07-18
Activity End Date:
Address: 2800 E 21ST ST
Activity Type: ERP
Muni: SUPERIOR **Zip:** 54880
File Location:
Region: NO **Region of Management:** NO
DSPS No:
County: Douglas
DATCP Case No:
DATCP Spill No:
FID: 816010580 **EPA Cerclis ID:**
Acres: ☐ Right-of-Way ☐ Acres > 100

NFA 1/29/14

Activity Address:

PLSS: SW 1/4 of the NW 1/4 of Sec 31, T49N, R13W **Latitude:** 0 **Longitude:** 0

Location Comment: LQG PER HW GENERATOR CHANGES FOR 2011; VSQG FOR 2010 PER EXEMPTION FORM AND MANIFEST CHECK 03/15/2011 MKP; VSQG FOR 2009 ONLY PER EXEMPTION FORM & MANIFEST CHECK - SLB; ENBRIDGE ENERGY CO CHANGE PER 2005 REPORT10/04/2006,MKP, ENBRIDGE ENERGY LTD PARTNERSHIP/LAKEHEAD CHANGED PER 2001 HW ANNUAL REPORTFKA: LAKEHEAD PIPELINE CO LP; SQG PER E-MAIL REQUEST, ANNUAL REPORT 1998 & SAL 3/5/99/LQG/STATUS CH FORM 9/20/94

Activity Comment:

☐ Transferred to DSPS ☐ Transferred to DATCP ☐ Transferred to WMM ☐ Tracked by DSPS ☐ Created by DSPS
☐ PECFA Eligible ☐ PECFA 80K ☐ PECFA 80K Failure ☐ Above Ground Storage Tank ☐ Co-Contamination
☐ VPLE at Location ☐ VPLE Inactive ☐ General Property at Location ☐ Drycleaner ☐ Superfund ☐ Superfund NPL
☐ Status Unclear (Mask BOTW) ☑ Geo-Located ☐ On GIS Registry

Other Activities at this Location

Activity Detail No	Type	Activity Detail Name	Start Date	End Date
01-16-561125		ENBRIDGE ENERGY - TANK 11		
01-16-561126		ENBRIDGE ENERGY - TANK 21 RING RD		
04-16-042495	SPILL	ENBRIDGE ENERGY - PUMP STATION	1988-01-11	1988-01-12
02-16-178165	ERP	LAKEHEAD PIPELINE - TANK 21 CRUDE OIL	1997-08-13	1998-03-16
02-16-176579	ERP	LAKEHEAD PIPELINE CO L P	1997-11-18	2003-10-23
02-16-183249	ERP	LAKEHEAD PIPELINE - MANIFOLD 3	1998-02-02	2004-04-15
04-16-202351	SPILL	LAKEHEAD PIPELINE - TANK 22	1998-08-28	1999-05-12
04-16-220589	SPILL	LAKEHEAD PIPELINE - TANK 11	1999-03-19	1999-05-13
02-16-220009	ERP	LAKEHEAD PIPELINE - CRUDE OIL TANK 22	1999-05-12	2003-10-23
02-16-275100	ERP	LAKEHEAD PIPELINE - TANK 24	1999-08-30	2004-02-02
04-16-275096	SPILL	LAKEHEAD PIPELINE - TANK 24	1999-08-30	2001-07-18
04-16-232151	SPILL	LAKEHEAD PIPELINE - TANK 23	1999-09-20	1999-10-19
04-16-251372	SPILL	LAKEHEAD PIPELINE - TANK PAD 12	2000-02-26	2000-03-01
02-16-279246	ERP	LAKEHEAD PIPELINE CO L P	2000-07-27	2005-08-16
04-16-256902	SPILL	LAKEHEAD PIPELINE CO L P	2000-07-27	2001-08-21
04-16-390497	SPILL	LAKEHEAD PIPELINE	2000-09-23	2002-06-10
04-16-427625	SPILL	LAKEHEAD PIPELINE	2001-06-23	2001-11-29
02-16-338051	ERP	LAKEHEAD PIPELINE - BOOSTER PUMP #56	2002-01-20	2006-07-14
04-16-338044	SPILL	LAKEHEAD PIPELINE - BOOSTER PUMP 56	2002-01-20	2003-01-07
04-16-408048	SPILL	ENBRIDGE ENERGY - TANK 8	2002-03-07	2002-05-29
04-16-408780	SPILL	ENBRIDGE ENERGY	2002-03-07	2002-05-29
04-16-489609	SPILL	ENBRIDGE ENERGY - TANK 8 FARM	2002-03-07	2002-05-29
04-16-403150	SPILL	ENBRIDGE ENERGY	2002-04-04	2002-11-08
04-16-403142	SPILL	ENBRIDGE ENERGY TERMINAL	2002-07-17	2002-11-05
04-16-402258	SPILL	ENBRIDGE ENERGY	2002-08-26	2002-09-26
04-16-403133	SPILL	ENBRIDGE ENERGY - PIPELINE ENTERING FROM SW	2002-09-12	2002-11-20
04-16-518737	SPILL	ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP	2002-11-28	2003-12-18
04-16-454807	SPILL	ENBRIDGE ENERGY - NEMADJI RIVER	2003-01-24	2003-10-01
02-16-513788	ERP	ENBRIDGE ENERGY - NEMADJI RIVER	2003-01-25	2010-03-24
04-16-522605	SPILL	ENBRIDGE ENERGY - MANIFOLD 1	2003-04-08	2004-01-12
04-16-518579	SPILL	ENBRIDGE ENERGY TERMINAL	2003-11-10	2003-12-12
04-16-529969	SPILL	ENBRIDGE ENERGY - MANIFOLD #1 BLDG	2004-03-10	2004-06-08
04-16-526914	SPILL	ENBRIDGE ENERGY - N SIDE OF MANIFOLD 1	2004-03-18	2004-06-01
04-16-526925	SPILL	ENBRIDGE ENERGY - PIPE A	2004-04-02	2004-06-01
04-16-527008	SPILL	ENBRIDGE ENERGY - DENOSTOMETER BLDG	2004-04-08	2004-06-01

02-16-560716 ENBRIDGE ENERGY - TANK 8

Activity Detail No	Type	Activity Detail Name	Start Date	End Date
04-16-527017	SPILL	ENBRIDGE ENERGY - SAMPLING BLDG	2004-04-14	2004-06-01
04-16-527028	SPILL	ENBRIDGE ENERGY	2004-04-16	2004-06-01
04-16-529990	SPILL	ENBRIDGE ENERGY - TANK 13	2004-05-13	2004-07-27
04-16-537774	SPILL	ENBRIDGE ENERGY - BOOSTER PUMP 25	2004-06-03	2004-10-18
04-16-544785	SPILL	ENBRIDGE ENERGY - CRUDE OIL TERMINAL	2005-10-03	2006-01-23
04-16-548608	SPILL	ENBRIDGE ENERGY - TANK 1	2006-01-01	2006-11-28
04-16-547783	SPILL	ENBRIDGE ENERGY	2006-02-09	2006-03-08
04-16-548152	SPILL	ENBRIDGE ENERGY - GRAVEL ROAD IN TERMINAL	2006-05-22	2006-05-30
04-16-551607	SPILL	ENBRIDGE ENERGY - LINE 6	2007-03-19	2007-08-09
04-16-550837	SPILL	ENBRIDGE ENERGY - LINE 1 MANIFOLD BLDG	2007-10-30	2008-01-23
04-16-552902	SPILL	ENBRIDGE ENERGY TERMINAL	2008-08-25	2008-11-18
04-16-553271	SPILL	ENBRIDGE ENERGY - PIG LAUNCHER	2009-02-12	2009-02-13
04-16-553390	SPILL	ENBRIDGE ENERGY - TANK FARM	2009-03-22	2009-03-23
04-16-554022	SPILL	ENBRIDGE ENERGY - LINE 61 PUMP UNIT	2009-04-25	2009-08-18
04-16-554023	SPILL	ENBRIDGE ENERGY - TANK FARM	2009-05-21	2009-08-18
02-16-556786	ERP	ENBRIDGE ENERGY - TANK 22	2009-10-09	2011-09-19
04-16-556812	SPILL	ENBRIDGE ENERGY - TANK 22	2009-10-09	2011-09-19
10-16-556810	REMOVED	ENBRIDGE ENERGY SPILL	2009-10-09	2011-03-11
04-16-556107	SPILL	ENBRIDGE ENERGY	2010-01-06	2010-09-29
04-16-556109	SPILL	ENBRIDGE ENERGY - TANK 15	2010-03-12	2010-09-29
04-16-555211	SPILL	ENBRIDGE ENERGY - LINE 2 BLDG	2010-04-30	2010-04-30
04-16-556000	SPILL	ENBRIDGE ENERGY - CONTAINMENT FACILITY	2010-06-02	2010-09-20
04-16-560095	SPILL	ENBRIDGE ENERGY SPILL	2011-04-04	2013-02-15
04-16-558331	SPILL	ENBRIDGE ENERGY - TANK 12	2011-08-17	2012-12-03
02-16-558329	ERP	ENBRIDGE ENERGY - TANK 12	2011-08-18	2012-12-03
02-16-558649	ERP	ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP	2011-09-25	2012-12-27
04-16-558652	SPILL	ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP SPILL	2011-09-25	2012-12-27
04-16-560096	SPILL	FUTURE ENVIRONMENTAL SPILL	2011-12-02	2013-02-15
04-16-558766	SPILL	ENBRIDGE ENERGY - TANK 16	2012-05-24	2012-05-25
10-16-558757	REMOVED	ENBRIDGE ENERGY - TANK 16	2012-05-24	2012-07-17
02-16-558989	ERP	ENBRIDGE ENERGY - TANK 23	2012-05-31	2013-11-18
02-16-558990	ERP	ENBRIDGE ENERGY - TANK 19	2012-05-31	2012-09-04
02-16-558991	ERP	ENBRIDGE ENERGY - LINE 6	2012-05-31	
02-16-558992	ERP	ENBRIDGE ENERGY - TANK 20 VALVE	2012-05-31	2012-09-04
02-16-558993	ERP	ENBRIDGE ENERGY - TANK 5	2012-05-31	
02-16-558988	ERP	ENBRIDGE ENERGY - OFFICE EXCAVATION	2012-06-04	2012-09-04
02-16-558987	ERP	ENBRIDGE ENERGY - TANK 9	2012-07-02	2012-09-04
10-16-558986	REMOVED	ENBRIDGE ENERGY - TANK 16	2012-07-02	
02-16-560841	ERP	ENBRIDGE ENERGY TERMINAL - LINE 5 PIG TRAP	2013-04-22	2013-09-03
10-16-559678	REMOVED	ENBRIDGE ENERGY TERMINAL - DV 566 VALVE	2013-06-04	2013-06-05
02-16-560657	ERP	ENBRIDGE ENERGY -SUPERIOR TERM FACILITY WIDE	2013-06-27	
04-16-560863	SPILL	ENBRIDGE ENERGY CO SPILL	2013-08-15	2013-08-21

Actions

Action Date	Code	Action Name / Comment	Audit
2013-07-18	**1**	**Notification**	Added 10/15/2013 by SHAFEK
2013-07-18	**28**	**Phase I Environmental Site Assessment Rpt Received**	Added 10/15/2013 by SHAFEK
		EXCAVATION OF SOILS AROUND TANK FOR CONSTRUCTION; HISTORICAL RELEASES	
2013-09-11	**99**	**Miscellaneous**	Added 10/15/2013 by SHAFEK
		RING ROAD EXCAVATION RPT REC'D	

Documents

Energy Act Details

Impacts

02-16-560716 ENBRIDGE ENERGY - TANK 8

Soil Contamination Added 10/15/2013 by SHAFEK

Priority

Risk

Not Applicable Assigned: 09/11/2013 Added 10/15/2013 by SHAFEK

Substances

Category: Petroleum

Crude Oil Added 10/15/2013 by SHAFEK

Category: VOC

VOC Added 10/15/2013 by SHAFEK

Who

Responsible Party is ENBRIDGE ENERGY
Title:
Address: 1320 GRAND AVE
SUPERIOR WI 54880
Phone: (715) 398-4751
Fax: ( ) -
E-Mail:

Project Manager is ERIN ENDSLEY
Title: HYDROGEOLOGIST
Address: 1701 N 4TH ST
SUPERIOR WI 54880
Phone: (715) 392-3126
Fax: (715) 392-7993
E-Mail: erin.endsley@wi.gov

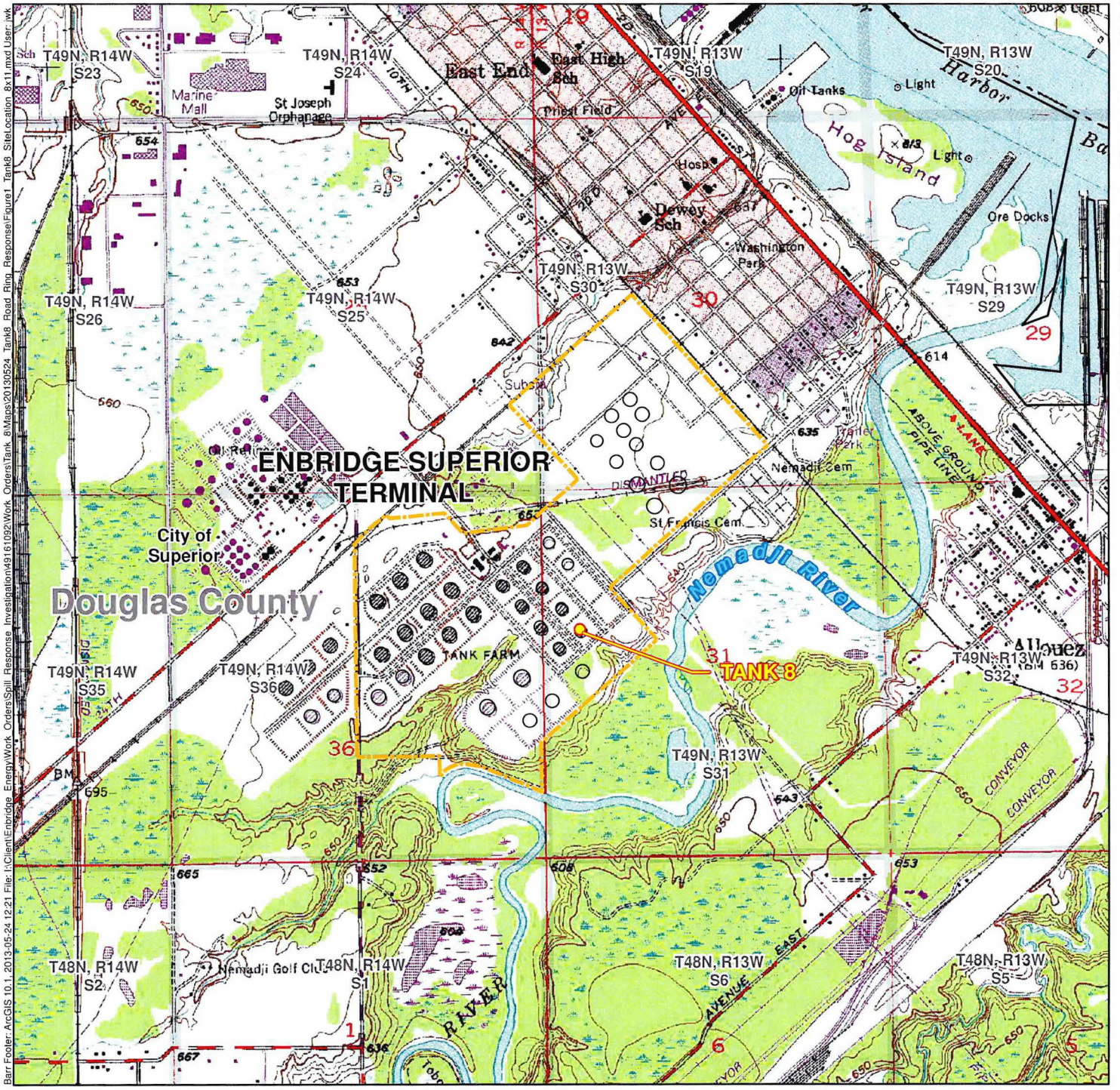
RP Contact/Agent is KARL BEASTER
Title:
Address: 1320 GRAND AVE
ENBRIDGE ENERGY LLC
SUPERIOR WI 54880
Phone: (715) 398-4754
Fax: ( ) -
E-Mail: karl.beaster@enbridge.com

Associated with:
ENBRIDGE ENERGY
1320 GRAND AVE
SUPERIOR , WI 54880-
Phone: (715) 398-4751
Fax: ( ) -

Table 1
Soil Analytical Data Summary
Tank 8 Ring Road Excavation
Enbridge Energy Terminal - Superior, WI
Units, mg/kg (unless otherwise noted)

		Chemical Name	Moisture	Diesel Range Organics	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Ethyl benzene	Toluene	Xylene, total
	Effective Date	Exceedance Key								
Wisconsin Generic Residual Contaminant Levels NR 720.09	09/01/2007	**Bold**		**250**			**0.0055**	2.9	1.5	4.1
Wisconsin Direct Contaminant Levels NR 746.06		None					1.10			
Location	**Date**	**Depth (ft)**								
TANK 8 ROAD-B-1	4/17/2013	1.8	19.1 %	< 13.0	< 0.063	< 0.063	< 0.063	< 0.063	< 0.063	< 0.19
TANK 8 ROAD-B-2	4/18/2013	1.8	25.1 %	< 15.4	< 0.073	< 0.073	< 0.073	< 0.073	< 0.073	< 0.22
TANK 8 ROAD-B-3	4/18/2013	1.8	26.3 %	28.8	0.18	0.077	**0.39**	0.17	< 0.069	< 0.21
TANK 8 ROAD-B-4	4/18/2013	1.8	19.1 %	< 10.8	< 0.061	< 0.061	< 0.061	< 0.061	< 0.061	< 0.18
TANK 8 ROAD-B-5	4/23/2013	1.8	21.7 %	**264**	2.4 *	4.1 *	< 0.31 *	2.3 *	0.56 *	2.8 *

*Estimated value, QA/QC criteria not met.



Tank 8

Terminal Property Boundary

N

0 2,000 4,000

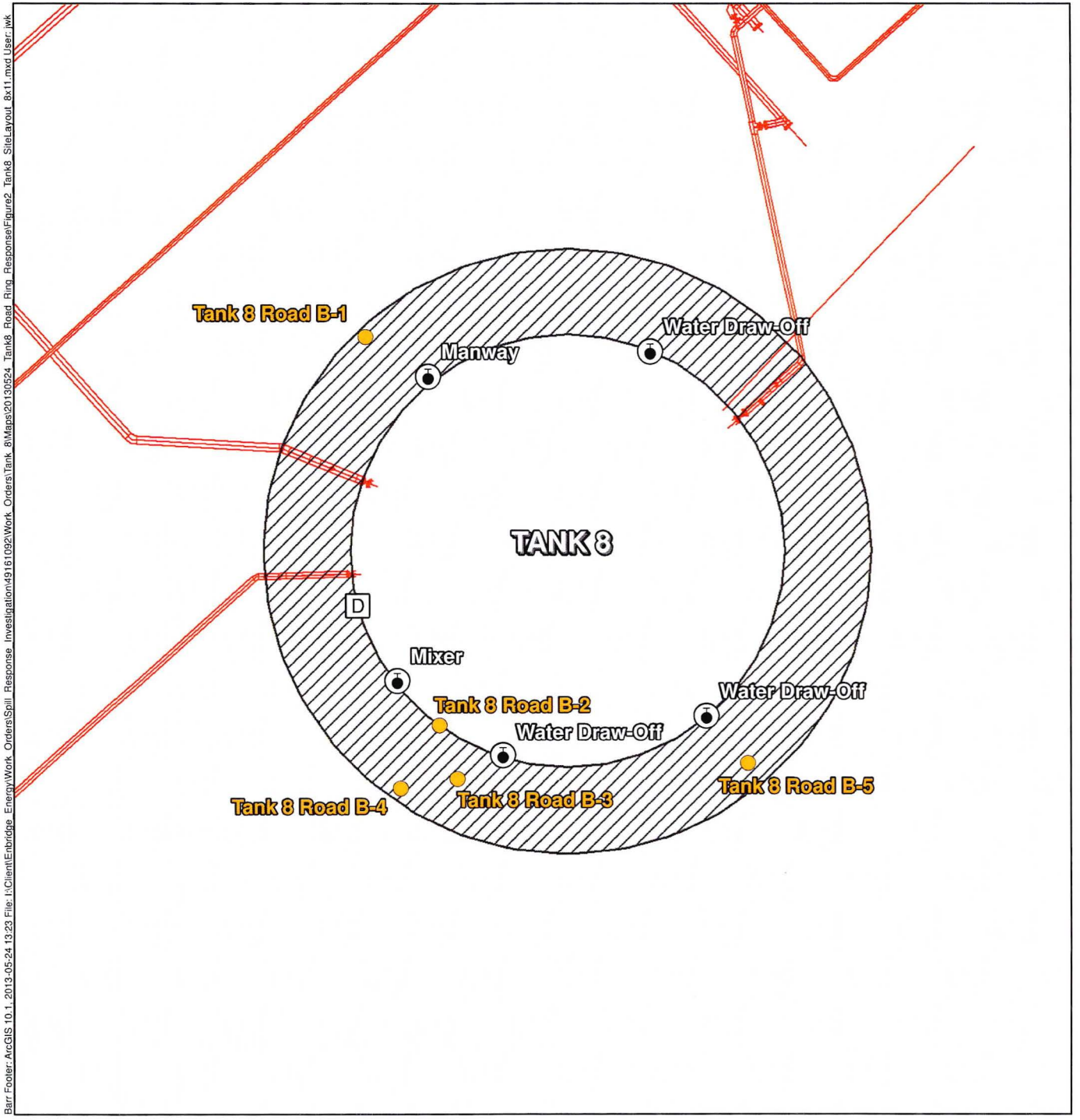
Feet

1 Inch = 2,000 Feet

Figure 1

TANK 8 SITE LOCATION
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE



ENBRIDGE SUPERIOR TERMINAL

- Sample Locations
- D-Door
- Valve Locations
- Excavation Extent
- Pipeline Infrastructure
- Terminal Property Boundary

N

0 50 100

Feet

1 Inch = 50 Feet

Figure 2

TANK 8 SITE LAYOUT MAP
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Enbridge Pipelines (Lakehead) L.L.C.
Environment Department
1320 Grand Avenue
Superior, WI 54880
Tel 715 394 1400
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Shane Yokom	Manager, Environment Operations
Joseph Peterson	Supervisor, Region Operations
Cheryl Urie	Supervisor, Programs
Jim Snider	Environmental Specialist
Rhonda O'Leary	Sr. Air Compliance Specialist
James Anklam	Sr. Environmental Analyst
Karl Beaster	Environmental Analyst II
Stacey Frerich	Environmental Analyst II
Derek Senn	Environmental Analyst II
Kelli Nelson	Environmental Analyst
Bryan Sederberg	Environmental Analyst
Alex Smith	Environmental Analyst
Greg St. Onge	ER Preparedness Coordinator
Julie O'Brien	Environmental Assistant

01-16-560716

September 9, 2013

Erin Endsley
Wisconsin Department of Natural Resources - Northern Region
Remediation and Redevelopment
1701 N 4th St
Superior, WI 54880

Re: Tank 8 Historical Crude Oil Impacts
Ring Road Excavation Report
Enbridge Energy Superior Terminal
Superior, Wisconsin

Dear Ms. Endsley:

Please find attached report regarding the clean-up of historical crude oil impacts discovered during the Tank 8 ring road excavation. Based on the findings presented in this report, we are requesting no further action in regards to this historical release.

