

Technical Memorandum

To: Alex Smith, Enbridge Energy
From: Ryan Erickson
Subject: Superior Terminal Manifold Corridor Area Excavations
WDNR BRRTS ID: 0216577298 (Manifold Corridor); 1616560657 (Facility-wide)
Date: February 19, 2019
Project: 49161092.06

This memorandum summarizes the environmental response activities performed by Barr Engineering (Barr) at the request of Enbridge Energy (Enbridge) following the discovery of historical hydrocarbon impacts within the Manifold Corridor Area (MCA) at the Enbridge Superior Terminal (Terminal) in Superior, Wisconsin (Figure 1).

Background

In November of 2018, Enbridge personnel conducting excavation activities associated with Terminal pipeline improvements west of the Terminal Office Building (Figure 2) discovered evidence of historical crude oil impacts (e.g., sheen and product on the surface of excavation water). Upon discovery of the impacts, Enbridge personnel responded to the site to assess site conditions. The excavations were located near historical releases, and no active releases were identified in the work area; therefore, Enbridge classified the impacts as historical. Excavation activities were completed in December 2018 and infrastructure project activities continued into 2019.

Multiple Wisconsin Department of Natural Resources (WDNR) Bureau for Remediation and Redevelopment Tracking System (BRRTS) sites located near the project excavations could be the source of the identified historical impacts encountered. Due to the presence of subsurface infrastructure (i.e., preferential migration pathways) and the difficulty in distinguishing potential comingled historical impacts from one another, encountered historical impacts will be grouped under a single WDNR BRRTS site renamed the Manifold Corridor Area (Attachment A). The MCA is defined by the area shown on Figure 2 and the excavations described in this memorandum fall within the MCA boundaries.

Initial Response Actions

Initially, soil excavated with historical impacts was stockpiled at the Superior Terminal Soil Management Area (SMA) for off-site disposal coordination. When practical, free-product was recovered with a vacuum truck and injected back into the pipeline system. Water with a hydrocarbon sheen removed from the excavation was containerized in a frac tank for off-site disposal coordination. Additional waste disposal actions are discussed in the *Material Management* section of this memo.

Enbridge Environment requested Barr's assistance with the following activities:

- review historical release information for the site;
- assess, screen and document environmental site conditions during project activities;
- assist with coordination of the off-site management of contaminated soil and water; and
- prepare a memorandum summarizing the response actions and the environmental conditions upon the completion of remedial activities.

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Field Activities

Barr was on site November 1, 8, 15, 16, and 19 and December 4, 2018 and January 16, 2019 to complete the field activities listed above.

On November 19 and December 4, Barr used soil field screening and sampling methods to document the environmental conditions in the excavation, as described in the WDNR Enbridge *Superior Terminal Site Investigation and Response Action Plan (SI/RAP)* and *Addendum*. Field screening samples were tested for the presence of organic vapors using a 10.6eV photoionization detector (PID). Samples were also inspected for the presence of other potential indicators of petroleum impacts such as odor, discoloration and sheen. The PID readings and physical observations were documented on a site investigation field sampling and screening log (Attachment B). Soil with PID headspace readings greater than 10 parts per million (ppm) or other evidence of hydrocarbon contamination (e.g., hydrocarbon odor, sheen, the presence of free product) were considered impacted.

Based on the field screening results, no analytical confirmation samples were collected from the excavation sidewalls or bottom, as discussed below. Waste characterization analytical sample *MC Stockpile-1* was collected on November 20 from the impacted soil stockpile for landfill disposal purposes. The sample was submitted to ALS Laboratory (ALS) in Holland, Michigan for analysis of benzene, toluene, ethyl benzene, and xylenes (BTEX) and diesel range organics (DRO). Material management documentation is discussed below and associated documents are provided in Attachment C.

Results

The following provides a summary of field data collected and documented observations at each of the excavation areas as shown on Figure 2.

- *Western Pothole Impacts:* Free-product and/or hydrocarbon-impacted water was observed in some of the hydrovac potholes advanced for the pipeline infrastructure supports on November 1 (Photos 1, 2; Figure 2; Attachment B). Following discovery, Enbridge recovered free-product from these potholes with a vacuum truck. By November 8, only a hydrocarbon sheen remained in the potholes with no measurable free-product (Photos 3 and 4).

Based on field observations, the shallow clay soil observed in the sidewalls of the potholes did not appear to be impacted, with the exception of clay in contact with hydrocarbon-impacted water. No evidence of hydrocarbon impacts were identified on the ground surface near the potholes. Deeper soil was not accessible due the size of the pothole and the water level within them. Hydrocarbon-impacted soil or water were not identified by contractors and/or observed by Barr in the additional potholes used for infrastructure positive identification, the larger project-associated excavation located approximately 30 feet to the southwest or the excavation that cut through the Tank 16 containment berm (Figure 2).

The infrastructure support borings were filled with concrete and the area immediately around it was covered with the foundation structure (Photo 11). Potholes used to identify the location of buried infrastructure were backfilled with clean fill.

- **Road Excavation:** An approximately 80 foot long (southwest to northeast) by 40 foot wide (southeast to northwest) by up to 12 foot deep excavation was cut through a Terminal road (Photos 5 through 10; Figure 2; Attachment B) to install new subsurface pipeline infrastructure (Photo 12). Soil in the excavation extents consisted of roadbed material near the ground surface and native clay and sandy construction fill around existing buried infrastructure.

Water with a hydrocarbon sheen and some free-product was observed within the excavation near the eastern half of the road excavation (Photos 5 and 6) when buried Terminal infrastructure was uncovered and perched water in surrounding backfill was drained. Water encountered during excavation activities was recovered with the hydrovacuum truck and solidified with the slurry soil. Additional groundwater that entered the excavation during project work was pumped into a frac tank for future off-site treatment, as described below.

No residual soil impacts were identified during final excavation field screening activities (November 19 and December 4), with the exception of a headspace reading of 16.7 ppm in bottom sample *B-1* (8-10 feet below ground surface). The *B-1* soil was excavated when the excavation was expanded to the west.

The excavation was still open for infrastructure construction activity on January 16, 2019. The inspector reported that no additional impacts had been observed in the excavation during or since its completion.

Clean fill material will be used to backfill the road excavation and open potholes upon completion of the project work.

Receptor Survey

No direct contact risks were identified based on field observations and screening results in the accessible excavation and associated potholes. No impacts to surface water were identified and there is little risk for future impacts based on the inferred depth of the residual impacts and location of the site within the Terminal. There are structures within 50 feet of identified impacted areas; however, there is limited human occupancy in those buildings. The buildings have no basements and employees are required to wear four-gas detectors that would alert them to a potentially hazardous atmosphere; therefore, the risk of hazardous vapor accumulation is low.

The groundwater receptor pathway is evaluated on a facility-wide basis at the Superior Terminal. The groundwater monitoring network is sampled on regular basis and results are submitted to WDNR. The nearest downgradient monitoring well is *MW-24*, which is located 1,100 feet east of the site (Figure 2). There have been no petroleum compound detections in this well recently or historically.

Material Management

During project activities, soil with evidence of hydrocarbon impacts was segregated from soil without identified impacts when excavated with a backhoe. However, when soil was excavated with hydrovacuum (hydrovac) trucks, segregation was not practical (e.g., if any impacted soil or water was excavated, the entire hydrovac load was classified as impacted). Waste characterization soil sample *MC Stockpile-1* was collected from the impacted stockpile and submitted to ALS for analysis of BTEX and DRO.

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Enbridge submitted the waste characterization sample data to the VONCO V landfill in Duluth, Minnesota as an addendum to existing profile 18-109-I. The profile addendum request was approved and approximately 273.87 tons of soil were hauled to the facility between November 30 and December 4, 2019. The waste characterization laboratory report, the profile addendum request and approval communication, and a landfill activity summary report are provided in Attachment C.

Hydrocarbon-impacted water that was removed from the Road Excavation to facilitate project activities was containerized in a frac tank and managed off site by OSI Environmental, Inc (OSI). Approximately 12,500 gallons of water was managed off site. An OSI water management summary email and bill of ladings are provided in Attachment C.

Discussion

Hydrocarbon-impacted soil and water identified within the Manifold Corridor Area during the 2018 infrastructure project appear to be associated with residual impacts from historical crude oil releases. Most of the residual impacts encountered appear to be associated with perched groundwater migrating along buried infrastructure. These inferences are based on the following observations:

- No active hydrocarbon release was identified during the project. Multiple historical releases have occurred in this manifold corridor area and similar historical impacts have been previously identified in this area.
- Hydrocarbon-impacted water entered the project excavations as infrastructure was exposed. The volume of water and degree of impacts observed in the excavation decreased after the excavation was initially pumped down.
- Soil with hydrocarbon impacts appeared to be limited to soil in contact with impacted water. Residual soil impacts were not identified in the final excavation through field observations and field screening.

Based on field observations and field screening activity, there was no evidence of residual soil contamination exceeding WDNR Direct Contact Zone residual contaminant levels (RCL) criteria in the final excavation footprint. Buried residual soil contamination is likely present near the new pipeline support foundations and along buried infrastructure in areas adjacent to the Road Excavation; however, excavation of this material is not feasible due to the presence of Terminal infrastructure. In addition, the impacted potholes were covered with structural supports and the pipeline road excavation will be backfilled with clean fill.

There is no identified remaining direct contact risk, surface water risk, or vapor intrusion risk associated with the residual contamination uncounted during this work. The risk to groundwater from the residual contamination will be addressed through the facility-wide hydrogeologic performance standard established for the Superior Terminal.

