

## Technical Memorandum

**To:** Alex Smith, Enbridge Energy  
**From:** Ryan Erickson  
**Subject:** Superior Terminal Tank 12 Historical Contamination  
**BRRS #:** 01-16-579606  
**Date:** January 13, 2017  
**Project:** 49161286  
**Coordinates:** 46° 41' 08.38"N, 92° 03' 16.53"W

This document summarizes the environmental assessment and waste management assistance performed by Barr Engineering (Barr) in response to the discovery of historically contaminated soil within the Tank 12 containment basin (Figure 1) at the Enbridge Energy (Enbridge) Superior Terminal in Superior, Wisconsin.

### Background

Excavation activities associated with new pipeline installation was conducted in the eastern half of the Tank 12 containment basin as part of the Superior Terminal Enhancement Project (Project) in 2014 (Photo 1). Soil with evidence of hydrocarbon contamination (hydrocarbon odor, sheen, discoloration) was encountered by contractors within the pipeline installation excavation (Figure 1). Enbridge was notified and the nearby infrastructure was assessed for an active release. No active release was identified; therefore, Enbridge inferred that the contamination was historical. The contractors continued their excavation activities and excavated soil with evidence of hydrocarbon contamination was transported to the Terminal soil management area for characterization and off-site management.

Barr assisted Enbridge with environmental assessment and waste management tasks, as summarized below.

Given the historical nature of the observed impacts and the size and duration of the Project, Enbridge provided general notification to the Wisconsin Department of Natural Resources (WDNR) that historical impacts would be encountered during the work and that site-specific summary reports would be submitted to upon completion of Project.

### Investigation Activities and Results

Barr was onsite on October 31 and November 3, 2014 to document environmental site conditions. On October 31, the contractors encountered an isolated pocket of soil with a strong hydrocarbon odor and black discoloration in the northern end of the pipeline installation trench from approximately 0 to 8 feet below ground surface (Photo 2). Barr confirmed the presence of hydrocarbon contamination and contractors continued to excavate the material as part of their planned Project scope. Barr returned to the site on November 3 to field screen the final excavation extents.

To: Alex Smith, Enbridge Energy  
From: Ryan Erickson and Noelle Scelina  
Subject: Superior Terminal Tank 12 Historical Contamination  
BRRTS #: 01-16-579606  
Date: January 13, 2016  
Page: 2

---

Barr field screened soil from the excavation for the presence of organic vapors using a photoionization detector (PID) and identified other potential indicators of contamination such as odor, discoloration, and sheen. Soil was classified as contaminated if PID headspace readings were greater than 10 parts per million (ppm), or other physical observations of oil impacts were observed, as outlined in the pending Wisconsin Department of Natural Resources (WDNR) Site Investigation and Response Action Plan (SI/RAP) (2014). Field screening sample locations and results were documented on Site Investigation Field Sampling and Screening Logs that are presented in Attachment A. Excavated soil identified as contaminated was segregated and stockpiled in the contaminated SMA until off-site disposal was approved. Contaminated soil characterization and management activities are discussed below in the *Waste Management* section of this memo.

The final pipeline installation trench was located along the northeastern Tank 12 containment basin berm and was approximately 60 feet wide by 10 feet deep (Figure 1; Photos 1, 3, and 4). Soil in the excavation sidewalls and bottom consisted of clay. Barr field screened the accessible extents of the final excavation where the hydrocarbon contamination had been previously identified and no evidence of residual soil contamination was detected (Attachment A). The highest photo-ionization detector headspace reading was 1.2 parts per million (ppm) and no other evidence of contamination such as odor, discoloration, or sheen was identified. The contractor's had placed clean fill in the bottom of the trench at approximately 12 feet bgs prior to the field screening activity so no samples were collected immediately beneath the pipeline. However, the contractor reported that no impacts were observed at that depth.

No analytical samples were collected from the excavation because the field screening headspace detections were below 10 ppm.

The excavation was backfilled with soil or fill with no identified contamination upon completion of the Project work.

### **Historical Release Information**

Barr reviewed the Wisconsin Department of Natural Resources (WDNR) Bureau of Remediation and Redevelopment Tracking System (BRRTS) database for historical releases in the vicinity of the Tank 12 excavation and no historical release source was identified. Based on the lack of a historical release in this location, the distance from Tank 12 or other potential source areas, and the apparent isolation of the impacted soil within the basin, it is possible that contaminated soil was used as fill material during a historical pipeline project or an unreported historical release occurred from infrastructure that has previously been removed.

To: Alex Smith, Enbridge Energy  
From: Ryan Erickson and Noelle Scelina  
Subject: Superior Terminal Tank 12 Historical Contamination  
BRRTS #: 01-16-579606  
Date: January 13, 2016  
Page: 3

---

## Waste Management

Approximately 500 tons of soil from the Tank 12 excavation was managed with the Superior Terminal Pipeline Enhancement Project contaminated soil waste stream. A total of 10,638.71 tons of contaminated soil from the overall Project was managed at both the Shamrock Landfill in Cloquet, Minnesota (waste profile# CL14-0029) and the VONCO V landfill in Duluth, Minnesota (waste profile# 16-007-I). Waste profile documentation associated with the Project is provided in Attachment B and includes: profile approval documents; landfill summary reports; and, waste characterization sample laboratory reports.

## Receptor Survey

The closest groundwater monitoring wells are *MW-20A* and *MW-20B* located approximately 650 feet to the south. In 2016, analyte concentrations for PVOC and naphthalene in these wells were below method detection limits as shown in *Groundwater Monitoring Program Report, Superior WI Report* (December 2016).

No residual contamination was identified, therefore no direct contact or surface water receptors are at risk.

The closest structure is Tank 12, which has no human occupancy. No other vapor receptors were identified within 100 feet of the excavation.

## Conclusion

All contaminated soil identified in the Tank 12 excavation was removed and was managed at an approved landfill. No residual soil contamination was identified in the final excavation extents through field screening.

Because no soil with residual contamination was identified in the final excavation extents, Barr recommends the Enbridge request site closure under NR 704. Barr believes that no further remedial or investigative actions will be requested by the WDNR for this site at this time.

## References

Barr, 2014. "Site Investigation and Response Action Plan, Enbridge Energy Superior Terminal (Facility-wide)". July 2014.

Barr, 2016. "Groundwater Monitoring Program Report, Superior WI Report". December 2016.

## Attachments

Site Photos	1 through 4
Figure 1	Site Layout
Attachment A	Site Investigation Field Sampling and Screening Log
Attachment B	Waste Management Documentation

To: Alex Smith, Enbridge Energy  
From: Ryan Erickson and Noelle Scelina  
Subject: Superior Terminal Tank 12 Historical Contamination  
BRRTS #: 01-16-579606  
Date: January 13, 2016  
Page: 4

---

### Site Photos



Photo 1



Photo 2

**Photo 1:** Final excavation extents of the Tank 12 Pipeline Enhancement excavation. Photo taken facing northwest on November 3, 2014.

**Photo 2:** Contaminated soil (dark discoloration near excavator bucket) towards the northern end of the excavation. Photo taken facing north on October 31, 2014.



Photo 3

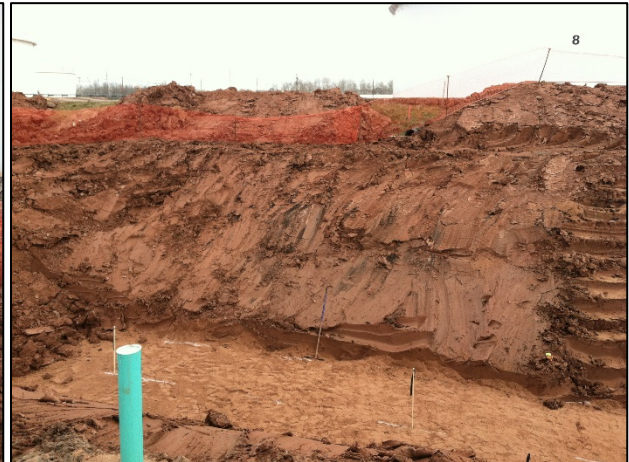
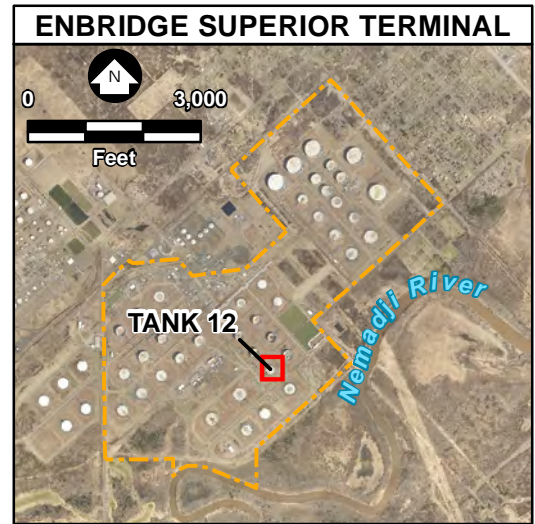
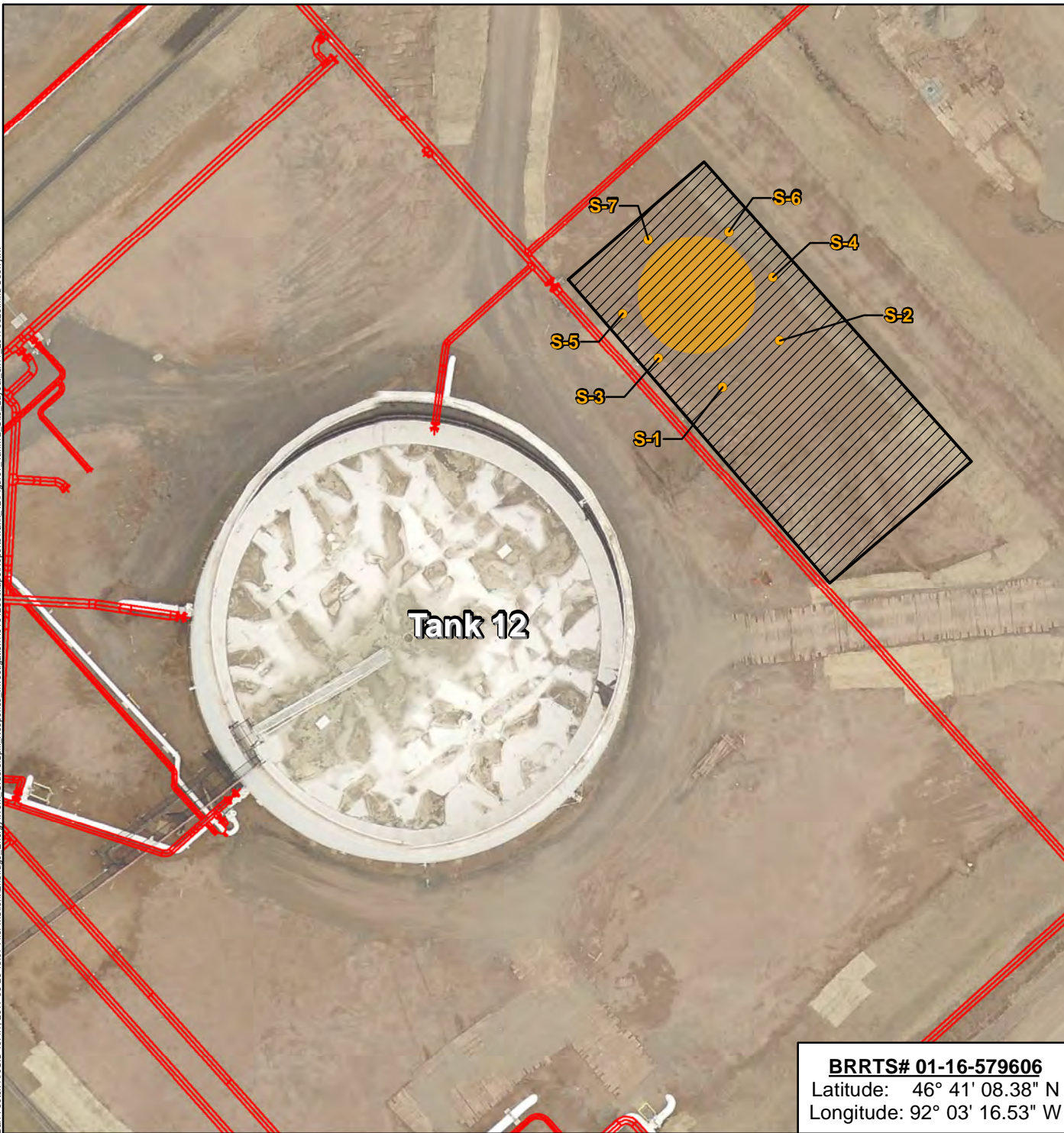


Photo 4

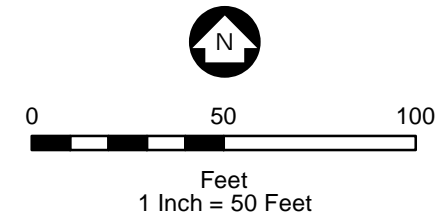
**Photo 3:** Final excavation extents of the Tank 12 Pipeline Enhancement excavation. Photo taken facing southeast on November 3, 2014.

**Photo 4:** Northeast end of the final Tank 12 Pipeline Enhancement excavation. Photo taken facing north on November 3, 2014.

Barr Footer: ArcGIS 10.4.1\_2017-06-28 15:07 File: I:\Client\Enbridge\_Energy\Work\_Orders\Spill\_Response\_Investigation\49161286\Maps\Reports\Tank\_12\Figure1\_Tank12\_Site\_Layout\_8x11\_20170628.mxd User: lwk



- Screening Sample Locations >10 PPM
- Contaminated Soil (Excavated)
- ▨ Excavation Extents
- - - Terminal Property Boundary
- Pipeline Infrastructure



Douglas County Imagery Circa May, 2016

Figure 1

**SITE LAYOUT**  
**TANK 12 ENHANCEMENT**  
**SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin

**BRRTS# 01-16-579606**  
 Latitude: 46° 41' 08.38" N  
 Longitude: 92° 03' 16.53" W



## **Attachment A**

### **Site Investigation Field Sampling and Screening Logs**



**Attachment B**

**Waste Management Documentation**





VONCO V, LLC  
1100 West Gary Street  
Duluth, MN 55808

VONCOUSA.com  
Office: 218.626.3830  
Fax: 218.626.4874

March 4, 2016

Enbridge Energy  
Attention: Alex Smith  
1100 Louisiana Ave Ste 3300  
Houston TX 77002

RE: 16-007-I SUP Terminal Enhancement Historical Soil

Dear Alex,

Please be advised that the above described waste material is acceptable for disposal at the Vonco V Waste Management Campus Facility in Duluth, MN. The waste material is acceptable per Vonco V (SW-560) Minnesota Pollution Control Agency Industrial Solid Waste Management Plan. This profile has been approved for a total of 6000 CY for disposal and will expire on 04/03/2018.

The referenced waste must maintain consistency with what was originally submitted on the waste profile. Vonco V Waste Management Campus must be contacted immediately for any changes in material composition or process generation as further testing and analysis may apply.

Additionally, acceptance is subject to the following conditions:

- The material will be absent of free liquids and must meet the paint filter test.
- A signed waste manifest with the correct profile number shall accompany each load delivered to Vonco V Waste Management Campus.
- All hauling will be in compliance with the Federal and State D.O.T regulations.

