

From: [Nick Larabel](#)
To: [Sager, John E - DNR](#)
Subject: RE: WDNR Notification: Manifold 213 (BRRTS site 02-16-558988)
Date: Thursday, September 28, 2023 12:14:50 PM
Attachments: [image007.png](#)
[20230919 Enbridge Terminal Manifold 213 Memo.pdf](#)

**CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Hi John,

Please find attached the Technical Memo prepared by Barr for the Manifold 213 project completed at the Superior Terminal. In summary, petroleum impacts (sheen, odor) were identified in July 2023 in the Manifold 213 maintenance project excavation located within the previously identified and closed WDNR BRRTS site 0216558988 (Manifold Corridor area) that is part of the Facility-wide site (BRRTS 01616560657).

No active release was identified during the work. Soil with evidence of historical petroleum impacts that was removed from the excavation was managed at a landfill. Three analytical samples were collected from the final excavation extents and analyte concentrations were below WDNR Direct Contact Residual Contaminant Levels (RCLs) and NR720 standards. One soil sample exceeded WDNR Groundwater RCLs for naphthalene. Clean fill was used to backfill the excavation.

Based on the location of the Manifold 213 excavation, field screening and sampling results, and ongoing facility environmental monitoring activities, we believe the petroleum impacts were associated with the historical Manifold Corridor area (BRRTS# 0216577298) and that there is no apparent risk to human health and the environment. Enbridge believes that this report should be added to the Manifold Corridor BRRTS file during the next Facility-wide file (BRRTS# 1616560657) update and that no additional investigation actions should be required.

If you have any questions, please let me know.

Nick

Nicholas B. Larabel, PG, CPG

Sr. Environment Advisor, Environment Remediation

—

ENBRIDGE

TEL: 269-330-3872

455 Leggitt Road, Marshall, MI 49068

enbridge.com

Safety. Integrity. Respect. Inclusion

From: Sager, John E - DNR <John.Sager@wisconsin.gov>
Sent: Monday, July 17, 2023 2:34 PM
To: Nick Larabel <nick.larabel@enbridge.com>
Subject: [External] RE: WDNR Notification: Manifold 213 (BRRTS site 02-16-558988)

CAUTION! EXTERNAL SENDER

Were you expecting this email? TAKE A CLOSER LOOK. Is the sender legitimate?
DO NOT click links or open attachments unless you are 100% sure that the email is safe.

Nick,

Thanks for the notification. I will add this to BRRTS No. 02-16-558988 and look forward to Barr's report.

We are committed to service excellence.

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

John Sager
Hydrogeologist – Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1701 N. 4th St.
Superior, WI 54880
Phone: (715) 919-7239
john.sager@wisconsin.gov



dnr.wi.gov



From: Nick Larabel <nick.larabel@enbridge.com>
Sent: Friday, July 14, 2023 1:11 PM
To: Sager, John E - DNR <John.Sager@wisconsin.gov>
Subject: FW: WDNR Notification: Manifold 213 (BRRTS site 02-16-558988)

**CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Hi John,

Recently, excavation soil/water with an apparent petroleum impacts were identified during a Manifold 213 infrastructure project within the terminal (see below). The site was inspected and no active release was identified. When reviewing the existing files, the site falls within the previously

identified and closed WDNR BRRTS site 02-16-558988 that is part of the Facility-wide site (BRRTS 01616560657). All soil and water with evidence of potential impacts that is removed from the excavation will be managed at an offsite facility.

I'm having our consultant, Barr assist with field work and they will collect the required field screening and analytical from the final excavation extents. Upon project completion, Barr will draft a short memo documenting the assessment and Enbridge's response actions. This memo will be provided to the WNDR for review.

Please let me know if you have any questions.



Thanks,

Nicholas B. Larabel, PG, CPG

Sr. Environment Advisor, Environment Remediation

ENBRIDGE

TEL: 269-330-3872

455 Leggitt Road, Marshall, MI 49068

enbridge.com

Safety. Integrity. Respect. Inclusion

Technical Memorandum

To: Nick Larabel, Enbridge Energy
From: Ryan Erickson
Subject: Enbridge Terminal – Manifold 213 Response
WDNR BRRTS #'s: 0216577298 (Manifold Corridor); 1616560657 (Terminal Facility-wide)
Site Coordinates: 46.68829°, -92.06004° (NAD83)
Barr Project: 49161092.11 003 103
Date: September 19, 2023

This memorandum summarizes the environmental response activities performed by Barr Engineering (Barr) at the request of Enbridge Energy (Enbridge) following the discovery of historical petroleum impacts in the Manifold 213 project excavation at the Enbridge Superior Terminal (Terminal) in Superior, Wisconsin (Figure 1) in July 2023.