The WDNR will be notified of any identified change in environmental conditions at the site. As part of the hydrogeologic performance standard, Enbridge will continue to monitor groundwater conditions of the facility and, if evidence of contamination is identified, it will be reported to the WDNR and managed in accordance with the approved *Facility-wide SI/RAP* and *Addendum*.

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Recommendations

Based on the conditions encountered in the field and the *Facility-Wide SI/RAP* and *Addendum* site classification, Barr anticipates that the pathway to site closure will be to transfer the MCA site (BRRTS#: 02-16-577298) to the Superior Terminal Facility-Wide Site (BRRTS#: 02-16-560657) and no additional response actions or investigation will be required. Upon WDNR approval, Enbridge will prepare an *Enbridge Superior Terminal Facility-Wide Continuing Obligations GIS Registry Update* and submit it, along with associated fees, to facilitate the modification of the facility-wide continuing obligation registry.

Attachments:

Site Photos 1 through 12
Figure 1 Site Location
Figure 2 Site Layout
Figure 3 Receptor Survey
Attachment A WDNR Communication
Attachment B Site Investigation Field Sampling and Screening Logs
Attachment C Material Management Documents

Site Photos



Photo 1



Photo 2

Photo 1: Hydrovac potholes located west of the Terminal road. The potholes were excavated to identify subsurface infrastructure (boards with "HOLE") and for drilled-shaft concrete foundations (left side of photo). Evidence of hydrocarbon impacts were identified in some of the potholes. Photo taken facing east on 11/1/2018.

Photo 2: Pothole located west of the Terminal road with product on the surface of the groundwater. Photo taken on 11/1/2018.

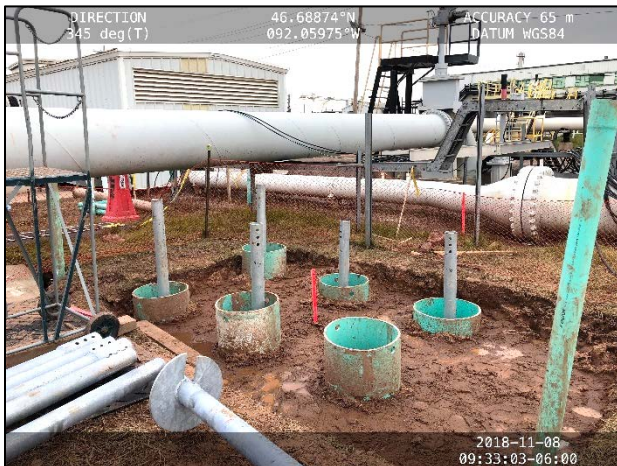


Photo 3



Photo 4

Photo 3: Infrastructure support borings (blue tubes) for drilled-shaft concrete foundations, located west of the Terminal road. The tubes will be filled with concrete. Photo taken facing north on 11/8/2018.

Photo 4: Groundwater with a hydrocarbon sheen in one of the drilled-shaft concrete foundation borings. Photo taken on 11/8/2018.



Photo 5



Photo 6

Photo 5: Project excavation on east side of road. Water with a trace amount of product is shown on the left side of the photo and in Photo 6. Photo taken facing southeast on 11/15/2018.

Photo 6: Hydrocarbon-impacted water in the east half of the Road Excavation. Photo taken on 11/15/2018.

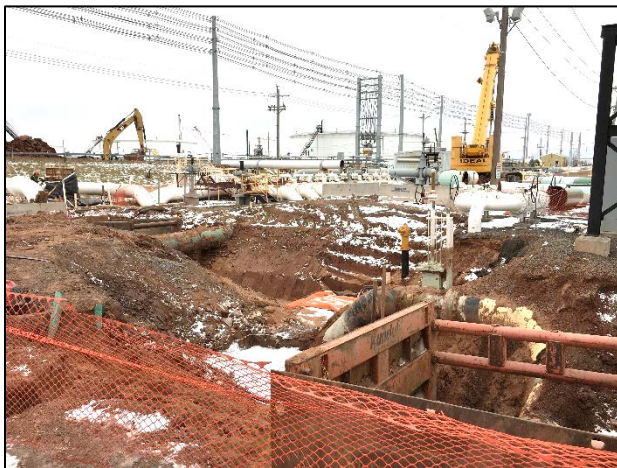


Photo 7



Photo 8

Photo 7: Final excavation extents. Photo taken facing northwest on 12/4/2018.

Photo 8: Final excavation extents. Photo taken facing southeast on 12/4/2018.

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Photo 9



Photo 10

Photo 9: Final excavation extents. Photo taken facing northeast on 12/4/2018.

Photo 10: Western end of the final excavation extents. Photo taken facing northeast on 12/4/2018.

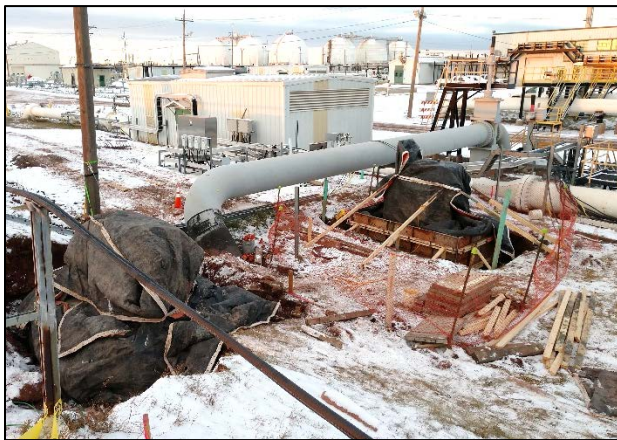


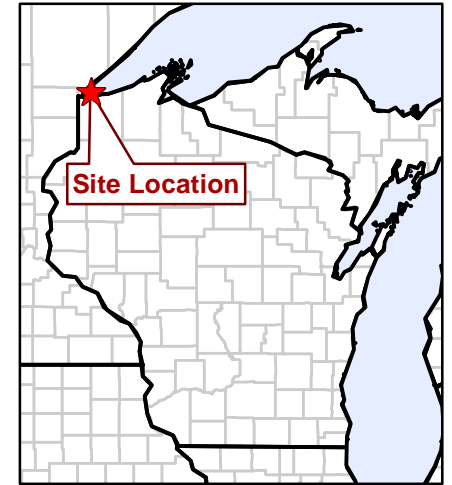
Photo 11



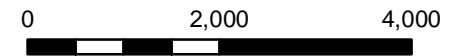
Photo 12

Photo 11: Infrastructure support foundations wrapped in black plastic. Photo taken facing northeast on 11/19/2018.

Photo 12: New pipelines installed in the roadway corridor. Photo taken facing east on 1/16/2019.



- ★ Site Location
- Terminal Property Boundary



Feet
1 Inch = 2,000 Feet

Figure 1

SITE LOCATION
MANIFOLD CORRIDOR EXCAVATION
SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin



Barr Footer: ArcGIS 10.6, 2019-02-15 11:21 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161092\Work_Orders\Manifold_Corridor\Maps\Reports\Figure2_Manifold_Corridor_Site_Layout.mxd User: jwk