Please contact me if you have any questions or comments regarding this project.

Sincerely,
Enbridge Energy

Karl F. Beaster, P.G.
Environmental Analyst

Enclosure

cc: Ryan Erickson, Barr Engineering

Superior Terminal Tank 8 Historic Crude Oil Impacts – Ring Road Excavation

Prepared for
Enbridge Energy

August 2, 2013

BARR

resourceful. naturally.
engineering and environmental consultants

BARR

Technical Memorandum

To: Karl Beaster, Enbridge Energy
From: Ryan Erickson and Brad Leick
Subject: Superior Terminal Tank 8 Historic Crude Oil Impacts – Ring Road Excavation
Date: August 2, 2013
Project: 49161092

This memorandum summarizes the field screening, analytical sampling and waste management assistance conducted by Barr Engineering (Barr) at the request of Enbridge Energy (Enbridge) in response to the discovery of historical, crude oil impacted soil during construction of the Tank 8 ring road at the Enbridge Superior Terminal in Superior, Wisconsin (Figure 1) in April of 2013.

Background and Response Activities

Enbridge replaced the road around the perimeter of Tank 8 at the Enbridge Superior Terminal in April of 2013 (Figure 2). The road around the tank is referred to as a ring road. Road construction activities consisted of first excavating the top two feet of the old road bed gravel fill and clay soil to a width of approximately 30 feet from the tank. A geotechnical fabric was then installed in the bottom of the excavation and approximately two feet of new gravel fill was placed over it.

Crude oil impacted soil was encountered by Enbridge contractors during Tank 8 road excavation activities between April 16 and April 27, 2013. Crude oil impacted soil was encountered in the following three locations associated with Tank 8 access ports or water draw-off valves (Figure 2): the northern-most water draw-off; the northwest manway; and between the southwest mixer and the southeast water draw-off. Enbridge Environment was notified by the contractor whenever crude oil impacted soil was encountered.

Barr conducted the following activities at the request of Enbridge during the Tank 8 ring road project:

- assess the environmental site conditions;
- identify and segregate excavated crude oil impacted soil from unimpacted soil;
- assist with the off-site disposal coordination and documentation of the soil;

- document the residual crude-oil impacts left in place beneath the new Tank 8 ring road.

Barr was onsite multiple times during the road construction work to carry out these tasks. Crude oil impacted soil was not typically excavated beyond the road construction excavation limits due to the presence of buried infrastructure.

Enbridge indicated that the crude oil impacts discovered in the ring road excavation were likely historical based on the location and characteristics of the contaminated soil. Barr checked the Enbridge Leak Reporting System (LRS) records and the Wisconsin Department of Natural Resources (WDNR) Bureau for Remediation and Redevelopment Tracking System (BRRTS) database and no reported releases were identified in the Tank 8 location. Therefore, Enbridge submitted a Notification for Hazardous Substance Discharge to the WDNR on July 17, 2013 (Attachment A).

Field Methods

Barr was onsite at Tank 8 as needed during the ring road excavation activities between April 16 and April 27, 2013. Barr field screened excavated soil for the presence of organic vapors using a photoionization detector (PID) and documented other potential indicators of impacts such as odor, discoloration and sheen. Excavated soil with PID headspace readings greater than 10 parts per million (ppm), or other evidence of crude oil impacts, was segregated and placed in temporary stockpiles near the construction area. Impacted soil stockpiles were staged on and covered with plastic. After construction activities were completed in an area, crude oil impacted soil was transported to the Superior Terminal Soil Management Area (SMA) (Figure 2) for storage until characterized and approved for off-site disposal.

After ring road excavation activities were completed, field screening soil samples were collected from the excavation to identify whether residual soil impacts were present. If residual impacts were identified during field screening, analytical samples were collected and submitted to Pace Analytical for laboratory analyses of diesel range organic (DRO) and petroleum volatile organic carbons (PVOCs). Laboratory analytical results for excavation samples are included in Attachment C.

Results

Field screening, analytical sampling and road construction remedial excavation activity results for the three locations are described below:

Northern-most Water Draw-off Valve

A tar-like substance was encountered approximately 0.5 feet below ground surface (bgs) on the northern-most side of Tank 8 beneath a water draw-off valve (Photo 1; Figures 2 and 3; Attachment B). The substance was approximately two to three inches thick and was present across an approximately 15 foot long by 5 foot wide area. Impacted soil was excavated, sampled for waste characterization and disposed of offsite (Attachment D). Field screening from the limits of the excavation confirmed that impacted soil in the area of the northern-most water draw-off valve had been excavated (Attachment B). No analytical samples were collected to document the excavation extent.

Northwest Manway

Crude oil impacted soil was discovered beneath a manway on the northwest side of Tank 8 (Photo 2; Figures 2 and 3; Attachment B). The impacted soil was present between approximately 0.5 to two feet bgs across an area approximately 15 feet wide by 20 feet long. Impacted soil was excavated, sampled for waste characterization and disposed of offsite (Attachment D). Field screening from the limits of the excavation confirmed that impacted soil in the area of the northwest manway had been excavated (Attachment B). Analytical sample TANK 8 ROAD B-1, collected to document the limits of the excavation, was non-detect for PVOCs and DRO (Table 1; Attachment C).

Southern Tank 8 Perimeter

Crude oil impacted soil was identified along the southern side of Tank 8 between the southwestern tank mixer and a southeastern water draw-off valve (Photo 3, 4 and 5; Figures 2 and 3; Attachment B). The impacted soil was present primarily around the tank ports and valves between approximately 0.5 to 2 feet bgs and across an area approximately 30 feet wide by 125 feet long. Impacted soil was excavated, sampled for waste characterization and disposed of offsite (Attachment D). Field screening from the limits of the excavation identified areas of residual contamination were present in soil after completion of road construction excavation activities. The contaminated soil left in place had headspace readings of up to 235 ppm, a petroleum odor, and dark discoloration (Attachment B). Analytical samples were collected from final excavation extents in the southwestern corner (TANK 8 ROAD B – 2, TANK 8 ROAD B – 3 and TANK 8 ROAD B – 4) and the southeastern corner (TANK 8 ROAD B – 5) (Figure 3). Concentrations of PVOCs and DRO were below the detection limits in samples B-2 and B-4. Samples B-3 and B-5 had concentrations exceeding the Wisconsin Generic Residual Contaminant Levels NR 720.09 for PVOCs and for DRO, respectively (Table 1 and Attachment C).

Following completion of excavation and sampling activities, the excavation was covered with a geotechnical fabric and backfilled with two feet of gravel fill.

Discussion

Soil analytical results from the final excavation extents were below the Generic Residual Contaminant Levels (GRCLs) (NR 720.09) with the exception of sample TANK 8 ROAD-B-3 (benzene detection of 0.39 mg/kg) and sample TANK 8 ROAD-B-5 (DRO detection of 264 mg/kg). No analyte detections exceeded the Wisconsin Direct Contact Levels (NR 746.06 and NR 720). Sample locations for both B-3 and B-5 are currently present under a geotextile fabric covered by two feet of gravel fill.

Waste Disposal Coordination and Documentation

Barr collected two analytical waste characterization samples from the crude impacted soil stockpiles for laboratory analysis. Sample TK 8 Road-Stockpile-1 was submitted to Legend Technical Services, Inc. and sample TANK 8 ROAD-STOCKPILE-2 was submitted to Pace Analytical. Stockpile samples were analyzed for DRO and benzene, toluene, ethylbenzene, and xylenes (BTEX). Waste characterization analytical results are summarized in Table 2 and the laboratory reports are included in the Shamrock Landfill Waste Profile application in Attachment D. A waste profile application with the laboratory results was submitted to the Shamrock Landfill near Cloquet, Minnesota and the soil was accepted under waste profile #CL13-0018 (Attachment D). A total of 734.31 tons of crude oil impacted soil was hauled to the landfill in April 2013.

Barr field screened soil from the Tank 8 clean soil stockpiles prior to off-site disposal at Undeen's School Forest Road gravel pit (Attachment B). A confirmation soil sample TANK 8 ROAD-UDEENS-1 was collected for laboratory analysis of DRO and PVOCs. The analytical sample was non-detect for all parameters (Table 2; Attachment D).Clean stockpiled soil was hauled to the Undeen's School Forest Road gravel pit located approximately 15 miles south of Superior, Wisconsin.

Approximately 2,000 gallons of snowmelt water accumulated in the Tank 8 road excavation near the southwest water draw-off valve on April 22, 2013. A petroleum sheen developed on the water after being in contact with crude oil impacted soil and the water was containerized in a tanker trailer. Analytical water sample TANK 8 ROAD-WATER-1 was collected and submitted to Pace Analytical for laboratory

analysis of DRO, gasoline range organics (GRO) and BTEX (Table 2; Attachment D). The laboratory report was submitted to the Western Lake Superior Sanitary District water treatment facility in Duluth, Minnesota and the water was accepted for disposal on April 30, 2013 (Attachment D). The construction contractor facilitated the disposal of the water.

Conclusions and Recommendations

Crude oil impacted soil encountered during construction of the Tank 8 ring road was excavated and disposed of at an approved landfill with the exception of a small area at the southern edge of Tank 8. Residual soil impacts at this location do not exceed the NR 720.02 GRCLs with the exception of benzene at 0.39 mg/kg in sample TANK 8 ROAD B-3. Residual crude oil impacted soil remaining in place following road construction activities has been covered with a geotechnical fabric and two feet of road bed gravel. The geotechnical fabric, gravel and employee-awareness will prevent direct contact exposure. The geotechnical fabric and clean fill will limit surface water infiltration and potential risk to groundwater. It is recommended that no further action be taken associated with the historically crude oil impacted soil around Tank 8.

Attachments:

Site Photos: 1-5

Figure 1	Tank 8 Site Location
Figure 2	Tank 8 Site Layout Map
Figure 3	Tank 8 Sample Locations
Table 1	Excavation Extent - Soil Analytical Data Summary
Table 2	Waste Characterization - Soil and Water Sampling Results Summary
Attachment A	WDNR Notification For Hazardous Substance Discharge
Attachment B	Enbridge Site Investigation Field Sampling and Screening Logs
Attachment C	Pace Analytical Laboratory Reports for Excavation Soil Samples
Attachment D	Waste Disposal Documentation

Site Photos:

Photo 1

Photo 2

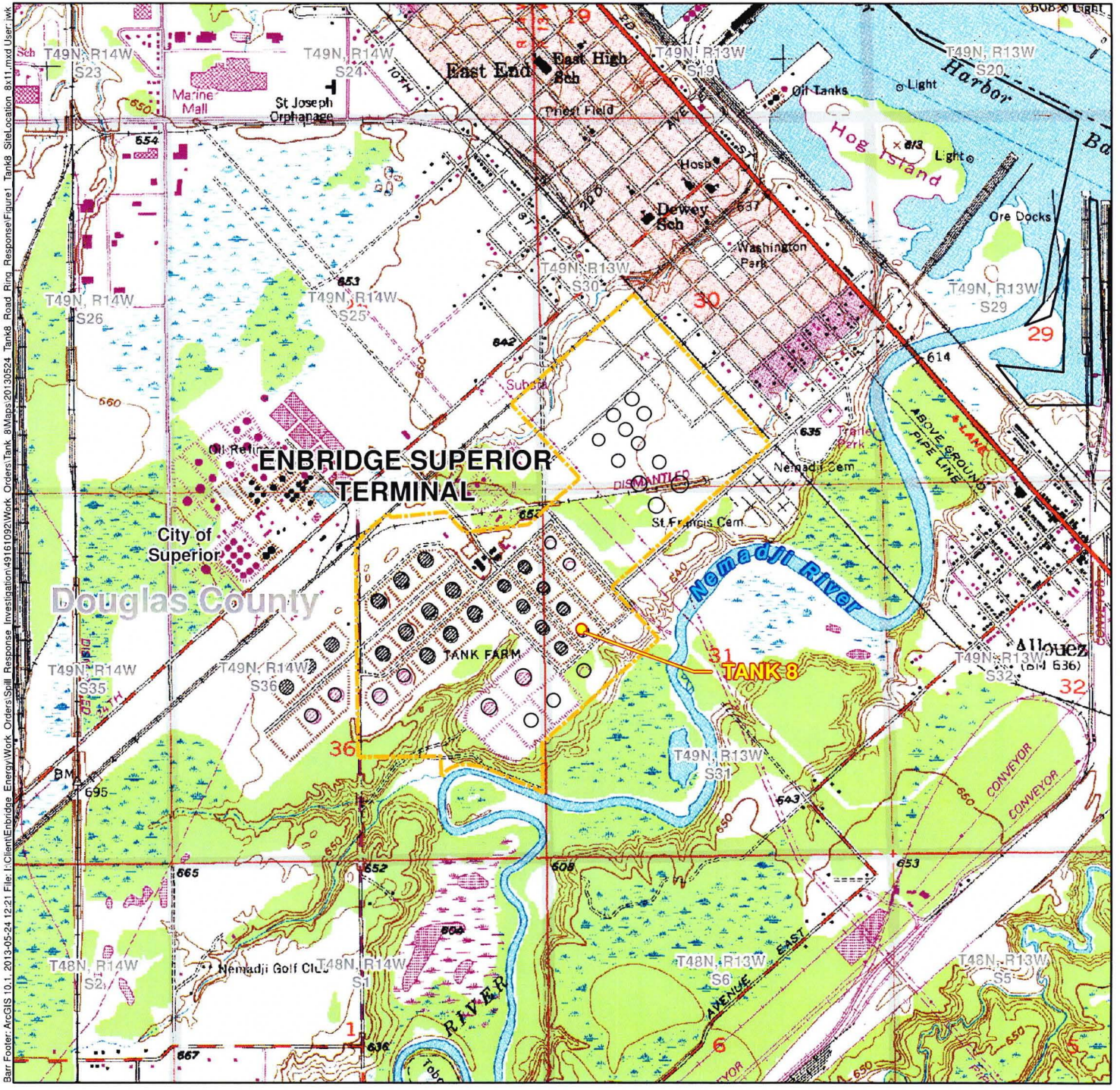
Photo 1: The road construction excavation northern-most of Tank 8 near the water draw-off valve. The water draw-off valve is shown on the left side of the photo.
Photo 2: The road construction excavation northwest of Tank 8 near the manway. The manway is present on the left side of the photo.

Photo 3

Photo 4

Photo 3: The road construction excavation on the southwest of Tank 8 near a mixer and water draw-off valve.
Photo 4: The final extent of the road construction excavation in the southwest corner of Tank 8 near the water draw-off valve. This is the location of sample TANK 8 ROAD B-3. Note the presence of the cathodic protection line, shown in the photo next to the shovel. The presence of the cathodic protection line limited the excavation extent.

Photo 5: The road construction excavation on the southeast corner of Tank 8 near the water draw-off valve.



Tank 8

Terminal Property Boundary

N

0 2,000 4,000

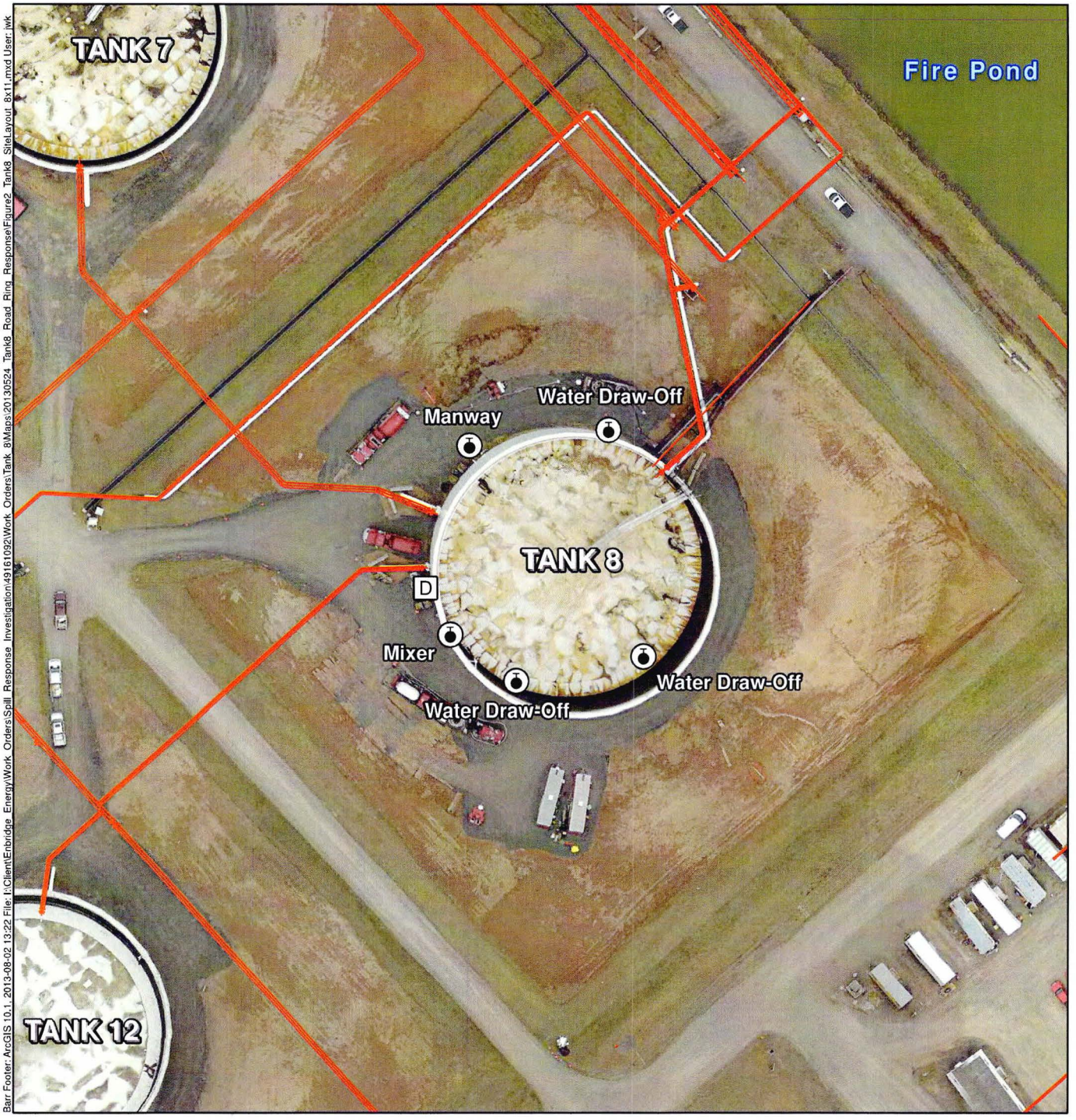
Feet

1 Inch = 2,000 Feet

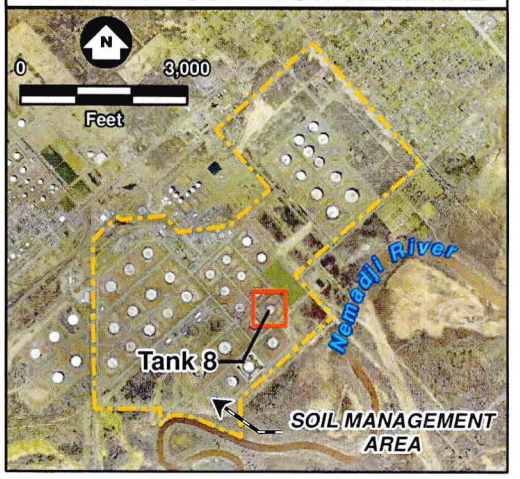
Figure 1

TANK 8 SITE LOCATION
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE



ENBRIDGE SUPERIOR TERMINAL



D D-Door

Valve Locations

Pipeline Infrastructure

Terminal Property Boundary

N

0 80 160

Feet

1 Inch = 80 Feet

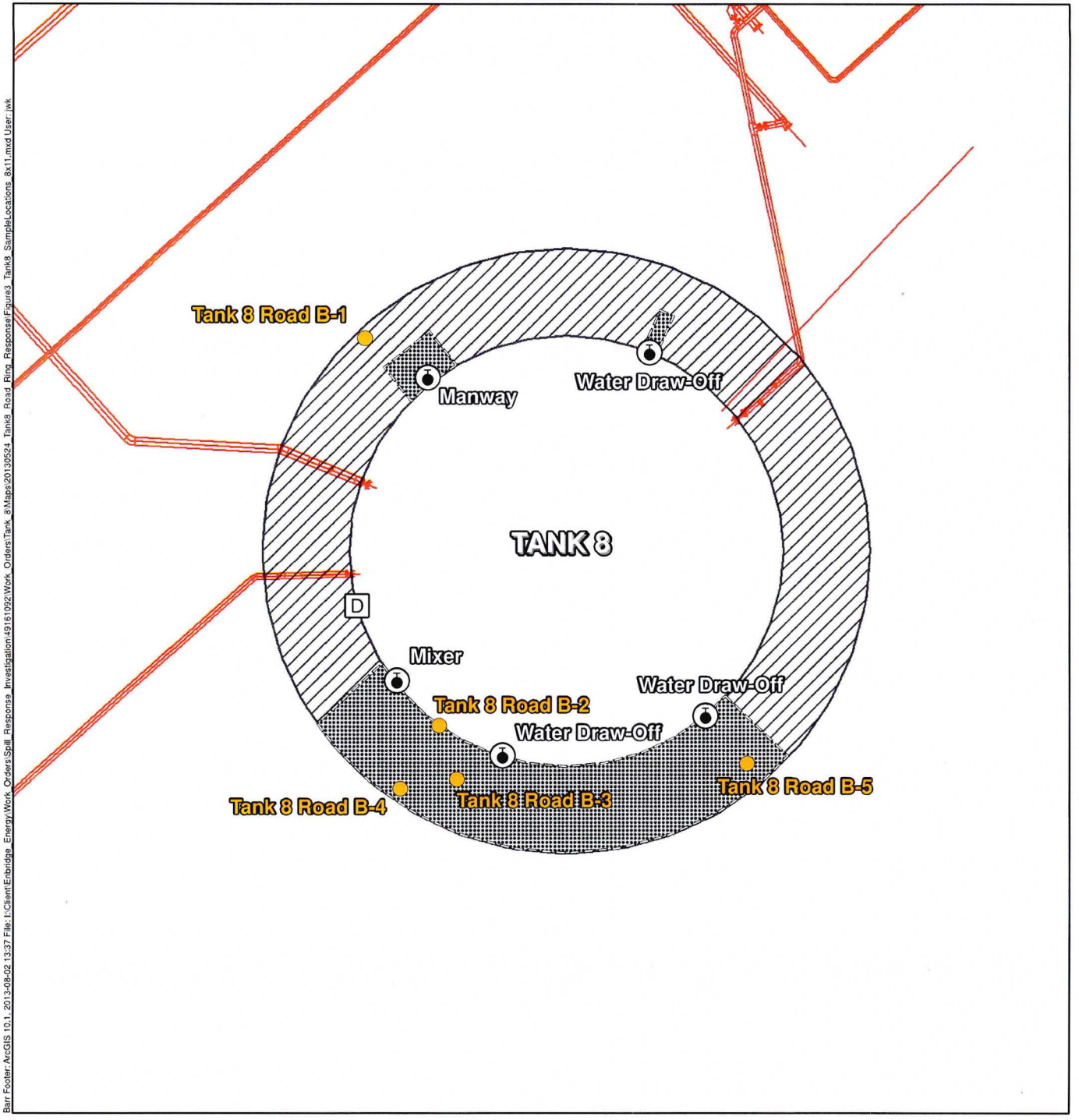
Douglas County Aerial Photography Circa April/May, 2013

