Wisconsin DNR Bureau of Remediation and Redevelopment Tracking System Activity Detail Report BRR01-P 02-16-560716 ENBRIDGE ENERGY - TANK 8 **Activity End Date:** Location Name: ENBRIDGE ENERGY CO Activity Start Date: 2013-07-18 ł Address: 2800 E 21ST ST Activity Type: ERP Muni: SUPERIOR Zip: 54880 File Location: DSPS No: Region: NO Region of Management: NO County: Douglas DATCP Case No: DATCR Spill No: FID: 816010580 **EPA Cerclis ID:** Right-of-Way Acres > 100 Acres: Activity Address: PLSS: SW 1/4 of the NW 1/4 of Sec 31, T49N, R13W Latitude: 0 Longitude: 0 Location LQG PER HW GENERATOR CHANGES FOR 2011; VSQG FOR 2010 PER EXEMPTION FORM AND MANIFEST CHECK 03/15/2011 MKP; VSQG Comment: 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 **Activity Detail Name** Start Date **End Date** Type **ENBRIDGE ENERGY - TANK 11** 01-16-561125 01-16-561126 ENBRIDGE ENERGY - TANK 21 RING RD 04-16-042495 SPILL ENBRIDGE ENERGY - PLIMP 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 FRP 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 LAKEHEAD PIPELINE - TANK 24 1999-08-30 2004-02-02 FRP SPILL LAKEHEAD PIPELINE - TANK 24 04-16-275096 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 LAKEHEAD PIPELINE - BOOSTER PUMP 56 04-16-338044 SPILL 2002-01-20 2003-01-07 SPILL **ENBRIDGE ENERGY - TANK 8** 04-16-408048 2002-03-07 2002-05-29 04-16-408780 SPILL 2002-03-07 2002-05-29 ENBRIDGE ENERGY 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 2002-09-12 04-16-403133 SPILL ENBRIDGE ENERGY - PIPELINE ENTERING FROM SW 2002-11-20 04-16-518737 SPILL ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP 2002-11-28 2003-12-18 2003-01-24 2003-10-01

ENBRIDGE ENERGY - NEMADJI RIVER

ENBRIDGE ENERGY - NEMAD1I RIVER

ENBRIDGE ENERGY - MANIFOLD #1 BLDG

ENBRIDGE ENERGY - N SIDE OF MANIFOLD 1

ENBRIDGE ENERGY - DENOSTOMETER BLDG

ENBRIDGE ENERGY - MANIFOLD 1

ENBRIDGE ENERGY TERMINAL

ENBRIDGE ENERGY - PIPE A

04-16-454807

02-16-513788

04-16-522605

04-16-518579

04-16-529969

04-16-526914

04-16-526925

04-16-527008

SPILL

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2010-03-24

2004-01-12

2003-12-12

2004-06-08

2004-06-01

2004-06-01

2004-06-01

2003-01-25

2003-04-08

2003-11-10

2004-03-10

2004-03-18

2004-04-02

2004-04-08

02-16-560716 ENBRIDGE ENERGY - TANK 8

Activity Detail No	Туре	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	200 9 -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	
		A	·····		

Actions

Code Action Name / Comment Audit **Action Date** 2013-07-18 Notification Added 10/15/2013 by SHAFEK 1 2013-07-18 Phase I Environmental Site Assessment Rpt Received Added 10/15/2013 by SHAFEK 28 EXCAVATION OF SOILS AROUND TANK FOR CONSTRUCTION; HISTORICAL RELEASES 2013-09-11 Miscellaneous Added 10/15/2013 by SHAFEK 99 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						
	R	isk				
Not Applicable	Assigned: 09/11/2013	Added 10/15/2013 by SHAFEK				
	Subs	tances				
Category: Petroleum						
Crude Oil		Added 10/15/2013 by SHAFEK				
Category: VOC						
VOC		Added 10/15/2013 by SHAFEK				

			Who	
Responsible Party is ENBRIDGE ENER	GY			
Title:			Phone: (715) 398-4751	
Address: 1320 GRAND AVE			Fax: () -	
			E-Mail:	
SUPERIOR	WI	54880		
Project Manager is ERIN ENDSLEY				
Title: HYDROGEOLOGIST			Phone: (715) 392-3126	
Address: 1701 N 4TH ST			Fax: (715) 392-7993	
			E-Mail: erin.endsley@wi.gov	
SUPERIOR	WI	54880		
RP Contact/Agent is KARL BEASTER				
Title:			Phone: (715) 398-4754	
Address: 1320 GRAND AVE			Fax: () -	
ENBRIDGE ENERGY LLC			E-Mail: karl.beaster@enbridge.com	
SUPERIOR	WI	54880		
Associated with:				
ENBRIDGE ENERGY			Phone: (715) 398-4751	
1320 GRAND AVE			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		Maintum	Diesel Range	1,2,4-Trimethyl	1,3,5-Trimethyl			Taluara	Widowa Antal	
	Effective Date	Exceedance Key	MOISIUITE	Organics	benzene	benzene	Denzene	Etnyi benzene	Ioineue	Aylene, total
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. 192	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.

1 of 1 6/13/2013 \\barr.com\projects\Duluth\49 WI\16\49161092 Superior Terminal Soll Management Activities\WorkFiles\2013_4_Tank & Road\DATA MGMT\Tank & Soil Analytical_720.09 & 746.06_06132013.xlsx





Enbridge Pipelines (Lakehead) L.L.C. Environment Department 1320 Grand Avenue Superior, WI 54880 Tel 715 394 1400 Fax 715 394 1500 Shane Yokom Joseph Peterson Cheryl Urie Jim Snider Rhonda O'Leary James Anklam Karl Beaster Stacey Frerich Derek Senn Kelli Nelson Bryan Sederberg Alex Smith Greg St. Onge Julie O'Brien Manager, Environment Operations Supervisor, Region Operations Supervisor, Programs Environmental Specialist Sr. Air Compliance Specialist Sr. Environmental Analyst Environmental Analyst II Environmental Analyst II Environmental Analyst II Environmental Analyst Environmental Analyst Environmental Analyst Environmental Analyst Environmental Analyst Environmental Analyst ER Preparedness Coordinator Environmental Assistant



RECEIVED SEP 1 1 2013 DNR - SUPERIOR 8/-/6-5607/6

September 9, 2013

www.enbridgepartners.com

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

Bent

Karl F. Beaster, P.G. Environmental Analyst

Enclosure

cc: Ryan Erickson, Barr Engineering

RECEIVED SEP 1 1 2013 DNR - SUPERIOR

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

Prepared for Enbridge Energy

August 2, 2013





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 northernmost 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

Karl Beaster Tank 8 Historic Crude Oil Impacts – Ring Road Excavation August 2, 2013 Page 5

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

Karl Beaster Tank 8 Historic Crude Oil Impacts – Ring Road Excavation August 2, 2013 Page 6

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 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.

Karl Beaster Tank 8 Historic Crude Oil Impacts – Ring Road Excavation August 2, 2013 Page 7



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







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	Maiatura	Diesel Range	1,2,4-Trimethyl	1,3,5-Trimethyl	Banzana	Ethyl konzono	Telvene
	Effective Date	Exceedance Key	Moisture	Organics benzene		benzene	Denzene	Ethyl benzene	Toluene
Wisconsin Generic Residual Contaminant Levels NR 720.09	09/01/2007	Bold	 	250			0.0055	2.9	1.5
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
TANK 8 ROAD-B-2	4/18/2013	1.8	25.1 %	< 15.4	< 0.073	< 0.073	< 0.073	< 0.073	< 0.073
TANK 8 ROAD-B-3	4/18/2013	1.8	26.3 %	28.8	0.18	0.077	0.39	0.17	< 0.069
TANK 8 ROAD-B-4	4/18/2013	1.8	19.1 %	< 10.8	< 0.061	< 0.061	< 0.061	< 0.061	< 0.061
TANK 8 ROAD-B-5	4/23/2013	1.8	21.7 %	264	2.4 *	4.1 *	< 0.31 *	2.3 *	0.56 *

*Estimated value, QA/QC criteria not met.

Xylene, total
4.1
< 0.19
< 0.22
< 0.21
< 0.18
2.8 *

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

		Analytical Results								
	Date	GRO		BTEX/PVOC						
Location ID	Completed		DRO	Benzene	Ethyl Benzene	Toluene	Xylene	1,2,4- Trimethylbe nzene	1,3,5- Trimethylbe nzene	
				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/	_)					
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

Notification For Hazardous Substance Discharge (Non-Emergency Only)

Date DNR Notified:

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

07/18/13

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. <u>TYPE or PRINT LEGIBLY</u>. NOTIFY appropriate DNR region (see next page) <u>IMMEDIATELY</u> 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

1. Discharge Reported By							
Name	Firm		Phone No. (include area code)				
Karl Beaster	easter Enbridge Energy						
		_					
Mailing Address		Ema	il 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	$\frac{31}{10}$ Tn $\frac{49N}{10}$ Range $\frac{13}{10}$ \bigcirc E \bigcirc 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	Phone Number	Email Ac	ldress
Name (if different) Karl Beaster	(715) 398-4757	ka	arl.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

4. Hazardous Substance Information		
Identify hazardous substance discharged (ch	eck all that apply):	
🔀 VOC's	Diesel	PERC (Dry Cleaners)
PAH's	E Fuel Oil	RCRA Hazardous Waste
	Gasoline	Leachate
Metals (specify):	Hydraulic Oil	
	Jet Fuel	Fertilizer Desticide (Lenkiside (Inc. esticide (a))
	Mineral Oil	
	U Waste Oil	Other (specify): Crude oil
Lead		
PCB's	Petroleum-Unknown Type	
5. Impacts to the Environment Information	n	
Enter "K" for known/confirmed or "P" for pote	ntial for all that apply.	
Air Contamination	Sanitary Sewer Contam	ination K Soil Contamination
Co-Contamination (Petroleum &	Contamination in Right	of Way Storm Sewer Contamination
Non-Petroleum)	Fire Explosion Threat	Surface Water Contamination
Contamination Within 1 Meter of Bedroc	k Free Product	Within 100 ft of Private Well
Contaminated Private Well	P Groundwater Contamina	ation Within 1000 ft of Public Well
Contaminated Public Well	Off-Site Contamination	
Contamination in Fractured Bedrock	Other (specify):	
Contamination was discovered as a result of: Tank closure assessment Si Date Date Lab results: Lab results will be faxed	te assessment 🛛 Othe Dat d upon receipt 🕅 Lab results a	r - Describe: Excavation of soils around tank for construction e 04/16/2013 are attached
Additional Comments: Include a brief descrip	otion of immediate actions taken to h	alt the release and contain or cleanup
hazardous substances that have been discha	arged.	
Impacts were from historical releases		
6. Federal Energy Act Requirements (Sec	tion 9002(d) of the Solid Waste Dis	(posal Act (SWDA))
For all confirmed releases	Source	Cause
from UST's occurring after Tank	000100	
9/30/2007 please provide Piping		Overfill
the following information: Dispenser		
Submersible	e Turbine Pump	Physical or Mechanical Damage
	blem	Installation Problem
Does not apply.	ify):	☐ Other (does not fit any of above)
		Unknown
Contact information to report non-emerg	ency releases in DNR's five region	ons are as follows:
Northeast Region (FAX: 920-662-5197); A	ttention R&R Program Associate	e: DNRRRNER@wisconsin.gov
Brown, Calumet, Door, Fond du Lac (exce Marinette, Marquette, Menominee, Oconto	pt City of Waupun - see South Cen Outagamie, Shawano, Sheboygan,	t ral Region) , Green Lake, Kewaunee, Manitowoc, Waupaca, Waushara, Winnebago counties
Northern Region (FAX: 715-623-6773); At	tention R&R Program Associate	DNRRRNOR@wisconsin.gov
Ashland, Barron, Bayfield, Burnett, Dougla Sawyer, Taylor, Vilas, Washburn counties	s, Forest, Florence, Iron, Langlade, L	incoln, Oneida, Polk, Price, Rusk,
South Central Region (FAX: 608-273-5610); Attention R&R Program Asso	ciate: DNRRRSCR@wisconsin.gov
Columbia, Dane, Dodge, Fond du Lac (Cit Rock, Sauk, Walworth counties	y of Waupun only), Grant, Green, Ic	owa, Jefferson, Lafayette, Richland,
Southeast Region (FAX: 414-263-8550); A	ttention R&R Program Associat	e: DNRRRSER@wisconsin.gov
Kenosha, Milwaukee, Ozaukee, Racine, W	ashington, Waukesha counties	
West Central Region (FAX: 715-839-6076)	; Attention R&R Program Assoc	iate: DNRRRWCR@wisconsin.gov
Adams, Buttalo, Chippewa, Clark, Crawford Pierce, Portage, St. Croix, Trempealeau, V	a, Dunn, Eau Claire, Jackson, Junea ernon, Wood counties	u, LaCrosse, Marathon, Monroe, Pepin,