Thank you for choosing Vonco V Waste Management Campus. We appreciate your business. If you have any questions or concerns please feel free to contact myself @ (651) 319-7013 or Joe Pesante @ (218) 730-6361.

Have a great day,

Nettie Kuhn  
Vonco V, LLC  
Industrial Waste Manager

July 16, 2014

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

RE: C114-0029 Crude contaminated soil-Pipeline Enhancement Project

Dear Mr. Smith,

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

Payment and terms are net thirty (30) days. Interest will be charged at a rate of 1 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 [jonp@shamrocklandfill.com](mailto:jonp@shamrocklandfill.com).

Shamrock Landfill

  
Jon Penheiter

Customer ACCEPTED BY: (name, position) *Alex Smith Environmental Analyst*

DATE: *15 July 2014*

WASTE APPROVAL Period: *7/17/2014 to 7/17/2016*

**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  
1320 Grand Ave  
Pipeline Enhancement Project  
Superior, WI 54880

**Disposal**

Waste Description: Crude contaminated soil-Pipeline Enhancement Project

Estimated Volume: 50 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-Pipeline
----------	---------	---------	----------------------------------

---

**Notification of Waste Acceptance**

PAGE 1 of 2  
7/16/2014

**CUSTOMER INFORMATION**

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

1320 Grand Ave  
Pipeline Enhancement Project  
Superior, WI 54880  
Contact: Alex Smith  
Phone: (715) 398-4795

Profile Sheet #:  
Waste Stream #: C114-0029  
Waste Name: Crude contaminated soil-Pipeline Enhancement Pr

**INVOICE INFORMATION**

Bill #: 2133  
Enbridge Pipelines Limited Partnership,  
Accounts Payable

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

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

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

**ACCEPTANCE INFORMATION**

The waste stream identified by the reference above is acceptable for disposal.  
The anticipated frequency of shipment is 50 YARDS / ONE TIME ONLY

This waste is acceptable for delivery beginning on 7/17/2014 thru 7/17/2016 at which time the material will need to be reanalyzed and recertified.

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

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

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

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

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

**WASTE STREAM ANALYSIS INFORMATION**

Waste Name: Crude contaminated soil-Pipeline Enhancement Proje  
Physical State: Solid  
Process Producing Waste: Pipeline Terminal Activities

**PRE-ACCEPTANCE SAMPLE RESULTS**

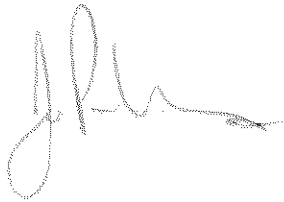
Color:		Physical State:	
Dust Present:	0	Free Liquids:	0
Paint Filter Test:	0	Odor:	
Flash Point Range:		Density:	
Radioactive?:	0	Water Reactivity:	0
pH Range:		React to Acid:	0
React to Base:	0	% Moisture:	
OVM Sniff:		Sulfide:	
Oxidizers:	0	Cyanide:	
Reacts with Air:	0		

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

**COMMENTS**

**AUTHORIZATION**

Approval:



Date:

7/16/14

P.O. Number	Customer Code	SKB Representative	CL
-------------	---------------	--------------------	----

**I. Generator Information**

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

**II. Waste Generation Information**

Waste Name: Crude contaminated soil - Pipeline Enhancement Project	Estimated rate of waste generation: <u>50</u> <input type="checkbox"/> Lbs. <input type="checkbox"/> tons <input checked="" type="checkbox"/> cy <input type="checkbox"/> drums	<input checked="" type="checkbox"/> one time <input type="checkbox"/> yearly
Generator Facility Operations and/or Site History: Enbridge Pipeline Terminal		
Describe the generating process or source of contaminated soil/debris and/or waste: Pipeline Terminal Activities		

**III. Waste Composition and Constituents (list all known)**

	Actual Range	
	%	ppm
Crude contaminated soil	100	

**IV. Waste Properties**

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

**V. Waste Classification**

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

**VI. Shipping Information**

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

**VII. Certification of Non Hazardous Waste & Approval Conditions**

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

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

 Signature	Alex Smith Printed Name	Environmental Analyst Title	16 July 2014 Date
--	----------------------------	--------------------------------	----------------------



REPORT NAME:  
DESCRIPTION:  
DATE RANGE:  
PRINTED ON (DATE):

**Tons Each Load By WSID**  
**Tonnage for EACH LOAD, grouped by customer**  
**01/01/2014 to 12/06/2016**  
**Tuesday, December 06, 2016**

**ENB14**

Enbridge Pipelines Limited Partnership  
1320 Grand Ave  
Superior WI 54880

LOAD #	MANIFEST	ARRIVED	WASTE STREAM	WASTE NAME	CELL	SPOT	LIFT	TONS
22630 (A)	52059	8/18/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.29
22636 (A)	52060	8/18/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.20
22640 (A)	52061	8/18/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.25
22643 (A)	52062	8/18/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.44
22659 (A)	52089	8/19/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.34
22666 (A)	52087	8/19/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	16.99
22668 (A)	52088	8/19/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.45
22792 (A)	52085-A	8/22/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	9.87
23267 (A)	52006	9/8/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	17.19
23278 (A)	52028	9/8/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.87
23650 (A)	52029	9/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	17.92
24039 (A)	52041	9/29/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	23.52
24041 (A)	52040	9/29/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.94
24051 (A)	52039	9/29/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.30
24361 (A)	52463	10/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.38
24366 (A)	52464	10/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.83
24429 (A)	52471	10/8/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.55
24435 (A)	52472	10/8/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.79
24506 (A)	52473	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	17.26
24507 (A)	52474	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	16.24
24517 (A)	52478	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.07
24519 (A)	52477	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.67
24526 (A)	52479	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.06
24527 (A)	52480	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.87
24537 (A)	52475	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.88
24538 (A)	52476	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.62
24543 (A)	52481	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.09
24544 (A)	52482	10/10/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	16.32
24575 (A)	52483	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	16.64
24580 (A)	52484	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	17.02
24588 (A)	52488	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.77
24590 (A)	52487	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.80
24594 (A)	52486	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.38
24596 (A)	52485	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.42
24604 (A)	52489	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.52
24605 (A)	52490	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.99
24613 (A)	52491	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	25.94
24614 (A)	52492	10/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.54
24629 (A)	52493	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.74
24639 (A)	52496	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.60
24641 (A)	52495	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.35
24656 (A)	52498	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.33
24658 (A)	52499	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	18.60
24675 (A)	52497	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.09
24676 (A)	52494	10/14/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.16
24698 (A)	52505	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.30
24699 (A)	52506	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	19.95
24708 (A)	52501	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.46
24715 (A)	52502	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.22
24732 (A)	52504	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.56

24739 (A)	52500	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.24
24749 (A)	52503	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.85
24751 (A)	50115	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.84
24762 (A)	50114	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	22.06
24763 (A)	50113	10/15/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.39
24785 (A)	50116	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	23.71
24786 (A)	50117	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	21.36
24798 (A)	50119	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.86
24800 (A)	50118	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	P44	1190	22.11
24822 (A)	50120	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1	P44	1190	19.27
24823 (A)	50121	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	P44	1190	20.02
24833 (A)	50123	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T44	1190	20.54
24836 (A)	50122	10/16/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T44	1190	21.21
24846 (A)	50124	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T44	1190	22.99
24863 (A)	50127	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T44	1190	19.97
24873 (A)	50128	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T44	1190	21.95
24874 (A)	50129	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T44	1190	19.31
24889 (A)	50130	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	18.81
24892 (A)	50131	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	20.54
24912 (A)	50132	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	19.37
24914 (A)	50133	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	18.44
24924 (A)	50134	10/17/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	Z33	1170	20.41
24929 (A)	50135	10/18/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	19.82
24944 (A)	50136	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	14.60
24946 (A)	50137	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	21.94
24952 (A)	50138	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	14.43
24953 (A)	50139	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	22.74
24962 (A)	50140	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	14.86
24965 (A)	50141	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	21.91
24979 (A)	50142	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	14.51
24984 (A)	50143	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	23.69
24994 (A)	50144	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	16.26
24999 (A)	50145	10/20/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	24.02
25017 (A)	50146	10/21/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	T43	1190	14.45
25685 (A)	50147	11/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	15.07
25702 (A)	50148	11/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y45	1190	18.79
25714 (A)	50149	11/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y41	1190	13.95
25731 (A)	50150	11/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y45	1190	17.00
25744 (A)	50151	11/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y45	1190	15.50
25773 (A)	50152	11/7/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	14.57
25780 (A)	50155	11/7/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	13.41
25785 (A)	50153	11/7/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	14.53
25793 (A)	50154	11/7/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	17.12
25899 (A)	50163	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	21.71
25907 (A)	50162	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	18.54
25916 (A)	50161	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	19.09
25917 (A)	50160	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	19.44
25920 (A)	50157	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	19.98
25923 (A)	50159	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	20.43
25929 (A)	007705	11/13/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Y43	1190	14.76
29123 (A)	51006	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	11.60
29124 (A)	51007	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	11.46
29126 (A)	50950	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	15.25
29129 (A)	50911	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.58
29130 (A)	51003	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	15.13
29131 (A)	51004	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	15.39
29136 (A)	51005	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	14.95
29139 (A)	50910	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	19.69
29140 (A)	51002	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.59
29141 (A)	50909	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.65
29142 (A)	50951	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	15.48



29146 (A)	50999	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	14.75
29147 (A)	51001	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.14
29148 (A)	51000	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	13.96
29149 (A)	50998	3/4/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	13.33
29164 (A)	50996	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.51
29165 (A)	50997	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	14.06
29168 (A)	50995	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.07
29169 (A)	50994	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	12.83
29173 (A)	50992	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.50
29175 (A)	50993	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	13.71
29179 (A)	50912	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.54
29180 (A)	50913	3/5/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	11.13
29188 (A)	50952	3/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	20.18
29189 (A)	50953	3/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	11.49
29193 (A)	50990	3/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	19.03
29194 (A)	50991	3/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	11.72
29200 (A)	50989	3/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.76
29201 (A)	50988	3/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	12.16
29221 (A)	50979	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.51
29222 (A)	50981	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.18
29223 (A)	50980	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.56
29224 (A)	50982	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.43
29226 (A)	50978	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.15
29227 (A)	50977	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.12
29228 (A)	50976	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.13
29229 (A)	50975	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.46
29230 (A)	50974	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.78
29231 (A)	50973	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	15.52
29232 (A)	50972	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.42
29233 (A)	50971	3/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.02
29248 (A)	50968	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	15.95
29249 (A)	50965	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	19.66
29255 (A)	50954	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.41
29256 (A)	50967	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	16.39
29257 (A)	50964	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.73
29263 (A)	50966	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.09
29265 (A)	50916	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	17.08
29266 (A)	50917	3/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	R36	1190	18.50
29274 (A)	50955	3/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.58
29276 (A)	50962	3/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	13.03
29279 (A)	50961	3/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	13.93
29281 (A)	50960	3/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	17.22
29282 (A)	50963	3/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	15.55
29288 (A)	50959	3/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	15.43
29326 (A)	50920	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	17.46
29327 (A)	50919	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	13.58
29328 (A)	50918	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	21.64
29334 (A)	50924	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	14.10
29335 (A)	50922	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.20
29337 (A)	50921	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	17.77
29338 (A)	50923	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	25.08
29342 (A)	51013	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	20.81
29345 (A)	51010	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.15
29346 (A)	51009	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	15.49
29347 (A)	51011	3/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	19.60
29395 (A)	51022	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	14.60
29396 (A)	51021	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	18.22
29397 (A)	50958	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.97
29398 (A)	50957	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	15.29
29403 (A)	51012	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.86
29404 (A)	51008	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.05

29405 (A)	51023	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	13.65
29407 (A)	51024	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	19.89
29412 (A)	51017	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	20.30
29413 (A)	51018	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	16.00
29414 (A)	51019	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	14.77
29415 (A)	51020	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	12.05
29416 (A)	51028	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	14.91
29417 (A)	51030	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	15.19
29418 (A)	51026	3/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	14.07
29441 (A)	51046	3/19/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	22.96
29442 (A)	51031	3/19/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	15.30
29444 (A)	51014	3/19/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	22.52
29446 (A)	51034	3/19/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	14.94
29451 (A)	51016	3/19/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	18.84
29453 (A)	51033	3/19/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	19.63
29464 (A)	51040	3/20/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	18.54
29465 (A)	51036	3/20/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	22.33
29472 (A)	51035	3/20/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	X35	1190	18.04
29615 (A)	51050	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	13.76
29616 (A)	51059	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.21
29620 (A)	51051	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.45
29625 (A)	51058	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.91
29628 (A)	51052	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.26
29630 (A)	51054	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.06
29632 (A)	51053	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.93
29633 (A)	51055	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.29
29635 (A)	51057	3/31/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.03
29664 (A)	51060	4/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.10
29665 (A)	51061	4/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.11
29666 (A)	51063	4/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.13
29667 (A)	51062	4/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	19.70
29685 (A)	51064	4/2/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.50
29686 (A)	51080	4/2/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.13
29695 (A)	51081	4/2/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.55
29698 (A)	51082	4/2/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.45
29699 (A)	51083	4/2/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	12.24
29730 (A)	51065	4/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.02
29734 (A)	51038	4/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.94
29738 (A)	51067	4/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.73
29741 (A)	51066	4/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.76
29745 (A)	51029	4/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.09
29770 (A)	7719	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.04
29771 (A)	51079	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.69
29773 (A)	7716	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.05
29774 (A)	7718	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.15
29777 (A)	51044	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.50
29778 (A)	7717	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.07
29779 (A)	7742	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.09
29780 (A)	51045	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.43
29784 (A)	51042	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.05
29785 (A)	7743	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.79
29786 (A)	7746	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	23.11
29787 (A)	51041	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.68
29792 (A)	51043	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	23.11
29793 (A)	7747	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.76
29794 (A)	7745	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.36
29795 (A)	7740	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.78
29800 (A)	7734	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.18
29801 (A)	7741	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.56
29802 (A)	7737	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.47
29803 (A)	7744	4/8/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	22.02

29809 (A)	7726	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.69
29812 (A)	7724	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.51
29813 (A)	7723	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	20.91
29814 (A)	7729	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	19.25
29815 (A)	7730	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.17
29816 (A)	7727	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.33
29817 (A)	7722	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.61
29819 (A)	7725	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	19.91
29821 (A)	7720	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.77
29822 (A)	7728	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	19.22
29823 (A)	7733	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.28
29826 (A)	7736	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.88
29827 (A)	7721	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.34
29828 (A)	160284	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	20.49
29829 (A)	160286	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.36
29832 (A)	7738	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	15.08
29833 (A)	7732	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	13.03
29836 (A)	7739	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.43
29837 (A)	160288	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.43
29838 (A)	160285	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.49
29839 (A)	160287	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	23.85
29840 (A)	7735	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.09
29841 (A)	7731	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.05
29844 (A)	160289	4/9/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.06
29853 (A)	160268	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	24.07
29854 (A)	160269	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	23.75
29855 (A)	160295	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.20
29856 (A)	160299	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	20.45
29858 (A)	160296	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.56
29859 (A)	160298	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.33
29861 (A)	160270	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.42
29863 (A)	160271	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.17
29864 (A)	160301	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	12.86
29865 (A)	160294	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	13.62
29866 (A)	160297	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.53
29867 (A)	160300	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.56
29869 (A)	160272	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	20.39
29870 (A)	160273	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.03
29874 (A)	160277	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	20.09
29875 (A)	160276	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.44
29876 (A)	160279	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.22
29877 (A)	160281	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.96
29881 (A)	160282	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	19.58
29882 (A)	160274	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.94
29883 (A)	160280	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.50
29884 (A)	160278	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.49
29885 (A)	160275	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.84
29888 (A)	160290	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.49
29892 (A)	160292	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	17.95
29894 (A)	160293	4/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.33
29931 (A)	160060	4/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	12.70
29933 (A)	160057	4/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.61
29939 (A)	160061	4/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	18.14
29940 (A)	160056	4/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	16.75
29985 (A)	160058	4/16/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	14.44
29986 (A)	160059	4/16/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	1A	S36	1190	21.52
31090 (A)	160106	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.13
31091 (A)	160109	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.39
31093 (A)	160110	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.46
31094 (A)	160111	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.47
31098 (A)	160114	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	14.89