Figure 2

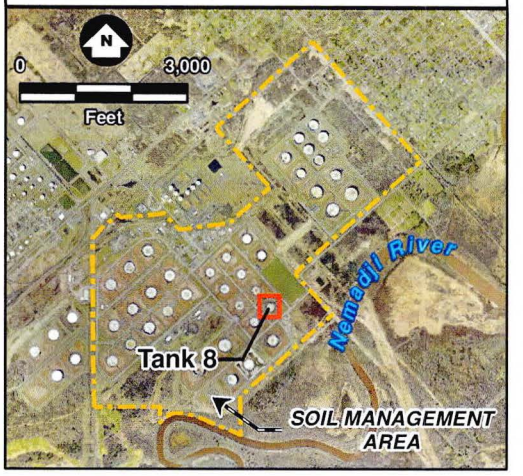
TANK 8 SITE LAYOUT MAP
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Barr Footer: ArcGIS 10.1 2013-08-02 13:22 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161092\Work_Orders\Tank_8\Maps\20130524_Tank8_Road_Ring_Response\Figure2_Tank8_SiteLayout_8x11.mxd User: jwk



ENBRIDGE SUPERIOR TERMINAL



- Sample Locations
- D-Door
- Valve Locations
- Approximate Area with Observed Crude Oil Impacted Soil Prior to Ring Road Excavation Activity
- Excavation Extent
- Pipeline Infrastructure
- Terminal Property Boundary

N

0 50 100

Feet

1 Inch = 50 Feet

Figure 3

TANK 8 SAMPLE LOCATIONS
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Table 1
Excavation Extent - Soil Analytical Data Summary
Tank 8 Ring Road Excavation
Enbridge Energy Terminal - Superior, WI
Units, mg/kg (unless otherwise noted)

Chemical Name			Moisture	Diesel Range Organics	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Ethyl benzene	Toluene	Xylene, total
	Effective Date	Exceedance Key								
Wisconsin Generic Residual Contaminant Levels NR 720.09	09/01/2007	**Bold**		**250**			**0.0055**	2.9	1.5	4.1
Wisconsin Direct Contact Levels NR 746.06		None					1.10			
Location	**Date**	**Depth (ft)**								
TANK 8 ROAD-B-1	4/17/2013	1.8	19.1 %	< 13.0	< 0.063	< 0.063	< 0.063	< 0.063	< 0.063	< 0.19
TANK 8 ROAD-B-2	4/18/2013	1.8	25.1 %	< 15.4	< 0.073	< 0.073	< 0.073	< 0.073	< 0.073	< 0.22
TANK 8 ROAD-B-3	4/18/2013	1.8	26.3 %	28.8	0.18	0.077	**0.39**	0.17	< 0.069	< 0.21
TANK 8 ROAD-B-4	4/18/2013	1.8	19.1 %	< 10.8	< 0.061	< 0.061	< 0.061	< 0.061	< 0.061	< 0.18
TANK 8 ROAD-B-5	4/23/2013	1.8	21.7 %	**264**	2.4 *	4.1 *	< 0.31 *	2.3 *	0.56 *	2.8 *

*Estimated value, QA/QC criteria not met.

Table 2
Waste Characterization - Soil and Water Sampling Results Summary
Tank 8 Ring Road Excavation

Location ID	Date Completed	Analytical Results							
				BTEX/PVOC					
		GRO	DRO	Benzene	Ethyl Benzene	Toluene	Xylene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
SOIL (mg/kg)									
Tk 8 Road-Stockpile-1	4/16/2013	-	**8000**	<0.030	<0.030	<0.030	**0.097**	-	-
Tank 8 Road-Stockpile-2	4/17/2013	-	**1550**	**0.677**	**1.41**	<0.063	**1.93**	-	-
Tank 8 Road-Udeens-1	4/22/2013	-	<11.3	<0.080	<0.080	<0.080	<0.024	<0.080	<0.080
WATER (ug/L)									
Tank 8 Road – Water-1	4/22/2013	**176**	**2300**	**3.4**	**2.2**	<1.0	**4**	-	-

Detections are reported in **Bold**

"-" = Not analyzed

Attachment A

WDNR Notification for Hazardous Substance Discharge

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Notification For Hazardous Substance Discharge (Non-Emergency Only)

Form 4400-225 (05/12) Page 1 of 2

Emergency Discharges / Spills should be reported via the 24-Hour Hotline: 1-800-943-0003

Notice: Hazardous substance discharges must be reported immediately according to s. 292.11 Wis. Stats. Non-emergency hazardous substance discharges may be reported by telefaxing or e-mailing a completed report to the Department, or calling or visiting a Department office in person. If you choose to notify the Department by telefax or by email, you should use this form to be sure that all necessary information is included. However, use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating the reporting requirements of ch. 292 Wis. Stats., shall be no less than $10 nor more than $5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from **(check one)**:

- ☐ Underground Petroleum Storage Tank System (additional information may be required for Item 6 below)
- ☐ Aboveground Petroleum Storage Tank System
- ☐ Dry Cleaner Facility
- ☒ Other - Describe: Historical crude oil impacts discovered near an above ground petroleum storage tank during tank ring road construction.

ATTN DNR: **R & R Program Associate** Date DNR Notified: 07/18/13

1. Discharge Reported By

Name	Firm	Phone No. (include area code)
Karl Beaster	Enbridge Energy	(715) 398-4754

Mailing Address	Email Address
1320 Grand Ave., Superior, WI 54880	karl.beaster@enbridge.com

2. Site Information

Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence/vacant property. Enbridge Superior Terminal - Tank 8

Location: Include street address, not PO Box. If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60. 2800 East 21st Street, Superior, WI 54880

Municipality: (City, Village, Township) Specify municipality in which the site is located, not mailing address/city.
Superior

County:	Legal Description:	WTM:
Douglas	SW 1/4 NW 1/4 Sec 31 Tn 49N Range 13 ○ E ◉ W	X Y

3. Responsible Party (RP) and/or RP Representative

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.
Enbridge Energy

☐ Reported in compliance with s. 292.11(2), Wis. Stats., by a local government exempt from liability under s. 292.11(9)(e), Wis. Stats. For more information see http://dnr.wi.gov/org/aw/rr/lgu/liability.htm.

Contact Person Name (if different)	Phone Number	Email Address
Karl Beaster	(715) 398-4757	karl.beaster@enbridge.com

Mailing Address	City	State	ZIP Code
1320 Grand Ave., Superior, WI 54880	Superior	WI	54880

Property owner if Different From RP: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Contact Person Name (if different)	Phone Number	Email Address

Mailing Address	City	State	ZIP Code

(continued)

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Notification For Hazardous Substance Discharge (Non-Emergency Only)

4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

- [x] VOC's
- [ ] PAH's
- [ ] Metals (specify): _____
  - [ ] Arsenic
  - [ ] Chromium
  - [ ] Cyanide
  - [ ] Lead
  - [ ] PCB's
- [ ] Diesel
- [ ] Fuel Oil
- [ ] Gasoline
- [ ] Hydraulic Oil
- [ ] Jet Fuel
- [ ] Mineral Oil
- [ ] Waste Oil
- [ ] Petroleum-Unknown Type
- [ ] PERC (Dry Cleaners)
- [ ] RCRA Hazardous Waste
- [ ] Leachate
- [ ] Fertilizer
- [ ] Pesticide/Herbicide/Insecticide(s)
- [x] Other (specify): Crude oil
- [ ] Unknown

5. Impacts to the Environment Information

Enter "K" for known/confirmed or "P" for potential for all that apply.

- ___ Air Contamination
- ___ Co-Contamination (Petroleum & Non-Petroleum)
- ___ Contamination Within 1 Meter of Bedrock
- ___ Contaminated Private Well
- ___ Contaminated Public Well
- ___ Contamination in Fractured Bedrock
- ___ Sanitary Sewer Contamination
- ___ Contamination in Right of Way
- ___ Fire Explosion Threat
- ___ Free Product
- P Groundwater Contamination
- ___ Off-Site Contamination
- ___ Other (specify): _____
- K Soil Contamination
- ___ Storm Sewer Contamination
- ___ Surface Water Contamination
- ___ Within 100 ft of Private Well
- ___ Within 1000 ft of Public Well

Contamination was discovered as a result of:

- [ ] Tank closure assessment — Date _____
- [ ] Site assessment — Date _____
- [x] Other - Describe: Excavation of soils around tank for construction — Date 04/16/2013

Lab results: [ ] Lab results will be faxed upon receipt [x] Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

Impacts were from historical releases

6. Federal Energy Act Requirements (Section 9002(d) of the Solid Waste Disposal Act (SWDA))

For all confirmed releases from UST's occurring after 9/30/2007 please provide the following information:

- [x] Does not apply.

Source

- [ ] Tank
- [ ] Piping
- [ ] Dispenser
- [ ] Submersible Turbine Pump
- [ ] Delivery Problem
- [ ] Other (specify): _____

Cause

- [ ] Spill
- [ ] Overfill
- [ ] Corrosion
- [ ] Physical or Mechanical Damage
- [ ] Installation Problem
- [ ] Other (does not fit any of above)
- [ ] Unknown

Contact information to report non-emergency releases in DNR's five regions are as follows:

Northeast Region (FAX: 920-662-5197); Attention -- R&R Program Associate: DNRRRNER@wisconsin.gov

Brown, Calumet, Door, Fond du Lac **(except City of Waupun - see South Central Region)**, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, Winnebago counties

Northern Region (FAX: 715-623-6773); Attention -- R&R Program Associate: DNRRRNOR@wisconsin.gov

Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn counties

South Central Region (FAX: 608-273-5610); Attention -- R&R Program Associate: DNRRRSCR@wisconsin.gov

Columbia, Dane, Dodge, Fond du Lac **(City of Waupun only)**, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk, Walworth counties

Southeast Region (FAX: 414-263-8550); Attention -- R&R Program Associate: DNRRRSER@wisconsin.gov

Kenosha, Milwaukee, Ozaukee, Racine, Washington, Waukesha counties

West Central Region (FAX: 715-839-6076); Attention -- R&R Program Associate: DNRRRWCR@wisconsin.gov

Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood counties

Attachment B

Enbridge Site Investigation Field Sampling and Screening Logs

4/16/2013 – Northern-most water draw-off
4/17/2013 – Northwest manway
4/18/2013 - Southwest mixer and water draw-off
4/22/2013 - Southwest mixer and water draw-off
4/23/2013 - Southeast mixer and water draw-off
4/24/2013 – Southwest soil stockpile screening
4/25/2013 – Southwest soil stockpile screening
4/26/2013 – Western excavation screening
4/27/2013 – Northwest soil stockpile screening

ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Date: 4/16/13

Location: *Milepost or Facility* Superior Terminal, Tank 8, Northeast water draw-off

Sampler: BJL2

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

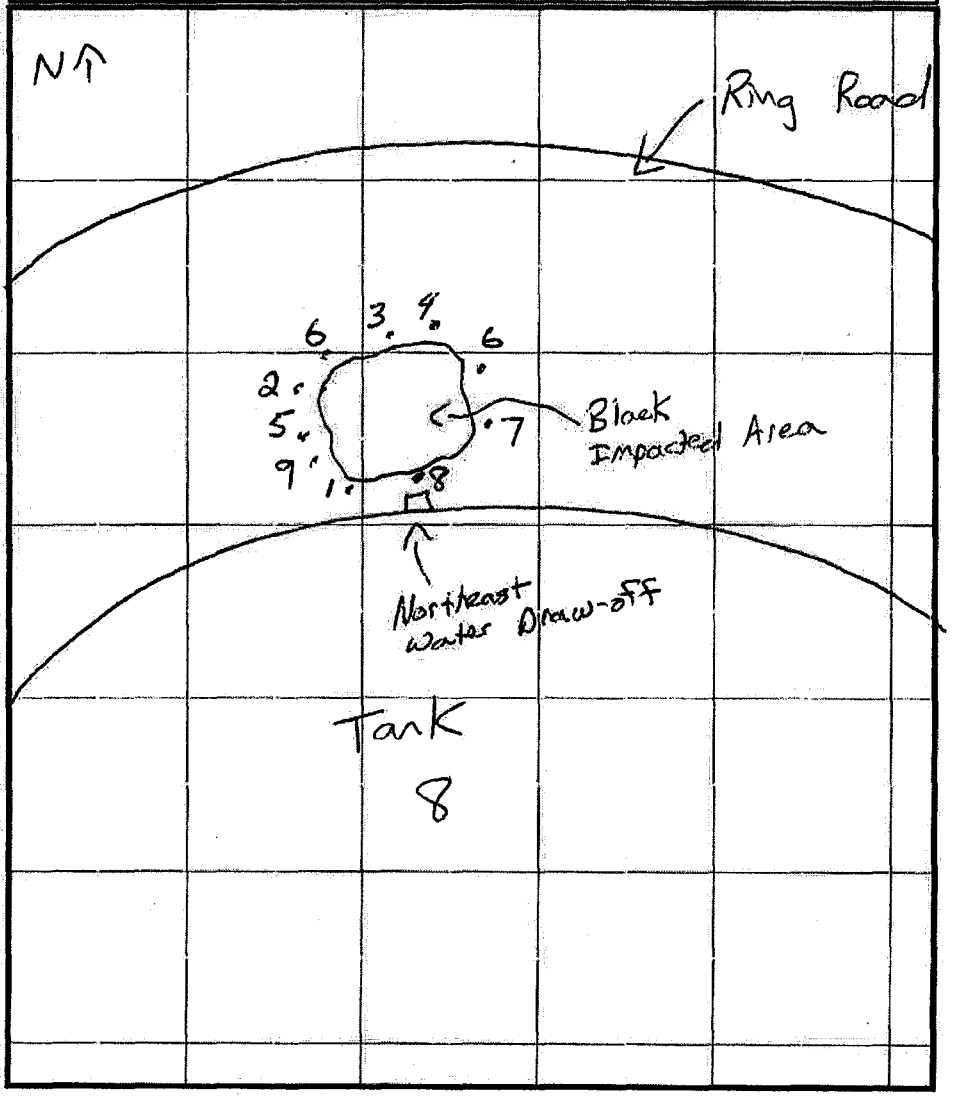
Calibration Time: 1000

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	6"	1030	SP	brown	N/N	2.4
2	6"	1030	SP	brown	N/N	0.8
3	6"	1100	SP	dk. brown	N/N	3.9
4	9"	1115	SP	brown	N/N	0.0
5	9"	1115	SP	brown	N/N	0.3
6	6"	1115	SP	brown	N/N	0.0
7	9"	1115	SP	brown	N/N	0.1
8	9"	1115	SP	brown	N/N	0.2
9	6"	1115	SP	brown	N/N	0.1
3 stockpiled (removed) headspace readings were:						
		1.2, 2.6, and 6.1 ppm.				

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid =*** 15 ***FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Date: 4/17/13

Location: *Milepost or Facility* Superior Terminal, Tank 8, Northwest Manway

Sampler: BJL2

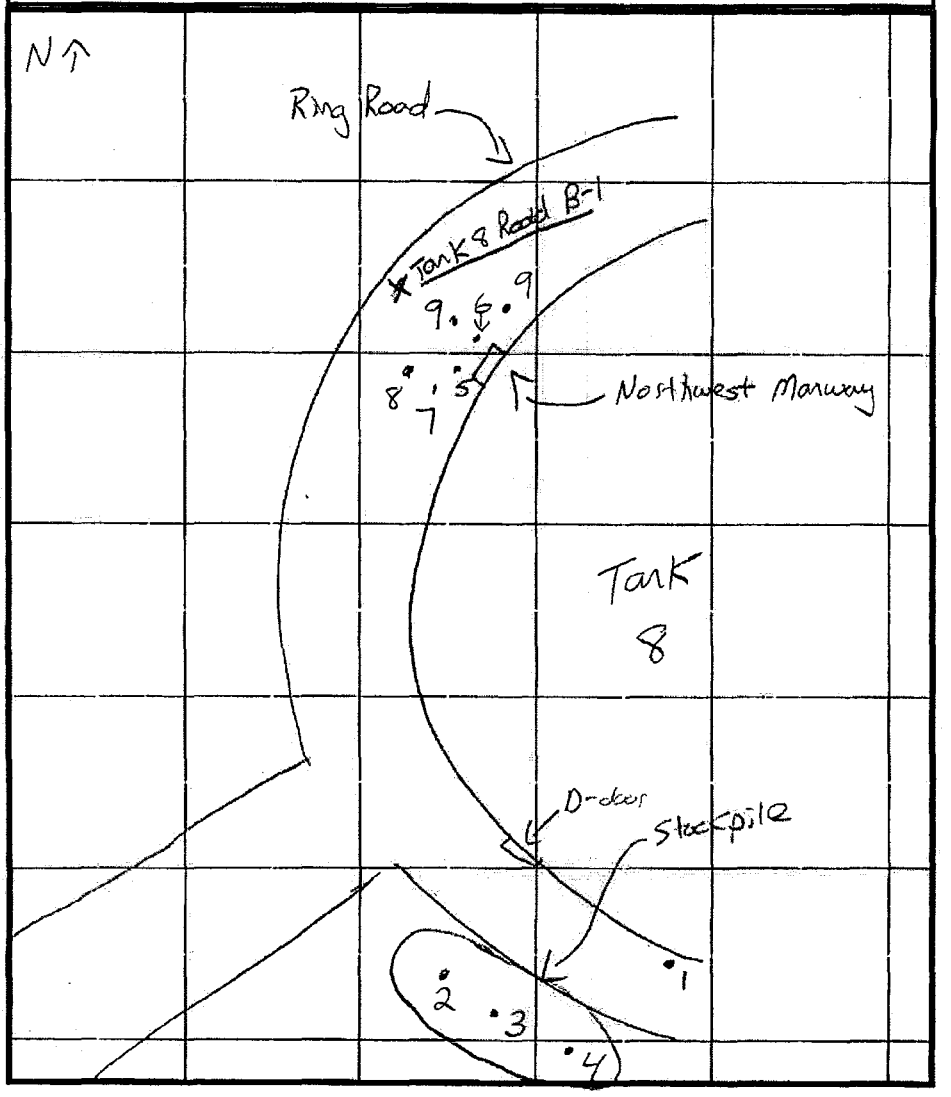
Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm Calibration Time: 1100

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	1	—	CL	Red brown	Y/Y	185+
2	Surface	—	CL	Red brown	N/N	8.2
3	Surface	—	CL	Red brown	Y/Y	135
4	Surface	—	CL	Red brown	N/N	20
5	1	—	CL	Red brown	N/N	0.8
6	1	—	CL	Red brown	N/N	0.9
7	2	—	CL	Black	N/N	0.5
8	1	—	CL	Red brown	N/N	1.4
9	1	—	CL	Red brown	N/N	0.5
10	1	—	CL	Red brown	N/N	1.0

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid = ~25 FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Superior Terminal, Tank 8, SW Mixes to water draw-off

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

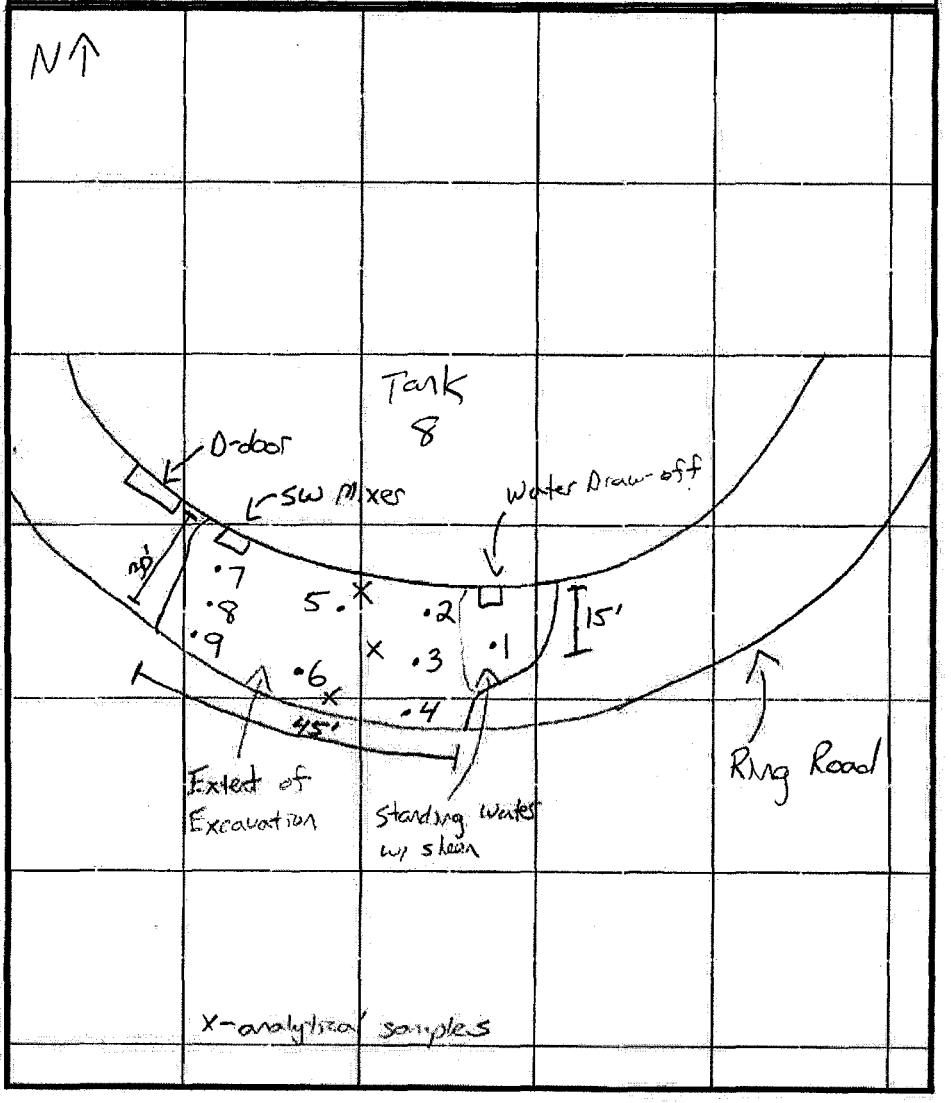
Date: 4/18/13
Sampler: BJL2
Calibration Time: 1000