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

ENBRID	GE SITE	INVESTI	GATION	FIELD SAMP	LING AND SC	REENING	LOG				Date: 4/	14/13
Location	: Milepos	t or Facil	ity\$	Superior 7	resminal,	Tank 8	Mortheast a	unter draw.	off	s	ampler: 8	522
Equipme	nt used:/	shoto.	ionizatio	n detector wil	h 10.6 eV l	amp	Background He	adspace: 0,0	_ppm	Calibratio	n Time: //	000
Sample N	lomencla	ture <i>(Lo</i>	cation - s	ample type - #	t):							
Soil Samp	le Types: I	R = Remov	ed Sample	e ; S = Sidewall .	Sample ; B = Bo	ttom Sample	; Stockpile = <i>Stock</i>	pile Sample				
Samala	Dambh	-	Soil	Color/		Headspace	SITE SKETCH: nor	rth is up; excavation	on extents and de	pths, sample loca	tions, structure	es,
ID	Deptn (ft)	(military)	(USCS)	Discolor	Odor/ Sheen	(ppm)	utilities, boring lo	cations, wells, na	tural features	1 inch/grid =	15 FEE	Γ
Exomple:	4	<u>16:30</u>	<u>cı</u>	Reddish brown	Petroleum/	<u>275</u>		•	an a			
	6"	1030	SP	brown	MAN	2.4	NY				2 0	,]
2	6"	1030	SP	brains	NIN	0.8			· · ·	1	King K	∞ol
3	6"	1100	SP	dK brown	NINI	3,9			4	-K	8	
4	9"	1115	SP	brown	NIN	0:0						
5	9"	1115	SP	STOWA	N/N	0.3						
6	6″	1115	SP	Brown	NIN	0:0	r		2 4			
7	9"	115	5P	Brown	NIN	0.1		6	3. 6		k	
8	9"	1115	SP	Brown	NIN	0.2		2.1	0			
9	6"	1115	SP	beaun	NIN	0.1		5.	(J.7	Black	Area	
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NBRID	GE SITE	NVESTIC	BATION	FIELD SAMP	LING AND SC	REENING I	<u>.0G</u>				Date: 4/17/1	3
ocation	: Milepos	t or Facili	ty <u>Su</u> f	erior Term	ral, Tank	8, North	west Marwal	1		S	ampler: <u>BJLQ</u>	
quipme	nt used:_	photo-	ionizatio	n detector wit	h_ <u>10,6_</u> eV k	атр	Background Hea	idspace: 0,0	_ppm	Calibratio	n Time: _// <i>o</i> ථ	
imple N	lomencla	iture <i>(Loc</i>	ation - se	ample type - #	<i>\$</i> :				b .			
il Samp	le Types: I	R = Remov	ed Sample	e ; S = Sidewall . T	Sample ; B = Bo	ttom Sample	; Stockpile = Stock	oile Sample				
ample	Depth	Time	Type	Color/		Reading	SILE SKEICH: NOT	th is up; excavation cations, walls, not	on extents and de tural features	ptns, sample local	tions, structures,	
ID	(ft)	(military)	(USCS)	Discolor	Odor/ Sheen	(ppm)	atimetes, boring ib		urur Jeacares	I manygha -		
ample: R-1	4	<u>16:30</u>	<u>CL</u>	<u>Reddish brown</u>	<u>Petroleum/</u> <u>Rainbow</u>	<u>275</u>						
1	1	-	CL	Red brown	414	185+	<i>\</i> ♥ · <i>\</i> ·	2				
2	Sustan	-	٢٢	Red brown	NIN	8,2		Kmg	Kood			
3	Surface	_	CL	Red brown	414	135			Le la			
4	Surface		CL	Red brown	NIN	20			.00	LEI _		
5	1		CL	Red brown	NIN	0.8			Ton K & M			
6	1	-	CL	Red BIANA	NIN	0.9			X 9 6.9			
7	.2		CL	Black	NIN	0.5			1.4	ni ininifiki di an		<u> </u>
8	1		CL	Red BIDIUN	NIN	1.4			8.511	Northw	est Marway	
9	1		CL	Red brown	NIN	0.5		/	°7/ '		~	
10			CL	Red brown	NIN	1.0				· .		
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ample ID	Depth (ft)	Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)	SITE SKETCH: nort utilities, boring loc	th is up; excavati ations, wells, na	on extents and de tural features	pths, sample loca 1 inch/grid =	tions, structures, -30 FEET	
campie: <u>R-1</u>	4	<u>16:30</u>	<u>CL</u>	<u>Reddish brown</u>	Rainbow	275						
1	2		CL	Ked Srawn	414	100+				1		
2	2		CL	Red Brown	NIN	10.8						
3	2		<u>CL</u>	Red Brown	NIN	4.1		and a second and a s				
9	2		CL	Ked Brixen	NIN	5.2						ĺ
S	2		CL	Red BIDSUA	NIN	5.3						ł
6	~		<u>CL</u>	Red Blown	NIN	2.5						
0	<u>·~</u>		CL	Red Brown	NIN	0.0					7	
89	2		CL	Red brown	NIN	6.1		D-door	Tark 8 Xer We	nter Araw-off		1
								7.8 5. 9 .6×	× .3 ·1	115'	- A-	-
							3	Exted of Excavotion	standing wates	•	Ring Road	
							- - - -					
								V				
								x-analyma	somples	المراجع المعارفين المحمد المعارف المحمد		<u>ji.</u>

ENRIPEDEE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG Date: 4/22/13 Location: Milepost or Facility Superior Terminal Tank 8, SW Movies to unites draw-off Sampler: BJL2 Equipment used: 0100 -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 Headspace SITE SKETCH: north is up; excavation extents and depths, sample locations, structures, Soil Color/ Sample Depth Reading Time Type utilities, boring locations, wells, natural features... **1** inch/arid = \frown FEET Odor/ Sheen ID (military) (USCS) Discolor (ft) (ppm) Petroleum/ Example: Reddish brown 4 16:30 CL 275 Rainbow R-1 NT 1.7 414 148+ Red BROWN 1 wet-01. 54 2 CL 1.3 414 1.1 -3 1.4 -CL NIN water Draw off 4 0.9 -1.3 CL NIN 5 CL 0.5 NIN 27 whiter Drawroff 6 64 -----NAN 0.5 7 3.0 CL 1.7 NIN Manter 8 -----NIN 0.3 CL 9 NIN 0.8 CL -----Tark 1.7 1.7 10 -CL NIN 11 -Surface CL NIN 8 0.0 1, Inter Draw-off-12 CL Surface _ NON 0.0 1 dass CL Mixes whites Araw 13 Servitore -----NIN 0.0 wester Draw-14 CL Surface Ol NIN -2. off 3 459 - Clean stockik 14 1312 Contominated Stockpile Area

ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

55 Mixor and Water Draw Off Location: Milepost or Facility Sugeriar Terminal K 9 70.

Background Headspace: 0.0 ppm

Date: 4/23/13 Sampler: BJL2 Calibration Time: 12/5

Sample Nomenclature (Location - sample type - #):

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

Sample ID	Depth (ft)	Time (military)	Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)	SITE SKETCH: no utilities, boring ic	rth is up; excavati ocations, wells, na	on extents and de tural features	epths, sample loca 1 inch/grid =	ntions, structures,	
Exomple:	4	16:30	GL	Reddish brown	Retrolium/ Rainbow	275	A# 37					
1	1.3	-	64	Red Brann	MIN	0.15	14.00					
2	1.7		SM	Gian	MIN	60-1						
3	1.7	-	SM	Gray	9/4	2.0						
4	1.7		SM	Glay	414	148+	T m 7th	to alking	Tank			
5	1.7	-	.SM	Gran	NIN	235+	1 mp	percueet.	8			
6	1.7		CL	Red Rows	NIN	37+	55	Mixes	Ŭ			
7	1.7	-	64	Ked Bown	NIN	113+	125					
8	1.1		CL	Ked Bown	NIN	43	V in	E winter	Now-oft			
9	1.1		64	Keel Brown	NIN	0.9			and the state of the set of a second data and the set of			
10	1-1		CL	Red Krown	NIN	0.7	1.2	7.67/	•9			
//	1. 1		64	Red DOWN	NIN	_//_		5			· · · · · · · · · · · · · · · · · · ·	
	· · · ·						B		• 11			
B-5	1.8		(1			and the second sec	-	•8				
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		-					2.0			isterio "A		
							ning no	~ (.4				
							X					

ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility <u>Superior Terminul</u>, Tark & Stocka & Equipment used: plato -ionization detector with 10.6 eV lamp Backg

Background Headspace: O.O. ppm

Date: 4/24/13 Sampler: BTLS Calibration Time: 0800

Sample Nomenclature (Location - sample type - #):

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

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Sample ID	Depth (ft)	Time (military)	Soll Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)	SITE SKETCH: north utilities, boring local	is up; excavations, wells, nat	on extents and de tural features	epths, sample loca 1 inch/grid =	tions, structures, 30 FEET	Non-reason
1 Surface	Example: R-1	4	<u>16:30</u>	<u>CL</u>	Reddish brown	Petroleum/ Rainbow	<u>275</u>	NA		• •			
2 Surface - SM Biown M/N 1.1 3 Surface - SM Biown Y/N 13.9 4 Surface - SM Biown N/N 1.1 5 Surface - SM Biown N/N 2.9 6 Surface - SM Biown Y/N 42.2 7 Surface - SM Biown Y/Y 348+ 	1	Surface	035- ⁴¹ 1	SM	Brown	NIN.	0.6						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2	Susfere	معمي	SM	BIDWA	NIN	1,1				ĺ		
9 Surface SAA Bown N/N 1.1 5 Surface SAA Brown NIN 2.9 6 Surface SAA Brown YIN 42.2 7 Surface SAA Brown YIY 348+ 7 Surface SAA Brown YIY 348+ 7 Surface SAA Brown YIY 348+ 7 Surface SAA Saa Saa Saa 7 Surface Saa Saa Saa Saa 7 Saa Saa Saa Saa Saa	3	Swface		SM	Brown	YIN	13.9						
5 Surface - SM Brown MIN 2.9 6 Surface - SM Brown 41N 42.2 7 Surface - SM Brown 41Y 348+ 	9	Surface		SM	Brown	NIN	1.1		-				
6 surface - SM Brown 4/4 348+ 7 Surface - SM Brown 4/4 348+ 	5	Surface	و سمري	5M	BIOWA	NIN	2.9				Tank		
$\frac{1}{2} \frac{5}{4} \frac{3}{4} \frac{3}{4} \frac{7}{4} \frac{3}{4} \frac{7}{4} \frac{3}{4} \frac{7}{4} \frac{7}$	6	Surface		.SM	Brown	YIN	42.2				8		
		Sufre		5M	Braun	414	348+			:			
2 1 1/7 2 1 1/7 2 1 1/7 4 3 Ring Roard N				<u> </u>									
2 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1				<u> </u>									
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Equipme Sample I	: <i>Milepos</i> ent used: Nomencia	it or Facili <u>Photo</u> ature (Lo	lity <u>5</u> -ionizatio cation - si	wperior Te n detector with ample type - A	er <i>minal</i> , To th <u>/0.6</u> eV t):	<u>mK8, 5</u> Iamp	Date: 7/25/13 Stock piles Sampler: B322 Background Headspace: 0-0 ppm Calibration Time: 0745
Soil Samp Sample ID	Depth	R = Remo Time (military)	ved Sample Soil Type (Uscs)	e ; S = Sidewall Color/ Discolor	Sample ; B = Ba	ottom Sample Headspace Reading (ppm)	e ; Stockpile = Stockpile Sample SITE SKETCH : north is up; excavation extents and depths, sample locations, structures, utilities, boring locations, wells, natural features 1 inch/grid = 30 FEET
Example:	4	16)30	<u>CL</u>	Reddish brown	Petroleum/ Balabow	275	
1	Surfaro		SM		TIN	53+	
2	1		SM		YIN	7.2	
3			SP/LL		NIN	2.8	
4			SMICL		NIN	4.6	
5			SMICL		NIN	0.3	
6		~	SM		NIN	0.2	
7			5M		NIN	0.3	Jans,
8			SMICL		NIN	15,9	8 / /
G		-	5M		NIN	0.3	
10		-	5M		NIN	0.3	King Klader
11			5.M	•	NIN	0.1	
12		1030	SC		NIN	0.6	
13		1030	SC	<u> </u>	NIN	2.6	
14		1030	CL		NIN	0.4	
15		1215	SC		NIN	0.7	TY '416-15
16		12.15	SC		NIN	4.8	3920 10
17		1330	55		NIN	2.5	
18		1530	<u>C</u> L	·	NIN	2.5	- Crean
19		1515	5<		NIN	5.4	Dirty station Stertionle
20		1515	SC		NIN	5.1	
		l i	1.		1 · · · ·	1	