31099 (A)	160112	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.20
31100 (A)	160108	6/29/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	19.33
31122 (A)	160113	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	9.87
31123 (A)	160121	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	9.74
31127 (A)	160107	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	14.44
31129 (A)	160120	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.62
31136 (A)	160105	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.76
31138 (A)	160118	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.10
31143 (A)	160119	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.76
31144 (A)	160115	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	11.98
31149 (A)	160117	7/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.96
31195 (A)	160305	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.22
31196 (A)	160302	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.58
31199 (A)	160126	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	10.69
31203 (A)	160304	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.12
31204 (A)	160303	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.39
31205 (A)	160306	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	10.87
31208 (A)	160127	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.70
31209 (A)	160128	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.08
31210 (A)	160267	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	11.64
31213 (A)	160129	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.96
31214 (A)	160122	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.20
31217 (A)	160125	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	11.76
31218 (A)	160124	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.97
31219 (A)	160123	7/6/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	14.30
31223 (A)	160116	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	10.93
31224 (A)	160138	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.45
31230 (A)	160139	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.22
31231 (A)	160137	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.21
31234 (A)	160145	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.41
31237 (A)	160140	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.97
31238 (A)	160136	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.13
31241 (A)	160143	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	17.78
31242 (A)	160141	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.28
31243 (A)	160135	7/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.38
31500 (A)	160316	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	17.92
31501 (A)	160321	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	19.21
31502 (A)	160323	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.83
31504 (A)	160314	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	18.07
31506 (A)	160320	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	19.60
31507 (A)	160326	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.36
31510 (A)	160315	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	19.53
31513 (A)	160319	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	20.22
31514 (A)	160325	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.84
31517 (A)	160313	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	18.08
31518 (A)	160317	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	19.36
31520 (A)	160324	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.10
31521 (A)	160318	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	19.42
31522 (A)	160312	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	17.58
31524 (A)	160322	7/23/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	16.78
31529 (A)	160346	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	18.61
31530 (A)	160340	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	17.21
31531 (A)	160338	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.40
31534 (A)	160308	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.50
31535 (A)	160311	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	11.12
31538 (A)	160345	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	11.52
31541 (A)	160337	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	12.02
31543 (A)	160328	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.32
31544 (A)	160329	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.36
31547 (A)	160344	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.17
31549 (A)	160336	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	14.30

31551 (A)	160330	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.30
31553 (A)	160327	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.84
31555 (A)	160341	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.15
31556 (A)	160335	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.11
31557 (A)	160331	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	14.63
31559 (A)	160310	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	14.45
31563 (A)	160334	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	15.20
31564 (A)	160342	7/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	R42	1190	13.87
31729 (A)	160010	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.58
31730 (A)	160009	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.46
31731 (A)	160309	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.21
31732 (A)	160332	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.78
31736 (A)	160003	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.60
31738 (A)	160001	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.84
31739 (A)	160350	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.74
31740 (A)	160348	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.83
31744 (A)	160004	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.89
31745 (A)	160002	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.76
31746 (A)	160349	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.74
31748 (A)	160347	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.10
31753 (A)	160014	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.90
31754 (A)	160013	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.01
31757 (A)	160011	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.33
31758 (A)	160012	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.92
31759 (A)	160007	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	9.91
31761 (A)	160008	8/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.32
31825 (A)	160023	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.00
31827 (A)	160018	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.56
31829 (A)	160029	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	17.27
31830 (A)	160019	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.61
31834 (A)	160024	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.28
31835 (A)	160025	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.27
31836 (A)	160022	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.40
31837 (A)	160026	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.15
31840 (A)	160017	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.05
31841 (A)	160016	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.63
31843 (A)	160015	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.22
31844 (A)	160027	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.55
31849 (A)	160030	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.30
31850 (A)	160021	8/7/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.81
31857 (A)	160020	8/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.80
31858 (A)	160031	8/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	8.34
31863 (A)	160033	8/10/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.25
31883 (A)	160032	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.02
31884 (A)	160028	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.93
31890 (A)	160172	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.51
31892 (A)	160164	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.22
31894 (A)	160171	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.10
31897 (A)	160036	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.40
31899 (A)	160165	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.19
31900 (A)	160035	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.59
31902 (A)	160034	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.13
31903 (A)	160166	8/11/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.24
31918 (A)	160169	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.94
31919 (A)	160307	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.32
31920 (A)	160199	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.72
31935 (A)	160168	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.47
31936 (A)	160167	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.93
31937 (A)	160198	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.99
31938 (A)	160197	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.41
31939 (A)	160044	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.59

31940 (A)	160040	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.24
31949 (A)	160041	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.97
31950 (A)	160196	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.50
31951 (A)	160043	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.48
31956 (A)	160202	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.93
31957 (A)	160195	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.90
31958 (A)	160042	8/12/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.70
31963 (A)	160191	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.61
31965 (A)	160200	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.41
31971 (A)	160194	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.32
31976 (A)	160201	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.44
31977 (A)	160190	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	17.38
31980 (A)	160218	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.15
31986 (A)	160193	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.67
31987 (A)	160188	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.39
31989 (A)	160217	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.96
31995 (A)	160189	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.83
31997 (A)	160216	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.17
32003 (A)	160192	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.28
32004 (A)	160214	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.29
32005 (A)	160215	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.34
32009 (A)	160209	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.85
32010 (A)	160213	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.74
32012 (A)	160245	8/13/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.22
32020 (A)	160208	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.82
32021 (A)	160210	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.89
32022 (A)	160244	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.45
32028 (A)	160236	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.37
32030 (A)	160211	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.10
32031 (A)	160221	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.06
32037 (A)	160235	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.68
32038 (A)	160212	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.10
32039 (A)	160229	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	9.74
32040 (A)	160261	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.39
32044 (A)	160223	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.33
32045 (A)	160222	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.04
32046 (A)	160234	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.75
32047 (A)	160219	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.21
32049 (A)	160228	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.79
32050 (A)	160242	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.48
32054 (A)	160224	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.80
32055 (A)	160230	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.66
32056 (A)	160233	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	17.37
32058 (A)	160240	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.94
32059 (A)	160227	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.87
32061 (A)	160243	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.06
32062 (A)	160225	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	18.16
32063 (A)	160232	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	18.51
32064 (A)	160231	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.89
32066 (A)	160241	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.92
32068 (A)	160262	8/14/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.62
32085 (A)	160226	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.87
32086 (A)	160351	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.64
32088 (A)	160263	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.26
32094 (A)	160220	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.47
32095 (A)	160264	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.25
32096 (A)	160361	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.62
32100 (A)	160260	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.60
32101 (A)	160265	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.81
32102 (A)	160360	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.73
32104 (A)	160359	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.90

32105 (A)	160259	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.66
32106 (A)	160266	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.95
32110 (A)	160358	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.66
32113 (A)	160371	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.41
32114 (A)	160357	8/17/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.51
32126 (A)	160369	8/18/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.74
32129 (A)	160163	8/18/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	13.96
32218 (A)	160352	8/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	11.37
32219 (A)	160380	8/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.32
32223 (A)	160375	8/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	8.45
32224 (A)	160377	8/24/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.42
32226 (A)	160376	8/25/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.46
32227 (A)	160381	8/25/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.91
32230 (A)	160367	8/25/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.61
32232 (A)	160382	8/25/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.03
32248 (A)	160370	8/25/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	10.95
32362 (A)	160405	9/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	15.87
32363 (A)	160368	9/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	16.57
32365 (A)	160403	9/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.54
32368 (A)	160402	9/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	17.40
32371 (A)	160404	9/1/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	14.30
32430 (A)	160456	9/3/2015	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	Z44	1210	12.76

**Total # of Loads: 499**

**Total Tons: 8,174.74**

**ENBS8**

Enbridge Pipelines Limited Partnership,  
1320 Grand Ave  
Superior WI 54880

LOAD #	MANIFEST	ARRIVED	WASTE STREAM	WASTE NAME	CELL	SPOT.	LIFT	TONS
21689 (A)	52054	7/18/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	17.00
22263 (A)	52057	8/6/2014	CL14-0029	Crude Contaminated Soil-Pipeline E	2A	P44	1190	20.41

**Total # of Loads: 2**

**Total Tons: 37.41**

**Grand Total (Tons): 8,212.15**  
**Grand Total (Loads): 501**

**BILL TO ACCOUNT**

2133 ENBRIDGE PIPELINES LIMITE

Enbridge Pipelines Limited Par  
 1320 Grand Ave  
 Superior, WI 54880

<b>TICKET</b>	<b>Manifest</b>	<b>DATE</b>	<b>Waste Stream</b>	<b>Waste Name</b>	<b>TONS</b>
614	160400	10/20/15	14-0029	Crude Contaminated Soil-Pipeline	11.35
623	160401	10/20/15	14-0029	Crude Contaminated Soil-Pipeline	11.27
630	160399	10/20/15	14-0029	Crude Contaminated Soil-Pipeline	11.93
633	160395	10/20/15	14-0029	Crude Contaminated Soil-Pipeline	13.76
643	160398	10/21/15	14-0029	Crude Contaminated Soil-Pipeline	11.26
644	160394	10/21/15	14-0029	Crude Contaminated Soil-Pipeline	12.42
652		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	14.57
657		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	15.16
659		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	14.14
664		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	15.22
665		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	13.34
673		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	14.45
678		10/21/15	14-0029	Crude Contaminated Soil-Pipeline	13.38
689	160468	10/22/15	14-0029	Crude Contaminated Soil-Pipeline	15.25
690		10/22/15	14-0029	Crude Contaminated Soil-Pipeline	16.44
699		10/22/15	14-0029	Crude Contaminated Soil-Pipeline	14.04
700		10/22/15	14-0029	Crude Contaminated Soil-Pipeline	14.58
704	160470	10/22/15	14-0029	Crude Contaminated Soil-Pipeline	15.64
706	160466	10/22/15	14-0029	Crude Contaminated Soil-Pipeline	15.16
716		10/22/15	14-0029	Crude Contaminated Soil-Pipeline	14.63
718		10/22/15	14-0029	Crude Contaminated Soil-Pipeline	14.10
737		10/23/15	14-0029	Crude Contaminated Soil-Pipeline	13.22
738		10/23/15	14-0029	Crude Contaminated Soil-Pipeline	11.75
742		10/23/15	14-0029	Crude Contaminated Soil-Pipeline	13.99
746		10/23/15	14-0029	Crude Contaminated Soil-Pipeline	12.69
750		10/23/15	14-0029	Crude Contaminated Soil-Pipeline	13.06
753		10/23/15	14-0029	Crude Contaminated Soil-Pipeline	13.61
757	160474	10/23/15	14-0029	Crude Contaminated Soil-Pipeline	12.75
758	160459	10/23/15	14-0029	Crude Contaminated Soil-Pipeline	11.54
759	160479	10/23/15	14-0029	Crude Contaminated Soil-Pipeline	9.81
760	160478	10/23/15	14-0029	Crude Contaminated Soil-Pipeline	10.60



**BILL TO ACCOUNT**

764		10/23/15 14-0029	Crude Contaminated Soil-Pipeline	13.75
765		10/23/15 14-0029	Crude Contaminated Soil-Pipeline	10.74
777	160476	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	13.69
778	160477	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	13.27
784	160480	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	16.72
786	160482	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	17.59
797	160481	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	15.32
798	160483	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	17.37
814	160504	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	18.12
816	160496	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	14.02
825	160503	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	13.11
827	160497	10/26/15 14-0029	Crude Contaminated Soil-Pipeline	16.21
839	160502	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	14.01
840	160498	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	11.77
848	160499	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	12.22
850	160501	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	11.49
856	160500	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	13.91
857	160506	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	16.07
869	160505	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	16.41
870	160507	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	12.94
873	160511	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	15.41
874	160510	10/27/15 14-0029	Crude Contaminated Soil-Pipeline	16.04
882	160489	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	16.19
883	160486	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	15.51
884	160487	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	19.60
885	160485	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.84
886	160488	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	18.55
887	160484	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.76
889	160516	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.55
890	160517	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	15.74
891	160515	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	13.69
898	160495	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	17.05
899	160493	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	15.34
901	160494	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	17.30
902	160519	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.64
903	160518	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.13

**BILL TO ACCOUNT**

908	160522	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	18.20
909	160490	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	16.79
910	160491	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	13.24
914		10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.46
915		10/28/15 14-0029	Crude Contaminated Soil-Pipeline	13.88
916		10/28/15 14-0029	Crude Contaminated Soil-Pipeline	13.86
918	160514	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	16.00
920	160521	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	15.47
922	160513	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	14.02
923	160512	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	16.96
924	160565	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	15.30
925	160568	10/28/15 14-0029	Crude Contaminated Soil-Pipeline	16.88
956	160509	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	15.91
957	160508	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	13.80
958	160577	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	11.83
965	160759	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	14.52
966	160579	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	15.20
972	160758	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	16.70
973	160582	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	16.72
977		10/29/15 14-0029	Crude Contaminated Soil-Pipeline	15.49
978		10/29/15 14-0029	Crude Contaminated Soil-Pipeline	15.82
986	160757	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	16.76
987	160753	10/29/15 14-0029	Crude Contaminated Soil-Pipeline	15.24
1000	160760	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	17.16
1001	160761	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	13.65
1004	160762	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	15.73
1005	160763	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	12.70
1009	160755	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	12.77
1012	160775	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	18.71
1013	160771	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	13.02
1017	160580	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	15.42
1020	160765	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	13.16
1022	160764	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	12.92
1023	160777	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	17.17
1026	160529	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	15.91
1028	160774	10/30/15 14-0029	Crude Contaminated Soil-Pipeline	13.91