Project Background

On July 14, 2023, Enbridge encountered apparent petroleum impacts (sheen, odor) in the Manifold 213 maintenance project excavation (hereafter referred to as the site). Upon discovery, excavation activities were halted, and the site was inspected by Enbridge and no active release source was identified. Based on the field observations and site information described below, the impacts were considered historical. Enbridge Environment was notified and requested that Barr complete the following:

- review historical records of releases near the site,
- assist with the off-site management coordination of soil with suspected impacts,
- field screen and sample soil from the excavation extents to document the soil conditions, and
- prepare a memorandum summarizing the response actions and the excavation conditions upon the completion of project activities.

A review of historical release documentation for this location identified that the site is within the Manifold Corridor area Bureau for Remediation and Redevelopment Tracking System (BRRTS; BRRTS# 0216577298) site that was granted Closure with Continuing Obligations by the Wisconsin Department of Natural Resources (WDNR) on March 10, 2022 (WDNR, 2022). The Manifold Corridor is part of the Enbridge Energy-Superior Terminal Facility-Wide agreement (BRRTS# 1616560657) that facilitates the tracking and reporting of historical impacts encountered at the facility.

Enbridge notified the WDNR of the discovery of the historical impacts via email (Attachment A).

Field Methods and Results

On July 14, 2023, Barr was on site to assess conditions in the project excavation (Photos 1 and 2; Figure 2) and collect waste characterization samples.

Barr field screened and sampled the excavation sidewalls to document environmental conditions per the WDNR-approved *Site Investigation and Response Action Plan* (SI/RAP; 2014). The final excavation was approximately 60 feet long (northwest to southeast) by up to 20 feet wide (northeast to southwest) by up to 3 feet deep. Soil consisted mostly of clay with sand fill around some buried infrastructure. Limited

To: Nick Larabel, Enbridge Energy
Subject: Enbridge Terminal – Manifold 213 Response
BRRS #'s: 0216577298 (Manifold Corridor); 1616560657 (Terminal Facility-wide)
Date: September 19, 2023
Page: 2

amounts of groundwater were observed in the excavation at approximately 3 feet below ground surface (bgs; Photo 3) and were removed with the soil during hydrovac excavation activities.

Barr collected eighteen field screening soil samples from the excavation sidewalls and bottom (Photos 1 and 2; Attachment B). The soil samples were tested for the presence of organic vapors using a 10.6eV photoionization detector (PID) and inspected for the presence of other potential indicators of petroleum impacts such as odor, discoloration and sheen. Field screening results are summarized below:

- No evidence of petroleum impacted soil (odor, sheen, headspace > 10 parts per million (ppm)) was identified in the northwest half of the excavation.
- Soil with petroleum impacts, as described below, was identified in the southeast half of the excavation. Residual impacts were mostly present below 1.5 feet bgs, near the buried pipeline.
- Four of eighteen field screening samples collected from the final southeastern excavation extents had headspace readings above 10 ppm (B-3 @ 3ft bgs = 12.8ppm; S-9 @ 1.5ft bgs = 10.6ppm; S-10 @ 1.5ft bgs = 127.1ppm; S-11 @ 2.5ft bgs = 360.4ppm) and a petroleum odor and sheen was identified in three of the samples.
- A petroleum sheen was also observed on excavation water (Photos 3 and 4) in the southeastern end of the excavation.

Analytical soil confirmation samples *MAN213-B-1*, *MAN213-S-1*, and *MAN213-S-2* were collected from the southern half of the excavation where impacted soil had been identified during excavation and/or in the final excavation extent coinciding the highest headspace readings (Figure 2; Attachment B). The samples were submitted to Pace Analytical Services in Duluth, MN for analysis of petroleum volatile organic compounds (PVOCs) and naphthalene. The analyte concentrations were below the laboratory method detection limits and/or the WDNR Industrial Groundwater Residual Contaminant Level (RCL) and Direct Contact RCL concentrations with the exception of *MAN213-S-1*, where a naphthalene (0.739 mg/kg) detection exceeded the Groundwater RCL (0.6582 mg/kg) but not the Direct Contact RCL (24.1 mg/kg). The sample results are summarized in Table 1 and the laboratory report is provided in Attachment C.

Upon completion of the project activities, the excavation was backfilled with clean fill.