Equipme	nt used:	<u>0/070</u> -	ionizatio	n detector wit	h <u>/0,6</u> eV/k	атр	Background Headspace: <u>Ø'O</u> ppm Calibration Time: <u>O</u>
Soil Samp	iomencia le Types: I	ature (<i>Loc</i> R = <i>Remov</i>	ation - se ed Sample	ampie type - A e ; S = Sidewall	sample ; B = Bo	ttom Sample	; Stockpile = Stockpile Sample
			Soil	Í		Headspace	SITE SKETCH: north is up; excavation extents and depths, sample locations, structur
Sample ID	Depth (ft)	Time (military)	Type (USCS)	Color/ Discolor	Odor/ Sheen	Reading (ppm)	utilities, boring locations, wells, natural features 1 inch/grid = /5 ⁻ FEE
Example: R-1	4	<u>16:30</u>	<u>CL</u>	<u>Reddish brown</u>	<u>Petroleum/</u> Rainbow	<u>275</u>	
<u></u>	. 1.	ward?~	SC		MN	0,0	
2	1.7		CL		NIN	0.1	1 Jan
3	1.7		CL.		NIN	0.0	
4	1.7		CL		NIN	0.1	
5	1.7		CL		NIN	0.4	Mater Diawooff
	Susface	-	CL,		NIN	0.2	Pioing THA
7	Surface	-	CL	Wildow.	NIN	0.0	2 D-dats

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ENBRID	GE S	SITE I	NVESTIC	GATION	FIELD SAMP	LING AND SO	CREENING	LOG Date: <u>4/27/13</u>
Location	: Mil	epos	t or Facili	ty	Superior To	esmoral 17	ank 8,	Stockpiles Sampler: BJLQ
Equipme	nt u	sed:	Ohoto -	ionizatio	n detector wit	h <u>10-6</u> eV li	атр	Background Headspace: 0,0 ppm Calibration Time: 0730
Sample N	lom	encla	ture (Loc	ation - se	ample type - #):		
Soil Samp	le Ty	pes: F	l = Remov	ed Sample	e ; S = Sidewall : T	Sample ; B = Bo	ttom Sample	; Stockpile = Stockpile Sample
Sample	De	pth	Time	Туре	Color/		Reading	utilities having locations wells natural features 1 inch/arid = FFFT
ID	Ű	t)	(military)	(USCS)	Discolor	Odor/ Sheen	(ppm)	
Example: R-1	4	!	<u>16:30</u>	<u>CL</u>	Reddish brown	<u>Petroleum/</u> Rainbow	<u>275</u>	
_/	Sw	face	6730	CL	Red Bean	NIN	0.1	101 45
2				1		NIN	0.3	
3			<u> </u>	ـلـ	_	NIN	0.1	
4			0720	CL	Red boun	NIN	0.2	14 13
5			5			NIN	0.2	
6				<u>ـلــ</u>	-	NIN	0.1	
7			0900	CL	Red brawn	NIN	0.1	
8				L		NIN	0.0	Tart B
9			0945	CL	Red brach	NIN	0.2	
10						NIN	0.1	
11				<u>لم</u>	·	NIN	0.1	
12			1030	CL	Red brown	NIN	0.1	
13		شىرىنىي			L	NIN	0.0	
14			1100	CL	Red brown	NIN	0.1	
15				1		NIN	0.4	
16						NIN	0.2	
17			1130	<u> </u>	Red brown	NIN	0.1	
18	لی۔	-	<u></u>		1	PULN	0.2	
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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



REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 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

REPORT OF LABORATORY ANALYSIS



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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

Method: WI MOD DRO

Description:WIDRO GCSClient:Barr EngineeringDate: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

REPORT OF LABORATORY ANALYSIS

Page 5 of 16



Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

Method: WI MOD GRO

Description:WIGRO GCVClient:Barr EngineeringDate: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.

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-1	Lab ID: 10226	169001	Collected: 04/17/1	3 15:00	Received: 04	/23/13 10:25 N	latrix: Solid	
Results reported on a "dry-weigh	nt" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method	I: WI MO	D DRO Preparation	Method	WI MOD DRO			
Diesel Range Organics Surrogates	<13.0 mg/kg	g	13.0	1	04/24/13 11:43	04/27/13 14:47		
n-Triacontane (S)	99 %		50-150	1	04/24/13 11:43	04/27/13 14:47	638-68-6	
WIGRO GCV	Analytical Method	I: WI MO	D GRO Preparation	Method	: TPH GRO/PVO	C WI ext.		
Benzene	<0.063 mg/kg	g	0.063	1	04/24/13 10:23	04/25/13 03:50	71-43-2	
Ethylbenzene	<0.063 mg/kg	g	0.063	1	04/24/13 10:23	04/25/13 03:50	100-41-4	
Toluene	<0.063 mg/kg	g	0.063	1	04/24/13 10:23	04/25/13 03:50	108-88-3	
1,2,4-Trimethylbenzene	<0.063 mg/kg	g	0.063	1	04/24/13 10:23	04/25/13 03:50	95-63-6	
1,3,5-Trimethylbenzene	<0.063 mg/kg	g	0.063	1	04/24/13 10:23	04/25/13 03:50	108-67-8	
Xylene (Total) <i>Surrogates</i>	<0.19 mg/kg	g	0.19	1	04/24/13 10:23	04/25/13 03:50	1330-20-7	
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	I: ASTM	D2974					
Percent Moisture	19.1 %		0.10	1		04/24/13 00:00		

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-2	Lab ID: 1022616	9002 Collected: 0	4/18/13 11:0	0 Received: 04	/23/13 10:25 N	latrix: Solid	
Results reported on a "dry-weigh	nt" basis						
Parameters	Results	Jnits Report L	imit DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method:	WI MOD DRO Prepar	ration Metho	od: WI MOD DRO			
Diesel Range Organics Surrogates	<15.4 mg/kg		15.4 1	04/24/13 11:43	04/27/13 14:40		
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 Prepa	ration Metho	od: TPH GRO/PVO	C 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) <i>Surrogates</i>	<0.22 mg/kg		0.22 1	04/24/13 10:23	04/25/13 04:28	1330-20-7	
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		

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-3	Lab ID: 10226	169003	Collected: 04/18/1	3 11:10	Received: 04	/23/13 10:25 N	latrix: Solid	
Results reported on a "dry-weigh	ıt" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method	I: WI MO	D DRO Preparation	Method	WI MOD DRO			
Diesel Range Organics Surrogates	28.8 mg/kg	g	12.5	1	04/24/13 11:43	04/27/13 15:01		Т6
n-Triacontane (S)	97 %		50-150	1	04/24/13 11:43	04/27/13 15:01	638-68-6	
WIGRO GCV	Analytical Method	I: WI MO	D GRO Preparation	Method	: TPH GRO/PVO	C WI ext.		
Benzene	0.39 mg/kg	g	0.069	1	04/24/13 10:23	04/25/13 04:48	71-43-2	
Ethylbenzene	0.17 mg/kg	g	0.069	1	04/24/13 10:23	04/25/13 04:48	100-41-4	
Toluene	<0.069 mg/kg	g	0.069	1	04/24/13 10:23	04/25/13 04:48	108-88-3	
1,2,4-Trimethylbenzene	0.18 mg/kg	g	0.069	1	04/24/13 10:23	04/25/13 04:48	95-63-6	
1,3,5-Trimethylbenzene	0.077 mg/kg	g	0.069	1	04/24/13 10:23	04/25/13 04:48	108-67-8	
Xylene (Total) Surrogates	<0.21 mg/kg	g	0.21	1	04/24/13 10:23	04/25/13 04:48	1330-20-7	
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	I: ASTM	D2974					
Percent Moisture	26.3 %		0.10	1		04/24/13 00:00		

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

Sample: TANK 8 ROAD-B-4	Lab ID: 10226169	004 Collected: 04/18/	13 11:20	Received: 04	/23/13 10:25 N	latrix: Solid	
Results reported on a "dry-weigh	nt" basis						
Parameters	Results Ur	nits Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: W	I MOD DRO Preparation	Method:	WI MOD DRO			
Diesel Range Organics Surrogates	<10.8 mg/kg	10.8	1	04/24/13 11:43	04/27/13 14:26		
n-Triacontane (S)	97 %	50-150	1	04/24/13 11:43	04/27/13 14:26	638-68-6	
WIGRO GCV	Analytical Method: W	I MOD GRO Preparation	Method	TPH GRO/PVO	C 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) <i>Surrogates</i>	<0.18 mg/kg	0.18	1	04/24/13 10:23	04/25/13 05:08	1330-20-7	
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: As	STM D2974					
Percent Moisture	19.1 %	0.10	1		04/24/13 00:00		

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

QC Batch:	GCV/	/10632	
QC Batch Method:	TPH	GRO/PVOC WI ext	ł.
Associated Lab Samp	les:	10226169001, 10	12

I0632Analysis Method:WI MOD GROGRO/PVOC WI ext.Analysis Description:WIGRO Solid GCV10226169001, 10226169002, 10226169003, 10226169004

METHOD BLANK: 141502	4	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		14	15026						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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 MS MS % Rec 10226098025 Spike Parameter % Rec Qualifiers Units Result Conc. Result Limits ND 80-120 1,2,4-Trimethylbenzene mg/kg 5.3 6.0 113 ND 1,3,5-Trimethylbenzene mg/kg 5.3 6.1 114 80-120 ND mg/kg 5.3 80-120 Benzene 5.9 111 ND Ethylbenzene mg/kg 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

		10226098026	Dup		Max	
Parameter	Units	Result	Result	RPD	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	

Date: 05/09/2013 04:37 PM

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226169

SAMPLE DUPLICATE: 1415028						
		10226098026	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Xylene (Total)	mg/kg	ND	<0.18		2	20
a,a,a-Trifluorotoluene (S)	%	104	104	.7		

REPORT OF LABORATORY ANALYSIS

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Project:	49161092 TANK 8	B ROAD						
Pace Project No.:	10226169							
QC Batch:	MPRP/38682		Analysis Meth	od:	ASTM D2974			
QC Batch Method:	ASTM D2974		Analysis Desc	ription:	Dry Weight/Percer	nt Moisture		
Associated Lab San	nples: 10226169	001, 1022616900	2, 10226169003, 10	226169004				
SAMPLE DUPLICA	TE: 1415001							
			10226242009	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	21.3	19	.2 10		30	
SAMPLE DUPLICA	TE: 1415021							
			10226255001	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Percent Moisture		%	73.6	74	.0 .5		30	

REPORT OF LABORATORY ANALYSIS

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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 Blank Reporting Parameter Units Result Limit Qualifiers Analyzed **Diesel Range Organics** mg/kg <10.0 10.0 04/25/13 14:09 50-150 n-Triacontane (S) % 91 04/25/13 14:09 LABORATORY CONTROL SAMPLE & LCSD: 1415153 1415154 Spike LCS LCSD LCS LCSD % Rec Max Parameter Units Conc. Result Result % Rec % Rec Limits RPD 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