**BILL TO ACCOUNT**

1032	160779	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	10.95
1033	160778	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	13.89
1034	160769	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	12.02
1035	160766	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	14.93
1036	160773	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	11.50
1041	160780	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	12.02
1043	160776	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	16.08
1044	160768	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	13.45
1045	160767	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	14.38
1047	160772	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	13.54
1050	160531	10/30/15	14-0029	Crude Contaminated Soil-Pipeline	12.05
1062	160538	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	13.74
1063	160528	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	12.09
1065	160754	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	12.30
1068	160537	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	13.07
1069	160527	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	13.05
1070	160523	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	14.06
1071	160525	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	13.39
1076	160536	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	13.53
1082	160535	11/2/15	14-0029	Crude Contaminated Soil-Pipeline	10.73
1615	160599	11/24/15	14-0029	Crude Contaminated Soil-Pipeline	12.39
1617	160598	11/24/15	14-0029	Crude Contaminated Soil-Pipeline	13.22
1618	160597	11/24/15	14-0029	Crude Contaminated Soil-Pipeline	14.60
1619	160600	11/24/15	14-0029	Crude Contaminated Soil-Pipeline	14.73
2026	160591	12/15/15	14-0029	Crude Contaminated Soil-Pipeline	17.30
2027	160601	12/15/15	14-0029	Crude Contaminated Soil-Pipeline	16.27
2031	160587	12/15/15	14-0029	Crude Contaminated Soil-Pipeline	20.14
2032	160386	12/15/15	14-0029	Crude Contaminated Soil-Pipeline	15.15
2517	160795	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	13.99
2518	160797	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	13.57
2523	160794	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	14.05
2524	160796	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	11.61
2526	160793	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	11.87
2528	160799	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	11.93
2533	160798	1/13/16	14-0029	Crude Contaminated Soil-Pipeline	11.73
2660	160814	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	11.85

**BILL TO ACCOUNT**

2661	160837	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.49
2662	160836	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.49
2666	160817	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	12.33
2667	160825	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	14.98
2668	160821	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	12.86
2674	160816	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.10
2675	160815	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.41
2678	160820	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.98
2684	160824	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.31
2687	160828	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.20
2689	160819	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	12.32
2691	160823	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	12.09
2692	160827	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	13.91
2694	160818	1/21/16	14-0029	Crude Contaminated Soil-Pipeline	12.94
3421	161025	3/10/16	14-0029	Crude Contaminated Soil-Pipeline	13.19
3426	161026	3/10/16	14-0029	Crude Contaminated Soil-Pipeline	13.29
<b># of Loads: 155</b>				<b>SUBTOTAL FOR Waste Stream</b>	<b>2,199.52</b>
<b>GRAND TOTALS</b>					<b>2,199.52</b>



Vonco V Waste Management Campus  
100 West Gary Street  
Duluth, MN 55808  
Permit: SW 536

*16-007-I SUP Terminal Historical*

Date	Ticket	Customer	Truck	Material	Tons
03/10/2016	271978	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	9.66
03/10/2016	271981	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	10.21
03/10/2016	271990	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	11.57
03/10/2016	271993	001342 - Enbridge Pipelines LLC	S19589X	Contaminated Soil Tons	8.73
03/10/2016	271996	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	9.10
03/10/2016	271998	001342 - Enbridge Pipelines LLC	S19589X	Contaminated Soil Tons	11.14
03/11/2016	272004	001342 - Enbridge Pipelines LLC	T53690W	Contaminated Soil Tons	17.64
03/11/2016	272009	001342 - Enbridge Pipelines LLC	T53690W	Contaminated Soil Tons	13.24
03/11/2016	272014	001342 - Enbridge Pipelines LLC	T53690W	Contaminated Soil Tons	5.69
03/30/2016	272432	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	12.26
03/30/2016	272440	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	12.93
03/30/2016	272442	001342 - Enbridge Pipelines LLC	S39449X	Contaminated Soil Tons	11.65
03/30/2016	272462	001342 - Enbridge Pipelines LLC	S38099W	Contaminated Soil Tons	15.53
03/30/2016	272463	001342 - Enbridge Pipelines LLC	S36746W	Contaminated Soil Tons	14.21
06/16/2016	275529	001342 - Enbridge Pipelines LLC	T53691W	Contaminated Soil Tons	20.83
06/16/2016	275530	001342 - Enbridge Pipelines LLC	T53691W	Contaminated Soil Tons	20.98
06/16/2016	275531	001342 - Enbridge Pipelines LLC	T53691W	Contaminated Soil Tons	21.67
				<b>Total Tons</b>	<b>227.04</b>
				<b>Total Loads</b>	<b>17</b>



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

July 15, 2014

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

Work Order Number: 1403025  
RE: 49161286

Enclosed are the results of analyses for samples received by the laboratory on 07/11/14. If you have any questions concerning this report, please feel free to contact me.

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

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

WI Accreditation #998022410

Prepared by,  
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink that reads "BACH PHAM".

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

A handwritten signature in blue ink that reads "Samantha Jaworski".

Samantha Jaworski  
Manager, Organics  
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SUP Enhancement Stockpile-01	1403025-01	Soil	07/10/14 11:00	07/11/14 09:35

**Shipping Container Information**

**Default Cooler**                      Temperature (°C): 2.4

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

**Case Narrative:**

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

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

The DRO chromatogram for the sample is attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

**DRO/8015D**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement Stockpile-01 (1403025-01) Soil</b> <b>Sampled: 07/10/14 11:00</b> <b>Received: 07/11/14 9:35</b>										
<b>Diesel Range Organics</b>	<b>950</b>	70	11	mg/kg dry	5	B4G1403	07/14/14	07/15/14	WI(95) DRO	L1
Surrogate: <i>Triacontane (C-30)</i>	84.6			70-130 %		"	"	"	"	



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement Stockpile-01 (1403025-01) Soil</b> <b>Sampled: 07/10/14 11:00</b> <b>Received: 07/11/14 9:35</b>										
Benzene	<0.0067	0.058	0.0067	mg/kg dry	1	B4G1406	07/14/14	07/14/14	WI(95) GRO	
<b>Ethylbenzene</b>	<b>0.044</b>	0.058	0.015	mg/kg dry	1	"	"	"	"	B-01, J
Toluene	<0.0095	0.058	0.0095	mg/kg dry	1	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.083</b>	0.17	0.033	mg/kg dry	1	"	"	"	"	J
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>94.7</i>			<i>80-150 %</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	



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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

**PERCENT SOLIDS**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement Stockpile-01 (1403025-01) Soil</b> <b>Sampled: 07/10/14 11:00</b> <b>Received: 07/11/14 9:35</b>										
<b>% Solids</b>	<b>43</b>			%	1	B4G1428	07/14/14	07/15/14	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

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

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B4G1403 - Sonication (Wisc DRO)</b>											
<b>Blank (B4G1403-BLK1)</b>											
						Prepared & Analyzed: 07/14/14					
Diesel Range Organics	< 1.3	8.0	1.3	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	15.1			mg/kg wet	16.0		94.2	70-130			
<b>LCS (B4G1403-BS1)</b>											
						Prepared & Analyzed: 07/14/14					
Diesel Range Organics	69.8	8.0	1.3	mg/kg wet	64.0		109	70-120			
Surrogate: <i>Triacontane (C-30)</i>	13.8			mg/kg wet	16.0		86.3	70-130			
<b>LCS Dup (B4G1403-BSD1)</b>											
						Prepared: 07/14/14 Analyzed: 07/15/14					
Diesel Range Organics	70.4	8.0	1.3	mg/kg wet	64.0		110	70-120	0.888	20	
Surrogate: <i>Triacontane (C-30)</i>	15.9			mg/kg wet	16.0		99.2	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

**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
<b>Batch B4G1406 - EPA 5035 Soil (Purge and Trap)</b>											
<b>Blank (B4G1406-BLK1)</b>						Prepared & Analyzed: 07/14/14					
Benzene	< 0.0029	0.025	0.0029	mg/kg wet							
Ethylbenzene	0.00699	0.025	0.0064	mg/kg wet							B-02, J
Toluene	< 0.0041	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	22.9			ug/L	25.0		91.8	80-150			
<b>LCS (B4G1406-BS1)</b>						Prepared & Analyzed: 07/14/14					
Benzene	99.2			ug/L	100		99.2	80-120			
Ethylbenzene	97.5			ug/L	100		97.5	80-120			
Toluene	99.5			ug/L	100		99.5	80-120			
Xylenes (total)	284			ug/L	300		94.7	80-120			
Surrogate: 4-Fluorochlorobenzene	23.3			ug/L	25.0		93.0	80-150			
<b>LCS Dup (B4G1406-BSD1)</b>						Prepared: 07/14/14 Analyzed: 07/15/14					
Benzene	96.9			ug/L	100		96.9	80-120	2.33	20	
Ethylbenzene	94.1			ug/L	100		94.1	80-120	3.47	20	
Toluene	96.5			ug/L	100		96.5	80-120	3.11	20	
Xylenes (total)	276			ug/L	300		92.1	80-120	2.83	20	
Surrogate: 4-Fluorochlorobenzene	23.2			ug/L	25.0		92.9	80-150			
<b>Matrix Spike (B4G1406-MS1)</b>						Source: 1403026-02 Prepared: 07/14/14 Analyzed: 07/15/14					
Benzene	94.9			ug/L	100	<	94.9	80-120			
Ethylbenzene	92.3			ug/L	100	0.245	92.0	80-120			
Toluene	95.1			ug/L	100	<	95.1	80-120			
Xylenes (total)	271			ug/L	300	<	90.3	80-120			
Surrogate: 4-Fluorochlorobenzene	23.3			ug/L	25.0		93.1	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

**PERCENT SOLIDS - Quality Control**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B4G1428 - General Preparation</b>											
<b>Duplicate (B4G1428-DUP1)</b>						<b>Source: 1403001-02</b>	Prepared: 07/14/14 Analyzed: 07/15/14				
% Solids	81.0			%		78.0			3.77	20	
<b>Duplicate (B4G1428-DUP2)</b>						<b>Source: 1403045-01</b>	Prepared: 07/14/14 Analyzed: 07/15/14				
% Solids	84.0			%		84.0			0.00	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 001 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403025 Date Reported: 07/15/14
---	---	--

### Notes and Definitions

L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)



7/15/14 BP

Data File: \\lts-target\targetdata\chem\FID5,i\140714,b\033,d

Date : 15-JUL-2014 07:13

Client ID:

Sample Info: 1403025-01 x5

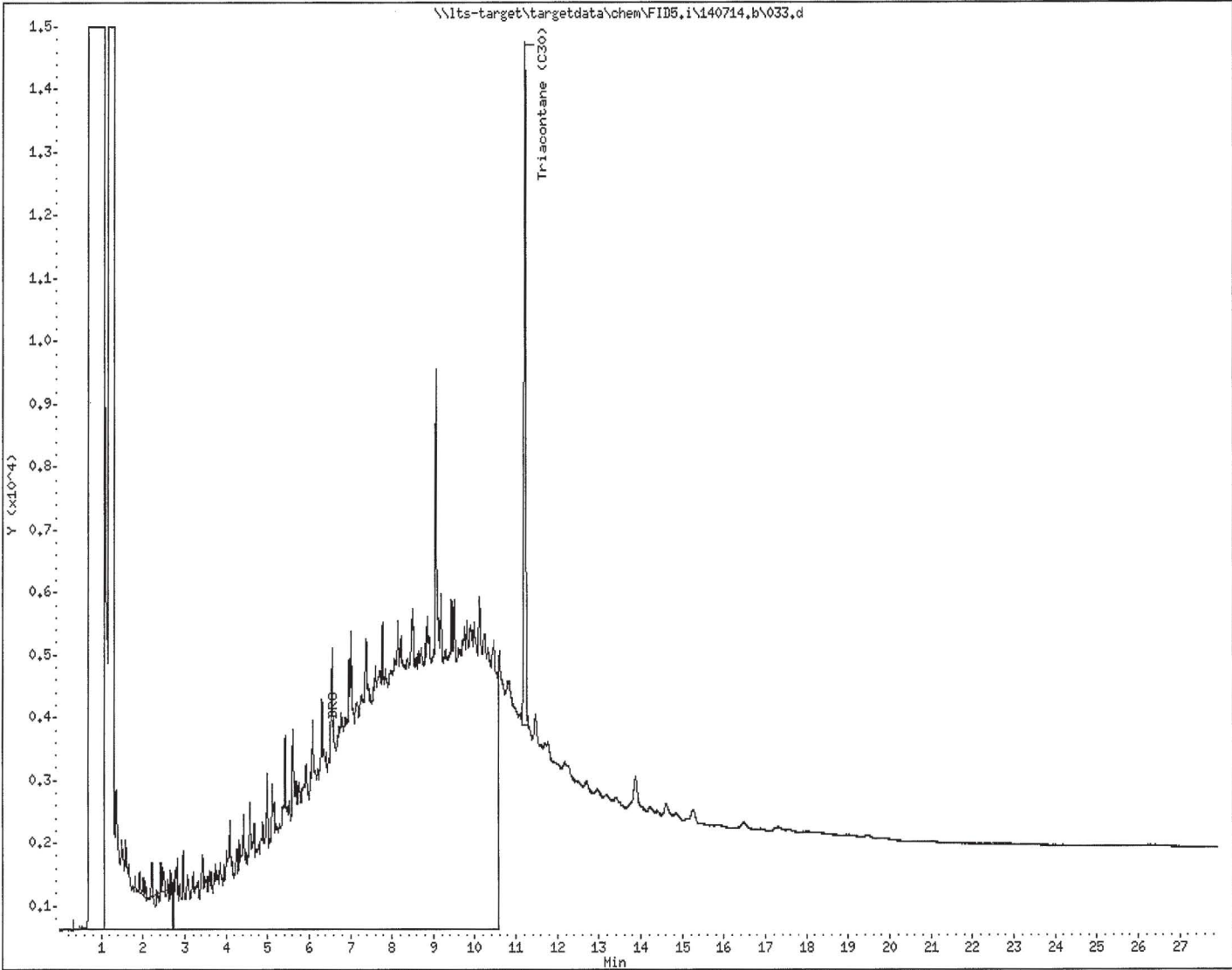
SUP Enhancement Stackpile-01

Instrument: FID5.i

Operator: yp

Column diameter: 0.53

Column phase:



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





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

August 07, 2014

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

Work Order Number: 1403432  
RE: 49161286

Enclosed are the results of analyses for samples received by the laboratory on 08/05/14. If you have any questions concerning this report, please feel free to contact me.

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

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

WI Accreditation #998022410

Prepared by,  
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "Bach Pham".

---

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

A handwritten signature in black ink, appearing to read "Kelly French".