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	2	—	CL	Red brown	Y/Y	100+
2	2	—	CL	Red brown	N/N	10.8
3	2	—	CL	Red brown	N/N	4.1
4	2	—	CL	Red brown	N/N	5.2
5	2	—	CL	Red brown	N/N	5.3
6	2	—	CL	Red brown	N/N	2.3
7	2	—	CL	Red brown	N/N	0.8
8	2	—	CL	Red brown	N/N	0.5
9	2	—	CL	Red brown	N/N	6.1

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid =*** 30 ***FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Date: 4/22/13

Location: *Milepost or Facility* Superior Terminal, Tank 8, SW Mixers to water draw-off

Sampler: BJL2

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

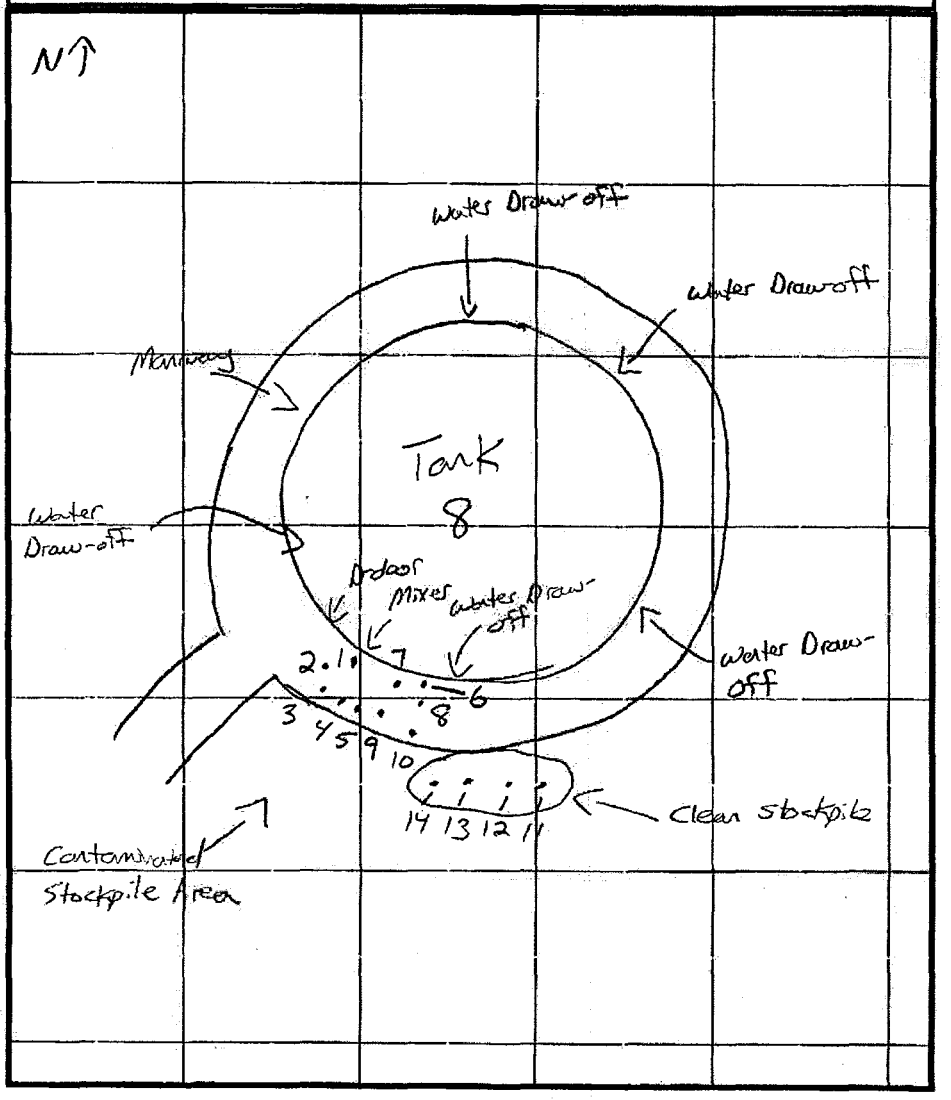
Calibration Time: 0745

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	1.7	—	CL	Red brown	Y/Y	148+
2	1.3	—	CL		Y/Y	1.1
3	1	—	CL		N/N	1.4
4	1.3	—	CL		N/N	0.9
5	0.5	—	CL		N/N	2.7
6	1	—	CL		N/N	0.5
7	1.7	—	CL		N/N	3.0
8	1	—	CL		N/N	0.3
9	1	—	CL		N/N	0.8
10	1.7	—	CL		N/N	1.7
11	Surface	—	CL		N/N	0.0
12	Surface	—	CL		N/N	0.0
13	Surface	—	CL		N/N	0.0
14	Surface	—	CL	—	N/N	0.1

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid = 50 FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Superior Terminal, Tank 8, SE Mixer and Water Draw Off

Equipment used: photo -*Ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

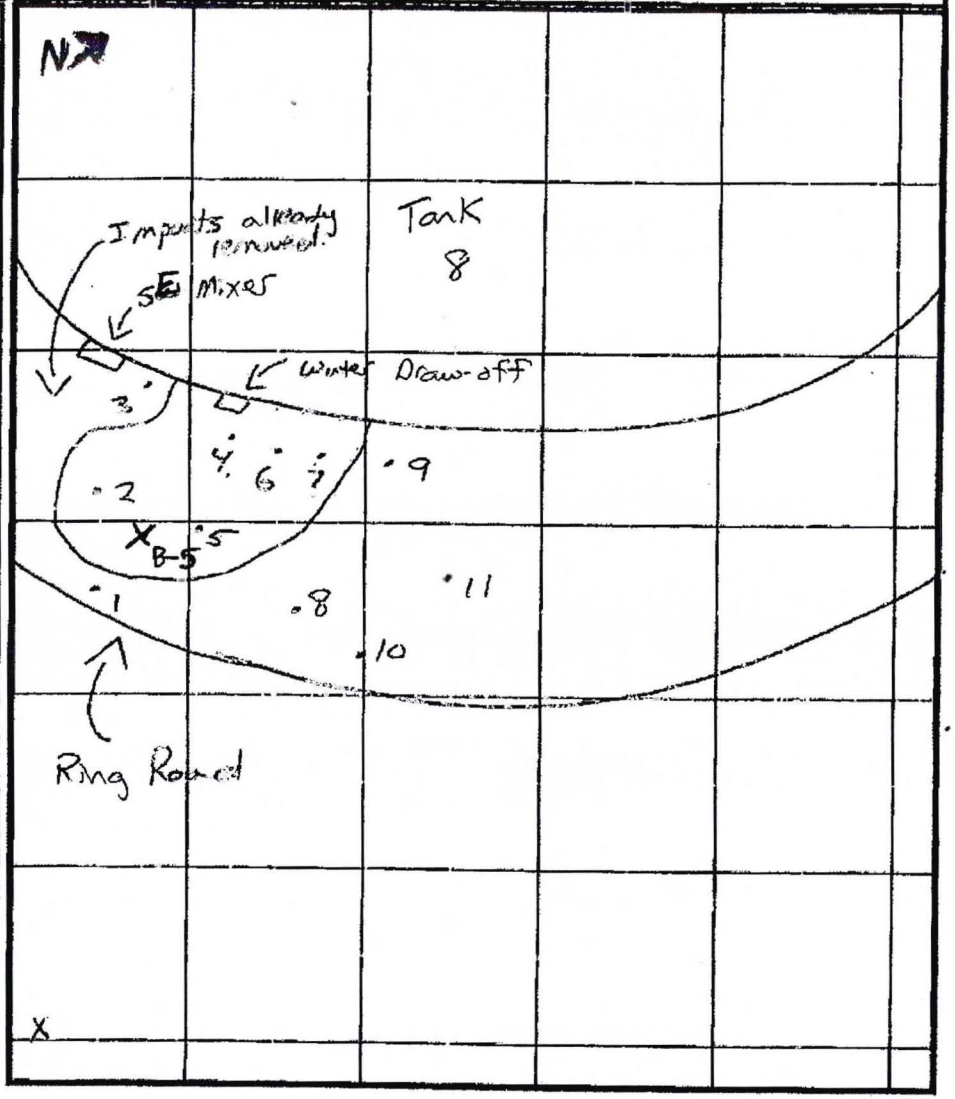
Date: 4/23/13
Sampler: BJL2
Calibration Time: 1215

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	1630	CL	Reddish brown	Petroleum/ Rainbow	275
1	1.3	—	CL	Red Brown	N/N	0.6
2	1.7	—	SM	Gray	N/N	60+
3	1.7	—	SM	Gray	Y/Y	2.0
4	1.7	—	SM	Gray	Y/Y	148+
5	1.7	—	SM	Gray	N/N	235+
6	1.7	—	CL	Red Brown	N/N	37+
7	1.7	—	CL	Red Brown	N/N	113+
8	1.7	—	CL	Red Brown	N/N	4.3
9	1.7	—	CL	Red Brown	N/N	0.9
10	1.7	—	CL	Red Brown	N/N	0.9
11	1.7	—	CL	Red Brown	N/N	1.1
B-5	1.8		CL			

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* **1 inch/grid** = ~15 **FEET**



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Superior Terminal, Tank 8, Stockpile

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

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

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

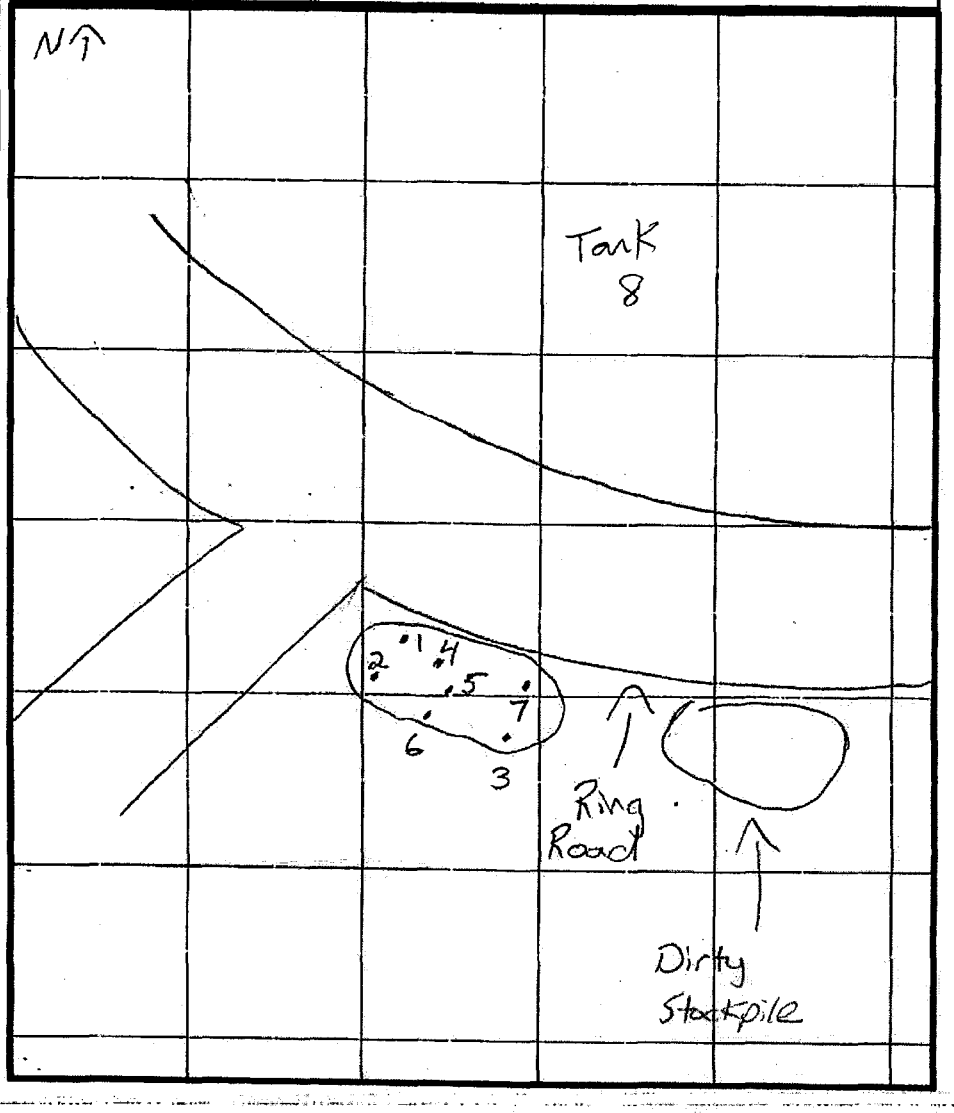
Date: 4/24/13

Sampler: BLR

Calibration Time: 0800

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	Surface	—	SM	Brown	N/N	0.6
2	Surface	—	SM	Brown	N/N	1.1
3	Surface	—	SM	Brown	Y/N	13.9
4	Surface	—	SM	Brown	N/N	1.1
5	Surface	—	SM	Brown	N/N	2.9
6	Surface	—	SM	Brown	Y/N	42.2
7	Surface	—	SM	Brown	Y/Y	348+

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid =*** 30 ***FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Superior Terminal, Tank 8, Stockpiles

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

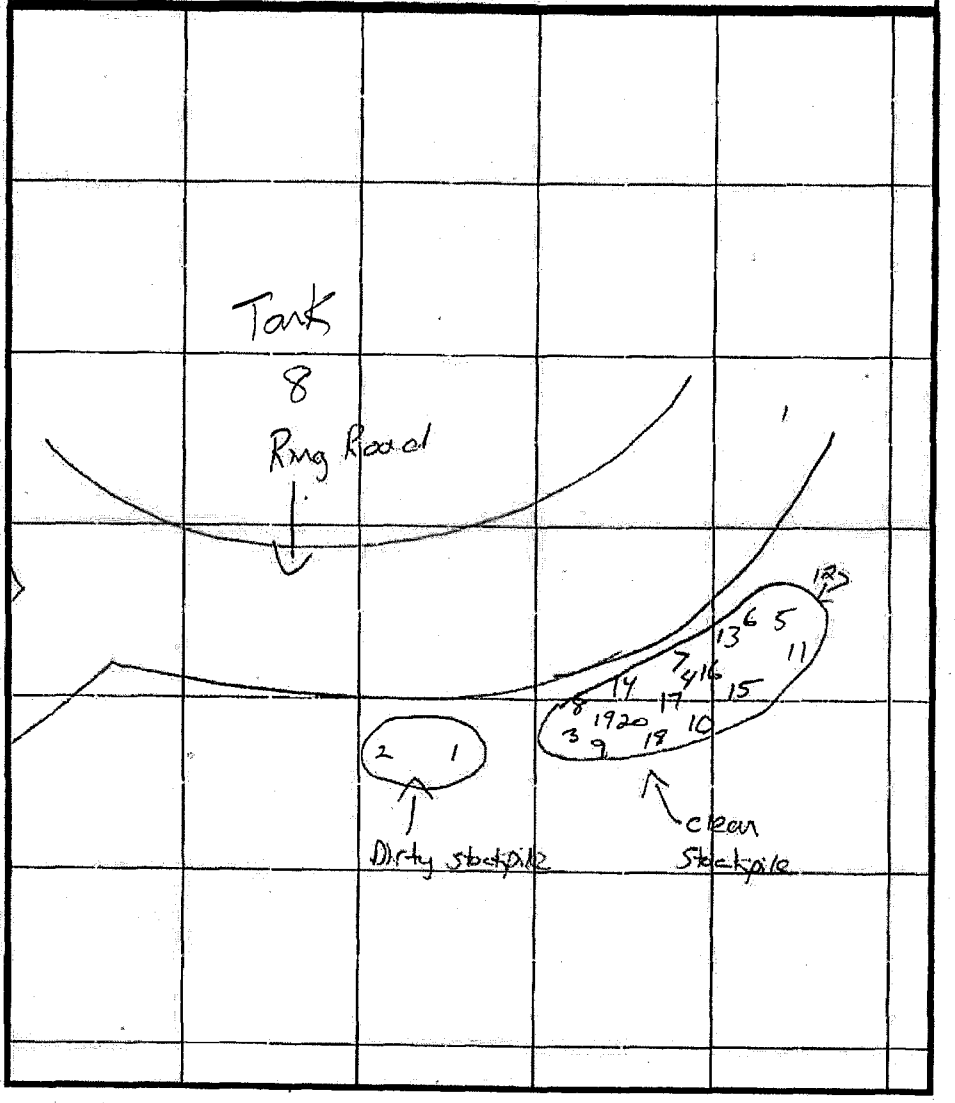
Date: 4/25/13
Sampler: BJL2
Calibration Time: 0745

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	1630	CL	Reddish brown	Petroleum/ Rainbow	275
1	Surface	—	SM	—	Y/N	53+
2	|	—	SM	—	Y/N	7.2
3	|	—	SP/CL	—	N/N	2.8
4	|	—	SM/CL	—	N/N	4.6
5	|	—	SM/CL	—	N/N	0.3
6	|	—	SM	—	N/N	0.2
7	|	—	SM	—	N/N	0.3
8	|	—	SM/CL	—	N/N	15.9
9	|	—	SM	—	N/N	0.3
10	|	—	SM	—	N/N	0.3
11	|	—	SM	—	N/N	0.1
12	|	1030	SC	—	N/N	0.6
13	|	1030	SC	—	N/N	2.6
14	|	1030	CL	—	N/N	0.4
15	|	1215	SC	—	N/N	0.7
16	|	1215	SC	—	N/N	4.8
17	|	1330	SC	—	N/N	2.5
18	|	1330	CL	—	N/N	2.5
19	|	1515	SC	—	N/N	5.4
20	—	1515	SC	—	N/N	5.1

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid =*** 30 ***FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Date: 9/26/13

Location: *Milepost or Facility* Superior Terminal, Tank 8, D-door and water draw-off

Sampler: BJL2

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

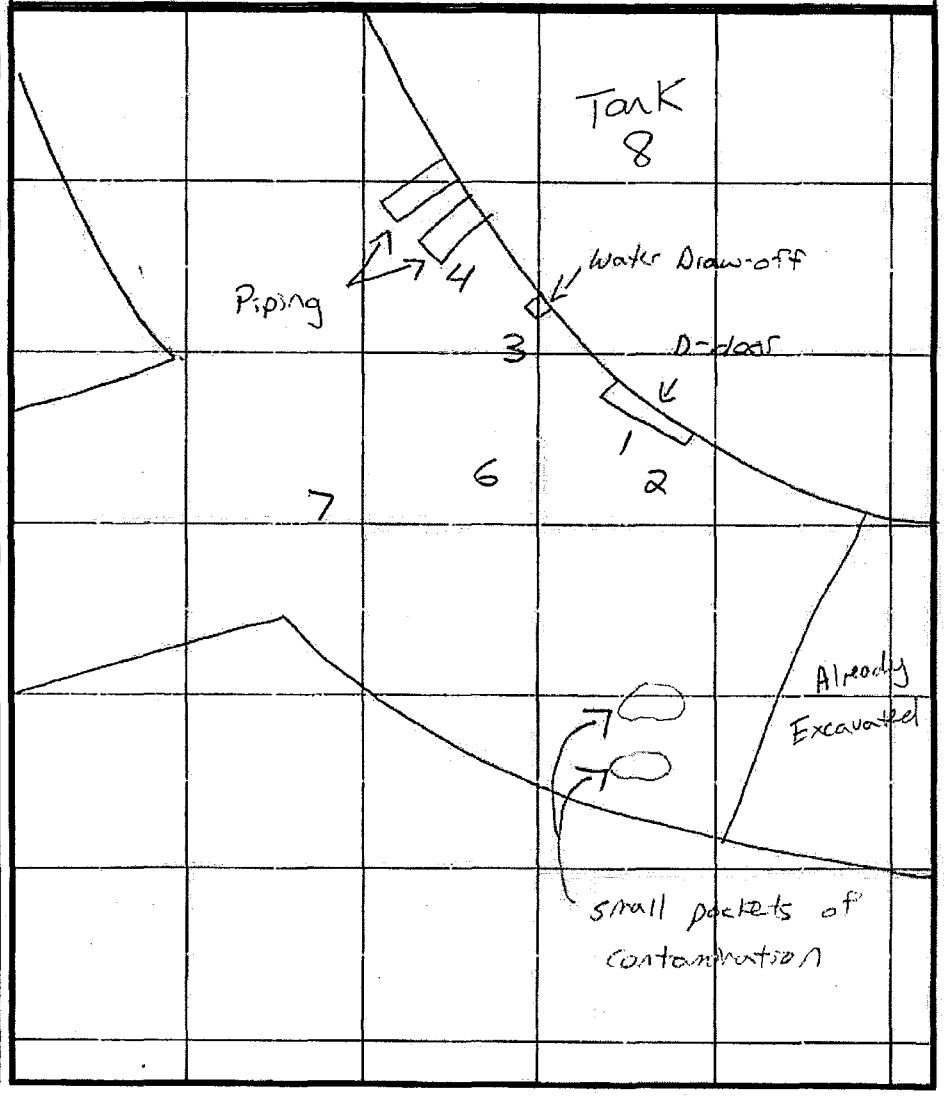
Calibration Time: 0745

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

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

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	1	—	SC	—	N/N	0.0
2	1.7	—	CL	—	N/N	0.1
3	1.7	—	CL	—	N/N	0.0
4	1.7	—	CL	—	N/N	0.1
5	1.7	—	CL	—	N/N	0.4
6	Surface	—	CL	—	N/N	0.2
7	Surface	—	CL	—	N/N	0.0

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid =*** 15 ***FEET***



ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Superior Terminal, Tank 8, Stockpiles

Equipment used: photo *-ionization detector with* 10.6 *eV lamp* Background Headspace: 0.0 ppm