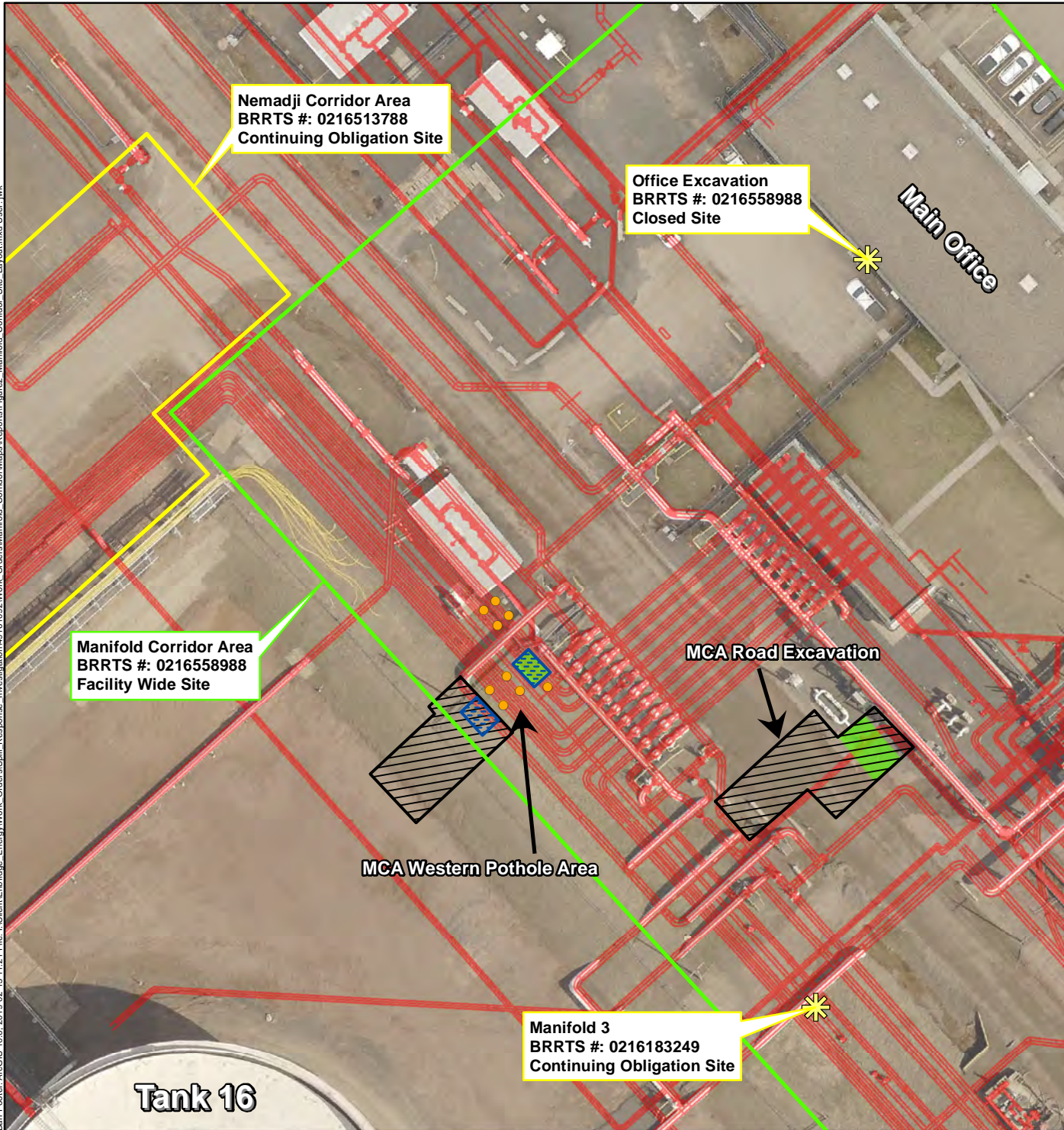
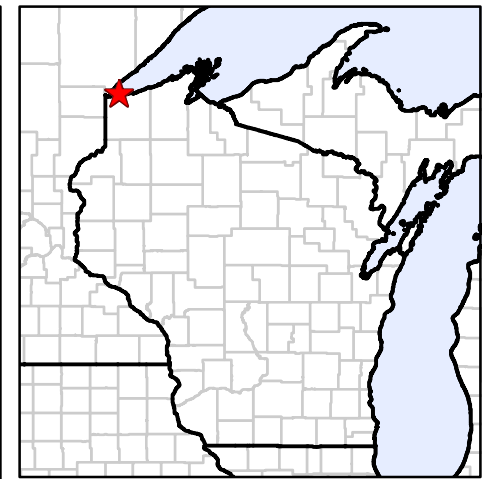
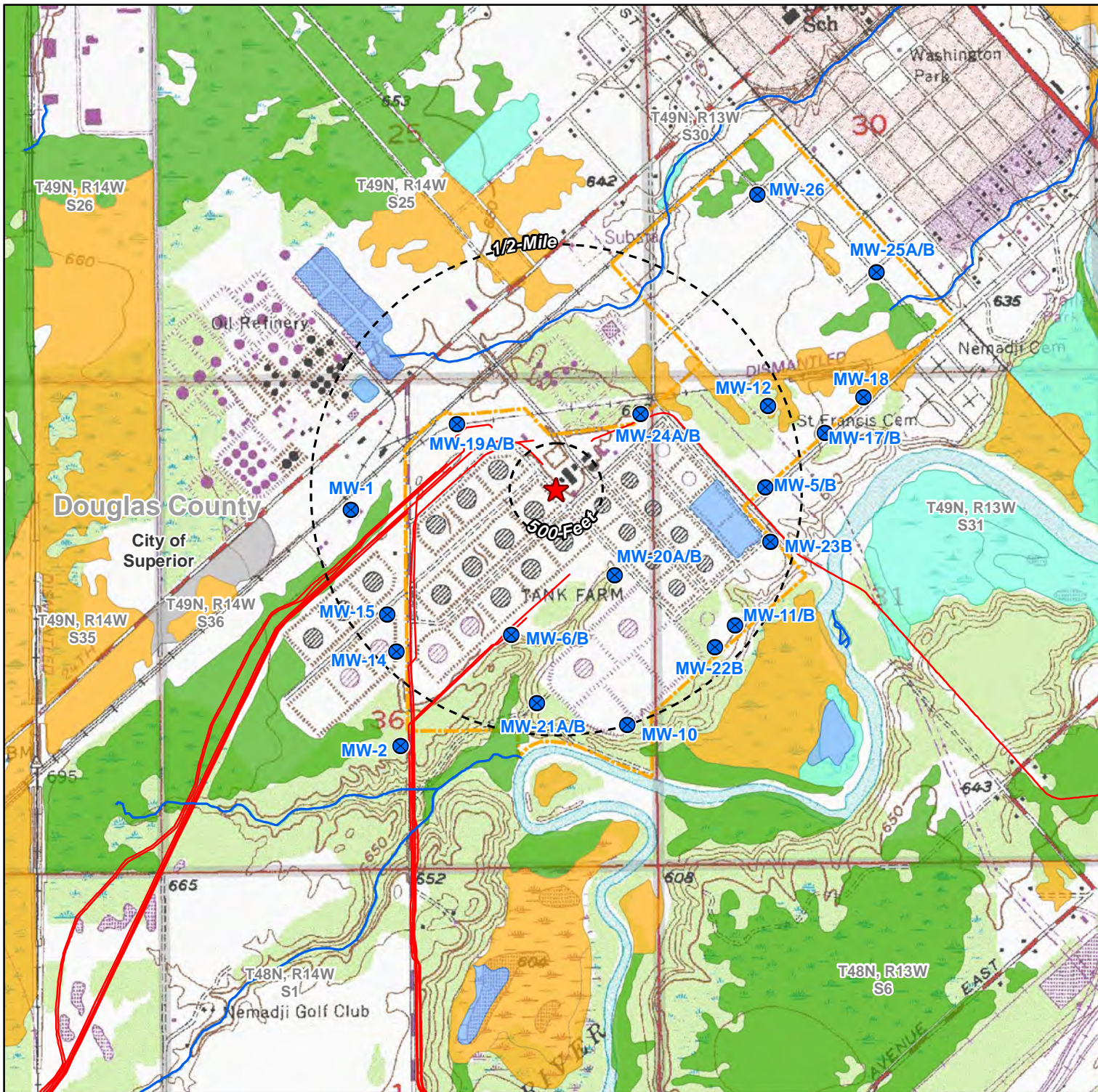


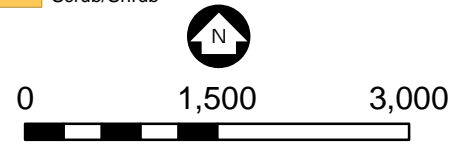
Figure 2

SITE LAYOUT
MANIFOLD CORRIDOR EXCAVATIONS
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin





- ★ Site Location
 - Enbridge Monitoring Well
 - - - Receptor Buffers
 - Enbridge Pipelines
 - Terminal Property Boundary
 - Watercourses
- Wisconsin Wetland Inventory**
- Emergent/wet meadow
 - Filled/drained wetland
 - Forested
 - Open Water
 - Scrub/Shrub



Feet
1 Inch = 1,500 Feet
Figure 3

**RECEPTOR SURVEY
MANIFOLD CORRIDOR
EXCAVATION
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin**



Attachment A
WDNR Communication

Ryan E. Erickson

From: Sager, John E - DNR <John.Sager@wisconsin.gov>
Sent: Wednesday, December 19, 2018 2:17 PM
To: Ryan E. Erickson
Cc: Alex.Smith@enbridge.com; Lynette M. Carney
Subject: RE: Manifold Corridor Area

Ryan,

I am asking Kathleen to change the name BRRTS ID 02-16-577298 to Enbridge Superior Terminal – Manifold Corridor. I have tracked the 2/5/2014 Technical Memorandum under this BRRTS number. As we discussed the boundaries of this ERP site should be based on investigation results from the various areas of contamination you are attributing to this release and not arbitrary polygons. We discussed this area would be depicted in an addendum to the 2/5/14 report and incorporated into the Facility Wide Database package when submitted. For future contamination detected within this area of contamination is reported or referenced please reference this BRRTS name and number.

Thanks

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

John Sager

Phone: (715) 392-7822

John.sager@wisconsin.gov

From: Ryan E. Erickson <RErickson@barr.com>
Sent: Wednesday, December 19, 2018 2:09 PM
To: Sager, John E - DNR <John.Sager@wisconsin.gov>
Cc: Alex.Smith@enbridge.com; Lynette M. Carney <LCarney@barr.com>
Subject: Manifold Corridor Area