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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										(200)		-							700-00				<u>ľ (</u>	226	16	<u>,1</u>	
Chain of	Cust	ody		()	5							N	umbe	r of C	ontai	ners I	s/Pr	eser	vativ	ve		T	COC	/	of	/	_
BARR 4/00 West 7/th Minneapolis, M (952) 832-2600	Street N 5543	5-4803																					Project		EC	970 ¹³	
Project Number: 491610	92			27/17/17/29/2020/19/2019/2019/2019/2019/2019/201			-															ſS	wianage		Interve	4 4 ⁹⁷	
Project Name: Tank 8	Born	1								C#	03)		#3 s (HCI)			I.	H) #1	(na	¥2	npres.)	-	ntaine	Project QC Co	ntact:	A.H	LN	
Sample Origination State	(use two) letter	postal si	ate abbreviation)						(Pour	s (HN	NO ₃)	erved) rganic	4) #4		₩OH)	1 MeO	reserv rved)	rved),	vial, u	U 0	Df Co		Ì	7-iyu 7	~	
COC Number:				······································	N	2	40	09	2	CI) #1	Metal	als (H	unpres nge O	(H ₂ SC		red Mo	K (tare	nprese	nprese	plastic	M	nber (Sampleo	d by:	JC.	- Andrew -	
Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Mater Soil	ix .	Typ Comb. Comb.		VOCs (H(Dissolved	Total Met	Ueneral (Diesel Ra	Nutrients		VOCs (tai	GRO, BTE)	Metals (u)	SVOCs (u	% Solids (2222	Total Nur	Laborat	ory: <u>7</u> 2	2 RC (
1. Tan K8 Road - B-1	20	20	TN	4117/13	1500	X	P	{										У		% 1		3		00	l		
2. Tarkshard-B-2	20	20	IN	4118113	1100	メ	7	5									•	X		75 7	<	Z		00	L		
3. Tart8Rand-B-3	20	20	IN	4/18/13	1110	×	þ	4										X		X¥	-	3	:	00	2		
4. Tert8Road-B-4/	20	20	Th	4118113	1120	X	2	۲										8		XY		IN.	p)	00	4		
5.																											
6.																							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	******			
7.																	-						4	305		T	
8.				C																				<u></u>	<u><u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u>	<u></u>	
9.																					-						
10.	-																										
Common Parameter/Container #1 - Volatile Organics = BTEX, GR(· - Preser 2, <i>TPH</i> , 82	vation I 260 Full I	Key ¹ List 4	Relinquished By:	\sim		Dn Ia Dn Ia	 xe? v		LL Date	3	Ti 163	me	Rec	eived	by:		6		5	2<		24	Date	3 1	Time 630	
 #2 - Semivolatile Organics = PAHs, J Full List, Herbicide/Pesticide/PC #3 - General = pH. Chloride, Fluoria 	PCP, Diox Bs le, Alkalin	ins, 8270 tity, TSS		Relinquished By	Ø		m Ic	xe?	t f	Date	iz	т) (me	Red	eived	by:	<u> p</u>	202					<u>ا</u> د	Date 12313	: //	Time UZS	
TDS, TS, Sulfate #4 - Nutrients = COD, TOC, Phenol Nitrogen TKN	s, Ammor	via	5	Samples Shipped N	/IA: Air Fi	reight	∏F€	edera	d Ex	xpress	s - [] Sar	npler	Air	Bill I	Num	iber:							5			İ

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

TUN

	Sample Co	Documen	it Name: Ipon Rece	int Form	Docume	nt Revised: 28Jan Page 1 of 1	2013	
PaceAnalytical	F	Docume	nt No.: 13-rev.06		ls Pace Mi	suing Authority: nnesota Quality (Office	
Den Receipt Client Name: B2.V Courier: DFèd Ex		C	Project #)#:10	22616 	59	
acking Number: <u>9970855</u> /5	Other:		armatococco ocucoviryznaliwskih •	102	26169			
stody Seal on Cooler/Box Present?	No	Seals ir	ntact?	Ives 🗆 N	lo Optional	: Proj. Due Date	e: Proj.	Name:
cking Material: Stubble Wrap	e Bags 🗌 No	ne []Other:			Temp Blank?	Ves	□ No
mam. Used: XB88A912167504 80512447	72337080 T	vpe of Ice:	Wet	Blue	None	Samples on ice, c	cooling proce	ass has b
pler Temp Read (°C): <u>3.2</u> Cooler Temp Should be above freezing to 6°C Correction	mp Corrected (on Factor:	c): <u>4</u>	Dat	te and Initials	Biological Tissu s of Person Exar	ue Frozen?	Yes Yes]No 137
hain of Custody Present?	Sves	□No	□n/a	1.				
hain of Custody Filled Out?	Exes	No		2.				****
hain of Custody Relinquished?	N Yês	[]No	□n/a	3.				
ampler Name and/or Signature on COC?	[]¥es	No		4.	Second Million and Andrews			
amples Arrived within Hold Time?	Xés	No	□n/A	5.				
hort Hold Time Analysis (<72 hr)?	[]Yes	São	□n/a	6.				
ush Turn Around Time Requested?	[]]Yes	5NO	□n/a	7.				
ufficient Volume?	. 'Sytes	ΰNo		8.				And callenge of the state of th
orrect Containers Used?	Ves	No		9,	CLUDELING CONTRACTOR CLUDELING			Weikcoccylegetater.
-Pace Containers Used?	Tyes	NNO		~\$				
ontainers Intact?	NYês			10.		70055000000000000000000000000000000000		
Itered Volume Received for Dissolved Tests?	Yes		NN/A	11.				
ample Labels Match COC?	Nes	ΠNo		12.	<u></u>			Undermoyne gan Denne
-Includes Date/Time/ID/Analysis Matrix:			hannad to by to be					
Il containers needing acid/base preservation have een checked? Noncompliances are noted in 13. Il containers needing preservation are found to be	Yes e in			13. Sample #	∐HNO₃	∐H₂SO₄	NaOH	
$_{\rm HNO_3, H_2SO_4, HCl<2; NaOH>12}$ xceptions: VOA, Coliform, TOC, Oil and Grease,		∐N0	L MAYA			Lot # of a	idded	
VI-DRO (water)			lar Mangarangangang Kalabian Laninasa Siggi pangan	Initial when	completed:	preserva	tive:	A 444111111111111 1
leadspace in VOA Vials (>6mm)?	<u>Yes</u>	UN0	DIMA	14.		gWarda)9A7753140409000000000000000000000000000000000		
rip Blank Present?	L Yes	No.		15.				
ace Trip Blank Lot # (if purchased):	LITES		LUNA.					
(0) 100 0. (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	A CONTRACTOR OF THE OWNER			<u>L</u>				
Person Contacted:				Date/Time:	Field [ata kequired?	LIYes L	NO
Comments/Resolution:			and a second	an Marine Collection of Strategy Collection o				
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<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	$\overline{\Lambda}$			anna dh'adhachachachachachachachachachachachachach		1-1-		Marin and a second s



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



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

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

REPORT OF LABORATORY ANALYSIS



SAMPLE SUMMARY

Project: 49161092 TANK 8 RING ROAD

Pace Project No.: 10226962

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10226962001		Solid	04/23/13 13:00	04/30/13 09:06

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 RING ROAD

Pace Project No.: 10226962

Method: WI MOD DRO

Description:WIDRO GCSClient:Barr EngineeringDate: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

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 RING ROAD

Pace Project No.: 10226962

Method: WI MOD GRO

Description:WIGRO GCVClient:Barr EngineeringDate: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)

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 RING ROAD

Pace Project No.: 10226962

Method:WI MOD GRODescription:WIGRO GCVClient:Barr EngineeringDate:May 13, 2013

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

REPORT OF LABORATORY ANALYSIS

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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	l/30/13 09:06 N	latrix: Solid	
Results reported on a "dry-weight" b	asis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical	Method: WI MO	D DRO Preparation	Method	WI MOD DRO			
Diesel Range Organics Surrogates	264	1 mg/kg	21.9	2	05/03/13 13:32	05/05/13 20:36		Т6
n-Triacontane (S)	93	3 %	50-150	2	05/03/13 13:32	05/05/13 20:36	638-68-6	
WIGRO GCV	Analytical	Method: WI MO	D GRO Preparation	Method	: TPH GRO/PVO	C WI ext.		
Benzene	<0.31	l mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	71-43-2	
Ethylbenzene	2.3	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	1 mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	95-63-6	
1,3,5-Trimethylbenzene	4.1	l mg/kg	0.31	5	05/03/13 10:35	05/06/13 13:10	108-67-8	
Xylene (Total) <i>Surrogates</i>	2.8	3 mg/kg	0.92	5	05/03/13 10:35	05/06/13 13:10	1330-20-7	
a,a,a-Trifluorotoluene (S)	67	7 %	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	7 %	0.10	1		05/03/13 00:00		

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 RING ROAD

Pace Project No.: 10226962

Face Floject No 10220902					
QC Batch: GCV/1067	6	Analysis Met	hod: W	/I MOD GRO	
QC Batch Method: TPH GRO	h Method: TPH GRO/PVOC WI ext.		cription: W	IGRO Solid GCV	
Associated Lab Samples: 102	26962001				
METHOD BLANK: 1421984		Matrix:	Solid		
Associated Lab Samples: 102	26962001				
		Blank	Reporting		
Parameter	Units	Result	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 SAMPL	E & LCSD: 1421985		14	21986						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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

		10227168002	Dup		Max	
Parameter	Units	Result	Result	RPD	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	

Date: 05/13/2013 04:29 PM

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 RING ROAD

Pace Project No.: 10226962

SAMPLE DUPLICATE: 1421998						
		10227168002	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Xylene (Total)	mg/kg	ND	<0.16			20
a,a,a-Trifluorotoluene (S)	%	101	100	3		

REPORT OF LABORATORY ANALYSIS

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Project:	49161092 TANK 8	RING ROAD							
Pace Project No.:	10226962								
QC Batch:	MPRP/38905		Analysis Meth	od:	ASTM D2974				
QC Batch Method:	ASTM D2974		Analysis Desc	ription:	Dry Weight/Per	cent Moisture			
Associated Lab Sar	nples: 10226962	001							
SAMPLE DUPLICA	TE: 1422371								
			10227373001	Dup		Max			
Paran	neter	Units	Result	Result	RPD	RPD		Qualifiers	
Percent Moisture		%	18.5	17	7.6	5	30		
SAMPLE DUPLICA	TE: 1422372								
			10227046003	Dup		Max			
Paran	neter	Units	Result	Result	RPD	RPD		Qualifiers	
Percent Moisture		%	5.3	5	5.4	.7	30		

REPORT OF LABORATORY ANALYSIS

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Project: Pace Project No.:	49161092 TANK 10226962	3 RING ROAD									
QC Batch:	OEXT/21551		Analys	is Method:	: W		RO				
QC Batch Method:	WI MOD DRO		Analys	is Descript	tion: W	IDRO G	CS				
Associated Lab Sar	nples: 10226962	2001									
METHOD BLANK:	1422343		N	Atrix: Sol	id						
Associated Lab Sar	nples: 10226962	2001									
			Blank	R	eporting						
Paran	neter	Units	Result	t	Limit	Ana	lyzed	Qualif	iers		
Diesel Range Orgar	nics	mg/kg	<	:10.0	10.0	05/05/	13 17:40				
n-Triacontane (S)		%		91	50-150	05/05/	13 17:40				
LABORATORY COI	NTROL SAMPLE 8	LCSD: 1422344		1	422345						
			Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Paran	neter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Diesel Range Organ	nics	mg/kg	80	75.7	67.0	95	84	70-120	12	20	
n-Triacontane (S)		%				97	86	50-150			

REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

Page 13 of 14



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		

Date: 05/13/2013 04:29 PM

REPORT OF LABORATORY ANALYSIS

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Page 14 of 14

				·	13226462
Chain of Custody	, <i>1</i> 00		Number	r of Containers/Preservative	1 1
4700 West 77th Street	105		Water	Soil	
ARR <i>Minneapolis, MN</i> 55435-4803 (952) 832-2600					Project Manager:
oject Number: 49161092	<i>V</i>				Project & A.
oject Name: Tark 8 Ring Rooe	1		1) #2 INO3) 3) id)#3 id)#3	#4 0 #1 0 #1 0 #2 0 #2	QC Contact: <u>AAM</u>
nple Origination State $\mathcal{L} \mathcal{I}$ (use two letter postal	state abbreviation)		l ervec HNO ₂ HNO ₂ serve Serve	04) # leOH ed Me ed Me erved vial, vial, Of O	1 200
OC Number:	Nº	40124	ICI) # unpres l Meta :tals (J (unpre ange ((H ₂ S) (H ₁) (H ₂ S) (H ₁) (H ₂) (H ₁) (H ₁) (H ₁) (H ₂) (H ₁) (H	Sampled by: DUC
Location Start Depth Depth Depth Or in.	h Collection Mating Date Time 5 (mm/dd/yyyy) (hh:mm) 5	rix Type	VOCs (F SVOCs (Dissolved Total Me General Diesel R	Nutrients VOCS (t) GRO, BTT DRO (ta Metals (SVOCs (SVOCs (SVOCs (Nutrients	Laboratory: Pace
Tank8Road-B-5 2000	4123113 1300 X	X			S PUDE-MTBE, DRO
1.8 1.8 5+	-				Normal TAT
	·				
					· · · · · · · · · · · · · · · · · · ·
mmon Parameter/Container - Preservation Key	Relinquished By:	On Ice? I	Date Time	Received by	Date Time
Volatile Organics = BTEX, GRO, TPH, 8260 Full List Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs	Relinquished By:	$\frac{\sqrt{12}}{0 \text{ Ice}^2}$	<u>7113 1015</u> Date Time	Received by:	Date Time
General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate Nutrients = COD, TOC, Phenols, Ammonia	Samples Shipped VIA: Air Freight	Federal E	xpress Sampler	Air Bill Number:	T=3,6