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

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

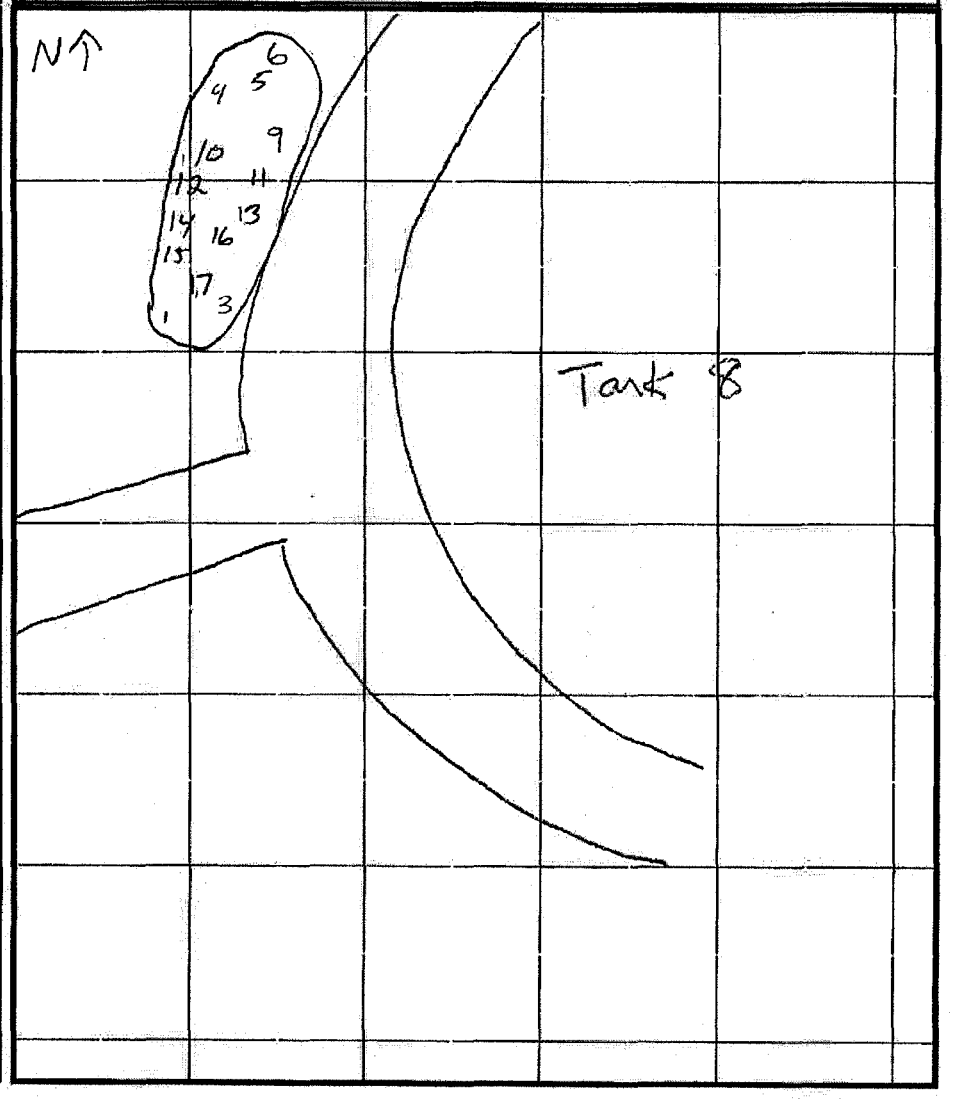
Date: 4/27/13

Sampler: BJL2

Calibration Time: 0730

Sample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	Surface	0730	CL	Red Brown	NIN	0.1
2	"	"	"	"	NIN	0.3
3	"	"	"	"	NIN	0.1
4	"	0820	CL	Red brown	NIN	0.2
5	"	"	"	"	NIN	0.2
6	"	"	"	"	NIN	0.1
7	"	0900	CL	Red brown	NIN	0.1
8	"	"	"	"	NIN	0.0
9	"	0945	CL	Red brown	NIN	0.2
10	"	"	"	"	NIN	0.1
11	"	"	"	"	NIN	0.1
12	"	1030	CL	Red brown	NIN	0.1
13	"	"	"	"	NIN	0.0
14	"	1100	CL	Red brown	NIN	0.1
15	"	"	"	"	NIN	0.4
16	"	"	"	"	NIN	0.2
17	"	1130	CL	Red brown	NIN	0.1
18	"	"	"	"	NIN	0.2

SITE SKETCH: *north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features...* ***1 inch/grid =*** ***FEET***



Attachment C

Pace Analytical Laboratory Reports for Excavation Soil Samples

Attachment C

Pace Analytical Laboratory Reports for Excavation Soil Samples

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

May 09, 2013

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Opland

andrea.opland@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10226169001	**TANK 8 ROAD-B-1**	Solid	04/17/13 15:00	04/23/13 10:25
10226169002	**TANK 8 ROAD-B-2**	Solid	04/18/13 11:00	04/23/13 10:25
10226169003	**TANK 8 ROAD-B-3**	Solid	04/18/13 11:10	04/23/13 10:25
10226169004	**TANK 8 ROAD-B-4**	Solid	04/18/13 11:20	04/23/13 10:25

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SAMPLE ANALYTE COUNT

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10226169001	**TANK 8 ROAD-B-1**	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	7	PASI-M
		ASTM D2974	JDL	1	PASI-M
10226169002	**TANK 8 ROAD-B-2**	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	7	PASI-M
		ASTM D2974	JDL	1	PASI-M
10226169003	**TANK 8 ROAD-B-3**	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	7	PASI-M
		ASTM D2974	JDL	1	PASI-M
10226169004	**TANK 8 ROAD-B-4**	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	7	PASI-M
		ASTM D2974	JDL	1	PASI-M

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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Method: **WI MOD DRO**
Description: WIDRO GCS
Client: Barr Engineering
Date: May 09, 2013

General Information:
4 samples were analyzed for WI MOD DRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with WI MOD DRO with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/21461

T6: High boiling point hydrocarbons are present in the sample.

- TANK 8 ROAD-B-3 (Lab ID: 10226169003)
  - Diesel Range Organics

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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Method: **WI MOD GRO**
Description: WIGRO GCV
Client: Barr Engineering
Date: May 09, 2013

General Information:
4 samples were analyzed for WI MOD GRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with TPH GRO/PVOC WI ext. with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-1 **Lab ID: 10226169001** Collected: 04/17/13 15:00 Received: 04/23/13 10:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO		Preparation Method: WI MOD DRO					
Diesel Range Organics	**<13.0**	mg/kg	13.0	1	04/24/13 11:43	04/27/13 14:47		
Surrogates								
n-Triacontane (S)	99	%	50-150	1	04/24/13 11:43	04/27/13 14:47	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO		Preparation Method: TPH GRO/PVOC WI ext.					
Benzene	**<0.063**	mg/kg	0.063	1	04/24/13 10:23	04/25/13 03:50	71-43-2	
Ethylbenzene	**<0.063**	mg/kg	0.063	1	04/24/13 10:23	04/25/13 03:50	100-41-4	
Toluene	**<0.063**	mg/kg	0.063	1	04/24/13 10:23	04/25/13 03:50	108-88-3	
1,2,4-Trimethylbenzene	**<0.063**	mg/kg	0.063	1	04/24/13 10:23	04/25/13 03:50	95-63-6	
1,3,5-Trimethylbenzene	**<0.063**	mg/kg	0.063	1	04/24/13 10:23	04/25/13 03:50	108-67-8	
Xylene (Total)	**<0.19**	mg/kg	0.19	1	04/24/13 10:23	04/25/13 03:50	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	100	%	80-125	1	04/24/13 10:23	04/25/13 03:50	98-08-8	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**19.1**	%	0.10	1		04/24/13 00:00		

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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-2 **Lab ID: 10226169002** Collected: 04/18/13 11:00 Received: 04/23/13 10:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO		Preparation Method: WI MOD DRO					
Diesel Range Organics	**<15.4**	mg/kg	15.4	1	04/24/13 11:43	04/27/13 14:40		
Surrogates								
n-Triacontane (S)	102	%	50-150	1	04/24/13 11:43	04/27/13 14:40	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO		Preparation Method: TPH GRO/PVOC WI ext.					
Benzene	**<0.073**	mg/kg	0.073	1	04/24/13 10:23	04/25/13 04:28	71-43-2	
Ethylbenzene	**<0.073**	mg/kg	0.073	1	04/24/13 10:23	04/25/13 04:28	100-41-4	
Toluene	**<0.073**	mg/kg	0.073	1	04/24/13 10:23	04/25/13 04:28	108-88-3	
1,2,4-Trimethylbenzene	**<0.073**	mg/kg	0.073	1	04/24/13 10:23	04/25/13 04:28	95-63-6	
1,3,5-Trimethylbenzene	**<0.073**	mg/kg	0.073	1	04/24/13 10:23	04/25/13 04:28	108-67-8	
Xylene (Total)	**<0.22**	mg/kg	0.22	1	04/24/13 10:23	04/25/13 04:28	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	101	%	80-125	1	04/24/13 10:23	04/25/13 04:28	98-08-8	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**25.1**	%	0.10	1		04/24/13 00:00		

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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-3 **Lab ID: 10226169003** Collected: 04/18/13 11:10 Received: 04/23/13 10:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO		Preparation Method: WI MOD DRO					
Diesel Range Organics	**28.8**	mg/kg	12.5	1	04/24/13 11:43	04/27/13 15:01		T6
Surrogates								
n-Triacontane (S)	97	%	50-150	1	04/24/13 11:43	04/27/13 15:01	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO		Preparation Method: TPH GRO/PVOC WI ext.					
Benzene	**0.39**	mg/kg	0.069	1	04/24/13 10:23	04/25/13 04:48	71-43-2	
Ethylbenzene	**0.17**	mg/kg	0.069	1	04/24/13 10:23	04/25/13 04:48	100-41-4	
Toluene	**<0.069**	mg/kg	0.069	1	04/24/13 10:23	04/25/13 04:48	108-88-3	
1,2,4-Trimethylbenzene	**0.18**	mg/kg	0.069	1	04/24/13 10:23	04/25/13 04:48	95-63-6	
1,3,5-Trimethylbenzene	**0.077**	mg/kg	0.069	1	04/24/13 10:23	04/25/13 04:48	108-67-8	
Xylene (Total)	**<0.21**	mg/kg	0.21	1	04/24/13 10:23	04/25/13 04:48	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	88	%	80-125	1	04/24/13 10:23	04/25/13 04:48	98-08-8	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**26.3**	%	0.10	1		04/24/13 00:00		

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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-4 **Lab ID: 10226169004** Collected: 04/18/13 11:20 Received: 04/23/13 10:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO		Preparation Method: WI MOD DRO					
Diesel Range Organics	**<10.8**	mg/kg	10.8	1	04/24/13 11:43	04/27/13 14:26		
Surrogates								
n-Triacontane (S)	97	%	50-150	1	04/24/13 11:43	04/27/13 14:26	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO		Preparation Method: TPH GRO/PVOC WI ext.					
Benzene	**<0.061**	mg/kg	0.061	1	04/24/13 10:23	04/25/13 05:08	71-43-2	
Ethylbenzene	**<0.061**	mg/kg	0.061	1	04/24/13 10:23	04/25/13 05:08	100-41-4	
Toluene	**<0.061**	mg/kg	0.061	1	04/24/13 10:23	04/25/13 05:08	108-88-3	
1,2,4-Trimethylbenzene	**<0.061**	mg/kg	0.061	1	04/24/13 10:23	04/25/13 05:08	95-63-6	
1,3,5-Trimethylbenzene	**<0.061**	mg/kg	0.061	1	04/24/13 10:23	04/25/13 05:08	108-67-8	
Xylene (Total)	**<0.18**	mg/kg	0.18	1	04/24/13 10:23	04/25/13 05:08	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	100	%	80-125	1	04/24/13 10:23	04/25/13 05:08	98-08-8	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**19.1**	%	0.10	1		04/24/13 00:00		

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

QC Batch: GCV/10632 Analysis Method: WI MOD GRO
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10226169001, 10226169002, 10226169003, 10226169004

METHOD BLANK: 1415024 Matrix: Solid
Associated Lab Samples: 10226169001, 10226169002, 10226169003, 10226169004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	<0.050	0.050	04/24/13 22:37	
1,3,5-Trimethylbenzene	mg/kg	<0.050	0.050	04/24/13 22:37	
Benzene	mg/kg	<0.050	0.050	04/24/13 22:37	
Ethylbenzene	mg/kg	<0.050	0.050	04/24/13 22:37	
Toluene	mg/kg	<0.050	0.050	04/24/13 22:37	
Xylene (Total)	mg/kg	<0.15	0.15	04/24/13 22:37	
a,a,a-Trifluorotoluene (S)	%	103	80-125	04/24/13 22:37	

LABORATORY CONTROL SAMPLE & LCSD: 1415025 1415026

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	5	5.2	4.8	103	96	80-120	7	20	
1,3,5-Trimethylbenzene	mg/kg	5	5.2	4.8	104	96	80-120	8	20	
Benzene	mg/kg	5	4.9	5.0	99	99	80-120	.2	20	
Ethylbenzene	mg/kg	5	5.1	4.9	101	98	80-120	3	20	
Toluene	mg/kg	5	5.0	4.9	100	99	80-120	1	20	
Xylene (Total)	mg/kg	15	15.4	14.6	103	97	80-120	6	20	
a,a,a-Trifluorotoluene (S)	%				98	98	80-125			

MATRIX SPIKE SAMPLE: 1415027

Parameter	Units	10226098025 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	ND	5.3	6.0	113	80-120	
1,3,5-Trimethylbenzene	mg/kg	ND	5.3	6.1	114	80-120	
Benzene	mg/kg	ND	5.3	5.9	111	80-120	
Ethylbenzene	mg/kg	ND	5.3	6.0	113	80-120	
Toluene	mg/kg	ND	5.3	5.9	112	80-120	
Xylene (Total)	mg/kg	ND	15.9	18.1	114	80-120	
a,a,a-Trifluorotoluene (S)	%				97	80-125	

SAMPLE DUPLICATE: 1415028

Parameter	Units	10226098026 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	ND	<0.061		20	
1,3,5-Trimethylbenzene	mg/kg	ND	<0.061		20	
Benzene	mg/kg	ND	<0.061		20	
Ethylbenzene	mg/kg	ND	<0.061		20	
Toluene	mg/kg	ND	<0.061		20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

SAMPLE DUPLICATE: 1415028

Parameter	Units	10226098026 Result	Dup Result	RPD	Max RPD	Qualifiers
Xylene (Total)	mg/kg	ND	<0.18		20	
a,a,a-Trifluorotoluene (S)	%	104	104	.7		

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

QC Batch: MPRP/38682 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10226169001, 10226169002, 10226169003, 10226169004

SAMPLE DUPLICATE: 1415001

Parameter	Units	10226242009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.3	19.2	10	30	

SAMPLE DUPLICATE: 1415021

Parameter	Units	10226255001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	73.6	74.0	.5	30	

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

QC Batch: OEXT/21461 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10226169001, 10226169002, 10226169003, 10226169004

METHOD BLANK: 1415152 Matrix: Solid
Associated Lab Samples: 10226169001, 10226169002, 10226169003, 10226169004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	<10.0	10.0	04/25/13 14:09	
n-Triacontane (S)	%	91	50-150	04/25/13 14:09	

LABORATORY CONTROL SAMPLE & LCSD: 1415153 1415154

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	82.2	82.1	103	103	70-120	.1	20	
n-Triacontane (S)	%				94	93	50-150			

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QUALIFIERS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

T6	High boiling point hydrocarbons are present in the sample.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226169

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10226169001	**TANK 8 ROAD-B-1**	WI MOD DRO	OEXT/21461	WI MOD DRO	GCSV/11190
10226169002	**TANK 8 ROAD-B-2**	WI MOD DRO	OEXT/21461	WI MOD DRO	GCSV/11190
10226169003	**TANK 8 ROAD-B-3**	WI MOD DRO	OEXT/21461	WI MOD DRO	GCSV/11190
10226169004	**TANK 8 ROAD-B-4**	WI MOD DRO	OEXT/21461	WI MOD DRO	GCSV/11190
10226169001	**TANK 8 ROAD-B-1**	TPH GRO/PVOC WI ext.	GCV/10632	WI MOD GRO	GCV/10633
10226169002	**TANK 8 ROAD-B-2**	TPH GRO/PVOC WI ext.	GCV/10632	WI MOD GRO	GCV/10633
10226169003	**TANK 8 ROAD-B-3**	TPH GRO/PVOC WI ext.	GCV/10632	WI MOD GRO	GCV/10633
10226169004	**TANK 8 ROAD-B-4**	TPH GRO/PVOC WI ext.	GCV/10632	WI MOD GRO	GCV/10633
10226169001	**TANK 8 ROAD-B-1**	ASTM D2974	MPRP/38682		
10226169002	**TANK 8 ROAD-B-2**	ASTM D2974	MPRP/38682		
10226169003	**TANK 8 ROAD-B-3**	ASTM D2974	MPRP/38682		
10226169004	**TANK 8 ROAD-B-4**	ASTM D2974	MPRP/38682		

10226169

Chain of Custody

1151

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

COC 1 of 1

Project Number: 49161092

Project Name: Tank 8 Road

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

COC Number: № 40092

Project Manager: REE

Project QC Contact: AAN

Sampled by: BJL2

Laboratory: Pace

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	Number of Containers/Preservative — Water: VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	Soil: VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	VOC - MTBE	Total Number Of Containers	
1.	Tank8Road-B-1	20	20	IN	4/17/13	1500		X	X												X			X	X	3	001
2.	Tank8Road-B-2	20	20	IN	4/18/13	1100		X	X												X			X	X	3	002
3.	Tank8Road-B-3	20	20	IN	4/18/13	1110		X	X												X			X	X	3	003
4.	Tank8Road-B-4	20	20	IN	4/18/13	1120		X	X												X			X	X	3	004
5.																											
6.																											
7.																											STD TAT
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/PCBs
- #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
- #4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
	(Y) N	4/22/13	1630		4/22/13	1630
Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
	(Y) N	4/22/13	1659	TN/Pace	42313	1025

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number:

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

H:\RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09\01\09

17 of 18

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-L-213-rev.06	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr

Project #: WO#: 10226169

10226169

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 9470855 1500042

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☒ B88A912167504 ☐ 80512447 ☐ 72337080 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.2 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** +.8 **Date and Initials of Person Examining Contents:** 4/23/13 TN

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☒ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: [signature] **Date:** 4/23/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

May 13, 2013

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on April 30, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Opland

andrea.opland@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10226962001	**TANK8ROAD-B-5_1.8-1.8'**	Solid	04/23/13 13:00	04/30/13 09:06

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SAMPLE ANALYTE COUNT

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10226962001	**TANK8ROAD-B-5_1.8-1.8'**	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	7	PASI-M
		ASTM D2974	JDL	1	PASI-M

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PROJECT NARRATIVE

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Method: **WI MOD DRO**
Description: WIDRO GCS
Client: Barr Engineering
Date: May 13, 2013

General Information:
1 sample was analyzed for WI MOD DRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with WI MOD DRO with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/21551

T6: High boiling point hydrocarbons are present in the sample.

- TANK8ROAD-B-5_1.8-1.8' (Lab ID: 10226962001)
  - Diesel Range Organics

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PROJECT NARRATIVE

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Method: **WI MOD GRO**
Description: WIGRO GCV
Client: Barr Engineering
Date: May 13, 2013

General Information:
1 sample was analyzed for WI MOD GRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with TPH GRO/PVOC WI ext. with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: GCV/10676

1M: Surrogate recovery outside laboratory control limits due to matrix interferences.
- TANK8ROAD-B-5_1.8-1.8' (Lab ID: 10226962001)
  - a,a,a-Trifluorotoluene (S)

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- TANK8ROAD-B-5_1.8-1.8' (Lab ID: 10226962001)
  - a,a,a-Trifluorotoluene (S)

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PROJECT NARRATIVE

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Method: **WI MOD GRO**
Description: WIGRO GCV
Client: Barr Engineering
Date: May 13, 2013

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Sample: TANK8ROAD-B-5_1.8-1.8' **Lab ID: 10226962001** Collected: 04/23/13 13:00 Received: 04/30/13 09:06 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO		Preparation Method: WI MOD DRO					
Diesel Range Organics	**264**	mg/kg	21.9	2	05/03/13 13:32	05/05/13 20:36		T6
Surrogates								
n-Triacontane (S)	93	%	50-150	2	05/03/13 13:32	05/05/13 20:36	638-68-6	
WIGRO GCV	Analytical Method: WI MOD GRO		Preparation Method: TPH GRO/PVOC WI ext.					
Benzene	**<0.31**	mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	71-43-2	
Ethylbenzene	**2.3**	mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	100-41-4	
Toluene	**0.56**	mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	108-88-3	
1,2,4-Trimethylbenzene	**2.4**	mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	95-63-6	
1,3,5-Trimethylbenzene	**4.1**	mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	108-67-8	
Xylene (Total)	**2.8**	mg/kg	0.92	5	05/03/13 10:35	05/06/13 13:10	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	67	%	80-125	5	05/03/13 10:35	05/06/13 13:10	98-08-8	1M,D3
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**21.7**	%	0.10	1		05/03/13 00:00		

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

QC Batch: GCV/10676 Analysis Method: WI MOD GRO
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10226962001

METHOD BLANK: 1421984 Matrix: Solid
Associated Lab Samples: 10226962001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	<0.050	0.050	05/03/13 14:36	
1,3,5-Trimethylbenzene	mg/kg	<0.050	0.050	05/03/13 14:36	
Benzene	mg/kg	<0.050	0.050	05/03/13 14:36	
Ethylbenzene	mg/kg	<0.050	0.050	05/03/13 14:36	
Toluene	mg/kg	<0.050	0.050	05/03/13 14:36	
Xylene (Total)	mg/kg	<0.15	0.15	05/03/13 14:36	
a,a,a-Trifluorotoluene (S)	%	100	80-125	05/03/13 14:36	

LABORATORY CONTROL SAMPLE & LCSD: 1421985 1421986

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	5	4.7	4.4	94	89	80-120	6	20	
1,3,5-Trimethylbenzene	mg/kg	5	4.8	4.5	96	89	80-120	7	20	
Benzene	mg/kg	5	4.6	4.1	93	82	80-120	13	20	
Ethylbenzene	mg/kg	5	4.8	4.4	95	88	80-120	7	20	
Toluene	mg/kg	5	4.7	4.3	94	85	80-120	10	20	
Xylene (Total)	mg/kg	15	14.1	13.3	94	89	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				99	95	80-125			

MATRIX SPIKE SAMPLE: 1421997

Parameter	Units	10227168001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	ND	5.1	4.6	89	80-120	
1,3,5-Trimethylbenzene	mg/kg	ND	5.1	4.6	91	80-120	
Benzene	mg/kg	ND	5.1	4.5	88	80-120	
Ethylbenzene	mg/kg	ND	5.1	4.6	91	80-120	
Toluene	mg/kg	ND	5.1	4.6	89	80-120	
Xylene (Total)	mg/kg	ND	15.3	13.7	89	80-120	
a,a,a-Trifluorotoluene (S)	%				100	80-125	