---

Kelly French  
Chemist III/Department Manager  
kfrench@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SUP-Enhancement-Stockpile-2	1403432-01	Soil	08/04/14 13:45	08/05/14 09:05

**Shipping Container Information**

**Default Cooler**                      Temperature (°C): 3.9

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

**Case Narrative:**

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

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

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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

**DRO/8015D**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP-Enhancement-Stockpile-2 (1403432-01) Soil</b> <b>Sampled: 08/04/14 13:45</b> <b>Received: 08/05/14 9:05</b>										
<b>Diesel Range Organics</b>	<b>3200</b>	1000	170	mg/kg dry	100	B4H0605	08/06/14	08/07/14	WI(95) DRO	L1
<i>Surrogate: Triacontane (C-30)</i>				70-130 %		"	"	"	"	D-1

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP-Enhancement-Stockpile-2 (1403432-01) Soil</b> <b>Sampled: 08/04/14 13:45</b> <b>Received: 08/05/14 9:05</b>										
Benzene	<0.0037	0.032	0.0037	mg/kg dry	1	B4H0608	08/06/14	08/06/14	WI(95) GRO	
Ethylbenzene	<b>0.052</b>	0.032	0.0082	mg/kg dry	1	"	"	"	"	B-01
Toluene	<b>0.016</b>	0.032	0.0053	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	<b>0.063</b>	0.096	0.018	mg/kg dry	1	"	"	"	"	J
Surrogate: 4-Fluorochlorobenzene	96.4			80-150 %		"	"	"	"	



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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

**PERCENT SOLIDS**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP-Enhancement-Stockpile-2 (1403432-01) Soil</b> <b>Sampled: 08/04/14 13:45</b> <b>Received: 08/05/14 9:05</b>										
<b>% Solids</b>	<b>78</b>			%	1	B4H0611	08/06/14	08/06/14	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

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

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B4H0605 - Sonication (Wisc DRO)</b>											
<b>Blank (B4H0605-BLK1)</b>											
						Prepared: 08/06/14 Analyzed: 08/07/14					
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	14.2			mg/kg wet	16.0		88.9	70-130			
<b>LCS (B4H0605-BS1)</b>											
						Prepared: 08/06/14 Analyzed: 08/07/14					
Diesel Range Organics	56.3	8.0	1.3	mg/kg wet	64.0		87.9	70-120			
Surrogate: <i>Triacontane (C-30)</i>	13.9			mg/kg wet	16.0		86.9	70-130			
<b>LCS Dup (B4H0605-BSD1)</b>											
						Prepared: 08/06/14 Analyzed: 08/07/14					
Diesel Range Organics	52.5	8.0	1.3	mg/kg wet	64.0		82.0	70-120	6.93	20	
Surrogate: <i>Triacontane (C-30)</i>	13.1			mg/kg wet	16.0		82.2	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

**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
<b>Batch B4H0608 - EPA 5035 Soil (Purge and Trap)</b>											
<b>Blank (B4H0608-BLK1)</b>						Prepared & Analyzed: 08/06/14					
Benzene	< 0.0029	0.025	0.0029	mg/kg wet							
Ethylbenzene	0.00744	0.025	0.0064	mg/kg wet							B-02, J
Toluene	< 0.0041	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	22.2			ug/L	25.0		88.8	80-150			
<b>LCS (B4H0608-BS1)</b>						Prepared & Analyzed: 08/06/14					
Benzene	91.8			ug/L	100		91.8	80-120			
Ethylbenzene	92.7			ug/L	100		92.7	80-120			
Toluene	91.4			ug/L	100		91.4	80-120			
Xylenes (total)	266			ug/L	300		88.8	80-120			
Surrogate: 4-Fluorochlorobenzene	22.1			ug/L	25.0		88.4	80-150			
<b>LCS Dup (B4H0608-BSD1)</b>						Prepared & Analyzed: 08/06/14					
Benzene	97.9			ug/L	100		97.9	80-120	6.53	20	
Ethylbenzene	96.2			ug/L	100		96.2	80-120	3.70	20	
Toluene	97.7			ug/L	100		97.7	80-120	6.64	20	
Xylenes (total)	277			ug/L	300		92.4	80-120	4.02	20	
Surrogate: 4-Fluorochlorobenzene	22.7			ug/L	25.0		90.8	80-150			
<b>Matrix Spike (B4H0608-MS1)</b>						Source: 1403407-05 Prepared & Analyzed: 08/06/14					
Benzene	91.0			ug/L	100	<	91.0	80-120			
Ethylbenzene	88.7			ug/L	100	0.266	88.4	80-120			
Toluene	90.9			ug/L	100	<	90.9	80-120			
Xylenes (total)	260			ug/L	300	0.179	86.7	80-120			
Surrogate: 4-Fluorochlorobenzene	22.9			ug/L	25.0		91.5	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

**PERCENT SOLIDS - Quality Control**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes	
<b>Batch B4H0611 - General Preparation</b>												
<b>Duplicate (B4H0611-DUP1)</b>							<b>Source: 1403416-04</b>					Prepared & Analyzed: 08/06/14
% Solids	87.0			%		88.0			1.14	20		
<b>Duplicate (B4H0611-DUP2)</b>							<b>Source: 1403432-01</b>					Prepared & Analyzed: 08/06/14
% Solids	77.0			%		78.0			1.29	20		



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 003 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403432 Date Reported: 08/07/14
---	--	--

### Notes and Definitions

- L1 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- J Parameter was present between the MDL and RL and should be considered an estimated value
- D-1 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- B-02 Target analyte was present in the method blank between the MDL and RL.
- B-01 Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
- < Less than value listed
- dry Sample results reported on a dry weight basis
- NA Not applicable. The %RPD is not calculated from values less than the reporting limit.
- MDL Method Detection Limit
- RL Reporting Limit
- RPD Relative Percent Difference
- LCS Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
- MS Matrix Spike = Laboratory Fortified Matrix (LFM)

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

1403432

Project Number: 4916 1286.00 003 001  
 Project Name: Embri 21 MP Enhancement Stockpile  
 Sample Origination State: WI (use two letter postal state abbreviation)  
 COC Number: **No 43403**

Number of Containers/Preservative		COC <u>1</u> of <u>1</u>
Water	Soil	
VOCs (unpreserved) #2	VOCs (stared MeOH) #1	Total Number of Containers
Dissolved Metals (HNO <sub>3</sub> )	BTEX (stared MeOH) #1	
Total Metals (HNO <sub>3</sub> )	DRO (stared unpreserved)	
General (unpreserved) #3	Metals (unpreserved)	
Diesel Range Organics (HCl)	SVOCs (unpreserved) #2	
Nutrients (H <sub>2</sub> SO <sub>4</sub> ) #4	% Solids (plastic vial, unpres.)	
	Extra Jar - Hold	

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type	
						Water	Soil	Grab	Comp.
1 SUP-Enhancement-Stockpile-2				8/4/14	1345	X	X		
2									
3									
4									
5									
6									
7									
8									
9									
10									

BTEX, DRO, 2  
 Extra Jars - Hold  
 ASAP TAT

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

Relinquished By: *[Signature]* On Ice?  N Date: 8/4/14 Time: 1445  
 Relinquished By: *[Signature]* On Ice?  N Date: 8/5/14 Time: 905  
 Received by: *[Signature]* Date: 8/5/14 Time: 905  
 Samples Shipped VIA:  Air Freight  Federal Express  Sampler Air Bill Number: 390  
 Other

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

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

8/7/14 BP

Data File: \\lts-target\targetdata\chem\FID5,i\140806.b\052.d

Date : 07-AUG-2014 08:33

Client ID:

Sample Info: 1403432-01 x100

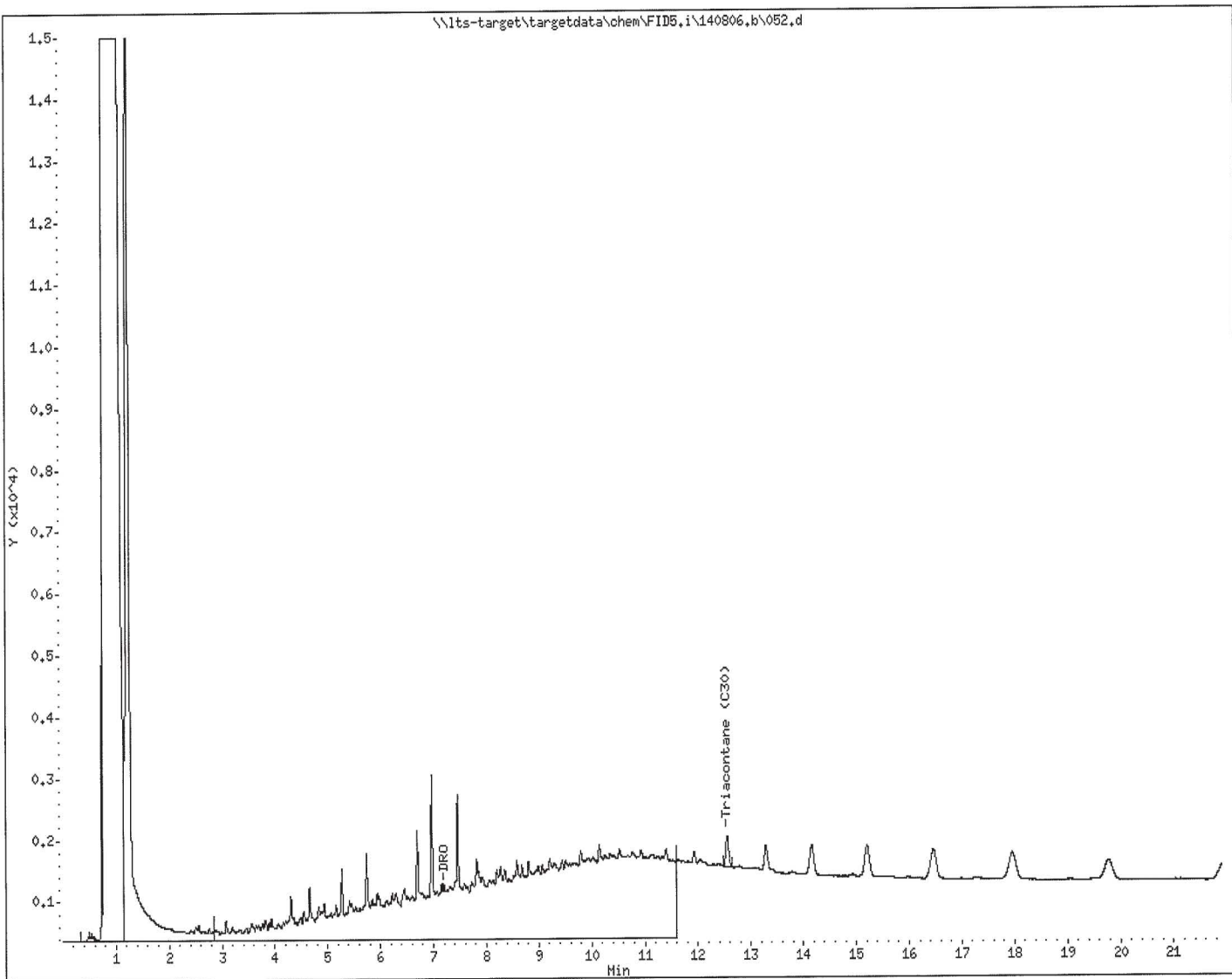
SUP-Enhancement-Stockpile-2

Instrument: FID5.i

Operator: yp

Column diameter: 0.53

Column phase:



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



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

August 25, 2014

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

Work Order Number: 1403769  
RE: 49161286

Enclosed are the results of analyses for samples received by the laboratory on 08/20/14. If you have any questions concerning this report, please feel free to contact me.

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

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

WI Accreditation #998022410

Prepared by,  
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "Bach Pham".

---

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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SUP Enhancement-Stockpile-03	1403769-01	Soil	08/19/14 10:00	08/20/14 09:15

**Shipping Container Information**

**Default Cooler**                      Temperature (°C):

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

**Case Narrative:**

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

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

The DRO chromatogram for the sample is attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

**DRO/8015D**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement-Stockpile-03 (1403769-01) Soil</b> <b>Sampled: 08/19/14 10:00</b> <b>Received: 08/20/14 9:15</b>										
<b>Diesel Range Organics</b>	<b>150</b>	12	2.0	mg/kg dry	1	B4H2002	08/20/14	08/21/14	WI(95) DRO	L1
Surrogate: <i>Triacontane (C-30)</i>	75.5			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement-Stockpile-03 (1403769-01) Soil    Sampled: 08/19/14 10:00    Received: 08/20/14 9:15</b>										
Benzene	<0.0048	0.041	0.0048	mg/kg dry	1	B4H2211	08/22/14	08/23/14	WI(95) GRO	
<b>Ethylbenzene</b>	<b>0.017</b>	0.041	0.011	mg/kg dry	1	"	"	"	"	B-01, J
<b>Toluene</b>	<b>0.0090</b>	0.041	0.0068	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	<0.024	0.12	0.024	mg/kg dry	1	"	"	"	"	
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>92.3</i>			<i>80-150 %</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

**PERCENT SOLIDS**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement-Stockpile-03 (1403769-01) Soil</b> <b>Sampled: 08/19/14 10:00</b> <b>Received: 08/20/14 9:15</b>										
<b>% Solids</b>	<b>66</b>			%	1	B4H2012	08/20/14	08/20/14	% calculation	



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

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

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B4H2002 - Sonication (Wisc DRO)</b>											
<b>Blank (B4H2002-BLK1)</b>											
						Prepared & Analyzed: 08/20/14					
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	13.4			mg/kg wet	16.0		83.6	70-130			
<b>LCS (B4H2002-BS1)</b>											
						Prepared & Analyzed: 08/20/14					
Diesel Range Organics	62.9	8.0	1.3	mg/kg wet	64.0		98.2	70-120			
Surrogate: <i>Triacontane (C-30)</i>	13.8			mg/kg wet	16.0		86.4	70-130			
<b>LCS Dup (B4H2002-BSD1)</b>											
						Prepared: 08/20/14 Analyzed: 08/21/14					
Diesel Range Organics	59.8	8.0	1.3	mg/kg wet	64.0		93.4	70-120	4.98	20	
Surrogate: <i>Triacontane (C-30)</i>	13.1			mg/kg wet	16.0		81.6	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

**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
<b>Batch B4H2211 - EPA 5035 Soil (Purge and Trap)</b>											
<b>Blank (B4H2211-BLK1)</b>											
						Prepared: 08/22/14 Analyzed: 08/23/14					
Benzene	< 0.0029	0.025	0.0029	mg/kg wet							
Ethylbenzene	0.0108	0.025	0.0064	mg/kg wet							B-02, J
Toluene	< 0.0041	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.5			ug/L	25.0		94.0	80-150			
<b>LCS (B4H2211-BS1)</b>											
						Prepared & Analyzed: 08/22/14					
Benzene	97.9			ug/L	100		97.9	80-120			
Ethylbenzene	101			ug/L	100		101	80-120			
Toluene	98.5			ug/L	100		98.5	80-120			
Xylenes (total)	293			ug/L	300		97.8	80-120			
Surrogate: 4-Fluorochlorobenzene	23.6			ug/L	25.0		94.4	80-150			
<b>LCS Dup (B4H2211-BSD1)</b>											
						Prepared: 08/22/14 Analyzed: 08/23/14					
Benzene	96.2			ug/L	100		96.2	80-120	1.85	20	
Ethylbenzene	98.9			ug/L	100		98.9	80-120	2.61	20	
Toluene	95.7			ug/L	100		95.7	80-120	2.82	20	
Xylenes (total)	289			ug/L	300		96.4	80-120	1.50	20	
Surrogate: 4-Fluorochlorobenzene	23.1			ug/L	25.0		92.2	80-150			
<b>Matrix Spike (B4H2211-MS1)</b>											
						Source: 1403769-01 Prepared: 08/22/14 Analyzed: 08/23/14					
Benzene	95.4			ug/L	100	<	95.4	80-120			
Ethylbenzene	99.0			ug/L	100	0.211	98.8	80-120			
Toluene	95.3			ug/L	100	0.109	95.2	80-120			
Xylenes (total)	288			ug/L	300	0.115	95.8	80-120			
Surrogate: 4-Fluorochlorobenzene	22.1			ug/L	25.0		88.5	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

**PERCENT SOLIDS - Quality Control**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B4H2012 - General Preparation</b>											
<b>Duplicate (B4H2012-DUP1)</b>		<b>Source: 1403773-01</b>				<b>Prepared &amp; Analyzed: 08/20/14</b>					
% Solids	88.0			%		87.0			1.14	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286.00 006 001 Project Manager: Ms. Andrea Nord	Work Order #: 1403769 Date Reported: 08/25/14
---	--	--

### Notes and Definitions

L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

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

14039109

Project Number: 49161286.00 006 001  
 Project Name: Enbridge Pipeline Enhancement - FB 227  
 Sample Origination State: WI (use two letter postal state abbreviation)  
 COC Number: **NO 43416**

Number of Containers/Preservative		COC	Project Manager: <u>REE</u>	Project QC Contact: <u>AAN</u>	Sampled by: <u>EJW</u>	Laboratory: <u>Legend</u>
Water	Soil					
SVOCs (unpreserved) #2	VOCs (tared MeOH) #1	1	1	4	DRG, BTEX	ASAP TAT
Dissolved Metals (HNO <sub>3</sub> )	GRQ (tared MeOH) #1					
Total Metals (HNO <sub>3</sub> )	DRQ (tared unpreserved)					
General (unpreserved) #2	Metals (unpreserved)					
Diesel Range Organics (HCl)	SVOCs (unpreserved) #2					
Nutrients (H <sub>2</sub> SO <sub>4</sub> ) #4	% Solids (plastic vial, unpres.)					