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

	Period Control of Cont	Document Nai	ne:	Document Revised: 28	Jan2013
Paga Apply tingl	Sample Co	ndition Upon	Receipt Form	Page 1 of 1	
A abo Alia) y lival		Document N).: 	Issuing Authorit	ly:
L		WIN-L-213-re	V.UB		ty Onice
Sample Condition Client Name:		Proj	ect #:	#:1022696	62
Courier: Fed Ex UPS Commercial Pace Tracking Number: AMT 0855 500	USPS Dother: 341	Client	10220	5962	
Custody Seal on Cooler/Box Present?	⊡ No	Seals Intact		lo Optional: Proj. Due I	Date: Proj. Name:
Packing Material: Bubble Wrap	Bags 🔲 N	one 🗌 Oth	er:	Temp Blan	k? Yes No
hermom Used: 20888A912167504 8051244	72337080	ype of Ice:	Wet Blue	None Samples on id	ce, cooling process has begin
cooler Temp Read (°C): <u>3</u> Cooler Temp emp should be above freezing to 6°C Correction	IP Corrected (°C): 3.1	Date and Initial	Biological Tissue Frozen? s of Person Examining Conten	□Yes, □No ts: <u>4743:73</u>
	Proton and	kanal kana	nggy gaag paragang garaga fi kin kin kin kin kin kin kin kin kin ki	Comments:	anan antara - Calandara ang Galaya na ang tang tang tang tang tang tang t
Chain of Custody Present?	Lilles		N/A 1.		
Chain of Custody Filled Out?		No 🗌	N/A 2.		₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩
Chain of Custody Relinquished?	Yes		N/A 3.		
Sampler Name and/or Signature on COC?	Pres	No 🗌	N/A 4.		:
Samples Arrived within Hold Time?	Yes		N/A 5.		
Short Hold Time Analysis (<72 hr)?	Yes	ZNO 🗆	N/A 6.		
Rush Turn Around Time Requested?	Yes	ZNO D	N/A 7.		
Sufficient Volume?	[]¥es		N/A 8.		
Correct Containers Used?	177Yes		N/A 9.		an a
-Pace Containers Used?	[]Ves		N/A O		
Containers Intest?	[Zivar		N/A 10	۲۰۰۰٬۰۰۰٬۰۰۰٬۰۰۰٬۰۰۰٬۰۰۰٬۰۰۰٬۰۰۰٬۰۰۰٬۰	
Containers intact	<u></u>]res		N/A 10.		
Filtered Volume Received for Dissolved Testsr	L Yes				<u></u>
	Ives		N/A 12.		
-Includes Date/Time/ID/Analysis Matrix:					
All containers needing actorbase preservation have been checked? Noncompliances are noted in 13. All containers needing preservation are found to be i compliance with EPA recommendation?	n TYes		N/A 13. Sample #	HNO3 H ₂ SO4	№аОННС
(HNO ₃ , H_2SO_4 , HCl<2; NaOH>12) Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	[]Yes	No	Initial when	completed: prese	of added rvative:
Headspace in VOA Vials (>6mm)?	Yes		N/A 14.		
Trip Blank Present?	Yes		N/A 15.	aannaa maanna miga mar an	
Trip Blank Custody Seals Present?	Yes		N/A		
Pace Trip Blank Lot # (if purchased):		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-		In the Control of
LIENT NOTIFICATION/RESOLUTION				Ficid Data Required	? Yes No
Person Contacted:			Date/Time:		
Comments/Resolution:				59539565954594594594594594594594594594594594594	a daga muning kangan mangkala kana kang bagi kilang binang kang kang bagi kang bagi kang bagi kang bagi kang b
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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)

	Document Name:	Revised Date: 19Apr2013
Papa Applytical"	MT to MN Sample Transfer Form	Page: 1 of 1
Tabe Analytical	Document Number:	Issuing Authority:
1	F-MT-C-179-rev.04	Pace Minnesota Quality Office
Shipping (circle):	UPS Fed Ex	
Tracking #:	5555- 4796	2 4383
Client:	Signal Reak	
Due Date:	13-May-2013	
Pace WO:	10226926	
Project Manager:	Samantha Rupe	

MT to MN Sample Transfer Condition Upon Receipt Form

	KERE ZRAUYE	(31:1: (010)	8760		
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	BR3N	7	7	Yes	
Alkalinity / EC	BP3U	7	7.	No	
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				-	
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	IN RECEIVAGA AL PUTERRE (GE	IEMNICORMANICON (Server and Server)	
IR Gun (circle) 80512447, B88A912167504, 723	337080 Correction Factor:	+ 8 Sample Matrix:	Lot
Cooler Temp Read-(°C): (),7_ Cooler Temp (Corrected (°C): 1. D	Filtred volume rec'd for dissolved tests:	Yes No NA
Arrived on Ice:	Yes / No	Samples pH have been checked:	Yes Z No_ NA
Custody Seal Present:	Yes Z No_	Trip Blank Present:	Yes No NA
Short Hold Time Requested < 72 Hours:	YesNo	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 Z No_	Reporting Units:	

	2076 Y	S Celli : 1 (o)	DYATRANGDO: CONTRACTOR OF STATE		
Relinguished by/Affiliation	Date	Time	Accepted By Affiliation	Date	Time
Norma C Trankle Place	41.30/13	1630	& GD VOCE	51113	0905
	4 7				

Person Contacted: ______ Date: _____ Comments/Resolution:

Project Manager Review:

Date: 5-1-1>

Attachment D

Waste Disposal Documentation



Waste Profile Sheet



P.O. Number	Cust	omer Code	SKE	B Represe	entative	CL		
I. Generator I	nformation							
Generator Name: Enbrid Partnership, LLC	lge Pipelines	Limited	Generator EP	A ID Num	ber		SIC Code	
Generator Location: Enbr Superior Terminal -Ta	ridge ink 8 Road	County: Douglas	Generator Cor	ntact: Ale	ex Smith			
			Phone: 715	-398-479	95 Fa	ix: 832-325-551	11	
Generator Mailing Address Superior, WI 54880	(if different: 13	20 Grand Ave,	Generator Em	ail Addres	ss: alex.smith@enb	ridge.com		
Bill To Name & Address:	Enbridge	Bill To #:	Billing Contact	t Alex S	Smith			
3300, Houston, TX 77	002		Phone: 715	-398-479	95 Fa	x: 832-325-551	1	
Invoice Contact			Billing Email A	Address:	alex.smith@enbridg	je.com		
II Waste Gen	eration Informa	tion						
Waste Name: Crude co	ntaminated s	oil - Tank 8 Road	1	Estimat	ed rate of waste generat	ion: <u>20</u>	one one	e time
Generator Facility Operatio	ns and/or Site H	istory: Enbridge Pi	ipeline Termina		is. Li tons 🖾 cy (∐ yea	ariy
Describe the generating pro	ocess or source	of contaminated soil/	debris and/or was	ste: Pipe	eline Terminal Activitie	es		
III. Waste Com	position and C	onstituents (list all l	known)				Actual Rang	je
Crude contaminated a	oil						% 1 100	ppm
Crude contaminated s	SOIL						100	
IV. Waste Pron	erties							
Physical state:	Free Lic Ye Content	uids: pH s ⊠ No □ % □	Range: <2	Flash ☐ ≤ 1 4 □ > 1 □ > 1	point: 140ºF 140ºF to < 200ºF 200ºF	Color: Brown	Odor (des petroleu odor	scribe): um
V. Waste Clas	sification							
Waste stream properties	s (answer ALL	questions)			Does this waste con	tain absorbents?	Yes	🛛 No
Does this waste stream hazardous waste, either treatment residue?	in pure form, a	F, K, U or P listed as a mixture, or	as 🗌 Yes	No No	Is this waste lethal (t 7045.0131 Subp. 6)?	y Minn. Rules	Yes	🛛 No
Does this waste stream	contain PCB n	naterial	🗌 Yes	🛛 No	Is this waste recyclal	ble?	☐ Yes	
Does this waste stream	contain fuming	acids?	☐ Yes	No No	Is this waste infection	us?	□ Yes	
Does this waste contain	asbestos?	uoluo.	☐ Yes	No	Is this putrescible wa	aste?	☐ Yes	No
Does this waste contain	oxidizers?		Yes	No No	Is this waste demolit	ion debris?	Yes	No No
Does this waste contain Please attach any ava	radioactive ma	aterial? on or analytical test	Yes results that hav	No No	Is this waste sewer s usly been performed on	ludge? this waste that su	Ves 🗌 Yes Ibstantiates t	No Nose
VI. Shipping In	determinations formation	 Include MSDS's a 	and any informat	tion from	other agencies (i.e., M	PCA, USEPA)		
Proper DOT Shipping Name	e (per CFR 172.	101) where applicable	e					
Reportable Quantity	DO	F Hazard Class	UN/NA Num	nber		Packing Group		
Method of packaging:	drums (size		Method of s	hipment	nd dump 🗌 Rail 🗌	Other (Specify)		
	n of Non Hazar) lous Waste & Annro	val Conditions					
I hereby certify and warrant and true and that the waste	, on behalf of the	e generator and myse s as defined in Title 4	elf that, to the bes	st of my kn Code Sec sota Statu	nowledge and belief, the internation 6903, Minnesota State Section 116.07.	information containe atute Section 116.0	ed herein is ac 6, Subdivision	curate, 13,
I understand that any appre- of the waste. Therefore, if the notify SKB Environmental. of this certification being ing	y the Minnesota aval is no longer the composition of I, on behalf of the accurate or untru	Pollution Control Age valid if there are any of the waste stream c e generator, hereby a e.	changes in the pr hanges or potenti agree to fully inde	rocess ger ially chang mnify SKE	nerating the waste or the ges, I or someone repres 3 Environmental for any o	re have been chang enting the generato damages and/or cos	ges in the com or, will immedia sts incurred as	ately s a result
I understand that any appro of the waste. Therefore, if the notify SKB Environmental. of this certification being ina	y the Minnesota wal is no longer he composition of I, on behalf of th accurate or untru	Pollution Control Age valid if there are any of the waste stream c e generator, hereby a le. Alex Sm	changes in the pr hanges or potenti agree to fully inde	rocess ger ially chang mnify SKE	nerating the waste or the ges, I or someone repres B Environmental for any of Environmental	re have been chang enting the generato damages and/or cos Analyst	ges in the com or, will immedia sts incurred as 4/18/1	ately a result


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

yla Im

Tyler Jones Chemist I tjones@legend-group.com

Legend Technical Services, Inc.

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.



Barr Engineering Co.	Project:	49161092			
4700 W 77th St	Project Number:	49161092 300 014 TK	8	Work O	rder #: 1301696
Minneapolis, MN 55435	Project Manager:	Ms. Andrea Nord		Date Re	ported: 04/18/13
	ANALYTICAL I	REPORT FOR SAM	IPLES		
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 Informa	tion				
Default Cooler	Temperature (°C):				
Received on ice: Yes Received on melt water: No	Temperature blank v Ambient: No	was not present	Receive Accepta	d on ice pack: No ble (IH/ISO only): No	0
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.



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	
					1

DRO/8015D Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tk8Road-Stockpile-1 (1301696-01) Soil	Sample	d: 04/16	13 12:00	Received:	04/17/13 1	0:10				
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



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	Sample	d: 04/16	/13 12:00	Received: (04/17/13 1	0:10				
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 %						



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435		Proje Proje Proje	ect: ect Number ect Manage	49161092 : 49161092 r: Ms. Andr	2 2 300 014 T ea Nord	⁻ K8		Wo Dat	rk Order #: e Reported:	1301696 04/18/13
		L	PE egend To	RCENT S echnical	OLIDS Services	, Inc.				
Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Tk8Road-Stockpile-1 (1301696-01) Soil	Sample	d: 04/16	/13 12:00	Received:	04/17/13 1	0:10				
% Solids	79			%	1	B3D1802	04/18/13	04/18/13	% calculation	1

LEGEND Technical Services, Inc.

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

Barr Engineering Co.	Project:	9161092		
4700 W 77th St	Project Number:	9161092 300 014 TK8	Work Order #:	1301696
Minneapolis, MN 55435	Project Manager: I	Ms. Andrea Nord	Date Reported:	04/18/13

DRO/8015D - Quality Control Legend Technical Services, Inc.