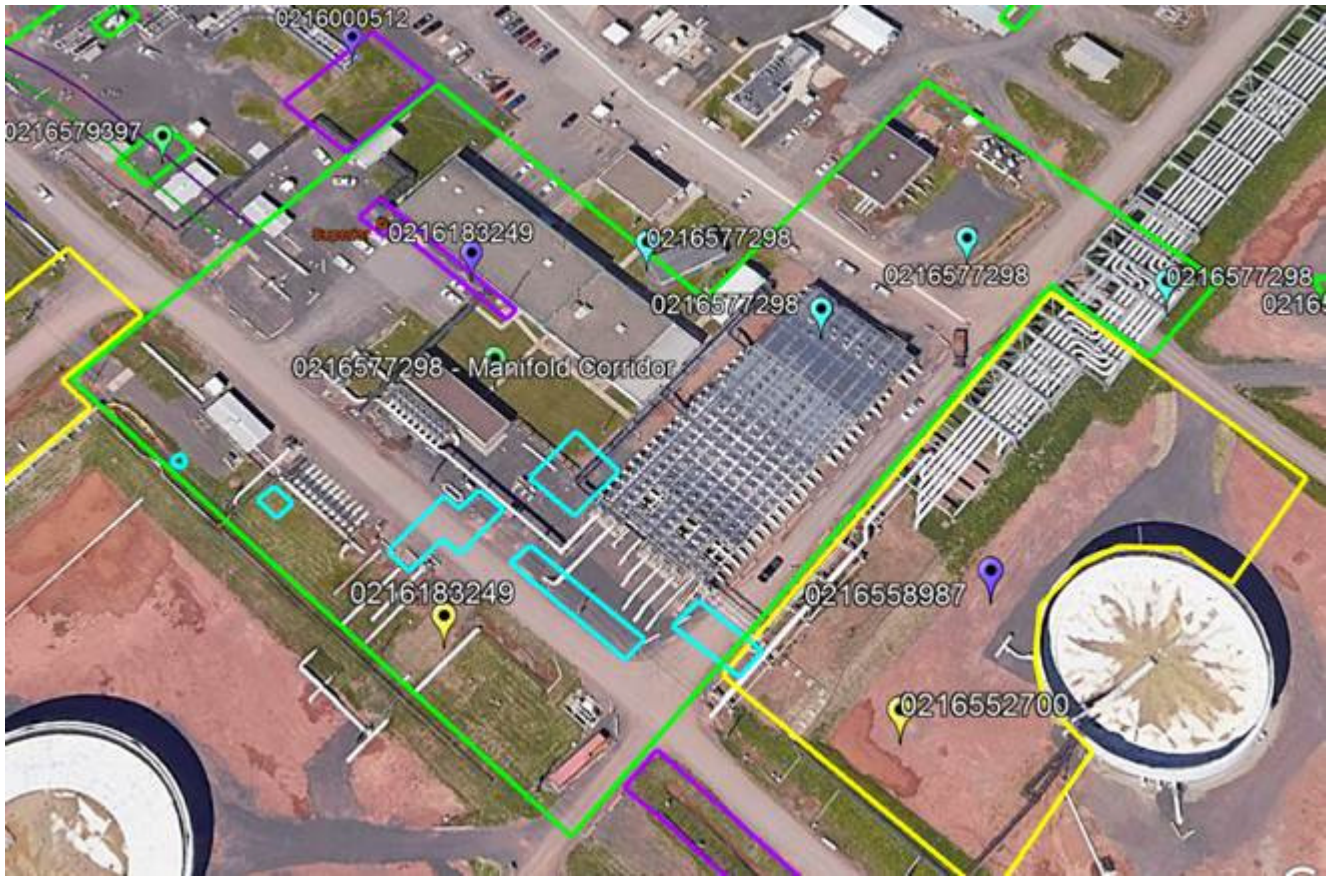
John,

Per our conversations, the proposed next steps for the Manifold Corridor area include the following:

1. Change the BRRTS site name from Pipe Rack to Manifold Corridor. The proposed Manifold corridor area is shown in the image below.
2. Prepare a *Facility-Wide Continuing Obligations GIS Registry Update* the references and available data from the sites within the boundary.

Please let me know if you have any questions.

Happy Holidays,
Ryan



Ryan E. Erickson, PG

Senior Geologist

Duluth, MN office: 218.529.7112

fax: 218.529.8202

cell: 612.418.0166

rerickson@barr.com

www.barr.com

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Attachment B

Site Investigation Field Sampling and Screening Logs

49161092.06 003 001
Superior Terminal - Nemadji Corridor

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Tank 13-16 Nemadji Corridor SW of manifold 213

Equipment used: PID -ionization detector with 10.6 eV lamp

Background Headspace: 0 ppm

Date: 11/1/18

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

Sampler: JET

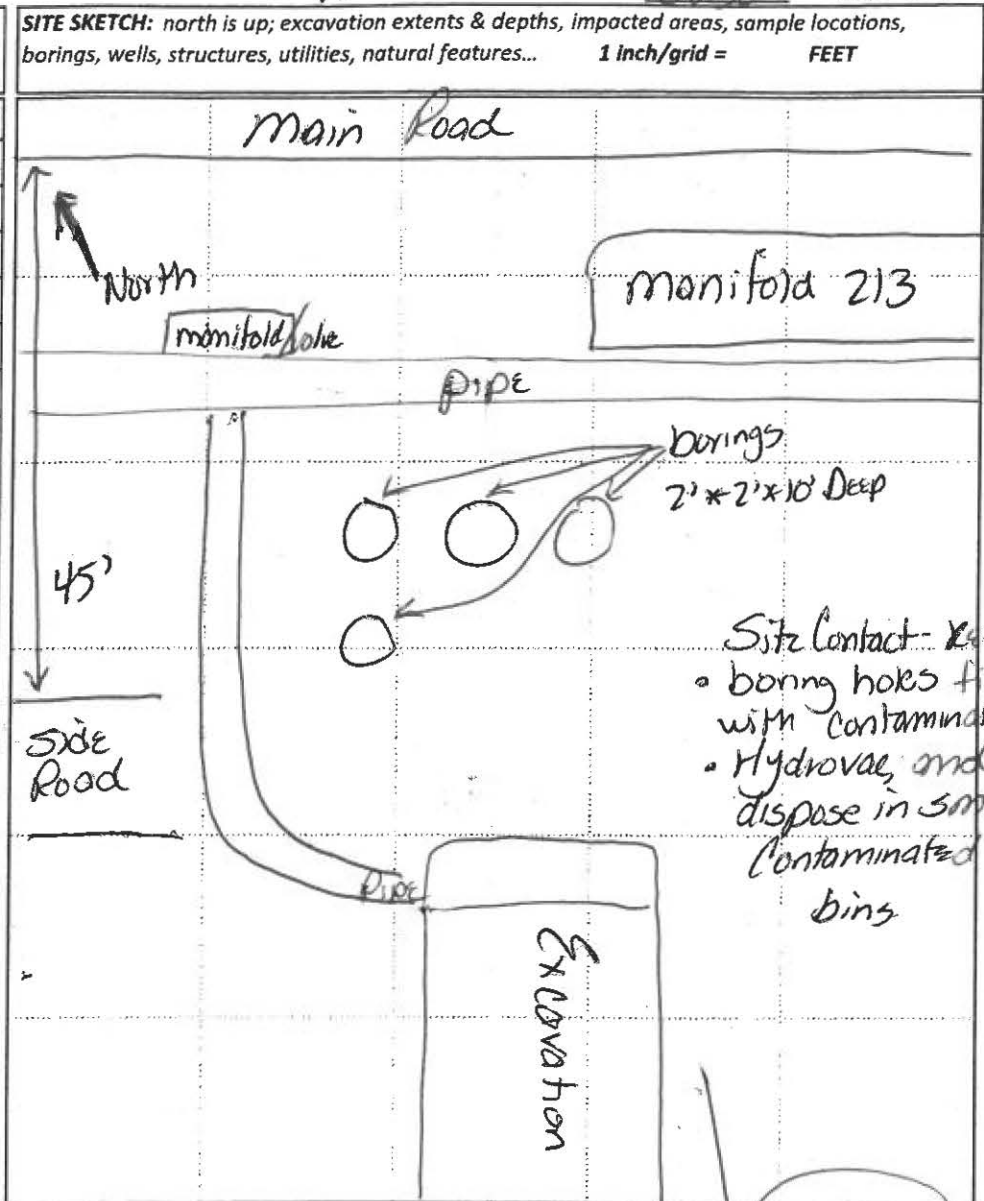
Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

100 ppm = 107 ppm

Calibration Time: 08:30



Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example: TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275
not completed						