Receptor Survey

No direct contact risks were identified based on the field observations and screening by the project team; the analytical soil sample results; and the use of clean fill material in backfilling the excavation. No impacts to surface water were identified during the project, and there is little risk of future surface water impacts based on field observations, distance to surface water receptors, and the use of clean backfill. No groundwater risks were identified based on the results of the analytical sample collected from the excavation and based on the results of the annual facility-wide groundwater monitoring program. Specifically, the groundwater pathway at the Superior Terminal is addressed on a facility-wide basis through the established hydrogeologic performance standard approved by the WDNR, i.e., Enbridge samples the Terminal groundwater monitoring well network (Figure 3) on an annual basis and provides the data to the WDNR. The nearest downgradient monitoring well is MW-20A located approximately 950 feet to the southeast. No vapor receptors were identified as the nearest structures are approximately 100 feet to the northwest and northeast of the excavation, and the structures are above grade pipeline-

To: Nick Larabel, Enbridge Energy
Subject: Enbridge Terminal – Manifold 213 Response
BRRTS #'s: 0216577298 (Manifold Corridor); 1616560657 (Terminal Facility-wide)
Date: September 19, 2023
Page: 3

operation buildings with no basement and limited human occupancy. Further, Terminal employees are required to wear four-gas detectors that would alert them to a potentially hazardous atmosphere.

Material Management

During the project activities, hydrovac slurry soil with evidence of petroleum impacts was managed in hydrovac slurry management roll-off containers in the Terminal Soil Management Area (SMA) and solidified for off-site disposal. Barr collected representative soil sample *MAN213-Stockpile-1* for laboratory analysis at Pace of benzene, toluene, ethylbenzene, xylenes (BTEX) and diesel range organics (DRO). A total of 137.76 tons of solidified soil was managed at the VONCO V landfill in Duluth, Minnesota under waste profile 23-049-I. The waste profile approval letter, landfill summary, and laboratory report are provided in Attachment D.


Conclusions

Petroleum impacted soil was identified in the Manifold 213 maintenance excavation in July 2023. The excavation was located within the Manifold Corridor area (BRRTS# 0216577298) that is part of the Terminal Facility-wide site (BRRTS# 1616560657). The impacted soil was only identified in the southeastern half of the excavation at a depth below approximately 1.5 feet bgs in a location immediately below and adjacent to Enbridge infrastructure. Analytical soil samples collected from this area had analyte concentrations below laboratory reporting limits and/or WDNR Industrial Direct Contact RCLs, except for one WDNR Groundwater RCL exceedance. Excavated soil with apparent petroleum impacts was managed at the VONCO V landfill.

Based on the location of the Manifold 213 excavation, field screening and sampling results, and ongoing facility environmental monitoring activities, we believe the petroleum impacts were associated with the historical Manifold Corridor area (BRRTS# 0216577298) and that there is no apparent risk to human health and the environment. Barr believes that this report should be added to the Manifold Corridor BRRTS file during the next Facility-wide file (BRRTS# 1616560657) update and that no additional investigation actions will be required.

Certification

I, Ryan Erickson, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

 , Professional Geologist (1446-13)
Signature and Title

9/19/2023
DATE

To: Nick Larabel, Enbridge Energy
Subject: Enbridge Terminal – Manifold 213 Response
BRRTS #'s: 0216577298 (Manifold Corridor); 1616560657 (Terminal Facility-wide)
Date: September 19, 2023
Page: 4

References

Barr, 2014, *Site Investigation and Response Action Plan Enbridge, Energy Superior Terminal (Facility-Wide)*. Prepared for Enbridge Energy, July 2014.

WDNR, 2022. *Reported Contamination at 2800 E 21st St., Superior, Wisconsin; DNR BRRTS Activity Name: Enbridge Terminal – Manifold Corridor; DNR BRRTS Activity #: 02-16-577298; DNR Facility-Wide BRRTS Activity #: 16-16-560657; DNR FID #: 816010580*. WDNR site closure with continuing obligations letter sent to Enbridge Energy, March 10, 2022.

Attachments:

Site Photos	1 through 4
Table 1	Soil Analytical Data Summary
Figure 1	Site Location
Figure 2	Site Layout
Figure 3	Receptor Survey
Attachment A	WDNR Site Notification
Attachment B	Site Investigation Field Sampling and Screening Log
Attachment C	Laboratory Report for Excavation Soil Samples
Attachment D	Material Management Documentation

To: Nick Larabel, Enbridge Energy
Subject: Enbridge Terminal – Manifold 213 Response
BRRTS #s: 0216577298 (Manifold Corridor); 1616560657 (Terminal Facility-wide)
Date: September 19, 2023
Page: 5

Site Photos



Photo 1



Photo 2

Photo 1: Manifold 213 excavation. Photo taken facing west on July 14, 2023.