SAMPLE DUPLICATE: 1421998

Parameter	Units	10227168002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	ND	<0.053		20	
1,3,5-Trimethylbenzene	mg/kg	ND	<0.053		20	
Benzene	mg/kg	ND	<0.053		20	
Ethylbenzene	mg/kg	ND	<0.053		20	
Toluene	mg/kg	ND	<0.053		20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

SAMPLE DUPLICATE: 1421998

Parameter	Units	10227168002 Result	Dup Result	RPD	Max RPD	Qualifiers
Xylene (Total)	mg/kg	ND	<0.16		20	
a,a,a-Trifluorotoluene (S)	%	101	100	3		

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

QC Batch: MPRP/38905
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10226962001

SAMPLE DUPLICATE: 1422371

Parameter	Units	10227373001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.5	17.6	5	30	

SAMPLE DUPLICATE: 1422372

Parameter	Units	10227046003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.3	5.4	.7	30	

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

QC Batch: OEXT/21551 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10226962001

METHOD BLANK: 1422343 Matrix: Solid
Associated Lab Samples: 10226962001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	<10.0	10.0	05/05/13 17:40	
n-Triacontane (S)	%	91	50-150	05/05/13 17:40	

LABORATORY CONTROL SAMPLE & LCSD: 1422344 1422345

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	75.7	67.0	95	84	70-120	12	20	
n-Triacontane (S)	%				97	86	50-150			

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

1M	Surrogate recovery outside laboratory control limits due to matrix interferences.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
T6	High boiling point hydrocarbons are present in the sample.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092 TANK 8 RING ROAD
Pace Project No.: 10226962

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10226962001	**TANK8ROAD-B-5_1.8-1.8'**	WI MOD DRO	OEXT/21551	WI MOD DRO	GCSV/11248
10226962001	**TANK8ROAD-B-5_1.8-1.8'**	TPH GRO/PVOC WI ext.	GCV/10676	WI MOD GRO	GCV/10679
10226962001	**TANK8ROAD-B-5_1.8-1.8'**	ASTM D2974	MPRP/38905		

1226962

Chain of Custody

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

1123

COC 1 of 1

Project Number: 49161092

Project Name: Tank 8 Ring Road

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

COC Number: № 40124

Project Manager: REE

Project QC Contact: AAN

Sampled by: BJ2

Laboratory: Pace

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Matrix:	Type: Grab	Type: Comp.	Type: QC	Number of Containers/Preservative — Water: VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4			Soil: VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	PVOC - MTBE		Total Number Of Containers	
1.	Tank 8 Road - B-5	~~20~~	~~30~~	M	4/23/13	1300	X			X													X			X	X		3	PVOC-MTBE, DRO
2.		1.8	1.8	ft																											Normal TAT
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/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
Brad Sen	(Y) N	4/29/13	1015	Pace	4/30/13	0906
Relinquished By:	On Ice? Y N	Date	Time	Received by:	Date	Time

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number: T-3.6

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

H:RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09\01\09

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-L-213-rev.06	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr

Project #: WO# : 10226962

10226962

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 947 0855 1500 341

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☒ B88A912167504 ☐ 80512447 ☒ 72337080 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.0 **Cooler Temp Corrected (°C):** 3.6 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** +.6 **Date and Initials of Person Examining Contents:** 4/3/13

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☐ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☒ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: CMD **Date:** 4-3-2013

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical™	Document Name: MT to MN Sample Transfer Form	Revised Date: 19Apr2013
	Page: 1 of 1	
	Document Number: F-MT-C-179-rev.04	Issuing Authority: Pace Minnesota Quality Office

Shipping (circle):	UPS Fed Ex
Tracking #:	6555 4796 4383
Client:	Signal Peak
Due Date:	13-May-2013
Pace WO:	10226926
Project Manager:	Samantha Rupe

MT to MN Sample Transfer Condition Upon Receipt Form

ANALYSIS REQUESTED

Method Number & Description	Container Type	# of Bottles	Number of Samples	Preservative Yes or No	Verify Arrival Date & Initials
Tests					
Total Metals	BP3N	7	7	Yes	
Field Filtered Metals	BP3N	7	7	Yes	
Alkalinity / EC	BP3U	7	7	No	

REPORTING REQUIREMENTS/ADDITIONAL COMMENTS

MINNESOTA SAMPLE RECEIPT INFORMATION

IR Gun (circle): 80512447, B88A912167504, 72337080 Correction Factor: +8		Sample Matrix:	Wat
Cooler Temp Read (°C): 0.2	Cooler Temp Corrected (°C): 1.0	Filtred volume rec'd for dissolved tests:	Yes ✓ No__ NA__
Arrived on Ice:	Yes ✓ No__	Samples pH have been checked:	Yes ✓ No__ NA__
Custody Seal Present:	Yes ✓ No__	Trip Blank Present:	Yes__ No__ NA ✓
Short Hold Time Requested < 72 Hours:	Yes__ No ✓	Trip Blank Custody Seals Present:	Yes__ No__ NA ✓
Rush TAT Requested:	Yes__ No ✓	Pace Trip Blank Lot #:	
Sufficient Sample Volume:	Yes ✓ No__	Sample Composites Required:	Yes__ No__ NA ✓
Samples Arrived within Hold Time:	Yes ✓ No__	Report Samples:	Wet Wt. ✓ Dry Wt.__
Containers Intact:	Yes ✓ No__	Reporting Units:	

CUSTODY TRANSFER

Relinquished by/Affiliation	Date	Time	Accepted By Affiliation	Date	Time
Norma C Tamble/Pace	4/30/13	1630	[signature] Pace	5/1/13	0905

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ **Date:** _____

Comments/Resolution: _____

Project Manager Review: [signature] **Date:** 5-1-13

Attachment D

Waste Disposal Documentation

Shamrock Landfill

Waste Profile Sheet

Shamrock Landfill

P.O. Number	Customer Code	SKB Representative	CL

I. Generator Information

Generator Name: Enbridge Pipelines Limited Partnership, LLC		Generator EPA ID Number	SIC Code
Generator Location: Enbridge Superior Terminal -Tank 8 Road	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
Invoice Contact:		Billing Email Address: alex.smith@enbridge.com	

II. Waste Generation Information

Waste Name: Crude contaminated soil - Tank 8 Road	Estimated rate of waste generation: 20 ☐ Lbs. ☐ tons ☒ cy ☐ drums	☒ one time ☐ yearly
Generator Facility Operations and/or Site History: Enbridge Pipeline Terminal		
Describe the generating process or source of contaminated soil/debris and/or waste: Pipeline Terminal Activities		

III. Waste Composition and Constituents (list all known)

	Actual Range %	ppm
Crude contaminated soil	100	

IV. Waste Properties

Physical state:	Free Liquids:	pH Range:	Flash point:	Color:	Odor (describe):
☒ Solid ☐ Liquid ☐ Sludge ☐ Gas	☐ Yes ☒ No Content ____ %	☐ <2 ☐ 2-4 ☐ 5-8 ☐ 8-12.4 ☐ >12.5	☐ ≤ 140°F ☐ > 140°F to < 200°F ☐ > 200°F	Brown	petroleum odor

V. Waste Classification

Waste stream properties (answer ALL questions)			Does this waste contain absorbents?	☐ Yes	☒ 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?	☐ Yes	☒ No	Is this waste lethal (by Minn. Rules 7045.0131 Subp. 6)?	☐ Yes	☒ No
Does this waste stream contain PCB material	☐ Yes	☒ No	Is this waste recyclable?	☐ Yes	☒ No
If yes, concentration: ____ppm			Is this waste explosive?	☐ Yes	☒ No
Does this waste stream contain fuming acids?	☐ Yes	☒ No	Is this waste infectious?	☐ Yes	☒ No
Does this waste contain asbestos?	☐ Yes	☒ No	Is this putrescible waste?	☐ Yes	☒ No
Does this waste contain oxidizers?	☐ Yes	☒ No	Is this waste demolition debris?	☐ Yes	☒ No
Does this waste contain radioactive material?	☐ Yes	☒ No	Is this waste sewer sludge?	☐ Yes	☒ 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: ☐ drums (size ____) ☒ Bulk Solids ☐ boxes (size ____)		Method of shipment ☐ Roll-off ☒ End dump ☐ Rail ☐ 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	Printed Name	Title	Date
	Alex Smith	Environmental Analyst	4/18/13

LEGEND
Technical Services, Inc.
www.legend-group.com

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

April 18, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1301696
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 04/17/13. If you have any questions concerning this report, please feel free to contact me.

All samples will be retained by LEGEND, unless consumed in the analysis, for 30 days from the date of this report and then discarded unless other arrangements are made.

WI Certification #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

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

Tyler Jones
Chemist I
tjones@legend-group.com

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Tk8Road-Stockpile-1	1301696-01	Soil	04/16/13 12:00	04/17/13 10:10

Shipping Container Information

Default Cooler Temperature (°C):

Received on ice: Yes
Temperature blank was not present
Received on ice pack: No
Received on melt water: No
Ambient: No
Acceptable (IH/ISO only): No
Custody seals: No

Case Narrative:

Recovery of the DRO surrogate for the sample was not available due to sample dilution required from high analyte concentration. The DRO chromatogram is attached for the sample.

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tk8Road-Stockpile-1 (1301696-01) Soil	**Sampled: 04/16/13 12:00**			**Received: 04/17/13 10:10**						
Diesel Range Organics	**8000**	510	59	mg/kg dry	50	B3D1715	04/17/13	04/18/13	WI(95) DRO	L1
Surrogate: Triacontane (C-30)				*70-130 %*		"	"	"	"	*D-1*

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tk8Road-Stockpile-1 (1301696-01) Soil	**Sampled: 04/16/13 12:00**			**Received: 04/17/13 10:10**						
Benzene	<0.030	0.030	0.0010	mg/kg dry	1	B3D1716	04/17/13	04/17/13	WI(95) GRO	
Ethylbenzene	<0.030	0.030	0.0032	mg/kg dry	1	"	"	"	"	
Toluene	<0.030	0.030	0.0011	mg/kg dry	1	"	"	"	"	
Xylenes (total)	**0.097**	0.090	0.0060	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*115*			*80-150 %*		"	"	"	"	

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tk8Road-Stockpile-1 (1301696-01) Soil	**Sampled: 04/16/13 12:00**			**Received: 04/17/13 10:10**						
% Solids	**79**			%	1	B3D1802	04/18/13	04/18/13	% calculation	

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

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 B3D1715 - Sonication (Wisc DRO)											
Blank (B3D1715-BLK1)					Prepared & Analyzed: 04/17/13						
Diesel Range Organics	< 8.0	8.0	0.93	mg/kg wet							
Surrogate: Triacontane (C-30)	*13.6*			*mg/kg wet*	*16.0*		*85.1*	*70-130*			
LCS (B3D1715-BS1)					Prepared & Analyzed: 04/17/13						
Diesel Range Organics	57.9	8.0	0.93	mg/kg wet	64.0		90.4	70-120			
Surrogate: Triacontane (C-30)	*14.3*			*mg/kg wet*	*16.0*		*89.5*	*70-130*			
LCS Dup (B3D1715-BSD1)					Prepared & Analyzed: 04/17/13						
Diesel Range Organics	58.5	8.0	0.93	mg/kg wet	64.0		91.4	70-120	1.16	20	
Surrogate: Triacontane (C-30)	*14.5*			*mg/kg wet*	*16.0*		*90.9*	*70-130*			

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

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 B3D1716 - EPA 5035 Soil (Purge and Trap)											
Blank (B3D1716-BLK1)					Prepared & Analyzed: 04/17/13						
Benzene	< 0.025	0.025	0.00085	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0027	mg/kg wet							
Toluene	< 0.025	0.025	0.00090	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.0050	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	*27.9*			*ug/L*	*25.0*		*112*	*80-150*			
LCS (B3D1716-BS1)					Prepared & Analyzed: 04/17/13						
Benzene	99.3			ug/L	100		99.3	80-120			
Ethylbenzene	98.4			ug/L	100		98.4	80-120			
Toluene	99.3			ug/L	100		99.3	80-120			
Xylenes (total)	298			ug/L	300		99.4	80-120			
Surrogate: 4-Fluorochlorobenzene	*28.0*			*ug/L*	*25.0*		*112*	*80-150*			
LCS Dup (B3D1716-BSD1)					Prepared & Analyzed: 04/17/13						
Benzene	95.7			ug/L	100		95.7	80-120	3.67	20	
Ethylbenzene	94.8			ug/L	100		94.8	80-120	3.70	20	
Toluene	96.5			ug/L	100		96.5	80-120	2.82	20	
Xylenes (total)	287			ug/L	300		95.7	80-120	3.78	20	
Surrogate: 4-Fluorochlorobenzene	*27.7*			*ug/L*	*25.0*		*111*	*80-150*			
Matrix Spike (B3D1716-MS1)		**Source: 1301696-01**			Prepared & Analyzed: 04/17/13						
Benzene	95.7			ug/L	100	<	95.7	80-120			
Ethylbenzene	98.0			ug/L	100	0.214	97.8	80-120			
Toluene	96.8			ug/L	100	0.112	96.7	80-120			
Xylenes (total)	297			ug/L	300	1.61	98.4	80-120			
Surrogate: 4-Fluorochlorobenzene	*29.5*			*ug/L*	*25.0*		*118*	*80-150*			

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

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 B3D1802 - General Preparation											
Duplicate (B3D1802-DUP1)		**Source: 1301696-01**			Prepared & Analyzed: 04/18/13						
% Solids	80.0			%		79.0			1.26	20	

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Barr Engineering Co.	Project:	49161092	
4700 W 77th St	Project Number:	49161092 300 014 TK8	Work Order #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord	Date Reported: 04/18/13

Notes and Definitions

L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
D-1	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
<	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)

Legend Technical Services, Inc.

Chain of Custody

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

1301096

COC 1 of 1

Project Number: 49161092 300 014

Project Name: Tank 8 Ring Road Response

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

COC Number: № 40089

Project Manager: REE

Project QC Contact: AAN

Sampled by: BRS

Laboratory: Legend

Location	Start Depth	Stop Depth	Depth Unit (m/ft or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Soil: VOCs (tared MeOH) #1	Soil: GRO BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Soil: BTEX (MeOH)	Total Number Of Containers	
1. TK8 Road-Stockpile-1	–	–	–	4/16/13	1200		X	X												X			X	X	2	ASAP TAT
2.																										
3.																										
4.																										
5.																										
6.																										
7.																										
8.																										
9.																										
10.																										

0.1 °C

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/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

No temp

Relinquished By	On Ice?	Date	Time	Received by	Date	Time
Brad Seib	Y	4/16/13	1900			
Relinquished By	On Ice?	Date	Time	Received by	Date	Time
	Y			Kelly Roeder	4/17/13	1010

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: UPS

Air Bill Number:

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.

LEGEND
Technical Services, Inc.
www.legend-group.com
88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

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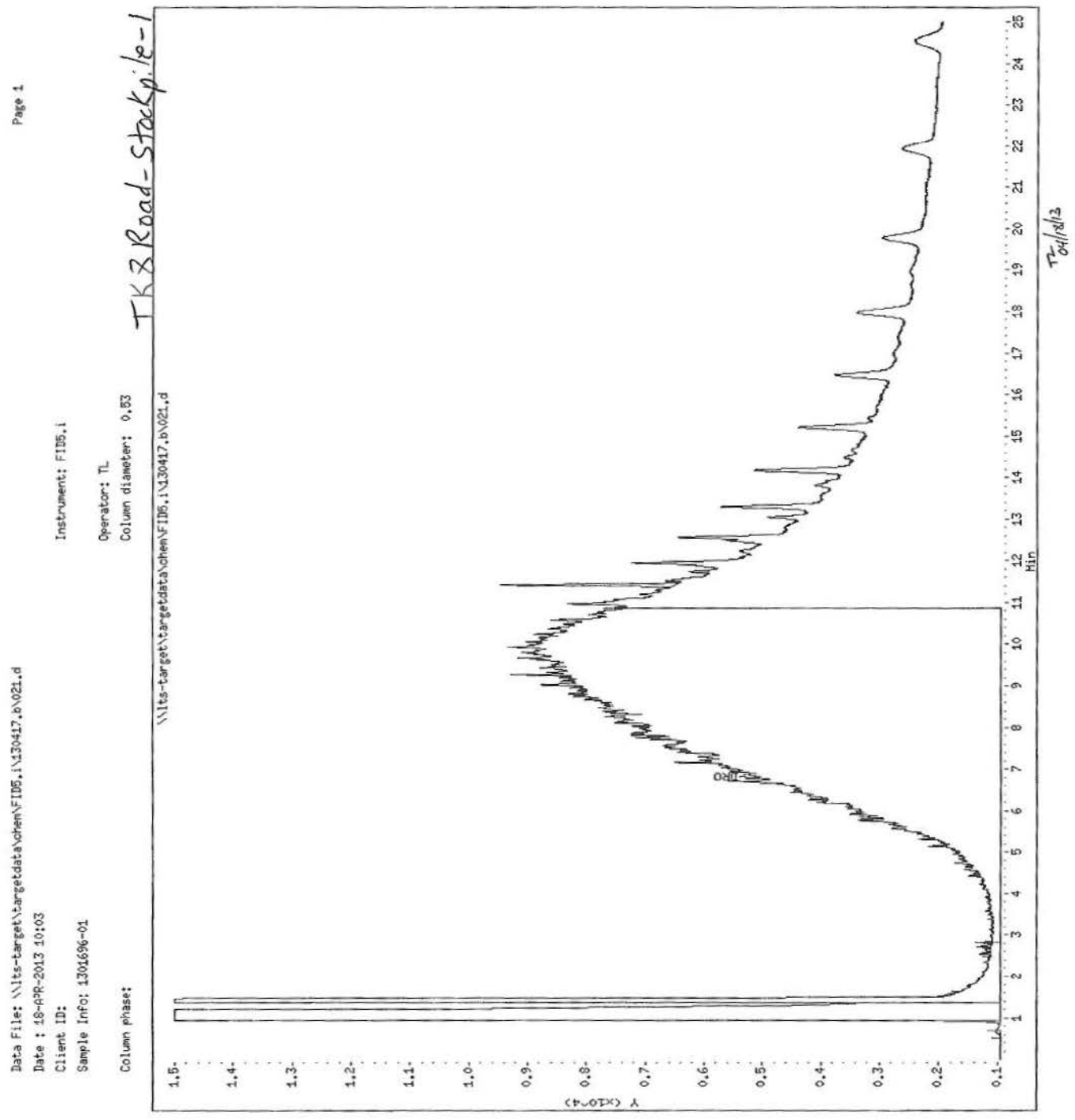

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 26, 2013

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Opland

andrea.opland@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10226170001	**TANK 8 ROAD-STOCKPILE-2**	Solid	04/17/13 15:30	04/23/13 10:25

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SAMPLE ANALYTE COUNT

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10226170001	**TANK 8 ROAD-STOCKPILE-2**	WI MOD DRO	MT	2	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260	CNC	7	PASI-M

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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Method: **WI MOD DRO**
Description: WIDRO GCS
Client: Barr Engineering
Date: April 26, 2013

General Information:
1 sample was analyzed for WI MOD DRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with WI MOD DRO with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/21458

S4: Surrogate recovery not evaluated against control limits due to sample dilution.
- TANK 8 ROAD-STOCKPILE-2 (Lab ID: 10226170001)
  - n-Triacontane (S)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/21458

T6: High boiling point hydrocarbons are present in the sample.
- TANK 8 ROAD-STOCKPILE-2 (Lab ID: 10226170001)
  - Diesel Range Organics

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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Method: **EPA 8260**
Description: 8260 MSV 5030 Med Level
Client: Barr Engineering
Date: April 26, 2013

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Sample: TANK 8 ROAD-STOCKPILE-2 **Lab ID: 10226170001** Collected: 04/17/13 15:30 Received: 04/23/13 10:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO							
Diesel Range Organics	**1550**	mg/kg	275	25	04/23/13 14:07	04/25/13 11:01		T6
Surrogates								
n-Triacontane (S)	0	%	50-150	25	04/23/13 14:07	04/25/13 11:01		S4
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**17.6**	%	0.10	1		04/24/13 00:00		
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Benzene	**677**	ug/kg	25.2	1	04/23/13 14:51	04/23/13 18:38	71-43-2	
Ethylbenzene	**1410**	ug/kg	63.0	1	04/23/13 14:51	04/23/13 18:38	100-41-4	
Toluene	**<63.0**	ug/kg	63.0	1	04/23/13 14:51	04/23/13 18:38	108-88-3	
Xylene (Total)	**1930**	ug/kg	189	1	04/23/13 14:51	04/23/13 18:38	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	92	%	57-150	1	04/23/13 14:51	04/23/13 18:38	17060-07-0	
Toluene-d8 (S)	98	%	70-136	1	04/23/13 14:51	04/23/13 18:38	2037-26-5	
4-Bromofluorobenzene (S)	109	%	67-138	1	04/23/13 14:51	04/23/13 18:38	460-00-4	

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

QC Batch: MPRP/38680
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10226170001

SAMPLE DUPLICATE: 1414998

Parameter	Units	10226242019 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.6	16.2	10	30	

SAMPLE DUPLICATE: 1415056

Parameter	Units	10226170001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.6	16.2	8	30	

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

QC Batch: MSV/23444
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5030 Med Level
Associated Lab Samples: 10226170001

METHOD BLANK: 1414086 Matrix: Solid
Associated Lab Samples: 10226170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	<20.0	20.0	04/23/13 12:16	
Ethylbenzene	ug/kg	<50.0	50.0	04/23/13 12:16	
Toluene	ug/kg	<50.0	50.0	04/23/13 12:16	
Xylene (Total)	ug/kg	<150	150	04/23/13 12:16	
1,2-Dichloroethane-d4 (S)	%	93	57-150	04/23/13 12:16	
4-Bromofluorobenzene (S)	%	96	67-138	04/23/13 12:16	
Toluene-d8 (S)	%	93	70-136	04/23/13 12:16	

LABORATORY CONTROL SAMPLE: 1414087

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	1000	772	77	72-125	
Ethylbenzene	ug/kg	1000	773	77	75-125	
Toluene	ug/kg	1000	777	78	75-125	
Xylene (Total)	ug/kg	3000	2390	80	75-125	
1,2-Dichloroethane-d4 (S)	%			97	57-150	
4-Bromofluorobenzene (S)	%			96	67-138	
Toluene-d8 (S)	%			94	70-136	

MATRIX SPIKE SAMPLE: 1414088

Parameter	Units	10226098025 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	ND	1080	1210	112	71-137	
Ethylbenzene	ug/kg	ND	1080	1230	113	75-134	
Toluene	ug/kg	ND	1080	1230	113	74-133	
Xylene (Total)	ug/kg	ND	3250	3780	116	75-135	
1,2-Dichloroethane-d4 (S)	%				95	57-150	
4-Bromofluorobenzene (S)	%				96	67-138	
Toluene-d8 (S)	%				93	70-136	

SAMPLE DUPLICATE: 1414089

Parameter	Units	10226098026 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/kg	ND	<24.5		30	
Ethylbenzene	ug/kg	ND	<61.2		30	
Toluene	ug/kg	ND	<61.2		30	
Xylene (Total)	ug/kg	ND	<184		30	
1,2-Dichloroethane-d4 (S)	%	94	93	.9		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

SAMPLE DUPLICATE: 1414089

Parameter	Units	10226098026 Result	Dup Result	RPD	Max RPD	Qualifiers
4-Bromofluorobenzene (S)	%	95	97	2		
Toluene-d8 (S)	%	93	92	.3		

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

QC Batch: OEXT/21458 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10226170001

METHOD BLANK: 1414427 Matrix: Solid
Associated Lab Samples: 10226170001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	<10.0	10.0	04/25/13 02:08	
n-Triacontane (S)	%	103	50-150	04/25/13 02:08	

LABORATORY CONTROL SAMPLE & LCSD: 1414428 1414429

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	86.4	79.3	108	99	70-120	9	20	
n-Triacontane (S)	%				110	102	50-150			

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

S4	Surrogate recovery not evaluated against control limits due to sample dilution.
T6	High boiling point hydrocarbons are present in the sample.