					Spike	Source		%REC		%RPD	
Analyte	Result	RL	MDL	Units	Level	Result	%REC	Limits	%RPD	Limit	Notes
Batch B3D1715 - Sonication (Wisc DF	20)										
Blank (B3D1715-BLK1)				F	repared	& Analyze	ed: 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)				F	repared	& Analyze	ed: 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)				F	repared	& Analyze	ed: 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			



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 (I	Purge and Trac)	a streve.	a president of		Compare Contact	100 1A 17. 00000				Second de la
Blank (B3D1716-BLK1)					Prepared	i & Analvze	ed: 04/17/	13			
Benzene	< 0.025	0.025	0.00085	mg/kg wet		1. T. A.		1. M. L			
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	& Analyze	ed: 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	& Analyze	ed: 04/17/	13			
Benzene	95.7			ug/L	100	177	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)	S	Source:	1301696-	01	Prepared	& Analyze	ed: 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			



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)	S	ource: "	1301696-0	1	Prepared	& Analyze	ed: 04/18/1	13			
% Solids	80.0			%		79.0			1.26	20	

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

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)

Chain of	Custe	ody									Nu	mber	d Cor	lain	rs/Pr	eserv	ative			1 1			
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Location	Start Depth	Stop Depth	Unit (m./t) or m.)	Collection Date (mm/dd/yyyy)	Collection Time (hh.mm)	Mati		Comp (14)	VOCS 1	SVOL-1 Distance	Total Ma	Diesel 8			(380 1) []	Merch (SAULT 1	BTEX	Total No.	Labourory	10	rger d	
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 Ocheval = ptf. Chloride, Alaendd TDS, TS, Sulfate Nutrients = COD, TOC, Phenole 	General = pH. Chlonide, Fluende, Alkatinatis, TSS, TDS, TS, Sulfate Nutrients = COD, TOC, Buenols, Animonia Other: UT S			dera S	Espn	355 T	Sar	opica	Au B	di N	anber	8											

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Inc.

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

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

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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



REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226170

Method: WI MOD DRO

Description:WIDRO GCSClient:Barr EngineeringDate: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

REPORT OF LABORATORY ANALYSIS

Page 5 of 13



PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226170

Method: EPA 8260

Description:8260 MSV 5030 Med LevelClient:Barr EngineeringDate: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.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226170

Sample: TANK 8 ROAD- STOCKPILE-2	Lab ID: 102	26170001	Collected: 04/17/	13 15:30) Received: 04	/23/13 10:25 N	latrix: Solid	
Results reported on a "dry-weig	ht" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Met	hod: WI MC	D DRO Preparation	Method	I: WI MOD DRO			
Diesel Range Organics Surrogates	1550 m	g/kg	275	25	04/23/13 14:07	04/25/13 11:01		Т6
n-Triacontane (S)	0 %		50-150	25	04/23/13 14:07	04/25/13 11:01		S4
Dry Weight	Analytical Met	hod: ASTM	D2974					
Percent Moisture	1 7.6 %		0.10	1		04/24/13 00:00		
8260 MSV 5030 Med Level	Analytical Met	hod: EPA 82	260 Preparation Met	hod: EP	A 5035/5030B			
Benzene	677 ug	g/kg	25.2	1	04/23/13 14:51	04/23/13 18:38	71-43-2	
Ethylbenzene	1410 ug	g/kg	63.0	1	04/23/13 14:51	04/23/13 18:38	100-41-4	
Toluene	<63.0 ug	g/kg	63.0	1	04/23/13 14:51	04/23/13 18:38	108-88-3	
Xylene (Total) <i>Surrogates</i>	1930 ug	g/kg	189	1	04/23/13 14:51	04/23/13 18:38	1330-20-7	
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	

REPORT OF LABORATORY ANALYSIS

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Project:	49161092 TANK 8	ROAD							
Pace Project No.:	10226170								
QC Batch:	MPRP/38680		Analysis Meth	od:	ASTM D2974				
QC Batch Method:	ASTM D2974	TM D2974 Analy		nalysis Description: Dry Weight/Perce		rcent Moisture	Э		
Associated Lab Sar	nples: 102261700	001							
SAMPLE DUPLICA	TE: 1414998								
			10226242019	Dup		Max	(
Paran	neter	Units	Result	Result	RPD	RPE)	Qualifiers	
Percent Moisture		%	14.6	16	5.2	10	30		
SAMPLE DUPLICA	TE: 1415056								
			10226170001	Dup		Max	(
Paran	neter	Units	Result	Result	RPD	RPE)	Qualifiers	
Percent Moisture		%	17.6	16	3.2	8	30		

REPORT OF LABORATORY ANALYSIS



Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226170

QC Batch: MS	V/23444	Analysis Meth	nod: E	PA 8260		
QC Batch Method: EP	A 5035/5030B	Analysis Des	cription: 8	260 MSV 5030 Med	Level	
Associated Lab Samples:	10226170001					
METHOD BLANK: 1414	086	Matrix:	Solid			
Associated Lab Samples:	10226170001					
	Blank	Reporting				
Parameter Units		Result	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	5) %	96	67-138	04/23/13 12:16		
Toluene-d8 (S)	%	93	70-136	04/23/13 12:16		
LABORATORY CONTRO	L SAMPLE: 1414087					

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% 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						
D		10226098025	Spike	MS	MS	% Rec	0 11
Parameter	Units	Result	Conc.	Result	% 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

		10226098026	Dup		Max	
Parameter	Units	Result	Result	RPD	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		

Date: 04/26/2013 10:10 AM

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226170

SAMPLE DUPLICATE: 1414089						
		10226098026	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
4-Bromofluorobenzene (S)	%	95	97	2		
Toluene-d8 (S)	%	93	92	.3		

REPORT OF LABORATORY ANALYSIS

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Project:	49161092 TANK 8	3 ROAD									
Pace Project No.:	10226170										
QC Batch:	OEXT/21458		Analys	is Method	W		RO				
QC Batch Method:	WI MOD DRO		Analys	is Descrip	tion: W	IDRO G	CS				
Associated Lab San	nples: 10226170	0001									
METHOD BLANK:	1414427		Ν	Aatrix: Sol	id						
Associated Lab San	nples: 10226170	0001									
			Blank	R	eporting						
Paran	neter	Units	Result	t	Limit	Ana	lyzed	Qualifi	iers		
Diesel Range Orgar	nics	mg/kg	<	<10.0	10.0	04/25/	13 02:08				
n-Triacontane (S)		%		103	50-150	04/25/	13 02:08				
LABORATORY COM	NTROL SAMPLE &	LCSD: 1414428			1414429						
			Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Paran	neter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Diesel Range Organ	nics	mg/kg	80	86.4	79.3	108	99	70-120	9	20	
n-Triacontane (S)		%				110	102	50-150			

REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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

Date: 04/26/2013 10:10 AM

REPORT OF LABORATORY ANALYSIS

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Chain of	<u>Custo</u>	ody		115							Nı W	umbe ater	er of	Conta	iners	/Pre	serv s	ativ	e			COC	1	of /	
BARR Minneapolis, MN (952) 832-2600	5543:	5-4803		(1 ~ 1	:			-														Project Manager:	RE	and the second s	*******
Project Number: 49/6/0	92																				rs.				
Project Name: Tout 8	Çoa_e	4								#2 0 ₃)		#3 5 (HCl)			1	H) #1	(22	<i>t</i> 2	ipres.)		ntainei	Project QC Conta	ct:	An	/
Sample Origination State	(use two	letter	postal st	ate abbreviation)						rved) (HN	NO ₃)	erved) rganice	4) #4		(HO	H MeO	(bev)	rved)#	vial, ui		Df Co		Common and	2~ /	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
COC Number:				nt sitte in han han den de sind de server an ander de server an ander de server an ander	N)	400	93	1# (];	nprese Metals	als (H	upres nge Oi	(H2SO		ed Me	(tared	ipresei	nprese	plastic		nber (Sampled b	y: <u>\$</u>	060	
Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Mater Soil	L xir Grap	ype duo O	VOCs (HC	Dissolved	Total Meta	General (1 Diesel Rai	Nutrients		VOCs (tar	GRO, BTE) DRO (tare	Metals (un	SVOCs (u)	% Solids (F		Total Nur	Laboratory		ne.	
1. TarkeRood-Stackpik-2	9.5555500m	attanan.	19932000	411713	1530 -450	×	X										<		XX		5	Place : On	3, exi 10/d	in jas	\$
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Common Parameter/Container	- Preser	vation I	Key I	relinquished By: Bend Sei	N)		On Ice?	.91	Date 22/(:	3	Ti 763	ime 365	F	Received	i by:			Z	- D) [4]	ate 22/13	Tim 163	e O
 #1 - Volatile Organics = B1EX, GRO, 1PH, 8200 Full List #2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, 			U,	Date (<i>VU</i>	13	Ti) (ime	Ì	eceived	i`by: M	lpz	er_	**				42	ate 313	Tim /02	; <u>5</u>					
TDS, TS, Sulfate Samples Shipped VIA: Air Freight #4 - Nutrients = COD, TOC, Phenols, Ammonia Other: Nitrogen, TKN Other:				Fede	ral E	Express Sampler			Air Bill Number:																
<i>.</i> ,			Di	stribution: White-	Original Accor	npanies	s Shipm	ent t	to La	o; Ye	llow	- Fie	eld (Copy; I	Pink -	- La	b Ca	oordi	nator	r		TRU	1		

	Sample Co	Document	Name:	ot Form	n2013					
	/ Pace Analytical	Document No.: F-MN-L-213-rev.06				Issuing Authority: Pace Minnesota Quality Office				
Sample Condition Upon Receipt Courie Tracking Numbe	r: <u>9470855</u>	□USPS □0ther: 5000で42	r Cri	Project #:		0#:1 	02261 	.70		
Custody Seal on (Cooler/Box Present? XYes	No	Seals inf	lact? 🔼	lyes □No	Optional	: Proj. Due Date	e: Proj	Name:	
Packing Material	: Baubble Wrap Bubbl	le Bags 🔲 N	one 🔲	Other:		Real-Manuscritter Annual State	Temp Blank?	Ves	No	
Thermom. Used:	B88A912167504 80512447	72337080 T	ype of Ice:	Wet	Blue	None	Samples on ice, o	cooling proc	ess has begun	
Cooler Temp Read	d (°C): <u>3</u> Cooler Te pove freezing to 6°C Correcti	mp Corrected (ion Factor:	°C): 4.	Dat	e and Initials c	Biological Tissu of Person Exan	e Frozen?]Yes [23]No 1377/	
Chain of Custody	· Present?	`∑Øes	[]No	□n/a	1.				· ·	
Chain of Custody	/ Filled Out?	Nyes	□ No		2.					
Chain of Custody	Relinquished?	Vres	No	□n/A	3.					
Sampler Name a	nd/or Signature on COC?	Syes	No	□n/A	4.					
Samples Arrived	within Hold Time?	Dres	No	□n/A	5.					
Short Hold Time	Analysis (<72 hr)?	Yes	No		6.		2000-000-000-000-00-000-00-000-00-00-00-			
Rush Turn Arour	nd Time Requested?	Ves	19NO		7.			,		
Sufficient Volum	e?	. Dyes			8.				******	
Correct Containe	ers Used?	X Ýês	□ No		9,				200	
-Pace Contain	ers Used?	Yes	SNG		er 1					
Containers Intac	17	Vēs	No	□n/a	10.		******************	**************************************		
Filtered Volume	Received for Dissolved Tests?	 Yes	No	DN/A	11.	a, analyticana and all all all all all all all all all al	an a	\$2000000000000000000000000000000000000	29 - Marija Andrika, Andrika Andrika, Andrika Andrika, Andrika Andrika, Andrika Andrika, Andrika Andrika, Andri	
Sample Labels M	latch COC?	Stres	□ No		12.	tadakasadada karaka		AS-462222004-00000000000000000000000000000	Sector and the sector of the s	
-Includes Date	e/Time/ID/Analysis Matrix: 🗲	×L ·····	titlib							
All containers ne been checked? All containers ne compliance with	eding acid/base preservation have Noncompliances are noted in 13. eding preservation are found to be EPA recommendation?	e in			13. Sample #	[]HNO₃	H ₂ SO ₄	NaOH	Пнсі	
(HNO ₃ , H ₂ SO ₄ , H	CI<2; NaOH>12)		example	7			•• 11•			
Exceptions: VOA	, collform, IUC, Oll and Grease,	Yes	DNO		Initial when o	ompleted:	Lot # of a preservat	aded tive:		
Headspace in VO	DA Vials (>6mm)?	Yes	[]No		14,					
Trip Blank Preser	nt?	Yes	No	/DN/A	15.			**************************************		
Trip Blank Custor	dy Seals Present?	Yes	No	DN/A						
Pace Trip Blank L	ot # (if purchased):			(-0400-947-947-947-947-947-947-947-94			Variety in some of the Contrast of a subject of the Variety	
CLIENT NOTIFICA Pers	TION/RESOLUTION on Contacted:	an a	Water State Concession of State		ate/Time:	Field D	ata Required?	Yes 🗌	No	
Project Manager Note: Whenever the hold, incorrect prese	Review: re is a discrepancy affecting North C rvative, out of temp. incorrect conta	arolina complianc	LL e samples, a) a copy of th	Date: is form will be s	e ent to the North	HAJB Carolina DEHNR C	ertification (-123	



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 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



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



PAGE 1 of 2 4/23/2013

CUSTOMER INFORMATION

Shamrock

Landfill

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, Abcounts 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.