SITE LAYOUT

Location: Milepost or Facility

Manifold 211 ENB Superior Terminal

Date: 11/16/2018

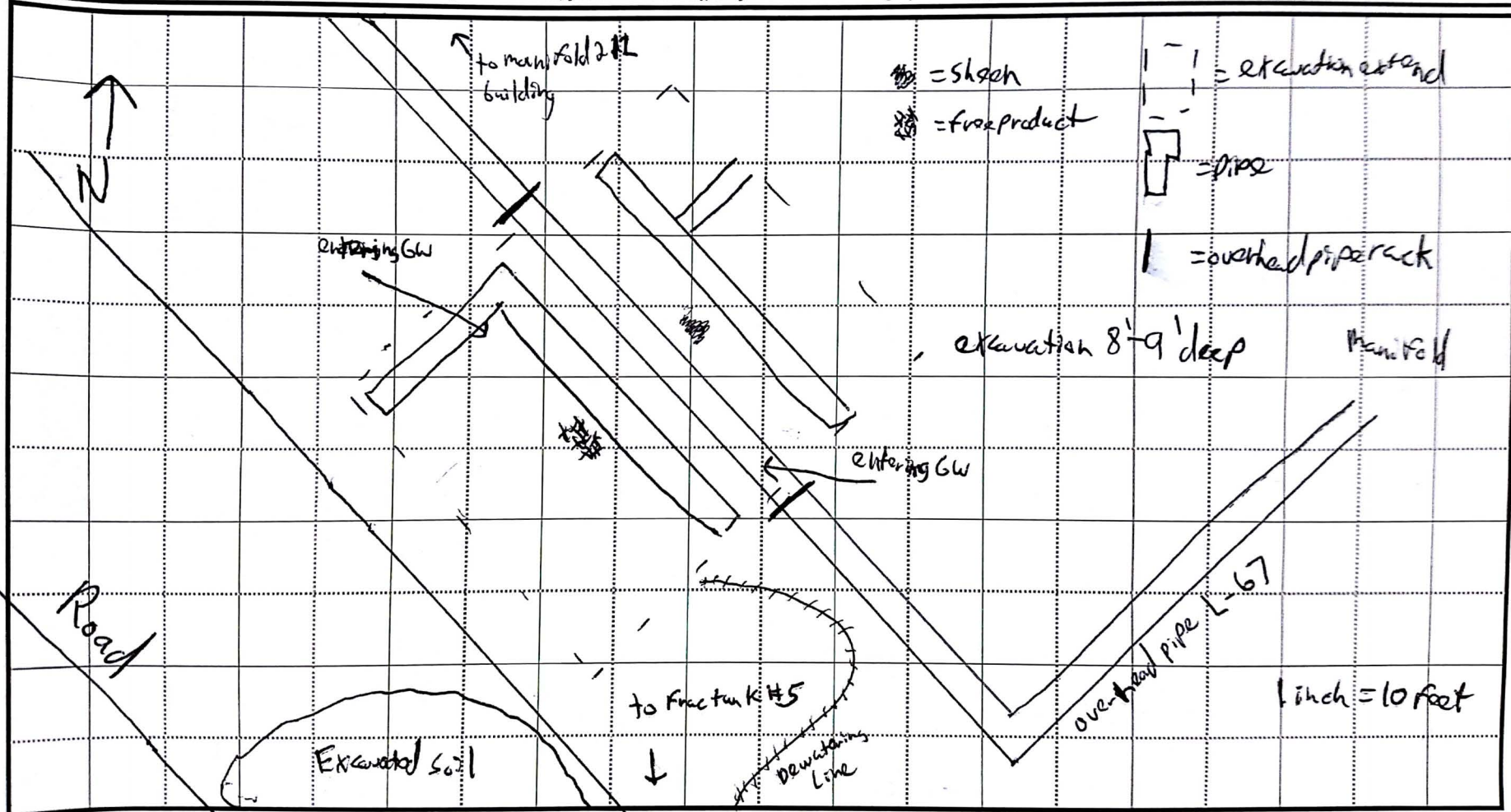
Barr Personnel: MJP

Was a GPS used to document the location of site features? YES or NO

Identify the GPS unit:

BARR

SITE SKETCH: north is up; DRAW (to scale) AND LABEL THE LOCATION OF THE FOLLOWING SITE FEATURES, if applicable: release location, maximum extent of release impacts, roads, structures, pipelines and pipeline infrastructure, excavations, stockpiles, borings, wells, water tankers/frac tanks, roll-off containers, equipment staging areas, municipal utilities (electric, water, sewer...), culverts, natural features (water bodies, forested areas...), surface water drainage pathways/direction, other site features 1 inch/grid = FEET



SITE NOTES/LEGEND: hydrocarbon impacted soil and water discovered in excavation on 11/15/2018

- free product observed floating on water within excavation. Shaken also observed on saturated soil surface in excavation and stockpile
- 6" of standing water - light hydrocarbon odor from excavation
- water from dewatering being pumped into frac tank #5. Soil (solid) being brought to bag don 3 of SMA

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Client: Edco - Superior Term. Date: 11/19/18

Location: Manifatt Corrid Sampler: PLL

Sample Nomenclature (Location - sample type - #):

R = Removed S = Sidewall B = Bottom Stockpile = Stockpile

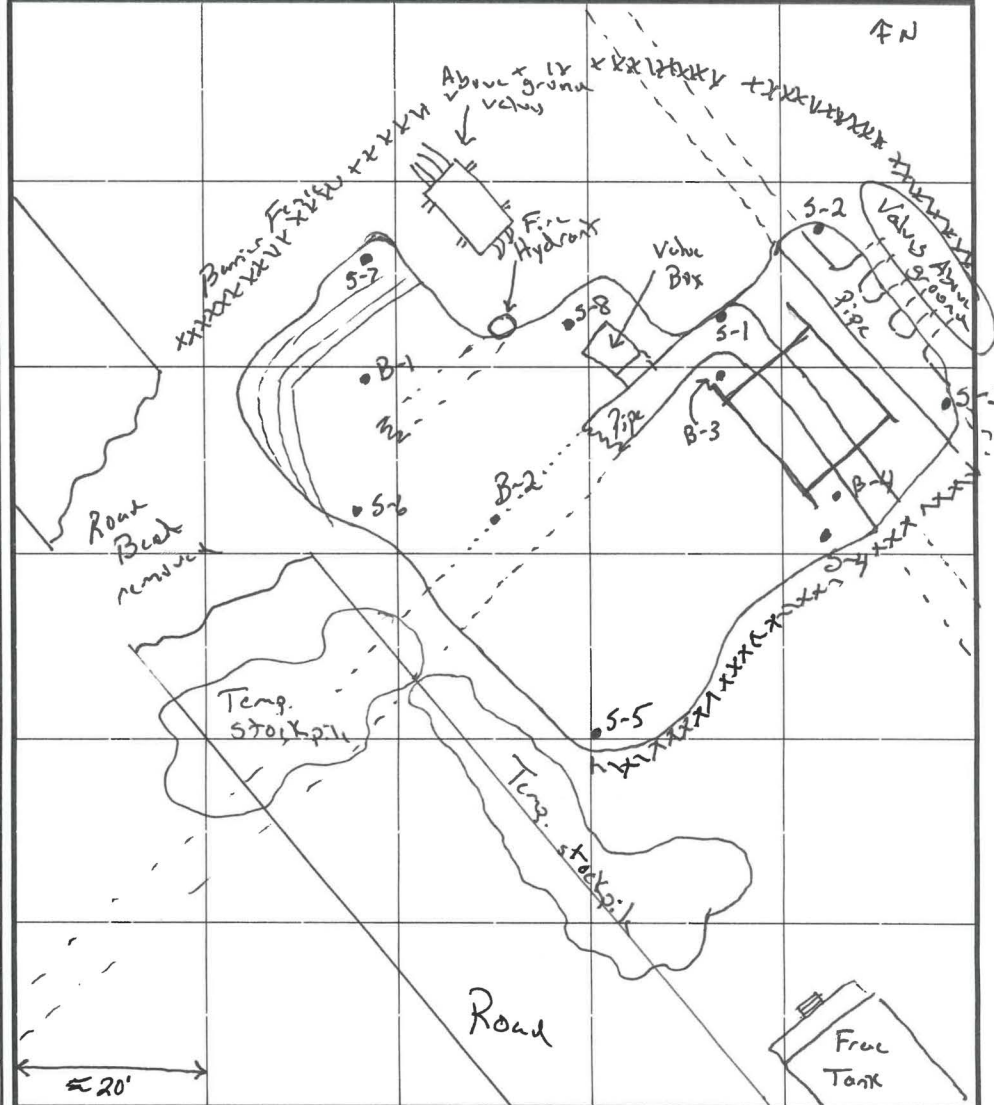
Equipment: Photoionization detector with 10.6 eV bulb



	Calibration	Bump Test 1	Bump Test 2
Time	0959	1522	1620
Zero reading (ppm)	0.0	0.2	0.1
Span reading (ppm)	100.0	98.9	98.4
Background (ppm)	0.6	0.2	0.1

Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example: Stockpile-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275
S-1	0-2	1455	CL	Reddish brown None	None/None	0.8
S-2			CH			1.1
S-3			SC			0.8
S-4			SW	Brown None		0.9
S-5		1505	GW	Reddish brown None		0.8
S-6			CL		Slight Petro None	0.9 0.7
S-7			SP		None/None	0.7 0.9
S-8			SW	Brown None		0.7
B-1	8-10	1515	CH	Reddish Brown None	Petro Slight Rainbow	16.7
B-2			CL	Reddish Brown Dark Brown	Slight Petro None	1.7
B-3			SP	Brown None	None/None	0.6
B-4			SW		Slight Petro None	1.4

Site Sketch: north arrow, scale, excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features...



49161092.06 003 007
 Site Figure Revised 12-20-18 JET

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Superior Terminal - Monitord Corridor