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type		OC	Total Number Of Containers
						Water	Soil	Grab	Comp.		
1. SUP ENHANCEMENT - STOCKPILE - 03				08/19/2014	1000	X	X				4
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

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

Relinquished By: Brad Seim On Ice? 0 N Date: 8/19/14 Time: 1600  
 Relinquished By: [Signature] On Ice? 0 N Date: 8/20/14 Time: 915  
 Samples Shipped VIA:  Air Freight  Federal Express  Sampler Air Bill Number: no temp, also unweighed jar  
 Other: \_\_\_\_\_

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

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.

8/25/14 BP

Data File: \\lts-target\targetdata\chen\FID5,i\140819,b\072,d

Date : 21-AUG-2014 03:06

Client ID:

Sample Info: 1403769-01

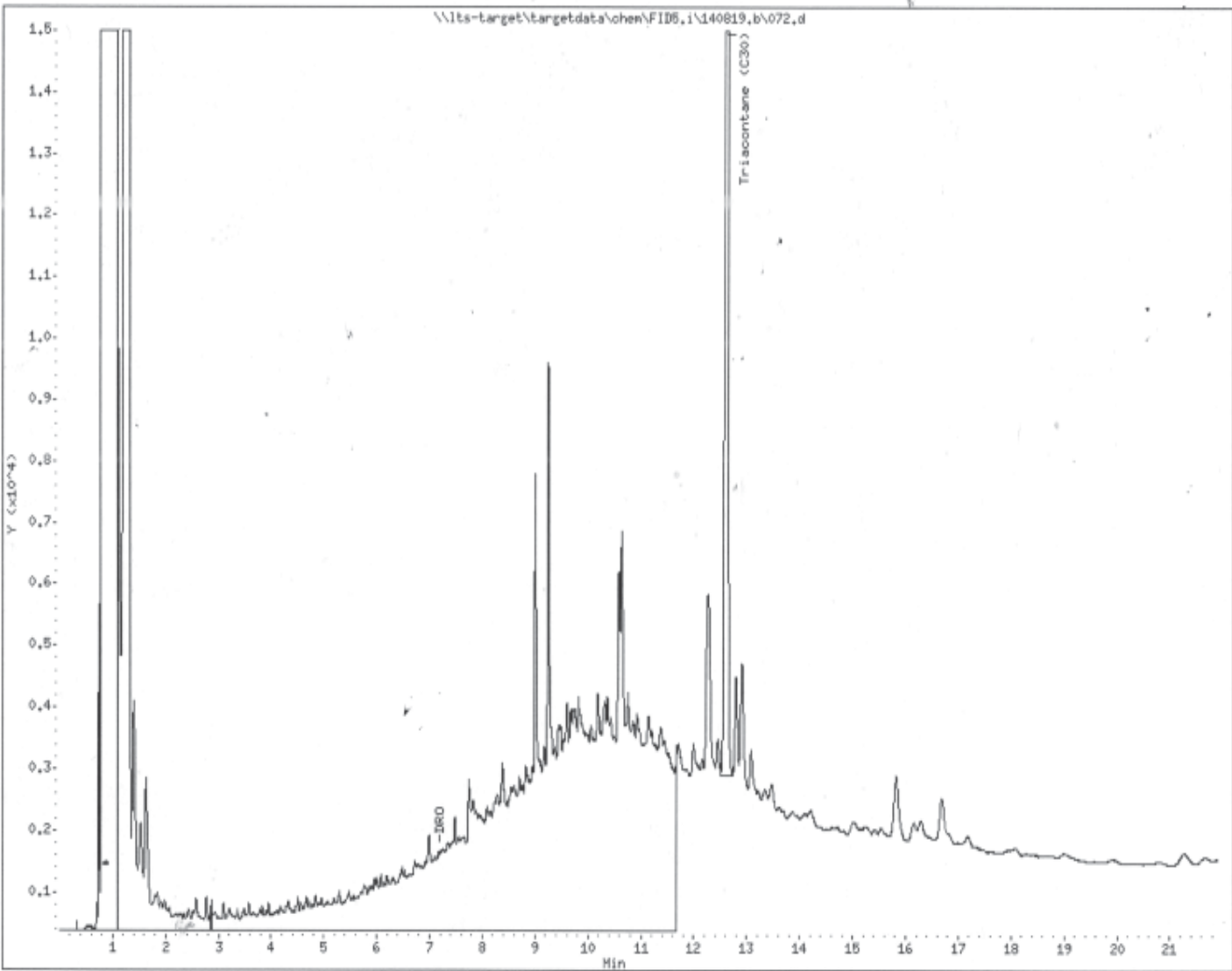
SUP Enhancement - Stockpile -03

Instrument: FID5.i

Operator: ye

Column diameter: 0.53

Column phase:





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

October 28, 2014

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

Work Order Number: 1404767  
RE: 49161286

Enclosed are the results of analyses for samples received by the laboratory on 10/16/14. If you have any questions concerning this report, please feel free to contact me.

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

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

WI Accreditation #998022410

Prepared by,  
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink that reads "BACH PHAM".

---

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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sup Enhancement-Stockpile-05	1404767-01	Soil	10/15/14 14:45	10/16/14 09:10

**Shipping Container Information**

**Default Cooler**                      Temperature (°C): 1.3

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

**Case Narrative:**

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

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



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

**DRO/8015D**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sup Enhancement-Stockpile-05 (1404767-01) Soil</b> <b>Sampled: 10/15/14 14:45</b> <b>Received: 10/16/14 9:10</b>										
<b>Diesel Range Organics</b>	<b>400</b>	8.9	1.5	mg/kg dry	1	B4J2102	10/21/14	10/22/14	WI(95) DRO	
Surrogate: <i>Triacotane (C-30)</i>	93.0			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sup Enhancement-Stockpile-05 (1404767-01) Soil</b> <b>Sampled: 10/15/14 14:45</b> <b>Received: 10/16/14 9:10</b>										
Benzene	<0.0037	0.032	0.0037	mg/kg dry	1	B4J1717	10/17/14	10/18/14	WI(95) GRO	
Ethylbenzene	<b>0.057</b>	0.032	0.0082	mg/kg dry	1	"	"	"	"	B-01
Toluene	<b>0.011</b>	0.032	0.0053	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	<b>0.091</b>	0.096	0.018	mg/kg dry	1	"	"	"	"	J
Surrogate: 4-Fluorochlorobenzene	100			80-150 %		"	"	"	"	



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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

**PERCENT SOLIDS**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sup Enhancement-Stockpile-05 (1404767-01) Soil</b> <b>Sampled: 10/15/14 14:45</b> <b>Received: 10/16/14 9:10</b>										
<b>% Solids</b>	<b>78</b>			<b>%</b>	<b>1</b>	<b>B4J2304</b>	<b>10/23/14</b>	<b>10/23/14</b>	<b>% calculation</b>	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

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

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B4J2102 - Sonication (Wisc DRO)</b>											
<b>Blank (B4J2102-BLK1)</b>											
						Prepared & Analyzed: 10/21/14					
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	13.6			mg/kg wet	16.0		85.3	70-130			
<b>LCS (B4J2102-BS1)</b>											
						Prepared & Analyzed: 10/21/14					
Diesel Range Organics	64.7	8.0	1.3	mg/kg wet	64.0		101	70-120			
Surrogate: <i>Triacontane (C-30)</i>	16.9			mg/kg wet	16.0		105	70-130			
<b>LCS Dup (B4J2102-BSD1)</b>											
						Prepared: 10/21/14 Analyzed: 10/22/14					
Diesel Range Organics	61.0	8.0	1.3	mg/kg wet	64.0		95.2	70-120	5.90	20	
Surrogate: <i>Triacontane (C-30)</i>	16.2			mg/kg wet	16.0		101	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

**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
<b>Batch B4J1717 - EPA 5035 Soil (Purge and Trap)</b>											
<b>Blank (B4J1717-BLK1)</b>						Prepared & Analyzed: 10/17/14					
Benzene	< 0.0029	0.025	0.0029	mg/kg wet							
Ethylbenzene	0.00806	0.025	0.0064	mg/kg wet							B-02, J
Toluene	< 0.0041	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	24.0			ug/L	25.0		96.1	80-150			
<b>LCS (B4J1717-BS1)</b>						Prepared & Analyzed: 10/17/14					
Benzene	89.7			ug/L	100		89.7	80-120			
Ethylbenzene	95.4			ug/L	100		95.4	80-120			
Toluene	92.3			ug/L	100		92.3	80-120			
Xylenes (total)	282			ug/L	300		93.9	80-120			
Surrogate: 4-Fluorochlorobenzene	24.3			ug/L	25.0		97.4	80-150			
<b>LCS Dup (B4J1717-BSD1)</b>						Prepared: 10/17/14 Analyzed: 10/18/14					
Benzene	94.3			ug/L	100		94.3	80-120	5.05	20	
Ethylbenzene	99.1			ug/L	100		99.1	80-120	3.81	20	
Toluene	96.3			ug/L	100		96.3	80-120	4.29	20	
Xylenes (total)	291			ug/L	300		97.1	80-120	3.38	20	
Surrogate: 4-Fluorochlorobenzene	24.7			ug/L	25.0		98.8	80-150			
<b>Matrix Spike (B4J1717-MS1)</b>						Source: 1404783-01 Prepared: 10/17/14 Analyzed: 10/18/14					
Benzene	92.0			ug/L	100	<	92.0	80-120			
Ethylbenzene	95.8			ug/L	100	0.268	95.5	80-120			
Toluene	93.0			ug/L	100	<	93.0	80-120			
Xylenes (total)	278			ug/L	300	0.140	92.7	80-120			
Surrogate: 4-Fluorochlorobenzene	24.5			ug/L	25.0		98.0	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

**PERCENT SOLIDS - Quality Control**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes	
<b>Batch B4J2304 - General Preparation</b>												
<b>Duplicate (B4J2304-DUP1)</b>							<b>Source: 1404774-09</b>					Prepared & Analyzed: 10/23/14
% Solids	90.0			%		88.0			2.25	20		
<b>Duplicate (B4J2304-DUP2)</b>							<b>Source: 1404798-04</b>					Prepared & Analyzed: 10/23/14
% Solids	96.0			%		95.0			1.05	20		
<b>Duplicate (B4J2304-DUP3)</b>							<b>Source: 1404798-05</b>					Prepared & Analyzed: 10/23/14
% Solids	97.0			%		92.0			5.29	20		

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 008 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1404767 Date Reported: 10/28/14
---	--	--

### Notes and Definitions

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



**Chain of Custody**

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

1404767

Project Number: 49161286 008 001  
 Project Name: Pipeline Enhancement Project Tank #1  
 Sample Origination State: WI (use two letter postal state abbreviation)  
 COC Number: **NO 43530**

Number of Containers/Preservative		COC 1 of 1
Water	Soil	
		Project Manager: REE
		Project QC Contact: JET
		Sampled by: JET
		Laboratory: Legend
		Total Number Of Containers
		Hold for 4oz for 1. metal jar

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type	
						Water	Soil	Grab Comp.	QC
1. JT. 10/15/14 Tank #1 Soil	-	-	-	10/15/14	14:45	X	X		
2. Sup Enhancement - Stockpile -05									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

BTEX, DRO, 1. metal jar / 4oz  
 (+4oz jar - hold)  
 Standard TAT!

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

Relinquished By: [Signature] On Ice?  N Date: 10/15/14 Time: 16:15  
 Received by: [Signature] Date: 10/16/14 Time: 9:10  
 Samples Shipped VIA:  Air Freight  Federal Express  Sampler Air Bill Number: 1302  
 Other:

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

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





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

June 23, 2015

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

Work Order Number: 1502376  
RE: 49161286

Enclosed are the results of analyses for samples received by the laboratory on 06/19/15. If you have any questions concerning this report, please feel free to contact me.

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

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

WI Accreditation #998022410

Prepared by,  
LEGEND TECHNICAL SERVICES, INC

---

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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SUP Enhancement-Stockpile-06	1502376-01	Soil	06/18/15 09:30	06/19/15 09:10

**Shipping Container Information**

**Default Cooler**                      Temperature (°C): 0.9

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

**Case Narrative:**

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

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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

**DRO/8015D**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement-Stockpile-06 (1502376-01) Soil</b> <b>Sampled: 06/18/15 09:30</b> <b>Received: 06/19/15 9:10</b>										
<b>Diesel Range Organics</b>	<b>17</b>	9.4	2.0	mg/kg dry	1	B5F2205	06/22/15	06/23/15	WI(95) DRO	
Surrogate: <i>Triacontane (C-30)</i>	90.6			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement-Stockpile-06 (1502376-01) Soil    Sampled: 06/18/15 09:30    Received: 06/19/15 9:10</b>										
<b>Benzene</b>	<b>0.22</b>	0.033	0.0011	mg/kg dry	1	B5F1918	06/19/15	06/20/15	WI(95) GRO	
<b>Ethylbenzene</b>	<b>0.31</b>	0.033	0.0047	mg/kg dry	1	"	"	"	"	
<b>Toluene</b>	<b>0.10</b>	0.033	0.0054	mg/kg dry	1	"	"	"	"	
<b>Xylenes (total)</b>	<b>9.6</b>	0.10	0.019	mg/kg dry	1	"	"	"	"	
<i>Surrogate: 4-Fluorochlorobenzene</i>	<i>118</i>			<i>80-150 %</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

**PERCENT SOLIDS**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SUP Enhancement-Stockpile-06 (1502376-01) Soil</b> <b>Sampled: 06/18/15 09:30</b> <b>Received: 06/19/15 9:10</b>										
<b>% Solids</b>	<b>75</b>			<b>%</b>	<b>1</b>	<b>B5F2304</b>	<b>06/23/15</b>	<b>06/23/15</b>	<b>% calculation</b>	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