PAGE 2 of 2 4/23/2013

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: July Date: 4/23/13

SKB CLOQUET

REPORT NAME: DESCRIPTION: DATE RANGE: PRINTED ON (DATE): Tons Each Load By WSID Tonnage for EACH LOAD, grouped by customer 01/01/2013 to 05/24/2013 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
				Tatal Haff and a 20	f a f	T	tal Tana	724 21

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



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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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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

REPORT OF LABORATORY ANALYSIS

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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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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226167

Method: WI MOD DRO

Description:WIDRO GCSClient:Barr EngineeringDate: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:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226167

Method: WI MOD GRO

Description:WIGRO GCVClient:Barr EngineeringDate: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.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226167

Sample: TANK 8 ROAD-UDEERS-1	Lab ID: 1	10226167001	Collected: 04/22/1	13 09:00	Received: 04	/23/13 10:25 M	latrix: Solid	
Results reported on a "dry-weight" b	asis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical N	Method: WI MC	D DRO Preparation	Method	: WI MOD DRO			
Diesel Range Organics Surrogates	<11.3	mg/kg	11.3	1	04/24/13 11:43	04/27/13 14:54		
n-Triacontane (S)	94	%	50-150	1	04/24/13 11:43	04/27/13 14:54		
WIGRO GCV	Analytical N	Method: WI MC	D GRO Preparation	Method	: TPH GRO/PVO	C 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) <i>Surrogates</i>	<0.24	mg/kg	0.24	1	04/24/13 10:23	04/25/13 04:09	1330-20-7	
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 N	Method: ASTM	D2974					
Percent Moisture	17.1	%	0.10	1		04/24/13 00:00		

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226167

	20107				
QC Batch: G	CV/10632	Analysis Met	hod: W	I MOD GRO	
QC Batch Method: TF	PH GRO/PVOC WI ext.	Analysis Des	cription: W	IGRO Solid GCV	
Associated Lab Samples	: 10226167001				
METHOD BLANK: 141	5024	Matrix:	Solid		
Associated Lab Samples	: 10226167001				
		Blank	Reporting		
Parameter	Units	Result	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	

ABORATORY CONTROL SAMPLE & LCSD: 1415025 1415026												
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max			
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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 10226098025 MS MS % Rec Spike Parameter Units Result % Rec Limits Qualifiers Result Conc. ND 1,2,4-Trimethylbenzene 80-120 mg/kg 5.3 6.0 113 ND 1,3,5-Trimethylbenzene mg/kg 5.3 6.1 114 80-120 ND Benzene mg/kg 5.3 5.9 111 80-120 ND Ethylbenzene mg/kg 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

		10226098026	Dup		Max	
Parameter	Units	Result	Result	RPD	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	

Date: 05/01/2013 10:33 AM

REPORT OF LABORATORY ANALYSIS

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Project: 49161092 TANK 8 ROAD

Pace Project No.: 10226167

SAMPLE DUPLICATE: 1415028						
		10226098026	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Xylene (Total)	mg/kg	ND	<0.18		2	20
a,a,a-Trifluorotoluene (S)	%	104	104	.7		

REPORT OF LABORATORY ANALYSIS

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Project:	49161092 TANK 8	ROAD							
Pace Project No.:	10226167								
QC Batch:	MPRP/38682		Analysis Meth	od:	ASTM D2974				
QC Batch Method: ASTM D2974		Analysis Desc	ription:	Dry Weight/Pe	rcent Moistur	е			
Associated Lab Sar	nples: 10226167	001							
SAMPLE DUPLICA	TE: 1415001								
			10226242009	Dup		Ma	x		
Paran	neter	Units	Result	Result	RPD	RPI	D	Qualifiers	
Percent Moisture		%	21.3	19	9.2	10	30		
SAMPLE DUPLICA	TE: 1415021								
			10226255001	Dup		Ma	x		
Paran	neter	Units	Result	Result	RPD	RPI	D	Qualifiers	
Percent Moisture		%	73.6	74	4.0	.5	30		

REPORT OF LABORATORY ANALYSIS

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Project:	49161092 TANK 8	3 ROAD									
Pace Project No.:	10226167										
QC Batch:	OEXT/21461		Analys	is Method	: W		RO				
QC Batch Method:	WI MOD DRO		Analys	is Descrip	tion: W	IDRO G	CS				
Associated Lab San	nples: 10226167	001									
METHOD BLANK:	1415152		N	latrix: Sol	id						
Associated Lab San	nples: 10226167	/001									
			Blank	R	eporting						
Paran	neter	Units	Result	t	Limit	Ana	lyzed	Qualifi	iers		
Diesel Range Orgar	nics	mg/kg	<	:10.0	10.0	04/25/	13 14:09				
n-Triacontane (S)		%		91	50-150	04/25/	13 14:09				
LABORATORY COM	NTROL SAMPLE &	LCSD: 1415153			1415154						
			Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Paran	neter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Diesel Range Orgar	nics	mg/kg	80	82.2	82.1	103	103	70-120	.1	20	
n-Triacontane (S)		%				94	93	50-150			

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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		

Date: 05/01/2013 10:33 AM

REPORT OF LABORATORY ANALYSIS

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			1	101						-													10	22	616	<u>=1</u>
4700 West 77th	Custo Street	ody	and here a	()(-		Nu Wa	umber ater	r of C	Conta	iners	/Pre	serv S	vativ oil	7e	********		сос		of	
BARR Minneapolis, MI (952) 832-2600	V 5543.	5-4803	energinger som som provinge	0034104-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	7/0000010101010101010100000000000000000				-														Project Manage:	r:_ <i>K</i>	n Transfer	50000000000000000000000000000000000000
Project Number: 49/6/2	>92			******									(1									ers				
Project Name: Tanks K	oo.el	/								с л	10 3))#3 s (HC			#1	(H) #1		#2	npres.)		ontaine	Project QC Cor	ntact:	AA	M
Sample Origination State	(use two	letter j	postal st	ate abbreviation)							ls (HN	INO ₃)	Served Drganic	04) #4		eOH)	ed MeO	erved)	erved)	vial, u	4	of c			and the second	- 0
COC Number:				••••••••••••••••••••••••••••••••••••••	NS	2	40	09	1	CI) #1	Meta	tals (F	ange ((H ₂ S		ired M	EX (tare	inprese	unpres	(plastic	M	mber	Sampled	by:	PS	sector horizon
Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Mater Soil		Grab Grab		VOCs (H	Dissolved	Total Me	Diesel R	Nutrients		VOCs (ta	GRO, BTH DRO (ta	Metals (1	SVOCs (% Solids		Total Nu	Laborate	ory:	Pac	e
wt8 Raod-Uders-1	Castanan		-	4122/13	0900			X	2								>	<		X.	X	3		0	01	
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0.	<u> </u>														-											
Common Parameter/Container	l - Preser	vation k		Relinquished By:	<u> </u>		On Ø	Ice? N	I Gjpe	Date	 	Ti Ti	 me 305	Re		l by:	<u> </u>			L S)	Date	13/1	Time 630
 Volatile Organics = BTEX, GRO Semivolatile Organics = PAHs, F Full List, Herbicide/Pesticide/PCI General = pH, Chloride, Fluorid, 	, TPH, 82 CP, Dioxi Bs Alkalin	260 Full 1 ins, 8270 itv TSS		Relinquished By:	Ob	Ő	On (Y	Ice?	1 4/	Date \mathcal{M}	13	Ti	me 59	Re	ceivec	l by:		ļ/) Ze	<u> </u>			4	Date 23/	3/	Time 0 2 5
TDS, TS, Sulfate - Nutrients = COD, TOC, Phenols Nitrogen TKN	, Ammon	иу, 100, ia	5	Samples Shipped	VIA: Air Fi	reight		Feder	al E	xpres	3 [Sar	npler	Air	Bill	Num	ber:	8			W.Taraya Salahara					

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

T 11 A



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

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 <u>4/30/2013</u>, the WLSSD approves the discharge of <u>approximately 2000 gallons of contaminated water from an Enbridge</u> <u>pipeline ground water clean-up site</u> 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 **<u>Barr</u> <u>Engineering or Enbridge</u>** 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 **<u>Barr Engineering or Enbridge or any consultant/contractor</u>** 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 Tecomin

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,

Carlong

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

Enclosures



REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS



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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 49/16-1092 REV

Pace Project No.: 10226151

Method: WI MOD DRO

Description:WIDRO GCSClient:Barr EngineeringDate: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

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 49/16-1092 REV

Pace Project No.: 10226151

Method: WI MOD GRO

Description:WIGRO GCVClient:Barr EngineeringDate: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.

REPORT OF LABORATORY ANALYSIS

Page 6 of 11



ANALYTICAL RESULTS

Project: 49/16-1092 REV

Pace Project No.: 10226151

Sample: Tank 8 Road-Water-1	Lab ID: 10226	151001	Collected:	04/22/	13 10:15	Received: 04	/23/13 10:25	Aatrix: Water	
Parameters	Results	Units	Repor	t Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method	d: WI MO	D DRO Prep	paration	Method:	WI MOD DRO			
Diesel Range Organics	2.3 mg/L			0.11	1	04/23/13 07:29	04/25/13 01:20		Т6
n-Triacontane (S)	96 %		:	50-150	1	04/23/13 07:29	04/25/13 01:20		
WIGRO GCV	Analytical Metho	d: WI MO	D 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	

REPORT OF LABORATORY ANALYSIS

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Analysis Method: Analysis Description:

Matrix: Water

WI MOD GRO

WIGRO GCV Water

Project: 49/16-1092 REV

Pace Project No.: 10226151

QC Batch:	GCV/10640
QC Batch Method:	WI MOD GRO
Associated Lab Samp	bles: 10226151001
METHOD BLANK:	1416247

Associated Lab Samples: 10226151001

		Blank	Reporting		
Parameter	Units	Result	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

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			

1416249

MATRIX SPIKE & MATRIX SP	PIKE DUPLICAT	E: 14184	32									
	102	225661008	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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			

REPORT OF LABORATORY ANALYSIS

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Project:	49/16-1092 REV										
Pace Project No.:	10226151										
QC Batch:	OEXT/21447		Analys	sis Method:	W		RO				
QC Batch Method:	WI MOD DRO		Analys	sis Descript	tion: W	IDRO G	CS				
Associated Lab Sar	mples: 10226151	001									
METHOD BLANK:	1414034		Ν	Matrix: Wa	ter						
Associated Lab Sar	mples: 10226151	001									
			Blank	K R	eporting						
Parar	neter	Units	Resul	t	Limit	Ana	lyzed	Qualif	iers		
Diesel Range Organ	nics	mg/L	<	<0.10	0.10	04/24/	13 07:54				
n-Triacontane (S)		%		82	50-150	04/24/	13 07:54				
LABORATORY CO	NTROL SAMPLE &	LCSD: 1414035		1	414036						
			Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parar	neter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
Diesel Range Organ	nics	mg/L	2	2.2	2.0	109	98	75-115	11	20	
n-Triacontane (S)		%				99	87	50-150			

REPORT OF LABORATORY ANALYSIS

Page 9 of 11



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.