Equipment used: PID -ionization detector with 10.6eV lamp

Background Headspace: 0 ppm

Date: 12/4/18

Sample Nomenclature (Location - sample type - #): MC-B (Bottom) MC-S-Sidewalk

Sampler: JET

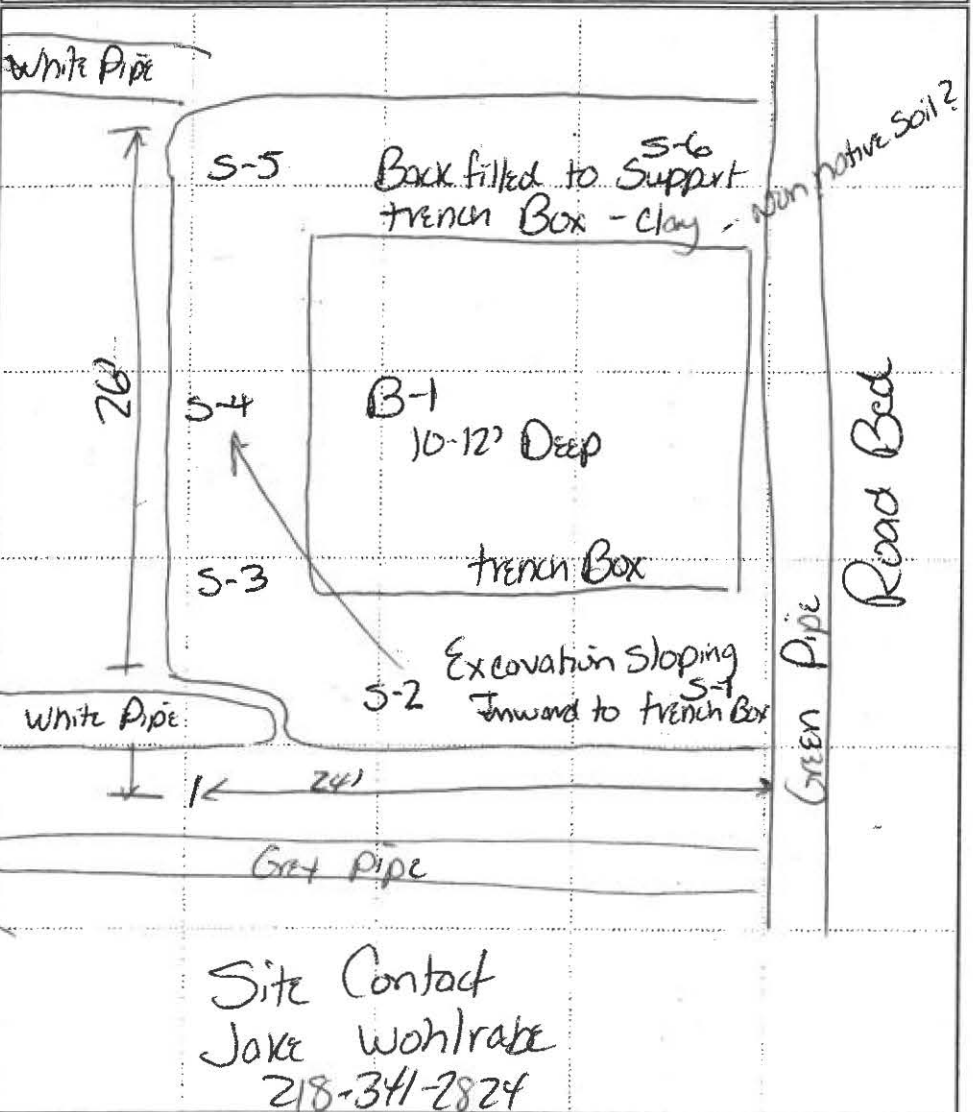
Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

Calibration Time: 07:50



Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/Sheen	Headspace Reading (ppm)
Example: TK99-S-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275
MC-B-1	10-12	11:00	CL	Red/Brown	None/none	0.1
MC-S-1	2		SW	Red/gray	None/none	0.1
MC-S-2	2		SW	Red/gray	None/none	0.1
MC-S-3	2		SW	Red/gray	None/none	0.7
MC-S-4	2		SW	Red/gray	None/none	1.2
MC-S-5	2		SW	Red/gray	None/none	1.7
MC-S-6	2		SW	Red/gray	None/none	5.9

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



Site Contact
 Jake Wohlrahe
 218-341-2824

Attachment C
Material Management Documents

Soil Management Documents

Ryan E. Erickson

From: Chris Guillemette <cguillemette@voncousa.com>
Sent: Tuesday, November 27, 2018 2:12 PM
To: Ryan E. Erickson
Cc: Alex Smith
Subject: RE: 18-109-I Addendum Report

Your good to haul in.

From: Ryan E. Erickson <RErickson@barr.com>
Sent: Tuesday, November 27, 2018 1:20 PM
To: Chris Guillemette <cguillemette@voncousa.com>
Cc: Alex Smith <alex.smith@enbridge.com>
Subject: RE: 18-109-I Addendum Report

Yes. I believe there is 50-100 yards at the Superior Terminal and the project is ongoing. With this approval, Enbridge will likely start hauling soon.

Ryan E. Erickson, PG

Senior Geologist
Duluth, MN office: 218.529.7112
fax: 218.529.8202
cell: 612.418.0166
rerickson@barr.com
www.barr.com

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From: Chris Guillemette <cguillemette@voncousa.com>
Sent: Tuesday, November 27, 2018 1:03 PM
To: Ryan E. Erickson <RErickson@barr.com>
Cc: Alex Smith <alex.smith@enbridge.com>
Subject: RE: 18-109-I Addendum Report

Yes. Do you have more material to come?

Chris

From: Ryan E. Erickson <RErickson@barr.com>
Sent: Tuesday, November 27, 2018 1:00 PM
To: Chris Guillemette <cguillemette@voncousa.com>
Cc: Alex Smith <alex.smith@enbridge.com>
Subject: 18-109-I Addendum Report

Chris,
Can you please add this lab report to the VONCO V 18-109-I waste profile? Thank you.

Ryan E. Erickson, PG

Senior Geologist
Duluth, MN office: 218.529.7112
fax: 218.529.8202
cell: 612.418.0166
rerickson@barr.com
www.barr.com

resourceful. naturally.



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From: Chris Guillemette <cguillemette@voncousa.com>
Sent: Monday, October 22, 2018 10:55 AM
To: Ryan E. Erickson <RErickson@barr.com>
Cc: Alex Smith <alex.smith@enbridge.com>
Subject: approval

Ryan,

Please see attached approval.

Thanks,



Chris Guillemette
Vice President

Main: 763-262-8662
Mobile: 612-221-0785
Fax: 763-262-3299
VONCOUSA.com



Chris Guillemette
Vice President
1100 West Gary Street
Duluth, MN 55808

Office: 218.626.3830
Mobile: 612.221.0785
Fax: 218.626.4874
CGuillemette@VoncoUSA.com

October 22, 2018

Enbridge Energy
Alex Smith
2800 E 21st Street
Superior, WI 54880

RE: 18-109-I/Superior Terminal – Nemadji Corridor (Contaminated Soil)

Alex,

Please be advised that the above described waste material is acceptable for up to **1000/yards** disposal at the Vonco V Waste Management Campus Facility in Duluth, MN. The waste material is acceptable per Vonco V (SW-536) Minnesota Pollution Control Agency Industrial Solid Waste Management Plan.

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. The term of the approval is 3 years and will expire on 10\15\2021.

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 The 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 me at: 612-221-0785.

We look forward to working with you,

Vonco V, LLC
Vice President





27-Nov-2018

Ryan Erickson
Barr Engineering Company
4300 Market Pointe Drive
Suite 200
Minneapolis, MN 55435

Re: **Manifold Corridor Response (49161092.06)**

Work Order: **18111489**

Dear Ryan,

ALS Environmental received 1 sample on 21-Nov-2018 for the analyses presented in the following report.

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

Sample results are compliant with industry accepted practices and Quality Control 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 12.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in cursive script that reads "Ehrland Bosworth".

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental ALS

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Barr Engineering Company
Project: Manifold Corridor Response (49161092.06)
Work Order: 18111489

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>
18111489-01	MC Stockpile-1	Soil		11/20/2018 11:20	11/21/2018 09:30	<input type="checkbox"/>

Client: Barr Engineering Company
Project: Manifold Corridor Response (49161092.06)
WorkOrder: 18111489

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
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 Reporting Limit, 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-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

Client: Barr Engineering Company
Project: Manifold Corridor Response (49161092.06)
Work Order: 18111489

Case Narrative

Samples for the above noted Work Order were received on 11/21/18. 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. A copy of the laboratory's scope of accreditation is available upon request.

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

Date: 27-Nov-18

Client: Barr Engineering Company
Project: Manifold Corridor Response (49161092.06)
Sample ID: MC Stockpile-1
Collection Date: 11/20/2018 11:20 AM

Work Order: 18111489
Lab ID: 18111489-01
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			Method: PUBL-SW-141		Prep: PUBL-SW-141 / 11/26/18		Analyst: RP
DRO (C10-C28)	7.0		0.56	5.6	mg/Kg-dry	1	11/26/2018 14:37
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 11/21/18		Analyst: AK
Benzene	11	J	6.2	37	µg/Kg-dry	1	11/21/2018 22:00
Ethylbenzene	34	J	7.7	37	µg/Kg-dry	1	11/21/2018 22:00
m,p-Xylene	91		17	73	µg/Kg-dry	1	11/21/2018 22:00
o-Xylene	15	J	14	37	µg/Kg-dry	1	11/21/2018 22:00
Toluene		U	10	37	µg/Kg-dry	1	11/21/2018 22:00
Xylenes, Total	110	J	32	110	µg/Kg-dry	1	11/21/2018 22:00
Surr: 1,2-Dichloroethane-d4	109			70-130	%REC	1	11/21/2018 22:00
Surr: 4-Bromofluorobenzene	103			70-130	%REC	1	11/21/2018 22:00
Surr: Dibromofluoromethane	91.4			70-130	%REC	1	11/21/2018 22:00
Surr: Toluene-d8	96.1			70-130	%REC	1	11/21/2018 22:00
MOISTURE			Method: SW3550C				Analyst: RBS
Moisture	9.2		0.025	0.050	% of sample	1	11/21/2018 16:46

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

Client: Barr Engineering Company
Work Order: 18111489
Project: Manifold Corridor Response (49161092.06)

QC BATCH REPORT

Batch ID: **128428** Instrument ID **GC8** Method: **PUBL-SW-141**

MBLK		Sample ID: DBLKS1-128428-128428				Units: mg/Kg		Analysis Date: 11/26/2018 02:08 P			
Client ID:		Run ID: GC8_181126A		SeqNo: 5402837		Prep Date: 11/26/2018		DF: 1			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	0.5	5.0								

LCS		Sample ID: DLCSS1-128428-128428				Units: mg/Kg		Analysis Date: 11/26/2018 01:38 P			
Client ID:		Run ID: GC8_181126A		SeqNo: 5402836		Prep Date: 11/26/2018		DF: 1			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	7.143	0.5	5.0	10	0	71.4	70-120	0			