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

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B5F2205 - Sonication (Wisc DRO)</b>											
<b>Blank (B5F2205-BLK1)</b>											
						Prepared: 06/22/15 Analyzed: 06/23/15					
Diesel Range Organics	< 8.0	8.0	1.7	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	15.7			mg/kg wet	16.0		97.8	70-130			
<b>LCS (B5F2205-BS1)</b>											
						Prepared: 06/22/15 Analyzed: 06/23/15					
Diesel Range Organics	62.6	8.0	1.7	mg/kg wet	64.0		97.8	70-120			
Surrogate: <i>Triacontane (C-30)</i>	16.6			mg/kg wet	16.0		104	70-130			
<b>LCS Dup (B5F2205-BSD1)</b>											
						Prepared: 06/22/15 Analyzed: 06/23/15					
Diesel Range Organics	56.0	8.0	1.7	mg/kg wet	64.0		87.5	70-120	11.1	20	
Surrogate: <i>Triacontane (C-30)</i>	15.8			mg/kg wet	16.0		99.0	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

**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
<b>Batch B5F1918 - EPA 5035 Soil (Purge and Trap)</b>											
<b>Blank (B5F1918-BLK1)</b>						Prepared & Analyzed: 06/19/15					
Benzene	< 0.00082	0.025	0.00082	mg/kg wet							
Ethylbenzene	0.0144	0.025	0.0035	mg/kg wet							J
Toluene	< 0.0041	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.1			ug/L	25.0		92.5	80-150			
<b>LCS (B5F1918-BS1)</b>											
<b>LCS (B5F1918-BS1)</b>						Prepared & Analyzed: 06/19/15					
Benzene	96.5			ug/L	100		96.5	80-120			
Ethylbenzene	97.1			ug/L	100		97.1	80-120			
Toluene	98.9			ug/L	100		98.9	80-120			
Xylenes (total)	302			ug/L	300		101	80-120			
Surrogate: 4-Fluorochlorobenzene	25.6			ug/L	25.0		102	80-150			
<b>LCS Dup (B5F1918-BSD1)</b>											
<b>LCS Dup (B5F1918-BSD1)</b>						Prepared: 06/19/15 Analyzed: 06/20/15					
Benzene	95.5			ug/L	100		95.5	80-120	1.07	20	
Ethylbenzene	95.4			ug/L	100		95.4	80-120	1.74	20	
Toluene	97.0			ug/L	100		97.0	80-120	1.85	20	
Xylenes (total)	293			ug/L	300		97.6	80-120	3.21	20	
Surrogate: 4-Fluorochlorobenzene	24.9			ug/L	25.0		99.6	80-150			
<b>Matrix Spike (B5F1918-MS1)</b>											
<b>Matrix Spike (B5F1918-MS1)</b>						Source: 1502347-01 Prepared: 06/19/15 Analyzed: 06/20/15					
Benzene	93.9			ug/L	100	<	93.9	80-120			
Ethylbenzene	95.2			ug/L	100	0.239	94.9	80-120			
Toluene	96.5			ug/L	100	<	96.5	80-120			
Xylenes (total)	293			ug/L	300	0.146	97.7	80-120			
Surrogate: 4-Fluorochlorobenzene	25.1			ug/L	25.0		100	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

**PERCENT SOLIDS - Quality Control**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B5F2304 - General Preparation</b>											
<b>Duplicate (B5F2304-DUP1)</b>		<b>Source: 1502397-02</b>				<b>Prepared &amp; Analyzed: 06/23/15</b>					
% Solids	95.0			%		95.0			0.00	20	



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 014 001 Project Manager: Mr. James E. Taraldsen	Work Order #: 1502376 Date Reported: 06/23/15
---	--	--

### Notes and Definitions

J	Parameter was present between the MDL and RL and should be considered an estimated value
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

**Chain of Custody**

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

1502376

Project Number: 491612586 014 001

Project Name: Pipeline Enbridge Pipeline Enhancement - Tank 20

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

COC Number: No 45046

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type	Number of Containers/Preservative		COC <u>1</u> of <u>1</u>
						Water	Soil		Water	Soil	
1. SUP ENHANCEMENT - STOCKPILE - 06				06/18/15	930	X	X		21	11	Project Manager: REE Project QC Contact: JET Sampled by: REE Laboratory: Legend
2.											
3.											
4.											ASAP TAT
5.											
6.											
7.											
8.											
9.											
10.											

**Common Parameter/Container - Preservation Key**

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List  
 #2 - Semivolatile Organics = PAHs, PCB, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs  
 #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate  
 #4 - Nutrients = COD, TOC, Phospho, Ammonia Nitrogen, TKN

Relinquished By: <i>[Signature]</i>	On Ice? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Date: 6/18/15	Time: 1400	Received by: <i>[Signature]</i>	Date: 6/19/15	Time: 910
Relinquished By: <i>[Signature]</i>	On Ice? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Date:	Time:	Received by: <i>[Signature]</i>	Date:	Time:

Samples Shipped VIA:  Air Freight  Federal Express  Sampler  Other: *D.900*

Air Bill Number: *D.900*

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



25-Aug-2015

Ryan Erickson  
Barr Engineering Company  
4700 West 77th Street  
Minneapolis, MN 55435-4803

Re: **Enbridge - Tank 21 (49161253.30)**

Work Order: **15081052**

Dear Ryan,

ALS Environmental received 2 samples on 20-Aug-2015 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish".

Electronically approved by: Tom Beamish

Tom Beamish  
Client Services Coordinator



Certificate No: WI: 399084510

### Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

---

---

**Client:** Barr Engineering Company  
**Project:** Enbridge - Tank 21 (49161253.30)  
**Work Order:** 15081052

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15081052-01	Tank 21 - Stockpile-1	Soil		08/17/15 16:00	08/20/15 09:00	<input type="checkbox"/>
15081052-02	Trip Blank	Soil		08/17/15	08/20/15 09:00	<input type="checkbox"/>

**Client:** Barr Engineering Company  
**Project:** Enbridge - Tank 21 (49161253.30)  
**WorkOrder:** 15081052

**QUALIFIERS,  
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg	Micrograms per Kilogram
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

---

**Client:** Barr Engineering Company  
**Project:** Enbridge - Tank 21 (49161253.30)  
**Work Order:** 15081052

---

**Case Narrative**

Samples for the above noted Work Order were received on 08/20/15. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

**Volatile Organics:**

No deviations or anomalies were noted.

**Extractable Organics:**

No deviations or anomalies were noted.

**Wet Chemistry:**

No deviations or anomalies were noted.

# ALS Group USA, Corp

Date: 25-Aug-15

**Client:** Barr Engineering Company  
**Project:** Enbridge - Tank 21 (49161253.30)  
**Sample ID:** Tank 21 - Stockpile-1  
**Collection Date:** 08/17/15 04:00 PM

**Work Order:** 15081052  
**Lab ID:** 15081052-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>			Method: <b>PUBL-SW-141</b>		Prep: PUBL-SW-141 / 8/21/15 Analyst: <b>IT</b>		
<b>DRO (C10-C28)</b>	<b>380</b>		<b>4.2</b>	<b>10</b>	<b>mg/Kg-dry</b>	1	08/24/15 11:12
<b>VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW8260B</b>		Prep: SW5035 / 8/20/15 Analyst: <b>BG</b>		
Benzene	ND		25	63	µg/Kg-dry	1	08/23/15 18:55
Ethylbenzene	ND		23	63	µg/Kg-dry	1	08/23/15 18:55
m,p-Xylene	ND		47	130	µg/Kg-dry	1	08/23/15 18:55
o-Xylene	ND		27	63	µg/Kg-dry	1	08/23/15 18:55
Toluene	ND		23	63	µg/Kg-dry	1	08/23/15 18:55
Xylenes, Total	ND		74	190	µg/Kg-dry	1	08/23/15 18:55
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	1	08/23/15 18:55
Surr: 4-Bromofluorobenzene	99.8			70-130	%REC	1	08/23/15 18:55
Surr: Dibromofluoromethane	99.8			70-130	%REC	1	08/23/15 18:55
Surr: Toluene-d8	98.0			70-130	%REC	1	08/23/15 18:55
<b>MOISTURE</b>			Method: <b>E160.3M</b>		Analyst: <b>EVB</b>		
<b>Moisture</b>	<b>52</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	08/21/15 14:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group USA, Corp**

Date: 25-Aug-15

**Client:** Barr Engineering Company  
**Project:** Enbridge - Tank 21 (49161253.30)  
**Sample ID:** Trip Blank  
**Collection Date:** 08/17/15

**Work Order:** 15081052  
**Lab ID:** 15081052-02  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS</b>			Method: <b>SW8260B</b>		Prep: SW5035 / 8/20/15		Analyst: <b>AK</b>
Benzene	ND		12	30	µg/Kg	1	08/21/15 20:53
Ethylbenzene	ND		11	30	µg/Kg	1	08/21/15 20:53
m,p-Xylene	ND		23	60	µg/Kg	1	08/21/15 20:53
o-Xylene	ND		13	30	µg/Kg	1	08/21/15 20:53
Toluene	ND		11	30	µg/Kg	1	08/21/15 20:53
Xylenes, Total	ND		35	90	µg/Kg	1	08/21/15 20:53
Surr: 1,2-Dichloroethane-d4	96.6			70-130	%REC	1	08/21/15 20:53
Surr: 4-Bromofluorobenzene	94.3			70-130	%REC	1	08/21/15 20:53
Surr: Dibromofluoromethane	95.5			70-130	%REC	1	08/21/15 20:53
Surr: Toluene-d8	98.0			70-130	%REC	1	08/21/15 20:53

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



**Client:** Barr Engineering Company  
**Work Order:** 15081052  
**Project:** Enbridge - Tank 21 (49161253.30)

**QC BATCH REPORT**

Batch ID: **75077** Instrument ID **GC8** Method: **PUBL-SW-141**

<b>MBLK</b>		Sample ID: <b>DBLKS1-75077-75077</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>08/24/15 10:42 AM</b>			
Client ID:		Run ID: <b>GC8_150824A</b>				SeqNo: <b>3429147</b>		Prep Date: <b>08/21/15</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	2	5.0								

<b>LCS</b>		Sample ID: <b>DLCSS1-75077-75077</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>08/24/15 10:12 AM</b>			
Client ID:		Run ID: <b>GC8_150824A</b>				SeqNo: <b>3429146</b>		Prep Date: <b>08/21/15</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	179.2	2	5.0	200	0	89.6	70-120	0			

<b>LCSD</b>		Sample ID: <b>DLCSDS1-75077-75077</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>08/24/15 12:41 PM</b>			
Client ID:		Run ID: <b>GC8_150824A</b>				SeqNo: <b>3429151</b>		Prep Date: <b>08/21/15</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	191.4	2	5.0	200	0	95.7	70-120	179.2	6.61	20	

The following samples were analyzed in this batch:

15081052-01C

Client: Barr Engineering Company  
 Work Order: 15081052  
 Project: Enbridge - Tank 21 (49161253.30)

# QC BATCH REPORT

Batch ID: **75058** Instrument ID **VMS9** Method: **SW8260B**

MBLK		Sample ID: <b>MBLK-75058-75058</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>08/20/15 04:43 PM</b>		
Client ID:		Run ID: <b>VMS9_150820A</b>				SeqNo: <b>3426777</b>			Prep Date: <b>08/20/15</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	12	30								
Ethylbenzene	ND	11	30								
m,p-Xylene	ND	23	60								
o-Xylene	ND	13	30								
Toluene	ND	11	30								
Xylenes, Total	ND	35	90								
<i>Surr: 1,2-Dichloroethane-d4</i>	933	0	0	1000	0	93.3	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	914.5	0	0	1000	0	91.4	70-130	0			
<i>Surr: Dibromofluoromethane</i>	907.5	0	0	1000	0	90.8	70-130	0			
<i>Surr: Toluene-d8</i>	975.5	0	0	1000	0	97.6	70-130	0			

LCS		Sample ID: <b>LCS-75058-75058</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>08/20/15 03:01 PM</b>		
Client ID:		Run ID: <b>VMS9_150820A</b>				SeqNo: <b>3426775</b>			Prep Date: <b>08/20/15</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	993.5	12	30	1000	0	99.4	75-125	0			
Ethylbenzene	992	11	30	1000	0	99.2	75-125	0			
m,p-Xylene	2036	23	60	2000	0	102	80-125	0			
o-Xylene	992.5	13	30	1000	0	99.2	75-125	0			
Toluene	1016	11	30	1000	0	102	70-125	0			
Xylenes, Total	3029	35	90	3000	0	101	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	924	0	0	1000	0	92.4	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	1059	0	0	1000	0	106	70-130	0			
<i>Surr: Dibromofluoromethane</i>	917.5	0	0	1000	0	91.8	70-130	0			
<i>Surr: Toluene-d8</i>	1010	0	0	1000	0	101	70-130	0			

MS		Sample ID: <b>15081076-09A MS</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>08/25/15 12:06 PM</b>		
Client ID:		Run ID: <b>VMS9_150824A</b>				SeqNo: <b>3430710</b>			Prep Date: <b>08/20/15</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1145	14	34	1132	0	101	75-125	0			
Ethylbenzene	1175	13	34	1132	0	104	75-125	0			
m,p-Xylene	2299	26	68	2264	0	102	80-125	0			
o-Xylene	1121	14	34	1132	0	99	75-125	0			
Toluene	1146	13	34	1132	0	101	70-125	0			
Xylenes, Total	3420	40	100	3397	0	101	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	1104	0	0	1132	0	97.5	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	1213	0	0	1132	0	107	70-130	0			
<i>Surr: Dibromofluoromethane</i>	1082	0	0	1132	0	95.6	70-130	0			
<i>Surr: Toluene-d8</i>	1151	0	0	1132	0	102	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Barr Engineering Company  
**Work Order:** 15081052  
**Project:** Enbridge - Tank 21 (49161253.30)

# QC BATCH REPORT

Batch ID: **75058**      Instrument ID **VMS9**      Method: **SW8260B**

MSD		Sample ID: 15081076-09A MSD				Units: µg/Kg		Analysis Date: 08/25/15 12:32 PM			
Client ID:		Run ID: VMS9_150824A			SeqNo: 3430711		Prep Date: 08/20/15		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1094	14	34	1132	0	96.6	75-125	1145	4.5	30	
Ethylbenzene	1115	13	34	1132	0	98.5	75-125	1175	5.19	30	
m,p-Xylene	2265	26	68	2264	0	100	80-125	2299	1.51	30	
o-Xylene	1094	14	34	1132	0	96.6	75-125	1121	2.4	30	
Toluene	1132	13	34	1132	0	100	70-125	1146	1.19	30	
Xylenes, Total	3359	40	100	3397	0	98.9	75-125	3420	1.8	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	1104	0	0	1132	0	97.6	70-130	1104	0.0513	30	
<i>Surr: 4-Bromofluorobenzene</i>	1201	0	0	1132	0	106	70-130	1213	0.985	30	
<i>Surr: Dibromofluoromethane</i>	1097	0	0	1132	0	96.8	70-130	1082	1.3	30	
<i>Surr: Toluene-d8</i>	1157	0	0	1132	0	102	70-130	1151	0.491	30	

The following samples were analyzed in this batch:

15081052-01A	15081052-02A
--------------	--------------

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Barr Engineering Company  
 Work Order: 15081052  
 Project: Enbridge - Tank 21 (49161253.30)

# QC BATCH REPORT

Batch ID: **R170180** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: <b>WBLKS-R170180</b>				Units: % of sample		Analysis Date: <b>08/21/15 02:45 PM</b>			
Client ID:		Run ID: <b>MOIST_150821A</b>				SeqNo: <b>3428821</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.025	0.050								

LCS		Sample ID: <b>LCS-R170180</b>				Units: % of sample		Analysis Date: <b>08/21/15 02:45 PM</b>			
Client ID:		Run ID: <b>MOIST_150821A</b>				SeqNo: <b>3428820</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0			