Pace Analytical Services, Inc.
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226170

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10226170001	**TANK 8 ROAD-STOCKPILE-2**	WI MOD DRO	OEXT/21458	WI MOD DRO	GCSV/11186
10226170001	**TANK 8 ROAD-STOCKPILE-2**	ASTM D2974	MPRP/38680		
10226170001	**TANK 8 ROAD-STOCKPILE-2**	EPA 5035/5030B	MSV/23444	EPA 8260	MSV/23445

10226170

Chain of Custody

1151

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

COC 1 of 1

Project Number: 49161092

Project Name: Tank 8 Road

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

COC Number: № 40093

Project Manager: REE

Project QC Contact: AAN

Sampled by: BJL2

Laboratory: Pace

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	Number of Containers/Preservative — Water: VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	Soil: VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	BTEX	Total Number Of Containers	
1.	TankRoad-Stockpile-2	—	—	—	4/17/13	1530 ~~1530~~		X	X												X			XX	6	Place 3 extra jars on hold 00
2.																											
3.																											
4.																											
5.																											
6.																											
7.																										RUSH per AAN	
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/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
Brad Sein	(Y) N	4/22/13	1630		4/22/13	1630
	On Ice?	Date	Time	Received by:	Date	Time
	(Y) N	4/22/13	1659	TN/Pace	42313	1025

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number:

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

H:RLGISTDFORMS\Chain Of Custody Form 2009 RLG Rev. 09\01109

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-L-213-rev.06	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr **Project #:** WO# : 10226170

10226170

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 9470855 15000242

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☒ 888A912167504 ☐ 80512447 ☐ 72337080 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.2 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** +.8 **Date and Initials of Person Examining Contents:** 4/23/13 TN

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☒ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: SL				
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 4/23/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Shamrock Landfill

April 23, 2013

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

RE: CL13-0018 Crude Contaminated Soil - Tank 8 Road

Dear 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 ½% 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 sopstad@skbinc.com.

Shamrock Landfill

Steve Opstad

Customer ACCEPTED BY: (name, position) _____

DATE: 23 April 2013

WASTE APPROVAL Period: 4/23/2013 to 4/16/2015

P.O. Box 338 • Esko, MN 55733-0338
Main: 218.878.0112 • Fax: 218.879.2120

Shamrock Landfill

Bill To Customer

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

Service For Generator

Enbridge Pipelines Limited Partnership, LLC
2800 East 21st St
Superior, WI 54880

Disposal

Waste Description: Crude Contaminated Soil - Tank 8 Road

Estimated Volume: 20 YARDS / ONE TIME ONLY

Disposal Method: Secure Non-Hazardous Landfill

Treatment Method: None Expected For Conforming Waste

Pricing

Disposal	$16.00	Per Ton	Crude Contaminated Soil - Tank 8 Road

Shamrock Landfill

Notification of Waste Acceptance

CUSTOMER INFORMATION

EPA ID#: WID981092133
Enbridge Pipelines Limited Partnership,
Enbridge Superior Terminal

2800 East 21st St
Superior, WI 54880
Contact: Alex Smith
Phone: (715) 398-4795

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

Profile Sheet #:
Waste Stream #: CL13-0018
Waste Name: Crude Contaminated Soil - Tank 8 Road

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 20 YARDS / ONE TIME ONLY

This waste is acceptable for delivery beginning on 4/23/2013 thru 4/16/2015 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.

Shamrock Landfill

WASTE STREAM ANALYSIS INFORMATION

Waste Name:	Crude Contaminated Soil - Tank 8 Road
Physical State:	Solid
Process Producing Waste:	pipeline terminal activities

PRE-ACCEPTANCE SAMPLE RESULTS

Color:		Physical State:	
Dust Present:	0	Free Liquids:	0
Paint Filter Test:	0	Odor:	
Flash Point Range:		Density:	
Radioactive?:	0	Water Reactivity:	0
pH Range:		React to Acid:	0
React to Base:	0	% Moisture:	
OVM Sniff:		Sulfide:	
Oxidizers:	0	Cyanide:	
Reacts with Air:	0		

This analysis is solely for use by Shamrock Landfill employees for the purpose of determining waste acceptability. No other claims are made or implied.

COMMENTS

AUTHORIZATION

Approval: _____ Date: 4/23/13

P.O. Box 338 • Esko, MN 55733-0338
Main: 218.878.0112 • Fax: 218.879.2120

SKB CLOQUET

REPORT NAME: **Tons Each Load By WSID**
DESCRIPTION: **Tonnage for EACH LOAD, grouped by customer**
DATE RANGE: **01/01/2013 to 05/24/2013**
PRINTED ON (DATE): **Friday, May 24, 2013**

ENBS1

Enbridge Pipelines Limited Partnership,
2800 East 21st St
Superior WI 54880

LOAD #	MANIFEST	ARRIVED	WASTE STREAM	WASTE NAME	CELL	SPOT	LIFT	TONS
9493 (A)	10379	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	25.09
9494 (A)	10380	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	19.13
9495 (A)	10381	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	16.55
9498 (A)	10382	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	13.50
9499 (A)	10387	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	21.51
9507 (A)	10384	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	23.00
9509 (A)	10385	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	17.92
9510 (A)	10386	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	17.71
9511 (A)	10387A	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	24.84
9517 (A)	10388	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	25.22
9520 (A)	10389	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	25.24
9527 (A)	10465	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	23.03
9529 (A)	10466	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	7.36
9533 (A)	10467	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	20.93
9535 (A)	10468	4/29/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	W41	1160	21.86
9542 (A)	10469	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R41	1160	22.89
9543 (A)	10470	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R41	1160	23.74
9544 (A)	10471	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R41	1160	14.83
9547 (A)	10472	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R41	1160	16.86
9548 (A)	10473	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R41	1160	13.21
9553 (A)	10474	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	23.15
9555 (A)	10475	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	22.89
9557 (A)	10476	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	14.66
9558 (A)	10477	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	17.45
9559 (A)	10478	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	14.97
9566 (A)	10479	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	20.75
9567 (A)	10480	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	24.89
9568 (A)	10481	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	17.36
9569 (A)	10482	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	15.09
9570 (A)	10483	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	19.64
9574 (A)	10484	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	25.31
9575 (A)	1048	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	22.64
9577 (A)	10486	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	15.50
9579 (A)	10487	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	14.24
9580 (A)	10488	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	14.12
9585 (A)	10489	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	24.24
9586 (A)	10453	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	22.53
9587 (A)	10454	4/30/2013	CL13-0018	Crude Contaminated Soil - Tank 8 R	2A	R42	1160	10.46

Total # of Loads: 38 **Total Tons: 734.31**

Grand Total (Tons): 734.31
Grand Total (Loads): 38

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

May 01, 2013

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Opland

andrea.opland@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10226167001	**TANK 8 ROAD-UDEERS-1**	Solid	04/22/13 09:00	04/23/13 10:25

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10226167001	**TANK 8 ROAD-UDEERS-1**	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	7	PASI-M
		ASTM D2974	JDL	1	PASI-M

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(612)607-1700

PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Method: **WI MOD DRO**
Description: WIDRO GCS
Client: Barr Engineering
Date: May 01, 2013

General Information:
1 sample was analyzed for WI MOD DRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with WI MOD DRO with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Method: **WI MOD GRO**
Description: WIGRO GCV
Client: Barr Engineering
Date: May 01, 2013

General Information:
1 sample was analyzed for WI MOD GRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with TPH GRO/PVOC WI ext. with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Sample: TANK 8 ROAD-UDEERS-1 **Lab ID: 10226167001** Collected: 04/22/13 09:00 Received: 04/23/13 10:25 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO		Preparation Method: WI MOD DRO					
Diesel Range Organics	**<11.3**	mg/kg	11.3	1	04/24/13 11:43	04/27/13 14:54		
Surrogates								
n-Triacontane (S)	94	%	50-150	1	04/24/13 11:43	04/27/13 14:54		
WIGRO GCV	Analytical Method: WI MOD GRO		Preparation Method: TPH GRO/PVOC WI ext.					
Benzene	**<0.080**	mg/kg	0.080	1	04/24/13 10:23	04/25/13 04:09	71-43-2	
Ethylbenzene	**<0.080**	mg/kg	0.080	1	04/24/13 10:23	04/25/13 04:09	100-41-4	
Toluene	**<0.080**	mg/kg	0.080	1	04/24/13 10:23	04/25/13 04:09	108-88-3	
1,2,4-Trimethylbenzene	**<0.080**	mg/kg	0.080	1	04/24/13 10:23	04/25/13 04:09	95-63-6	
1,3,5-Trimethylbenzene	**<0.080**	mg/kg	0.080	1	04/24/13 10:23	04/25/13 04:09	108-67-8	
Xylene (Total)	**<0.24**	mg/kg	0.24	1	04/24/13 10:23	04/25/13 04:09	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	101	%	80-125	1	04/24/13 10:23	04/25/13 04:09	98-08-8	
Dry Weight	Analytical Method: ASTM D2974							
Percent Moisture	**17.1**	%	0.10	1		04/24/13 00:00		

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

QC Batch: GCV/10632 Analysis Method: WI MOD GRO
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10226167001

METHOD BLANK: 1415024 Matrix: Solid
Associated Lab Samples: 10226167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	<0.050	0.050	04/24/13 22:37	
1,3,5-Trimethylbenzene	mg/kg	<0.050	0.050	04/24/13 22:37	
Benzene	mg/kg	<0.050	0.050	04/24/13 22:37	
Ethylbenzene	mg/kg	<0.050	0.050	04/24/13 22:37	
Toluene	mg/kg	<0.050	0.050	04/24/13 22:37	
Xylene (Total)	mg/kg	<0.15	0.15	04/24/13 22:37	
a,a,a-Trifluorotoluene (S)	%	103	80-125	04/24/13 22:37	

LABORATORY CONTROL SAMPLE & LCSD: 1415025 1415026

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	5	5.2	4.8	103	96	80-120	7	20	
1,3,5-Trimethylbenzene	mg/kg	5	5.2	4.8	104	96	80-120	8	20	
Benzene	mg/kg	5	4.9	5.0	99	99	80-120	.2	20	
Ethylbenzene	mg/kg	5	5.1	4.9	101	98	80-120	3	20	
Toluene	mg/kg	5	5.0	4.9	100	99	80-120	1	20	
Xylene (Total)	mg/kg	15	15.4	14.6	103	97	80-120	6	20	
a,a,a-Trifluorotoluene (S)	%				98	98	80-125			

MATRIX SPIKE SAMPLE: 1415027

Parameter	Units	10226098025 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	ND	5.3	6.0	113	80-120	
1,3,5-Trimethylbenzene	mg/kg	ND	5.3	6.1	114	80-120	
Benzene	mg/kg	ND	5.3	5.9	111	80-120	
Ethylbenzene	mg/kg	ND	5.3	6.0	113	80-120	
Toluene	mg/kg	ND	5.3	5.9	112	80-120	
Xylene (Total)	mg/kg	ND	15.9	18.1	114	80-120	
a,a,a-Trifluorotoluene (S)	%				97	80-125	

SAMPLE DUPLICATE: 1415028

Parameter	Units	10226098026 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	mg/kg	ND	<0.061		20	
1,3,5-Trimethylbenzene	mg/kg	ND	<0.061		20	
Benzene	mg/kg	ND	<0.061		20	
Ethylbenzene	mg/kg	ND	<0.061		20	
Toluene	mg/kg	ND	<0.061		20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

SAMPLE DUPLICATE: 1415028

Parameter	Units	10226098026 Result	Dup Result	RPD	Max RPD	Qualifiers
Xylene (Total)	mg/kg	ND	<0.18		20	
a,a,a-Trifluorotoluene (S)	%	104	104	.7		

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QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

QC Batch: MPRP/38682
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10226167001

SAMPLE DUPLICATE: 1415001

Parameter	Units	10226242009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.3	19.2	10	30	

SAMPLE DUPLICATE: 1415021

Parameter	Units	10226255001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	73.6	74.0	.5	30	

Pace Analytical Services, Inc.
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

QC Batch: OEXT/21461 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10226167001

METHOD BLANK: 1415152 Matrix: Solid
Associated Lab Samples: 10226167001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	<10.0	10.0	04/25/13 14:09	
n-Triacontane (S)	%	91	50-150	04/25/13 14:09	

LABORATORY CONTROL SAMPLE & LCSD: 1415153 1415154

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	82.2	82.1	103	103	70-120	.1	20	
n-Triacontane (S)	%				94	93	50-150			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092 TANK 8 ROAD
Pace Project No.: 10226167

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10226167001	**TANK 8 ROAD-UDEERS-1**	WI MOD DRO	OEXT/21461	WI MOD DRO	GCSV/11190
10226167001	**TANK 8 ROAD-UDEERS-1**	TPH GRO/PVOC WI ext.	GCV/10632	WI MOD GRO	GCV/10633
10226167001	**TANK 8 ROAD-UDEERS-1**	ASTM D2974	MPRP/38682		

10226167

1151

Chain of Custody

BARR

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

COC 1 of 1

Project Number: 49161092

Project Name: Tank 8 Road

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

COC Number: № 40091

Project Manager: REE

Project QC Contact: AAN

Sampled by: ESR2

Laboratory: Pace

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Matrix:	Type: Grab	Type: Comp.	Type: QC	Number of Containers/Preservative — Water: VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4			Soil: VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	Pace - MTBE		Total Number Of Containers	
1.	Tank 8 Road-Ueaas-1	-	-	-	4/23/13	0900		X			X													X		X	X		3	001
2.																														
3.																														
4.																														STD TAT
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/PCBs
- #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
- #4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Y N	4/22/13	1630	[signature]	4/22/13	1630
[signature]	Y N	4/22/13	1659	TN/Pace	42313	1025

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number:

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

2626 Courtland Street
Duluth, MN 55806-1894
phone 218.722.3336
fax 218.727.7471
www.wlssd.com

WLSSD
Western Lake Superior Sanitary District

April 30, 2013

Ryan Erickson
Barr Enginerring
332 W. Superior Street, Suite 600
Duluth, MN 55802

Re: WLSSD Discharge Approval (Enbridge Groundwater Clean-up)

Dear Mr. Erickson:

Based on the analytical information provided on **4/30/2013**, the WLSSD approves the discharge of **approximately 2000 gallons of contaminated water from an Enbridge pipeline ground water clean-up site** provided there is no visual sign of the petroleum oil, grease or other petroleum related products. This contaminated water is to be disposed of at the WLSSD's main treatment facility, which is located at 2626 Courtland in Duluth.

This is a one time only approval for the waste described. It does not release **Barr Engineering or Enbridge** from any conditions/regulations set forth by the MPCA and/or any other agency that regulates the waste being discharged. In addition, this approval does not release **Barr Engineering or Enbridge or any consultant/contractor** involved from any subsequent liabilities associated with conducting this discharge.

Disposal during a significant rainstorm may be denied because of high flows. A copy of this letter of approval is to accompany each load and is to be disposed of and given to the process control operator. **Please attempt to discharge at our facility between 7:00 a.m. and 5:00 p.m. If you are unable to discharge at that time please call the procees control operator (218) 722-3336 ext. 301 with you estimated time of arrival.**

If there are any questions, please contact me at (218) 740-4815.

Sincerely,

Tim Tuominen
Chemist

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 30, 2013

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 49/16-1092 REV
Pace Project No.: 10226151

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised 4/30/13 to change the project ID and the sample ID at the client's request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy for
Andrea Opland
andrea.opland@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 49/16-1092 REV
Pace Project No.: 10226151

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Hawaii Certification #Pace
Idaho Certification #: MN00064
Illinois Certification #: 200011
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia/DCLS Certification #: 002521
Virginia/VELAP Certification #: 460163
Washington Certification #: C754
West Virginia Certification #: 382
Wisconsin Certification #: 999407970

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 49/16-1092 REV
Pace Project No.: 10226151

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10226151001	**Tank 8 Road-Water-1**	Water	04/22/13 10:15	04/23/13 10:25

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 49/16-1092 REV
Pace Project No.: 10226151

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10226151001	**Tank 8 Road-Water-1**	WI MOD DRO	MT	2	PASI-M
		WI MOD GRO	KT1	6	PASI-M

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PROJECT NARRATIVE

Project: 49/16-1092 REV
Pace Project No.: 10226151

Method: **WI MOD DRO**
Description: WIDRO GCS
Client: Barr Engineering
Date: April 30, 2013

General Information:
1 sample was analyzed for WI MOD DRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with WI MOD DRO with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/21447

T6: High boiling point hydrocarbons are present in the sample.

- Tank 8 Road-Water-1 (Lab ID: 10226151001)
  - Diesel Range Organics

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Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 49/16-1092 REV
Pace Project No.: 10226151

Method: **WI MOD GRO**
Description: WIGRO GCV
Client: Barr Engineering
Date: April 30, 2013

General Information:
1 sample was analyzed for WI MOD GRO. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 49/16-1092 REV
Pace Project No.: 10226151

Sample: Tank 8 Road-Water-1 **Lab ID: 10226151001** Collected: 04/22/13 10:15 Received: 04/23/13 10:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO							
Diesel Range Organics	**2.3**	mg/L	0.11	1	04/23/13 07:29	04/25/13 01:20		T6
Surrogates								
n-Triacontane (S)	96	%	50-150	1	04/23/13 07:29	04/25/13 01:20		
WIGRO GCV	Analytical Method: WI MOD GRO							
Benzene	**3.4**	ug/L	1.0	1		04/28/13 13:22	71-43-2	
Ethylbenzene	**2.2**	ug/L	1.0	1		04/28/13 13:22	100-41-4	
Gasoline Range Organics	**176**	ug/L	100	1		04/28/13 13:22		
Toluene	**<1.0**	ug/L	1.0	1		04/28/13 13:22	108-88-3	
Xylene (Total)	**4.0**	ug/L	3.0	1		04/28/13 13:22	1330-20-7	
Surrogates								
a,a,a-Trifluorotoluene (S)	105	%	80-125	1		04/28/13 13:22	98-08-8	

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QUALITY CONTROL DATA

Project: 49/16-1092 REV
Pace Project No.: 10226151

QC Batch: GCV/10640
QC Batch Method: WI MOD GRO
Analysis Method: WI MOD GRO
Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10226151001

METHOD BLANK: 1416247 Matrix: Water
Associated Lab Samples: 10226151001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	<1.0	1.0	04/28/13 12:41	
Ethylbenzene	ug/L	<1.0	1.0	04/28/13 12:41	
Gasoline Range Organics	ug/L	<100	100	04/28/13 12:41	
Toluene	ug/L	<1.0	1.0	04/28/13 12:41	
Xylene (Total)	ug/L	<3.0	3.0	04/28/13 12:41	
a,a,a-Trifluorotoluene (S)	%	99	80-125	04/28/13 12:41	

LABORATORY CONTROL SAMPLE & LCSD: 1416248 1416249

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	100	94.2	96.8	94	97	80-120	3	20	
Ethylbenzene	ug/L	100	91.9	94.7	92	95	80-120	3	20	
Gasoline Range Organics	ug/L	1000	1020	1040	102	104	80-120	2	20	
Toluene	ug/L	100	93.2	96.0	93	96	80-120	3	20	
Xylene (Total)	ug/L	300	283	289	94	96	80-120	2	20	
a,a,a-Trifluorotoluene (S)	%				98	101	80-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1418432 1418433

Parameter	Units	10225661008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	1830	1000	1000	2960	2970	113	114	80-120	.3	20	
Ethylbenzene	ug/L	138	1000	1000	1120	1130	99	99	80-120	.4	20	
Gasoline Range Organics	ug/L	4270	10000	10000	14700	15000	104	107	80-120	2	20	
Toluene	ug/L	39.0	1000	1000	1020	1030	98	99	80-120	.8	20	
Xylene (Total)	ug/L	636	3000	3000	3710	3730	103	103	80-120	.6	20	
a,a,a-Trifluorotoluene (S)	%						97	98	80-125			

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(612)607-1700

QUALITY CONTROL DATA

Project: 49/16-1092 REV
Pace Project No.: 10226151

QC Batch: OEXT/21447 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10226151001

METHOD BLANK: 1414034 Matrix: Water
Associated Lab Samples: 10226151001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/L	<0.10	0.10	04/24/13 07:54	
n-Triacontane (S)	%	82	50-150	04/24/13 07:54	

LABORATORY CONTROL SAMPLE & LCSD: 1414035 1414036

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/L	2	2.2	2.0	109	98	75-115	11	20	
n-Triacontane (S)	%				99	87	50-150			

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Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 49/16-1092 REV
Pace Project No.: 10226151

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

T6	High boiling point hydrocarbons are present in the sample.