LCSD		Sample ID: DLCSDS1-128428-128428				Units: mg/Kg		Analysis Date: 11/26/2018 03:06 P			
Client ID:		Run ID: GC8_181126A		SeqNo: 5402839		Prep Date: 11/26/2018		DF: 1			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	7.024	0.5	5.0	10	0	70.2	70-120	7.143	1.69	20	

The following samples were analyzed in this batch:

18111489-01C

Client: Barr Engineering Company
 Work Order: 18111489
 Project: Manifold Corridor Response (49161092.06)

QC BATCH REPORT

Batch ID: **128372** Instrument ID **VMS9** Method: **SW8260C**

MBLK		Sample ID: MBLK-128372-128372				Units: µg/Kg-dry			Analysis Date: 11/21/2018 04:43 P		
Client ID:		Run ID: VMS9_181121B				SeqNo: 5400544		Prep Date: 11/21/2018		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	5.1	30								
Ethylbenzene	U	6.3	30								
m,p-Xylene	U	14	60								
o-Xylene	U	12	30								
Toluene	U	8.2	30								
Xylenes, Total	U	26	90								
<i>Surr: 1,2-Dichloroethane-d4</i>	1069	0	0	1000	0	107	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	977	0	0	1000	0	97.7	70-130	0			
<i>Surr: Dibromofluoromethane</i>	928	0	0	1000	0	92.8	70-130	0			
<i>Surr: Toluene-d8</i>	973.5	0	0	1000	0	97.4	70-130	0			

LCS		Sample ID: LCS-128372-128372				Units: µg/Kg-dry			Analysis Date: 11/21/2018 03:58 P		
Client ID:		Run ID: VMS9_181121B				SeqNo: 5400543		Prep Date: 11/21/2018		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1123	5.1	30	1000	0	112	75-125	0			
Ethylbenzene	1026	6.3	30	1000	0	103	75-125	0			
m,p-Xylene	2109	14	60	2000	0	105	80-125	0			
o-Xylene	1046	12	30	1000	0	105	75-125	0			
Toluene	1067	8.2	30	1000	0	107	70-125	0			
Xylenes, Total	3155	26	90	3000	0	105	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	1050	0	0	1000	0	105	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	1024	0	0	1000	0	102	70-130	0			
<i>Surr: Dibromofluoromethane</i>	1067	0	0	1000	0	107	70-130	0			
<i>Surr: Toluene-d8</i>	1010	0	0	1000	0	101	70-130	0			

MS		Sample ID: 18111466-01A MS				Units: µg/Kg-dry			Analysis Date: 11/21/2018 10:59 P		
Client ID:		Run ID: VMS9_181121B				SeqNo: 5400565		Prep Date: 11/21/2018		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1124	5.1	30	1000	0	112	75-125	0			
Ethylbenzene	989.5	6.3	30	1000	0	99	75-125	0			
m,p-Xylene	2002	14	60	2000	0	100	80-125	0			
o-Xylene	1010	12	30	1000	0	101	75-125	0			
Toluene	987.5	8.2	30	1000	0	98.8	70-125	0			
Xylenes, Total	3012	26	90	3000	0	100	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	1072	0	0	1000	0	107	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	1034	0	0	1000	0	103	70-130	0			
<i>Surr: Dibromofluoromethane</i>	978.5	0	0	1000	0	97.8	70-130	0			
<i>Surr: Toluene-d8</i>	969.5	0	0	1000	0	97	70-130	0			

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

Client: Barr Engineering Company
Work Order: 18111489
Project: Manifold Corridor Response (49161092.06)

QC BATCH REPORT

Batch ID: **128372** Instrument ID **VMS9** Method: **SW8260C**

MSD		Sample ID: 18111466-01A MSD				Units: µg/Kg-dry		Analysis Date: 11/21/2018 11:14 P			
Client ID:		Run ID: VMS9_181121B				SeqNo: 5400566		Prep Date: 11/21/2018		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1109	5.1	30	1000	0	111	75-125	1124	1.3	30	
Ethylbenzene	990.5	6.3	30	1000	0	99	75-125	989.5	0.101	30	
m,p-Xylene	2022	14	60	2000	0	101	80-125	2002	0.994	30	
o-Xylene	1012	12	30	1000	0	101	75-125	1010	0.198	30	
Toluene	1015	8.2	30	1000	0	102	70-125	987.5	2.75	30	
Xylenes, Total	3034	26	90	3000	0	101	75-125	3012	0.728	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>1074</i>	<i>0</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>107</i>	<i>70-130</i>	<i>1072</i>	<i>0.14</i>	<i>30</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>1053</i>	<i>0</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>105</i>	<i>70-130</i>	<i>1034</i>	<i>1.87</i>	<i>30</i>	
<i>Surr: Dibromofluoromethane</i>	<i>992.5</i>	<i>0</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>99.2</i>	<i>70-130</i>	<i>978.5</i>	<i>1.42</i>	<i>30</i>	
<i>Surr: Toluene-d8</i>	<i>968</i>	<i>0</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>96.8</i>	<i>70-130</i>	<i>969.5</i>	<i>0.155</i>	<i>30</i>	

The following samples were analyzed in this batch:

18111489-01A

Client: Barr Engineering Company
Work Order: 18111489
Project: Manifold Corridor Response (49161092.06)

QC BATCH REPORT

Batch ID: **R249874** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R249874				Units: % of sample		Analysis Date: 11/21/2018 04:46 P			
Client ID:		Run ID: MOIST_181121G				SeqNo: 5400320		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.025	0.050								

LCS		Sample ID: LCS-R249874				Units: % of sample		Analysis Date: 11/21/2018 04:46 P			
Client ID:		Run ID: MOIST_181121G				SeqNo: 5400319		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.98	0.025	0.050	100	0	100	99.5-100.5	0			

DUP		Sample ID: 18111456-35A DUP				Units: % of sample		Analysis Date: 11/21/2018 04:46 P			
Client ID:		Run ID: MOIST_181121G				SeqNo: 5400315		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.14	0.025	0.050	0	0	0	0-0	14.48	4.46	10	

The following samples were analyzed in this batch:

18111489-01B

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

18111489

Barr Engineering Co. Chain of Custody

Sample Origination State:
 KS MO UT
 MI ND WI
 MN SD Other: _____

Ann Arbor Duluth Hibbing Minneapolis
 Bismarck Grand Rapids Jefferson City Salt Lake City

COC Number: **57712**
 COC 1 of 1

Matrix Code:
 GW = Groundwater
 SW = Surface Water
 WW = Waste Water
 DW = Drinking Water
 S = Soil/Solid
 SD = Sediment
 O = Other

Preservative Code:
 A = None
 B = HCl
 C = HNO₃
 D = H₂SO₄
 E = NaOH
 F = MeOH
 G = NaHSO₄
 H = Na₂S₂O₃
 I = Ascorbic Acid
 J = NH₄Cl
 K = Zn Acetate
 O = Other

REPORT TO		INVOICE TO	
Company: <i>Barr Engineering</i>	Address: <i>375 S. York Ave, Duluth</i>	Company:	Address: <i>Embridge Energy</i>
Name: <i>Ryan Erickson</i>	email: <i>rerickson@barr.com</i>	Name:	email:
Copy to: <i>datamgt@barr.com</i>	Project Name: <i>Manitowish Corn dock</i>	Copy to: <i>J.Toraldsen@barr.com</i>	Barr Project No: <i>49161092.06 103007</i>

Location	Sample Depth			Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y/N	Total Number of Containers	Analysis Requested		% Solids
	Start	Stop	Unit (m./ft. or in.)						Water	Soil	
1. <i>MC Stockpile-1</i>				<i>11/20/18</i>	<i>11:20</i>	<i>S</i>	<i>N</i>	<i>5</i>		<i>BTEX DRO Hold Jar</i>	<i>A</i>
2. <i>Temp Blank</i>						<i>U/L</i>					
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

ASAP TAT

BARR USE ONLY		Relinquished by: <i>J.Toraldsen</i>	On Ice? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Date: <i>11/20/18</i>	Time: <i>16:00</i>	Received by: <i>FED EX</i>	Date:	Time:
Sampled by: <i>J.Toraldsen</i>	Barr Proj. Manager: <i>Ryan Erickson</i>	Relinquished by: <i>FED EX</i>	On Ice? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Date: <i>11/21/18</i>	Time: <i>09:30</i>	Received by: <i>[Signature]</i>	Date:	Time:
Barr DQ Manager: <i>J.Toraldsen</i>	Lab Name: <i>AS</i>	Samples Shipped VIA: <input type="checkbox"/> Courier <input checked="" type="checkbox"/> Federal Express <input type="checkbox"/> Sampler	<input type="checkbox"/> Other: _____	Air Bill Number:		Requested Due Date: <input type="checkbox"/> Standard Turn Around Time <input checked="" type="checkbox"/> Rush <i>ASAP TAT</i> (mm/dd/yyyy)		
Lab Location: <i>Holland, MI</i>	Lab WO:	Temperature on Receipt (°C):	Custody Seal Intact? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> None					

Distribution - White-Original: Accompanies Shipment to Laboratory; Yellow Copy: Include in Field Documents; Pink Copy: Send to Data Management Administrators.