REPORT OF LABORATORY ANALYSIS

Page 10 of 11



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 OF LABORATORY ANALYSIS

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Data File: \\192.168.10.12\chem\10gcv6.i\042813a-2.b\042813005.d Page 1 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 Compound Sublist: all.sub Integrator: HP Genie Target Version: 4.14 Processing Host: SEMIVOLGCMS

Concentration Formula: Amt * DF * CpndVariable Cpnd Variable Local Compound Variable

CONCENTRATIONS

					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(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







Data File: \\192.168.10.12\chem\10gcv3.i\042313c-2.b\G1-11333.d Page 1 Report Date: 25-Apr-2013 13:36

Pace Analytical Services

Wisconsin GAS RANGE ORGANICS

Inst ID: 10gcv3.i

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

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

CONCENTRATIONS

	ON-COLUMN	FINAL				
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(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



Data File: 042413000076.D

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

						CONCENTRA	ATIONS
						ON-COLUMN	FINAL
Com	pounds	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 amountBelow 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:



																					 *********	102-	261	51	
Chain of Chain	Custe	ody		ISI							WA10000000435	N	umbo	er of	Conta	iner	s/Pro	eser	vati	ve		COC _	/	of	
4700 West 77th Minneapolis, MN (952) 832-2600	Street 55435	5-4803		~		*****																Project Manager:	F	an an tain tain tain tain tain tain tain	*
Project Number: 49116-	109'	2																			rs	3			
Project Name: Tark & R	os d	/								4	03)		#3 s (HCI	,		1,	1#(H	(na	\$2	npres.)	ntaine	Project QC Conta	act: <u> </u>	AN	/
Sample Origination State 4 ((use two	letter j	postal st	ate abbreviation)						14.000	s (HN	NO ₃)	served) rganics)4) #4		eOH) #	d McOl	rved)	rved)#	vial, u	 Of Co		T	200	7
COC Number:					N	2	4(009) 4	CI) #1	Metal	als (H	unpres	(H ₂ SC		red M	X (tare	nprese	nprese	plastic	mber	Sampled	ру: <u></u>	<u>V</u>	ague
Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Water W	atrix	Crab Grab	oc oc	VOCs (H	Dissolved	Total Met	General (Diesel Ra	Nutrients	CKO	VOCs (ta	GRO, BTE	Metals (u	<u>SVOCs (u</u>	% Solids (Total Nu	Laborator	y:_ <u>7</u> 0	Re	
1. Tark&Road-Water-1	Gryweth Stree	di ^{anan}	- Support Set	412213	1015	×		K					X		ХХ						4	40000000000000000000000000000000000000	X	\prec	80090099999999999999999999999999999999
2.				-																					
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8.																									
9.																									
10.																									
Common Parameter/Container -	Preserv	vation I	Key I	Relinquished By:	es la	<u>x l</u>	On Y	Ice? N	I 4/5	Date	, ,	Ti <i>16</i> e	ime		Receive	d by:				D D) 4/2	Date 2/13	Tij	me ට
 #1 - Volatile Organics = BTEX, GRO, #2 - Semivolatile Organics = PAHs, PO Full List, Herbicide/Pesticide/PCB 	TPH, 82 CP, Dioxi s	260 Full 1 ins, 8270	List I	Relinquished By:			On V	Ice?	1 1 1	Date nl(3	Ti ((ime) I	Receive	d by:	\mathcal{N}_{j}	pz	a u		 	4	Date Z 3/3	Tin 102	ne 25
 #3 - General = pH, Chloride, Fluoride, TDS, TS, Sulfate #4 - Nutrients = COD, TOC, Phenols, 	, Alkalini Ammon	ity, TSS, ia	5	Samples Shipped V	Air F ☐ Other	reigh	:	Feder	al E	xpress	s [] Sar	npler		Air Bill	Nun	nber:				 				

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

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Pace Analytical *	Sample Co	Documer	it No.:	ipt ronn	lssu	ling Authority:		
	For the second sec	-MN-L-21	3-rev.06		Pace Mini	nesota Quality (Office	
Dependence Client Name:		i. 	Project #	•	0#:10	2261	51	
Courier: Fed Ex UPS Commercial Pace acking Number: 9470755 15	□USPS □Other: ○○○こイス		ent	1.0:	4 			
stody Seal on Cooler/Box Present? XVes		Seals Int	act?	Jyes DN	lo Optional:	Proj. Due Date	e: Proj	. Name:
cking Material: Bubble Wrap	e Bags 🔲 No	one 🗌	Other:			Temp Blank?	Ves	[]No
rmom. Used: B888A912167504 80512447	72337080 T	vpe of Ice:	Swet	Blue	None	Samples on ice, o	cooling proc	ess has be
pler Temp Read (°C): <u>3</u> . Cooler Temp should be above freezing to 6°C Correction	mp Corrected (on Factor:	° c): <u>4</u> , .8	Dat	te and Initials	Biological Tissue of Person Exami	Frozen?]Yes [3]No 5/37
hain of Custody Present?	Ses	No	N/A	1.				
hain of Custody Filled Out?	Sizes	No		2.		an a		
hain of Custody Relinguished?	Vres	No	□n/A	3.		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	,	ATTACLE AND
ampler Name and/or Signature on COC?	Stres .			4.				
amples Arrived within Hold Time?	Nyés			5	<u>,</u>			and a second
nort Hold Time Analysis (<72 hr)?		NG		6	492144915149161402422091916195094910566699777669984409454	299889999422244*************************		1004114-00712045000000204m
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ufficient Volume?	NV5c			<u>у.</u>				
anden volumet	Niver			<u>o</u>				
Para Containers Used?	Dures .			9 ,		· ·		
-race containers oseur	L Tres			10	annan			
Annual Values Received for Dissolved Tosts?			EIN/A	44		2008775625222422499999999999999999999999999999		Reformation and the second
nered volume Received for Dissolved Testsr	[]res			4.2				
ample cases Match COC?	Lacres		LIN/A	12,				
-Includes Date/Time/ID/Analysis Matrix: V Il containers needing acid/base preservation have			"N INTYA	12	Пимо.			
een checked? Noncompliances are noted in 13. Il containers needing preservation are found to be ompliance with EPA recommendation?	e in	No		Sample #		L		· ليا ا
HNO3, H2SO4, HCI<2; NaOH>12) xceptions: VOA Coliform, TOC, Oil and Grease, VI-DRO (water)	Syes	No		Initial when	completed:	Lot # of a preserva	idded tive:	
eadspace in VOA Vials (>6mm)?	Yes	No	□n/a	14,		and the second		
rip Blank Present?	Yes	No	□n/A	15.				
rip Blank Custody Seals Present?	Yes	ΠNο	RMA.					* *
ace Trip Blank Lot # (if purchased):		an ta ana ang ang di katang ang ang ang ang ang ang ang ang ang			<u></u>	an a statistic frankright strandstradigter statistics	1949 - 1 960 - 1960 -	
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Comments/Percelution				Date/ Hitte:				ungfilmagelindenstrationstration
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	Document Name:		Document Revised: 28Jan2013 pt Form Page 1 of 1					
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oler Temp Read (°C): <u>3</u> Cooler Temp Read (°C): Cooler Temp Should be above freezing to 6°C Correction	mp Corrected (on Factor:	° c): <u>4</u> .8	Da	te and Initia	Biological Tiss Is of Person Exa	sue Frozen? [mining Contents]Yes [: <u>42</u> 3]No 5/377
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Auch Turn Around Time Requested?		Nam		7				
Sufficient Volume?	'NVEG			8	*******			***************************************
Correct Containers Used?	K]Yes			9.	ny ny nany nany alay ing kanang kang bahari na kanang mang sa kang sa kang sa kang sa kang sa kang sa kang sa k			
-Pace Containers Used?	Tives	NN6						1. 1. 1. 1. 1.
Containers Intact?	Klyes			10.		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
iltered Volume Received for Dissolved Tests?	Tiyes		NN/A	11.	nenganiga maning kipi neta kini kini kini kini kana kana kana da kina di 2000. 			and an and a second
Sample Labels Match COC?	Nixes			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. 5	[]]HNO₃	H ₂ SO ₄	NaOH	Пн
compliance with EPA recommendation?	[]Yes	No	5M/A	Jampie #		•		
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>12)		1	17				addod	
WI-DRO (water)	[]Yes	(Shio		Initial whe	n completed:	preserv	ative:	
Headspace in VOA Vials (>6mm)?	[]Yes	□ No		14.				
Trip Blank Present?	[]]Yes	No	<u>́</u> М/А	15.				
Trip Blank Custody Seals Present?	Yes	ΠNο	NYA .		• · · ·			
Pace Trip Blank Lot # (if purchased):							5956	· . • · ·
LIENT NOTIFICATION/RESOLUTION				-	Field	Data Required?	Yes []No
Person Contacted:	an a	********	and an address of the standard	Date/Time:	SCOMOLOGISCUP Alternation and a support of the		************************	
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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. <u>TYPE or PRINT LEGIBLY</u>. NOTIFY appropriate DNR region (see next page) <u>IMMEDIATELY</u> 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

X 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 Discharg	e Reported By	

Name	Firm		Phone No. (include area code)	
Karl Beaster	Enbridge Energy		(715) 398-4754	
Mailing Address 1320 Grand Ave., Superior, WI 54880		Email Address 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, <u>not PO Box</u>. 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.

					and the second second
County:	Legal Description:			WTM:	
Douglas	SW 1/4 NW 1/4 Sec	31 Tn 49N Range	13 OE OW	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	Phone Number	Email Address		
Name (if different) Karl Beaster	(715) 398-4757	karl.beaster@enbridge.com		
Mailing Address 1320 Grand Ave., Superior, WI 54880	City Superior	State ZIP Code 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	

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

Notification For Hazardous Substance Discharge (Non-Emergency Only) Form 4400-225 (05/12) Page 2 of 2

4. Hazardous Substance I	nformation				
Identify hazardous substand	e discharged (che	eck all that apply):			
🗙 VOC's		Diesel	PERC (Dry Cleaners)		
PAH's		E Fuel Oil	RCRA Hazardous Waste		
		Gasoline	Leachate		
Metals (specify):		Hydraulic Oil			
Arsenic		Jet Fuel	Fertilizer		
Chromium		Mineral Oil	Pesticide/Herbicide/Insecticide(s)		
Cyanide		U Waste Oil	Other (specify): Crude oil		
Lead					
PCB's	Petroleum-Unknown Type				
5. Impacts to the Environm	nent Information		and the second second second second second		
Enter "K" for known/confirm	ed or "P" for poten	tial for all that apply.			
Air Contamination		Sanitary Sewer Contamir	nation <u>K</u> Soil Contamination		
Co-Contamination (Petroloum)	oleum &	Contamination in Right of	f Way Storm Sewer Contamination		
		Fire Explosion Threat	Surface Water Contamination		
Contamination Within 1	Meter of Bedrock	Free Product	Within 100 ft of Private Well		
Contaminated Private V	Vell	P Groundwater Contaminat	ion Within 1000 ft of Public Well		
Contaminated Public W	/ell	Off-Site Contamination			
	Irea Bedrock	Other (specify):			
Contamination was discover	ed as a result of:		Described Exceptation of soils around tank for construction		
		assessment X Other	- Describe: Excavation of sons around tank for construction		
Date		Date	04/16/2013		
Lab results: Lab res	sults will be faxed	upon receipt 🛛 🔀 Lab results ar	e attached		
Additional Comments: Inclu hazardous substances that I	de a brief descripti nave been dischar	ion of immediate actions taken to hal ged.	t the release and contain or cleanup		
Impacts were from historica	l releases				
6. Federal Energy Act Rec	uirements (Section	on 9002(d) of the Solid Waste Disp	oosal Act (SWDA))		
For all confirmed releases	_	Source	Cause		
from UST's occurring after	Tank				
9/30/2007 please provide	Piping				
the following information.	Dispenser				
	Submersible	Turbine Pump	Physical or Mechanical Damage		
	Delivery Prob	blem	Installation Problem		
	Other (specify	y):	Other (does not fit any of above)		
			Unknown		
Contact information to re	port non-emerge	ncy releases in DNR's five regior	ns are as follows:		
Northeast Region (FAX: 9	20-662-5197); Att	ention R&R Program Associate:	DNRRRNER@wisconsin.gov		
Brown, Calumet, Door, Fo Marinette, Marquette, Mer	nd du Lac (except nominee, Oconto, (t City of Waupun - see South Centr Outagamie, Shawano, Sheboygan, V	ral Region) , Green Lake, Kewaunee, Manitowoc, Vaupaca, Waushara, Winnebago counties		
Northern Region (FAX: 71	5-623-6773); Atte	ention R&R Program Associate:	DNRRRNOR@wisconsin.gov		
Ashland, Barron, Bayfield, Sawyer, Taylor, Vilas, Wa	Burnett, Douglas, shburn counties	Forest, Florence, Iron, Langlade, Lir	ncoln, Oneida, Polk, Price, Rusk,		
South Central Region (FA)	X: 608-273-5610)	; Attention R&R Program Associ	iate: DNRRRSCR@wisconsin.gov		
Columbia, Dane, Dodge, I	Fond du Lac (City	of Waupun only), Grant, Green, low	va, Jefferson, Lafayette, Richland,		
Rock, Sauk, Walworth cou	INTIES	tention - R&P Program Accorden	DNRRRSER@wisconsin gov		
Kenosha Milwaukoo Oza	ukee Racine Wa	shington Waukesha counties			
West Central Region (FAX	: 715-839-60761	Attention R&R Program Associa	te: DNRRRWCR@wisconsin.gov		
Adams, Buffalo, Chippewa	, Clark, Crawford.	Dunn, Eau Claire, Jackson, Juneau.	LaCrosse, Marathon, Monroe, Pepin.		
Pierce, Portage, St. Croix,	Trempealeau, Ver	mon, Wood counties			