DUP		Sample ID: <b>15081099-01B DUP</b>				Units: % of sample		Analysis Date: <b>08/21/15 02:45 PM</b>			
Client ID:		Run ID: <b>MOIST_150821A</b>				SeqNo: <b>3428807</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.58	0.025	0.050	0	0	0		6.17	6.43	20	

DUP		Sample ID: <b>15081123-01A DUP</b>				Units: % of sample		Analysis Date: <b>08/21/15 02:45 PM</b>			
Client ID:		Run ID: <b>MOIST_150821A</b>				SeqNo: <b>3428814</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	7.1	0.025	0.050	0	0	0		7.08	0.282	20	

The following samples were analyzed in this batch:

15081052-01B
--------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



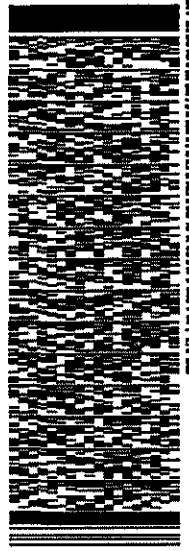
ORISEN D.D.N.H.A (440) 539-2090  
NORFOLK STEEL  
NORFOLK STEEL  
329 S. LAKE AVE  
SUITE 100  
DUNLITH, ILL 60132  
UNITED STATES US

SHIP DATE: 18AUG15  
ACTWGT: 33.50 LB  
GROSS WT: 37.00 LB  
DIM: 20X14X14 IN  
BILL SENDER

TO **TOM BEAMISH**  
**ALS ENVIRONMENTAL**  
**3352 128TH AVE**

**HOLLAND MI 49424**

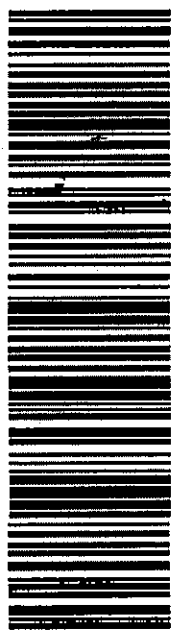
(016) 738-7318 REF: 49161253 28 001 001  
RD DEPT:



TRK# 7743 1199 2701  
0201

WED - 19 AUG 10:30A  
PRIORITY OVERNIGHT

**XXHLMA**  
49424  
GRR  
M:US



639J\FECA3100

**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Sample Receipt Checklist

Client Name: **BARRENG-MN**

Date/Time Received: **20-Aug-15 09:00**

Work Order: **15081052**

Received by: **NML**

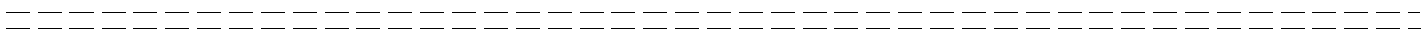
Checklist completed by Diane Shaw 20-Aug-15  
eSignature Date

Reviewed by: Tom Bramish 20-Aug-15  
eSignature Date

Matrices: Soil  
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.2/1.2 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>8/20/2015 11:10:38 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u></u>		

Login Notes:



Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



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

December 01, 2015

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

Work Order Number: 1505276  
RE: 49161286

Enclosed are the results of analyses for samples received by the laboratory on 11/25/15. If you have any questions concerning this report, please feel free to contact me.

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

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

WI Accreditation #998022410

Prepared by,  
LEGEND TECHNICAL SERVICES, INC

---

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



Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FB 23 Stockpile-1	1505276-01	Soil	11/24/15 13:45	11/25/15 09:30

**Shipping Container Information**

**Default Cooler**                      Temperature (°C): 1.4

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

**Case Narrative:**

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

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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

**DRO/8015D**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>FB 23 Stockpile-1 (1505276-01) Soil</b> <b>Sampled: 11/24/15 13:45</b> <b>Received: 11/25/15 9:30</b>										
<b>Diesel Range Organics</b>	<b>7.2</b>	<b>7.7</b>	<b>2.3</b>	mg/kg dry	1	B5L0107	12/01/15	12/01/15	WI(95) DRO	J
Surrogate: <i>Triacontane (C-30)</i>	110			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>FB 23 Stockpile-1 (1505276-01) Soil</b> <b>Sampled: 11/24/15 13:45</b> <b>Received: 11/25/15 9:30</b>										
Benzene	<0.0011	0.0037	0.0011	mg/kg dry	1	B5K2508	11/25/15	11/25/15	WI(95) GRO	
<b>Ethylbenzene</b>	<b>0.019</b>	0.016	0.0048	mg/kg dry	1	"	"	"	"	B-01
Toluene	<0.0056	0.018	0.0056	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.019	0.065	0.019	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	103			80-150 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

**PERCENT SOLIDS**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>FB 23 Stockpile-1 (1505276-01) Soil</b> <b>Sampled: 11/24/15 13:45</b> <b>Received: 11/25/15 9:30</b>										
% Solids	73			%	1	B5L0112	12/01/15	12/01/15	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

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

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B5L0107 - Sonication (Wisc DRO)</b>											
<b>Blank (B5L0107-BLK1)</b>											
						Prepared & Analyzed: 12/01/15					
Diesel Range Organics	< 1.7	5.6	1.7	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	18.2			mg/kg wet	16.0		114	70-130			
<b>LCS (B5L0107-BS1)</b>											
						Prepared & Analyzed: 12/01/15					
Diesel Range Organics	66.8	5.6	1.7	mg/kg wet	64.0		104	70-120			
Surrogate: <i>Triacontane (C-30)</i>	17.1			mg/kg wet	16.0		107	70-130			
<b>LCS Dup (B5L0107-BSD1)</b>											
						Prepared & Analyzed: 12/01/15					
Diesel Range Organics	67.4	5.6	1.7	mg/kg wet	64.0		105	70-120	0.832	20	
Surrogate: <i>Triacontane (C-30)</i>	17.7			mg/kg wet	16.0		111	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

**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
<b>Batch B5K2508 - EPA 5035 Soil (Purge and Trap)</b>											
<b>Blank (B5K2508-BLK1)</b>						Prepared & Analyzed: 11/25/15					
Benzene	< 0.00082	0.0027	0.00082	mg/kg wet							
Ethylbenzene	0.00951	0.012	0.0035	mg/kg wet							B-02, J
Toluene	< 0.0041	0.014	0.0041	mg/kg wet							
Xylenes (total)	< 0.014	0.047	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	19.9			ug/L	20.0		99.3	80-150			
<b>LCS (B5K2508-BS1)</b>						Prepared & Analyzed: 11/25/15					
Benzene	106			ug/L	100		106	80-120			
Ethylbenzene	109			ug/L	100		109	80-120			
Toluene	110			ug/L	100		110	80-120			
Xylenes (total)	338			ug/L	300		113	80-120			
Surrogate: 4-Fluorochlorobenzene	21.6			ug/L	20.0		108	80-150			
<b>LCS Dup (B5K2508-BSD1)</b>						Prepared: 11/25/15 Analyzed: 11/26/15					
Benzene	104			ug/L	100		104	80-120	2.26	20	
Ethylbenzene	106			ug/L	100		106	80-120	3.10	20	
Toluene	108			ug/L	100		108	80-120	2.14	20	
Xylenes (total)	328			ug/L	300		109	80-120	2.74	20	
Surrogate: 4-Fluorochlorobenzene	21.6			ug/L	20.0		108	80-150			
<b>Matrix Spike (B5K2508-MS1)</b>						Source: 1505276-01 Prepared & Analyzed: 11/25/15					
Benzene	106			ug/L	100	<	106	80-120			
Ethylbenzene	110			ug/L	100	0.277	110	80-120			
Toluene	111			ug/L	100	<	111	80-120			
Xylenes (total)	343			ug/L	300	0.129	114	80-120			
Surrogate: 4-Fluorochlorobenzene	21.8			ug/L	20.0		109	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

**PERCENT SOLIDS - Quality Control**  
**Legend Technical Services, Inc.**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
<b>Batch B5L0112 - General Preparation</b>											
<b>Duplicate (B5L0112-DUP1)</b>			<b>Source: 1505198-02</b>		<b>Prepared &amp; Analyzed: 12/01/15</b>						
% Solids	86.0			%		86.0			0.00	20	
<b>Duplicate (B5L0112-DUP2)</b>			<b>Source: 1505274-01</b>		<b>Prepared &amp; Analyzed: 12/01/15</b>						
% Solids	54.0			%		51.0			5.71	20	
<b>Duplicate (B5L0112-DUP3)</b>			<b>Source: 1505276-01</b>		<b>Prepared &amp; Analyzed: 12/01/15</b>						
% Solids	74.0			%		73.0			1.36	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161286 Project Number: 49161286 015 001 Field Booster 23 Project Manager: Mr. James E. Taraldsen	Work Order #: 1505276 Date Reported: 12/01/15
---	---	--

### Notes and Definitions

J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit; Equivalent to the method LOD (Limit of Detection)
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)





## Technical Memorandum

**To:** Alex Smith, Enbridge Energy  
**From:** Ryan Erickson and Noelle Scelina  
**Subject:** Superior Terminal Tank 12 Historical Contamination  
**Date:** January 13, 2017  
**Project:** 49161286

01-16-579606

This document summarizes the environmental assessment and waste management assistance performed by Barr Engineering (Barr) in response to the discovery of historically contaminated soil within the Tank 12 containment basin (Figure 1) at the Enbridge Energy (Enbridge) Superior Terminal in Superior, Wisconsin.

### Background

Excavation activities associated with new pipeline installation was conducted in the eastern half of the Tank 12 containment basin as part of the Superior Terminal Enhancement Project (Project) in 2014 (Photo 1). Soil with evidence of hydrocarbon contamination (hydrocarbon odor, sheen, discoloration) was encountered by contractors within the pipeline installation excavation (Figure 1). Enbridge was notified and the nearby infrastructure was assessed for an active release. No active release was identified; therefore, Enbridge inferred that the contamination was historical. The contractors continued their excavation activities and excavated soil with evidence of hydrocarbon contamination was transported to the Terminal soil management area for characterization and off-site management.

Enbridge requested that Barr assist with environmental assessment and waste management tasks using methods described in the *Field Activities* section of *Superior Terminal Pipeline Enhancement Project Environmental Oversight Technical Memorandum*. The site specific activities and results are summarized below.

### Investigation Activities and Results

Barr was onsite on October 31 and November 3, 2014 to document environmental site conditions. On October 31, the contractors encountered an isolated pocket of soil with a strong hydrocarbon odor and black discoloration in the northern end of the pipeline installation trench from approximately 0 to 8 feet below ground surface (Photo 2). Barr confirmed the presence of hydrocarbon contamination and contractors continued to excavate the material as part of their planned Project scope. Barr returned to the site on November 3 to field screen the final excavation extents.

The pipeline installation trench was located along the northeastern Tank 12 containment basin berm and was approximately 60 feet wide by 10 feet deep (Figure 1; Photos 1, 3, and 4). Soil in the excavation sidewalls and bottom consisted of clay. Barr field screened the final extents of the excavation where the

**To:** Alex Smith, Enbridge Energy  
**From:** Ryan Erickson and Noelle Scelina  
**Subject:** Superior Terminal Tank 12 Historical Contamination  
**Date:** January 13, 2016  
**Page:** 2

---

hydrocarbon contamination had been previously identified and detected no evidence of residual soil contamination (Attachment A). The highest photo-ionization detector headspace reading was 1.2 parts per million (ppm) and no other evidence of contamination such as odor, discoloration, or sheen was identified.

No analytical samples were collected from the excavation because the field screening headspace detections were below 10 ppm.

The excavation was backfilled with soil or fill with no identified contamination upon completion of the Project work.

#### **Historical Release Information**

Barr reviewed the Wisconsin Department of Natural Resources (WDNR) Bureau of Remediation and Redevelopment Tracking System (BRRTS) database for historical releases in the vicinity of the Tank 12 excavation and no historical release source was identified. Based on the lack of a historical release in this location, the distance from Tank 12 or other potential source areas, and the apparent isolation of the impacted soil within the basin, it is likely that contaminated soil was used as fill material during a historical pipeline project or an unreported historical release occurred from infrastructure that has previously been removed.

#### **Waste Management**

Contaminated soil was managed off-site as described in the *Waste Management* section of the *Superior Terminal Pipeline Enhancement Project Environmental Oversight Technical Memorandum*.

#### **Receptor Survey**

The closest groundwater monitoring wells are *MW-20A* and *MW-20B* located approximately 650 feet to the south. In 2016, petroleum organic compounds and naphthalene analyte concentrations in these wells were below method detection limits as described in the *Superior Terminal Pipeline Enhancement Project Environmental Oversight Technical Memorandum*.

No residual contamination remains in place, therefore no surface water receptors are at risk.

The closest structure is Tank 12, which has no human occupancy. No other vapor receptors were identified within 100 feet of the excavation.

#### **Conclusion**

Identified contaminated soil was excavated from the Tank 12 basin and was managed at an approved landfill. No residual soil contamination was identified in the final excavation extents through field screening.

**To:** Alex Smith, Enbridge Energy  
**From:** Ryan Erickson and Noelle Scelina  
**Subject:** Superior Terminal Tank 12 Historical Contamination  
**Date:** January 13, 2016  
**Page:** 3

---

Because no soil with residual historical contamination was identified, the WDNR will likely close this site without establishing a new Environmental Repair (ERP) number or adding the site to the pending Terminal-wide GIS registry. Barr believes that no further remedial or investigative actions will be requested by the WDNR for this site at this time.

**Attachments:**

Site Photos            1 through 4  
Figure 1                Site Layout  
Attachment A        Site Investigation Field Sampling and Screening Log

### Site Photos



**Photo 1**



**Photo 2**

**Photo 1:** Final excavation extents of the Tank 12 Pipeline Enhancement excavation. Photo taken facing northwest on November 3, 2014.

**Photo 2:** Contaminated soil (dark discoloration near excavator bucket) towards the northern end of the excavation. Photo taken facing north on October 31, 2014.



**Photo 3**



**Photo 4**

**Photo 3:** Final excavation extents of the Tank 12 Pipeline Enhancement excavation. Photo taken facing southeast on November 3, 2014.

**Photo 4:** Northeast end of the final Tank 12 Pipeline Enhancement excavation. Photo taken facing north on November 3, 2014.

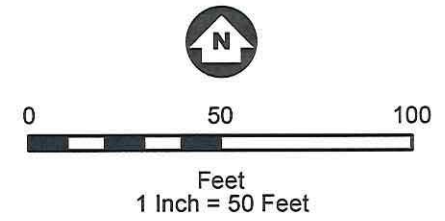
Bar Footer: AcGIS 10.4, 2017-01-12 10:30 File: I:\Client\Enbridge\_Energy\Work Orders\Spill Response Investigation\0161288\Mapa\Reports\Tank 12\Figure1\_Tank12\_Site\_Layout\_8x11.mxd User: MK



### ENBRIDGE SUPERIOR TERMINAL



- Screening Sample Locations >10 PPM
- Contaminated Soil (Excavated)
- Excavation Extents
- Terminal Property Boundary
- Pipeline Infrastructure



Douglas County Imagery Circa May, 2016

Figure 1

**SITE LAYOUT**  
**TANK 12 ENHANCEMENT**  
**SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin



**Attachment A**

**Site Investigation Field Sampling and Screening Logs**