502 2111 EB

H:\RLG\STD\FORMS\Chain of Custody Form 2015 RLG Rev. 01/02/18

Sample Receipt Checklist

Client Name: **BARRENG-MN**

Date/Time Received: **21-Nov-18 09:30**

Work Order: **18111489**

Received by: **DS**

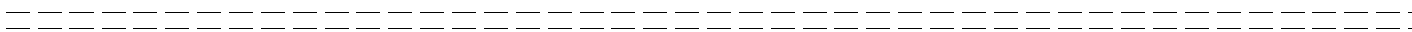
Checklist completed by Diane Shaw 21-Nov-18
eSignature Date

Reviewed by: Eheland Beaworth 21-Nov-18
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>3.4/3.4 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>11/21/2018 1:13:08 PM</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:



Vonco V Waste Management Campus
1100 West Gary Street
Duluth, MN 55808
Permit: SW 536

18-109-I Superior Terminal Nemadji Corridor					
Date	Ticket	Customer	Truck	Material	Tons
10/31/2018	305020	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	17.37
10/31/2018	305021	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	18.64
10/31/2018	305027	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	18.74
10/31/2018	305030	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	19.93
10/31/2018	305039	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	23.21
10/31/2018	305040	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	25.20
10/31/2018	305047	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	22.51
10/31/2018	305050	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	20.69
10/31/2018	305058	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	21.73
11/01/2018	305065	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	21.32
11/01/2018	305068	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	16.62
11/01/2018	305074	001342 - Enbridge Pipelines LLC	T53690W	Alternative Daily cover	17.52
11/01/2018	305077	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	14.80
11/30/2018	305746	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	17.60
11/30/2018	305748	001342 - Enbridge Pipelines LLC	S19589X	Alternative Daily cover	14.06
11/30/2018	305750	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	18.16
11/30/2018	305758	001342 - Enbridge Pipelines LLC	S19589X	Alternative Daily cover	14.85
11/30/2018	305762	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	18.65
11/30/2018	305763	001342 - Enbridge Pipelines LLC	S19589X	Alternative Daily cover	15.90
12/03/2018	305772	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	17.03
12/03/2018	305784	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	20.97
12/03/2018	305801	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	23.39
12/03/2018	305802	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	21.92
12/03/2018	305810	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	21.63
12/04/2018	305821	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	13.36
12/04/2018	305831	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	19.81
12/04/2018	305840	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	17.25
12/04/2018	305848	001342 - Enbridge Pipelines LLC	T53691W	Alternative Daily cover	19.29
Total Tons					532.15
Total Loads					28

Highlighted lines are associated with the **Manifold Corridor project**.

The total tonnage for these lines was **273.87 tons**.

Water Management Documents

Ryan E. Erickson

From: Alex Smith <alex.smith@enbridge.com>
Sent: Tuesday, January 08, 2019 4:48 PM
To: Ryan E. Erickson
Subject: FW: [External] FW: Message from "RNP0026736F0A76"
Attachments: 201901081423.pdf

FYI dig disposal manifests.

-----Original Message-----

From: Patrick Tracey [mailto:ptracey@osienv.com]
Sent: Tuesday, January 08, 2019 3:27 PM
To: Alex Smith
Cc: Kevin Olson; Jason Peterson; Dean Will; Craig Noble; Tom Peterson
Subject: [External] FW: Message from "RNP0026736F0A76"

Alex, please find the final 2018 manifest activity attached. I have copied a number of individuals as the documents overlapped several projects and were combined for economic reasons with respect to transportation. The following will assist in defining the origin of materials:

Document #26593-A Bill of Lading (BOL) adjusted at OSI's Shop to 5,000 gallons (2,500 Terminal Dig, 1,350 Pig Wash Tank, 1,150 Frac Tank #1 Clean)

Document #26593-B BOL for Terminal Dig

Document #26593-C BOL for Terminal Dig

Document #26633-A -VOID- This BOL was utilized for the removal of material from the Pig Wash Tank during system maintenance and added to BOL #26593-A for transport to Republic. Transportation was invoiced against the Terminal Dig with product disposal applied to the Pig Wash project (1,350).

I will mail the hardcopies of the BOL's today.

Upon review, should you have any questions or require additional information, please feel free to contact me.

Patrick Tracey
OSI Environmental, Inc.
P (218) 744-3064
F (218) 744-4832
Ptracey@osienv.com

***** IMPORTANT NOTICE***** Unless otherwise indicated or obvious from the nature of the transmittal, the information contained in this email message is CONFIDENTIAL information intended for the use of the individual or entity named herein. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify the sender using the above contact information or by return email and delete this message and any copies from your computer system. Thank you.

THIS MEMORANDUM

is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. 715-396-4500

Document # 26593-A

Carrier OSI Environmental, Inc. SCAC SCAC Carrier's No. 800-777-8542

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at 300 Fayal Rd., Eveleth, MN, 55734, date _____ from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO:	FROM:
Consignee <u>Alexander TRD (701) 572-4506</u>	Shipper <u>Enbridge</u>
Street <u>14391 39th Street NW, CR 16</u>	Street <u>2800 East 21 Street</u>
Destination <u>Alexander, ND</u> Zip <u>58831</u>	Origin <u>Superior, WI</u> Zip <u>54880</u>

Route _____
 Delivering Carrier OSI Environmental, Inc. Vehicle Number _____ U.S. DOT Hazmat Reg. Number DOT 366 793

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
1 - TT	X	UN1267	Petroleum Crude Oil (ERG 128)	3	1	2500 5000	gl.	
Alexander TRD Sign: <u>[Signature]</u> Date: <u>12-18-15</u>								

Remit COD to: Address: City: _____ State: _____ Zip: _____	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.	COD AMT: \$ _____	COD FEE: Prepaid <input type="checkbox"/> Collect <input type="checkbox"/> \$ _____
NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$ _____ Per _____	(Signature of Consignor)	TOTAL CHARGES: \$ _____	FREIGHT CHARGES: <input type="checkbox"/> Prepaid <input type="checkbox"/> Collect
NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).	PLACARDS REQUIRED	PLACARDS SUPPLIED	<input type="checkbox"/> BY SHIPPER <input type="checkbox"/> BY CARRIER
This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____		DRIVER'S SIGNATURE:	

SHIPPER: Enbridge CARRIER: OSI Environmental, Inc.
 PER: [Signature] DATE: 11/29/15 PER: [Signature] DATE: 11-29-15

EMERGENCY RESPONSE TELEPHONE NUMBER: (800) 777-8542 NAME OR CONTRACT NUMBER OR OTHER UNIQUE IDENTIFIER: _____

THIS MEMORANDUM

Is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. 715-396-4500

Document # 26593-B

Carrier OSI Environmental, Inc. SCAC OSI Carrier's No. 800-777-8542

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at 300 Faval Rd, Eveleth, MN 55734, date _____ from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO:
 Consignee Alexander TRD (701) 572-4506
 Street 14301 39th Street NW, CR 16
 Destination Alexander, ND Zip 58831
FROM:
 Shipper Enbridge
 Street 2800 East 21 Street
 Origin Superior, WI Zip 54880

Route _____
 Delivering Carrier OSI Environmental, Inc. Vehicle Number _____ U.S. DOT Hazmat Reg. Number DOT 366 793

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
1 -- TT	X	UN1267	Petroleum Crude Oil (ERG 128)	3,	1	5000	gl.	
			Alexander TRD Sign <i>[Signature]</i>			Date: <u>12/5/18</u>		

Remit COD to:
 Address: _____
 City: _____ State: _____ Zip: _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

COD AMT: \$ _____
COD FEE: Prepaid Collect \$ _____
TOTAL CHARGES: \$ _____
FREIGHT CHARGES: Prepaid Collect

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$ _____ Per _____

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 13706(c)(1)(A) and (B). This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

PLACARDS REQUIRED **PLACARDS SUPPLIED**
 DRIVER'S SIGNATURE: _____
 BY SHIPPER BY CARRIER

SHIPPER: Enbridge CARRIER: OSI Environmental, Inc.
 PER: Jacob Wokirako DATE: 11/28/18 PER: [Signature] DATE: 11-28-18

EMERGENCY RESPONSE
 TELEPHONE NUMBER: (800) 777-8542
NAME OR CONTRACT NUMBER OR OTHER UNIQUE IDENTIFIER: _____

THIS MEMORANDUM

Is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. 715-396-4500Document # 26593-CCarrier OSI Environmental, Inc. SCAC SCAC Carrier's No. 800-777-8542RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations; at 300 Faysl Rd, Eveleth, MN, 55734 date _____ from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO: Consignee Street Destination	<u>Alexander TRD (701) 572-4508</u> <u>14391 39th Street NW, CR 16</u> <u>Alexander, ND Zip 58831</u>	FROM: Shipper Street Origin	<u>Enbridge</u> <u>2800 East 21 Street</u> <u>Superior, WI Zip 54880</u>
--	---	---	--

Route _____ Delivering Carrier OSI Environmental, Inc. Vehicle Number _____ U.S. DOT Hazmat Reg. Number DOT 366 793

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
1 -- TT	X	UN1267	Petroleum Crude Oil (ERG 128)	3,	1	5000	gl.	
			Alexander TRD Sign: <u>[Signature]</u> Date: <u>12-3-18</u>					

Remit COD to: Address: City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$ _____ Per _____

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: \$ _____

\$

TOTAL CHARGES: \$ _____

\$

COD FEE:

Prepaid Collect \$

FREIGHT CHARGES:

 Prepaid Collect BY SHIPPER BY CARRIER

PLACARDS REQUIRED

PLACARDS SUPPLIED

DRIVER'S SIGNATURE: _____

SHIPPER: Enbridge
PER: Jacob WohlrabeDATE: 11/28/18CARRIER: OSI Environmental, Inc.PER: Tommy NoleceDATE: 11-28-18EMERGENCY RESPONSE TELEPHONE NUMBER: (800) 777-8542

NAME OR CONTRACT NUMBER OR OTHER UNIQUE IDENTIFIER: _____