Pace Analytical Services, Inc.
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49/16-1092 REV
Pace Project No.: 10226151

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10226151001	**Tank 8 Road-Water-1**	WI MOD DRO	OEXT/21447	WI MOD DRO	GCSV/11173
10226151001	**Tank 8 Road-Water-1**	WI MOD GRO	GCV/10640		

Report Date: 29-Apr-2013 14:44

Pace Analytical Services

WIGRO GASOLINE RANGE ORGANICS

Data file : \\192.168.10.12\chem\10gcv6.i\042813a-2.b\042813005.d

Lab Smp Id: 10226151001 Client Smp ID: 10226151001

Inj Date : 28-APR-2013 13:22

Operator : KT1 Inst ID: 10gcv6.i

Smp Info : 10226151001

Misc Info : 10640

Comment : WIGRO GASOLINE RANGE ORGANICS

Method : \\192.168.10.12\chem\10gcv6.i\042813a-2.b\G613-WIGRO-042513.m

Meth Date : 29-Apr-2013 14:44 10gcv6.i Quant Type: ESTD

Cal Date : 25-APR-2013 16:25 Cal File: 042513016.d

Als bottle: 1

Dil Factor: 1.00000

Integrator: HP Genie Compound Sublist: all.sub

Target Version: 4.14

Processing Host: SEMIVOLGCMS

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
S 5 GRO	3.195	-12.253		156999484	175.592	175.6

Data File: \\192.168.10.12\chem\10gcv6.i\042813a-2.b/042813005.d

Report Date: 04/29/2013

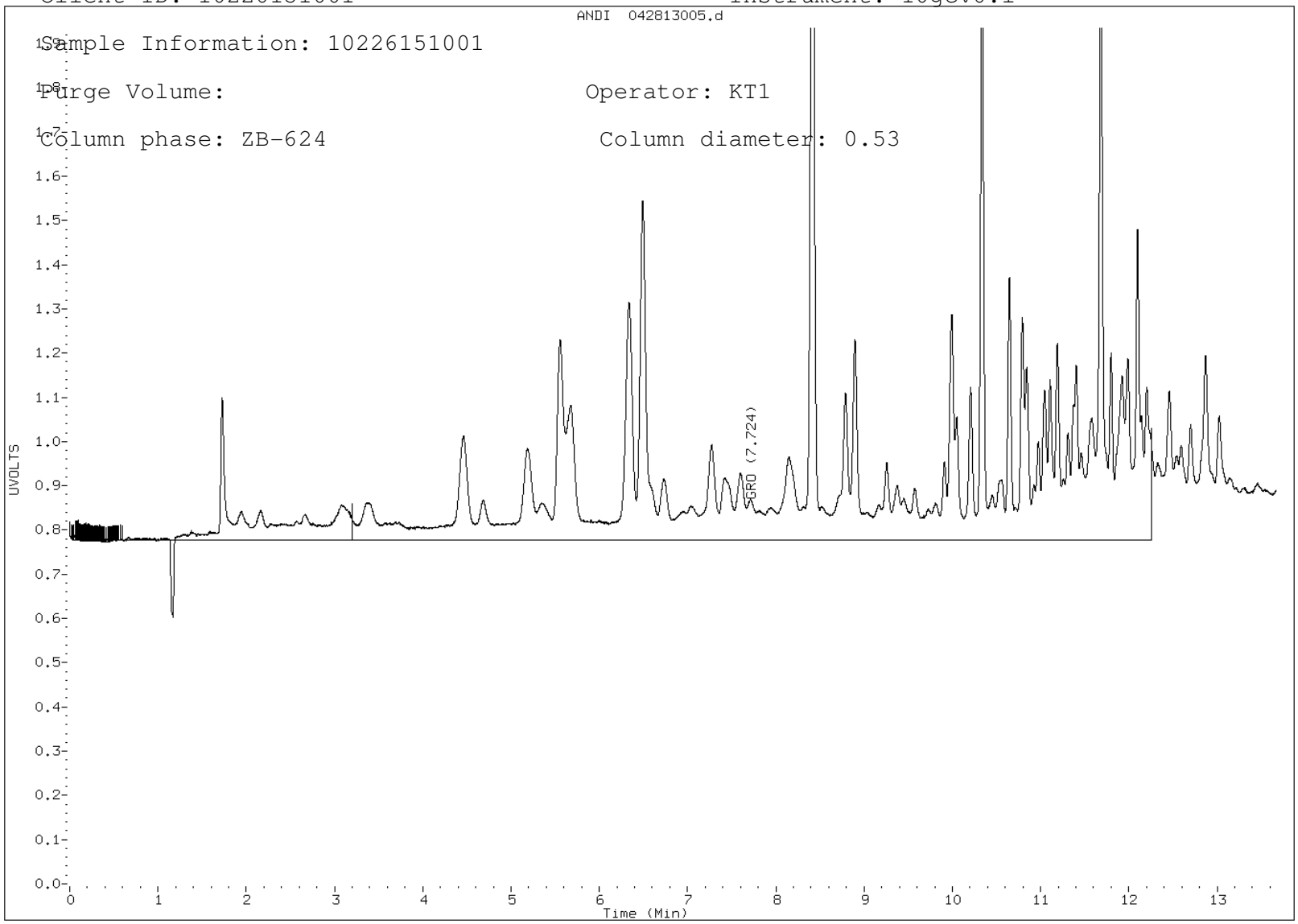
Sample ID: 10226151001

Client ID: 10226151001 Instrument: 10gcv6.i

Sample Information: 10226151001

Purge Volume: Operator: KT1

Column phase: ZB-624 Column diameter: 0.53



Report Date: 25-Apr-2013 13:36

Pace Analytical Services

Wisconsin GAS RANGE ORGANICS

Data file : \\192.168.10.12\chem\10gcv3.i\042313c-2.b\G1-11333.d

Lab Smp Id: 10226151001

Inj Date : 24-APR-2013 00:22

Operator : KT1 Inst ID: 10gcv3.i

Smp Info : 10226151001

Misc Info : 10634

Comment : Modified WIGRO

Method : \\192.168.10.12\chem\10gcv3.i\042313c-2.b\g313-wigro-113.m

Meth Date : 25-Apr-2013 13:36 10gcv3.i Quant Type: ESTD

Cal Date : 23-APR-2013 22:05 Cal File: G1-11326.d

Als bottle: 1

Dil Factor: 1.00000

Integrator: HP Genie Compound Sublist: all.sub

Target Version: 4.14

Processing Host: SEMIVOLGCMS

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

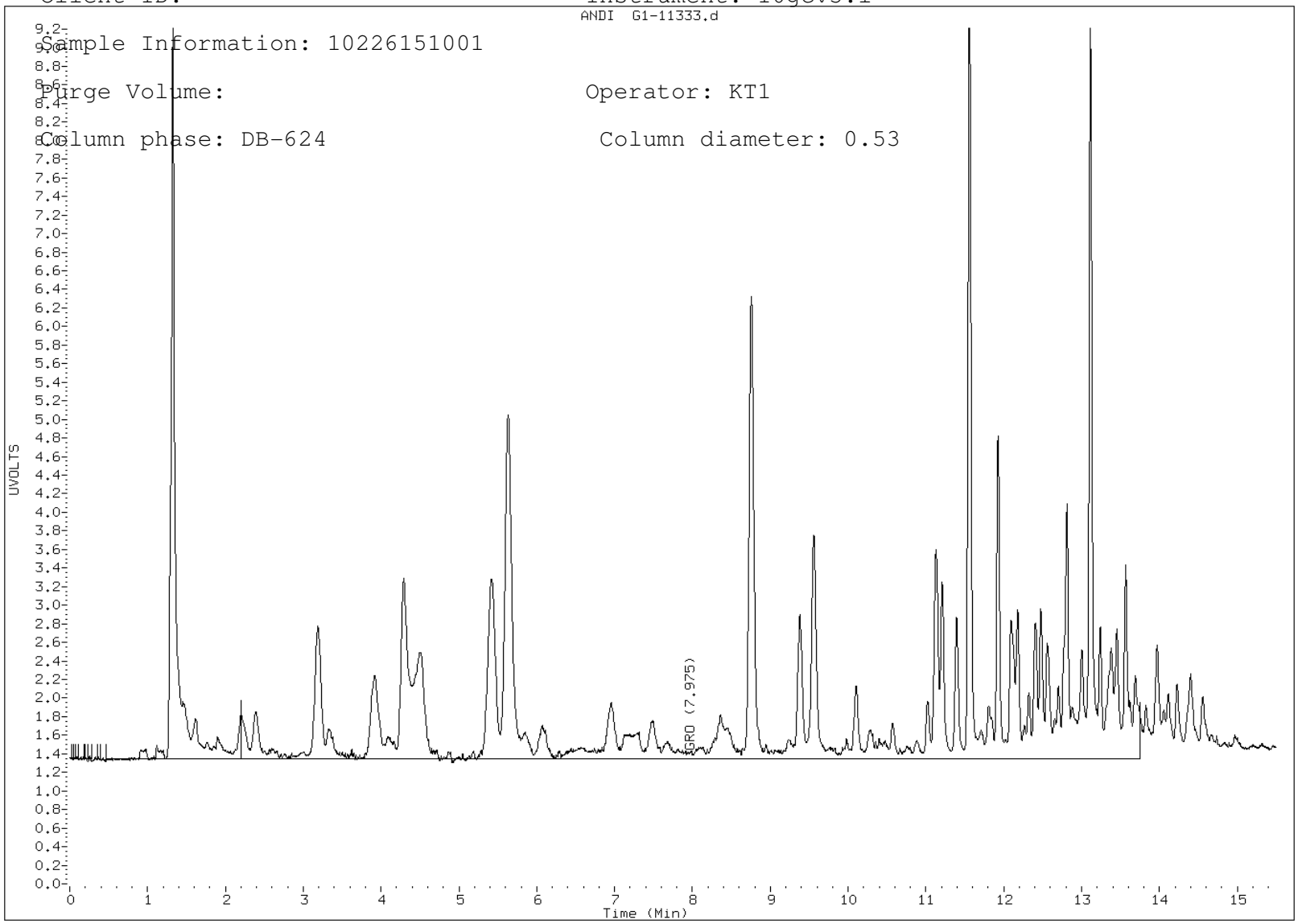
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
S 5 GRO	2.200	-13.750		1608679	143.550	143.5

Data File: \\192.168.10.12\chem\10gcv3.i\042313c-2.b/G1-11333.d

Report Date: 04/25/2013

Sample ID: 10226151001

Client ID: Instrument: 10gcv3.i



Sample Information: 10226151001

Purge Volume: Operator: KT1

Column phase: DB-624 Column diameter: 0.53

Report Date: 25-Apr-2013 07:57

Pace Analytical Services

WI Dept of Nat. Resources- WIDRO

Data file : \\192.168.10.12\chem\10gcs9.i\042413dro.b\042413000076.D

Lab Smp Id: 10226151001

Inj Date : 25-APR-2013 01:20

Operator : MT Inst ID: 10gcs9.i

Smp Info : 10226151001

Misc Info : 11173

Comment : C10-C28 DRO

Method : \\192.168.10.12\chem\10gcs9.i\042413dro.b\WDRO9-032213.m

Meth Date : 25-Apr-2013 07:39 mthao Quant Type: ESTD

Cal Date : 22-MAR-2013 15:41 Cal File: 032213000030.D

Als bottle: 1

Dil Factor: 1.00000

Integrator: HP Genie Compound Sublist: dro.sub

Target Version: 4.14

Processing Host: 10VOA3

Concentration Formula: Amt * DF * Uf * Vt/ (Vo * Vi) * CpndVariable

Name	Value	Description

DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1.000	Volume of final extract (mL)
Vo	1000.000	Volume of sample extracted (mL)
Vi	1.000	Volume injected
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS	
						ON-COLUMN	FINAL
Compounds		RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(mg/L)
S	1 Diesel Range Organics	0.860-2.109			663127367	2120.54	2.12
$	2 n-Triacontane (S)	2.191	2.179	0.012	12072419	48.1312	0.0481(aM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

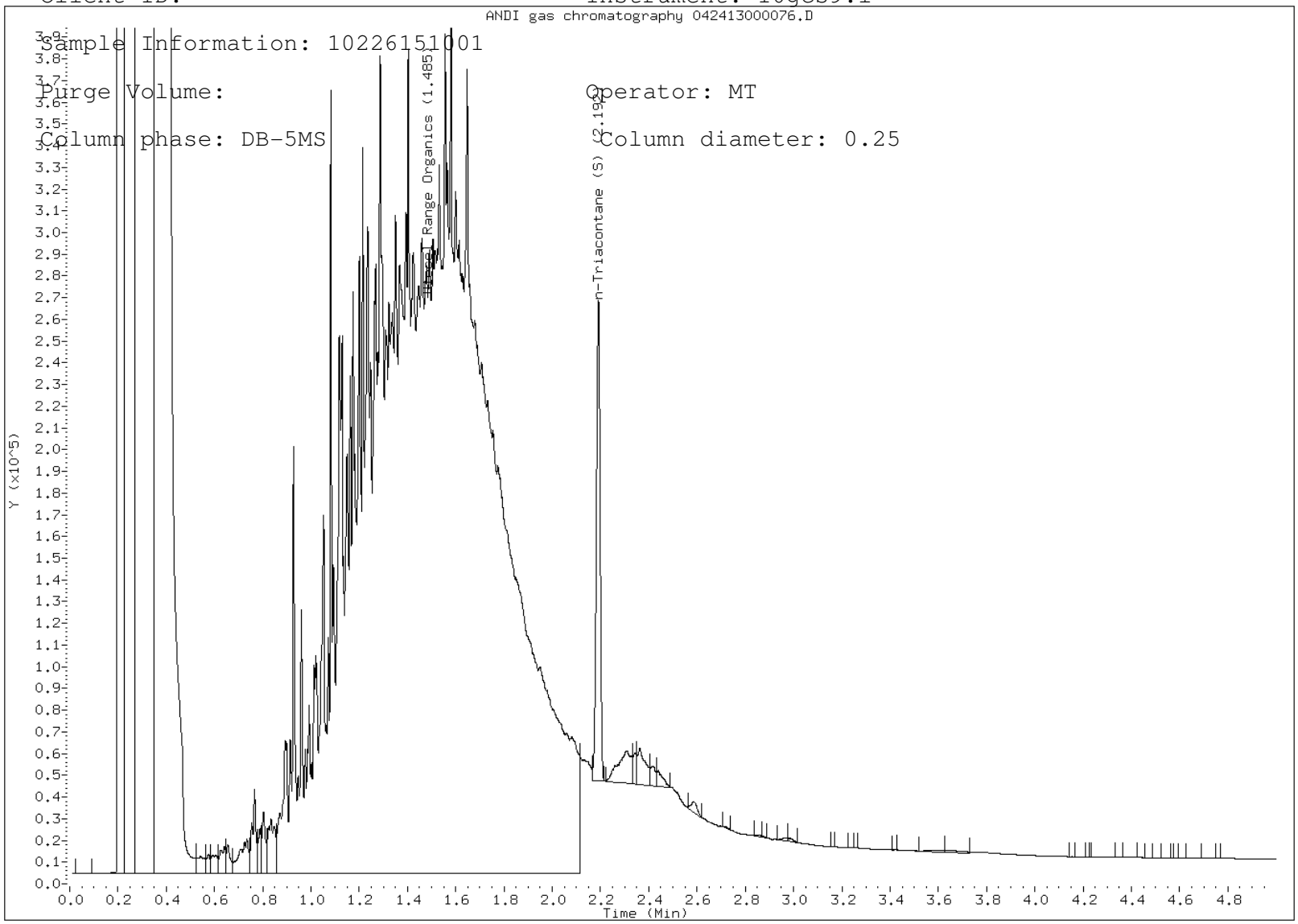
M - Compound response manually integrated.

Data File: \\192.168.10.12\chem\10gcs9.i\042413dro.b/042413000076.D

Report Date: 04/25/2013

Sample ID: 10226151001

Client ID: Instrument: 10gcs9.i



Sample Information: 10226151001

Purge Volume: Operator: MT

Column phase: DB-5MS Column diameter: 0.25

10226151

Chain of Custody

1151

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

Project Number: 49116-1092

Project Name: Tank 8 Road

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

COC Number: № 40094

COC 1 of 1

Project Manager: REE

Project QC Contact: AAN

Sampled by: BSR2

Laboratory: Pace

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Matrix:	Type: Grab	Type: Comp.	Type: QC	Number of Containers/Preservative — Water: VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	BTEX	GRO	Soil: VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)		Total Number Of Containers
1.	Tank8Road-Water-1	—	—	—	4/22/13	1015	X			X								X	X	BTEX GRO									4
2.																													
3.																													
4.																													
5.																													
6.																													
7.																													
8.																													
9.																													
10.																													

001

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/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

	On Ice?	Date	Time		Date	Time
Relinquished By:	(Y) N	4/22/13	1630	Received by:	4/22/13	1630
Relinquished By:	(Y) N	4/22/13	1659	Received by: TN/Pace	4/23/13	1025

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number:

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

H:RLG\STDFORMS\Chain Of Custodv Form 2009 RLG Rev. 09\01\09

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-L-213-rev.06	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr

Project #: WO# : 10226151

10226151

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 9470855 1500034?

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☒ B88A912167504 ☐ 80512447 ☐ 72337080 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.2 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** +.8 **Date and Initials of Person Examining Contents:** 42313 TN

Comments:

Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☒ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☒ Yes	☐ No		Initial when completed: TN Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☒ No	☐ N/A	14.
Trip Blank Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 4/23/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-L-213-rev.06	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr

Project #: WO#: 10226167

10226167

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 9470855 150002942

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermom. Used: ☒ B88A912167504 ☐ 80512447 ☐ 72337080 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.2 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** +.8 **Date and Initials of Person Examining Contents:** 42313 TN

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☒ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: [signature] **Date:** 4/23/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

02-16-560716

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Notification For Hazardous Substance Discharge (Non-Emergency Only)

Form 4400-225 (05/12) Page 1 of 2

Emergency Discharges / Spills should be reported via the 24-Hour Hotline: 1-800-943-0003

Notice: Hazardous substance discharges must be reported immediately according to s. 292.11 Wis. Stats. Non-emergency hazardous substance discharges may be reported by telefaxing or e-mailing a completed report to the Department, or calling or visiting a Department office in person. If you choose to notify the Department by telefax or by email, you should use this form to be sure that all necessary information is included. However, use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating the reporting requirements of ch. 292 Wis. Stats., shall be no less than $10 nor more than $5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from **(check one)**:

☐ Underground Petroleum Storage Tank System (additional information may be required for Item 6 below)
☐ Aboveground Petroleum Storage Tank System
☐ Dry Cleaner Facility
☒ Other - Describe: Historical crude oil impacts discovered near an above ground petroleum storage tank during tank ring road construction.

ATTN DNR: **R & R Program Associate** Date DNR Notified: 07/18/13

1. Discharge Reported By

Name	Firm	Phone No. (include area code)
Karl Beaster	Enbridge Energy	(715) 398-4754

Mailing Address	Email Address
1320 Grand Ave., Superior, WI 54880	karl.beaster@enbridge.com

2. Site Information

Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence/vacant property. Enbridge Superior Terminal - Tank 8

Location: Include street address, not PO Box. If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60. 2800 East 21st Street, Superior, WI 54880

Municipality: (City, Village, Township) Specify municipality in which the site is located, not mailing address/city.
Superior

County:	Legal Description:	WTM:
Douglas	SW 1/4 NW 1/4 Sec 31 Tn 49N Range 13 ○ E ◉ W	X _____ Y _____

3. Responsible Party (RP) and/or RP Representative

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Enbridge Energy

☐ Reported in compliance with s. 292.11(2), Wis. Stats., by a local government exempt from liability under s. 292.11(9)(e), Wis. Stats. For more information see **http://dnr.wi.gov/org/aw/rr/lgu/liability.htm**.

Contact Person Name (if different)	Phone Number	Email Address
Karl Beaster	(715) 398-4757	karl.beaster@enbridge.com

Mailing Address	City	State	ZIP Code
1320 Grand Ave., Superior, WI 54880	Superior	WI	54880

Property owner if Different From RP: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Contact Person Name (if different)	Phone Number	Email Address

Mailing Address	City	State	ZIP Code

(continued)

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Notification For Hazardous Substance Discharge (Non-Emergency Only)

4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

- ☒ VOC's
- ☐ PAH's
- ☐ Metals (specify): _____
  - ☐ Arsenic
  - ☐ Chromium
  - ☐ Cyanide
  - ☐ Lead
  - ☐ PCB's
- ☐ Diesel
- ☐ Fuel Oil
- ☐ Gasoline
- ☐ Hydraulic Oil
- ☐ Jet Fuel
- ☐ Mineral Oil
- ☐ Waste Oil
- ☐ Petroleum-Unknown Type
- ☐ PERC (Dry Cleaners)
- ☐ RCRA Hazardous Waste
- ☐ Leachate
- ☐ Fertilizer
- ☐ Pesticide/Herbicide/Insecticide(s)
- ☒ Other (specify): Crude oil
- ☐ Unknown

5. Impacts to the Environment Information

Enter "K" for known/confirmed or "P" for potential for all that apply.

- ___ Air Contamination
- ___ Co-Contamination (Petroleum & Non-Petroleum)
- ___ Contamination Within 1 Meter of Bedrock
- ___ Contaminated Private Well
- ___ Contaminated Public Well
- ___ Contamination in Fractured Bedrock
- ___ Sanitary Sewer Contamination
- ___ Contamination in Right of Way
- ___ Fire Explosion Threat
- ___ Free Product
- P Groundwater Contamination
- ___ Off-Site Contamination
- ___ Other (specify): _____
- K Soil Contamination
- ___ Storm Sewer Contamination
- ___ Surface Water Contamination
- ___ Within 100 ft of Private Well
- ___ Within 1000 ft of Public Well

Contamination was discovered as a result of:

- ☐ Tank closure assessment — Date
- ☐ Site assessment — Date
- ☒ Other - Describe: Excavation of soils around tank for construction — Date 04/16/2013

Lab results: ☐ Lab results will be faxed upon receipt ☒ Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

Impacts were from historical releases

6. Federal Energy Act Requirements (Section 9002(d) of the Solid Waste Disposal Act (SWDA))

For all confirmed releases from UST's occurring after 9/30/2007 please provide the following information:

☒ Does not apply.

Source

- ☐ Tank
- ☐ Piping
- ☐ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other (specify): _____

Cause

- ☐ Spill
- ☐ Overfill
- ☐ Corrosion
- ☐ Physical or Mechanical Damage
- ☐ Installation Problem
- ☐ Other (does not fit any of above)
- ☐ Unknown

Contact information to report non-emergency releases in DNR's five regions are as follows:

Northeast Region (FAX: 920-662-5197); Attention -- R&R Program Associate: DNRRRNER@wisconsin.gov

Brown, Calumet, Door, Fond du Lac **(except City of Waupun - see South Central Region)**, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, Winnebago counties

Northern Region (FAX: 715-623-6773); Attention -- R&R Program Associate: DNRRRNOR@wisconsin.gov

Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn counties

South Central Region (FAX: 608-273-5610); Attention -- R&R Program Associate: DNRRRSCR@wisconsin.gov

Columbia, Dane, Dodge, Fond du Lac **(City of Waupun only)**, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk, Walworth counties

Southeast Region (FAX: 414-263-8550); Attention -- R&R Program Associate: DNRRRSER@wisconsin.gov

Kenosha, Milwaukee, Ozaukee, Racine, Washington, Waukesha counties

West Central Region (FAX: 715-839-6076); Attention -- R&R Program Associate: DNRRRWCR@wisconsin.gov

Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood counties