Photo 2: Manifold 213 excavation. Photo taken facing northwest on July 14, 2023.



Photo 3



Photo 4

Photo 3: Petroleum sheen on excavation water in Manifold 213 excavation. Photo taken on July 14, 2023.

Photo 4: Close-up photo of petroleum sheen on excavation water in Manifold 213 excavation. Photo taken on July 14, 2023.

Table 1
Soil Analytical Data Summary
Superior Terminal Manifold 213 Response
Enbridge Energy Inc.

Parameter	Location Date Depth	MAN213-B-1 7/14/2023 3 ft	MAN213-S-1 7/14/2023 1.5 ft	MAN213-S-2 7/14/2023 2.5 ft	
					MAN213-B-1
	Wisconsin Groundwater RCLs, DF=2	Wisconsin Not to Exceed Direct Contact Industrial RCLs			
Last Updated	12/01/2018	12/01/2018			
Exceedance Key	Bold	No Exceedances			
General Parameters					
% Moisture			19.8	19.7	20.8
Volatile Organic Compounds					
1,2,4-Trimethylbenzene	1.3787 (1)	219	< 0.0171 U	0.127	0.0751
1,3,5-Trimethylbenzene	1.3787 (1)	182	< 0.0165 U	0.0324 J	< 0.0179 U
Benzene	0.0051	7.07	< 0.0079 U	< 0.0086 U	< 0.0086 U
Ethyl benzene	1.57	35.4	< 0.0198 U	< 0.0216 U	< 0.0214 U
Methyl tertiary butyl ether (MTBE)	0.027	282	< 0.0172 U	< 0.0187 U	< 0.0186 U
Naphthalene	0.6582	24.1	0.0460 HJ	0.739 H	0.106 HJ
Toluene	1.1072	818	0.0264 HJ	0.0376 HJ	0.674
Xylene, total	3.96	260	< 0.0334 U	0.161 J	< 0.0362 U

Notes:

All values in mg/kg unless otherwise noted

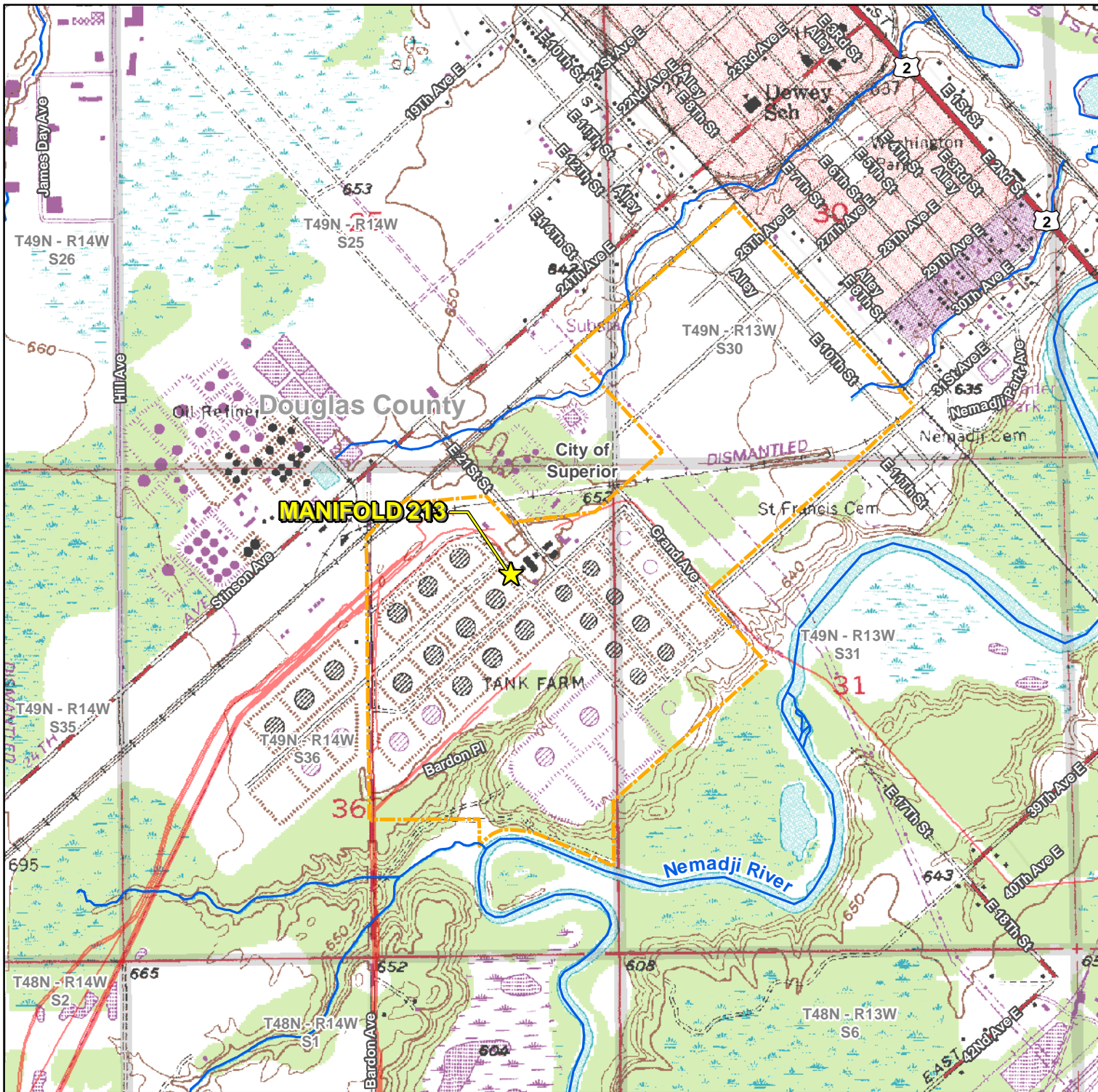
Data Footnotes and Qualifiers





Barr Standard Footnotes and Qualifiers

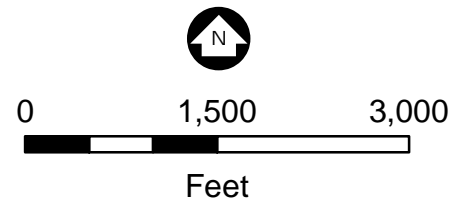
H	Recommended sample preservation, extraction or analysis holding time was exceeded.
J	Estimated detected value. Either certain QC criteria were not met or the concentration is between the laboratory's detection and quantitation limits.
U	The analyte was analyzed for, but was not detected.

Wisconsin Groundwater RCLs, DF=2

(1)	Representing the criteria for combined Trimethylbenzenes.
-----	---



-  Site Location
-  Enbridge Pipelines
-  Terminal Property Boundary
-  Watercourses

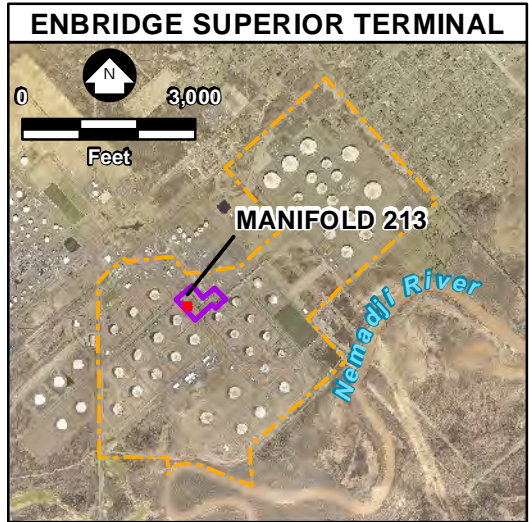


1 Inch = 1,500 Feet

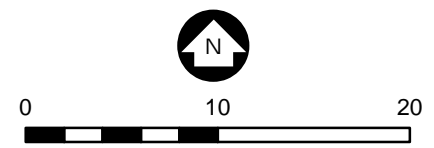
Figure 1

SITE LOCATION
MANIFOLD 213 EXCAVATION
SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin





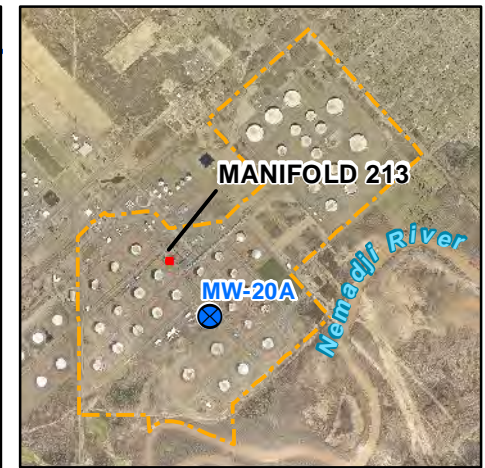
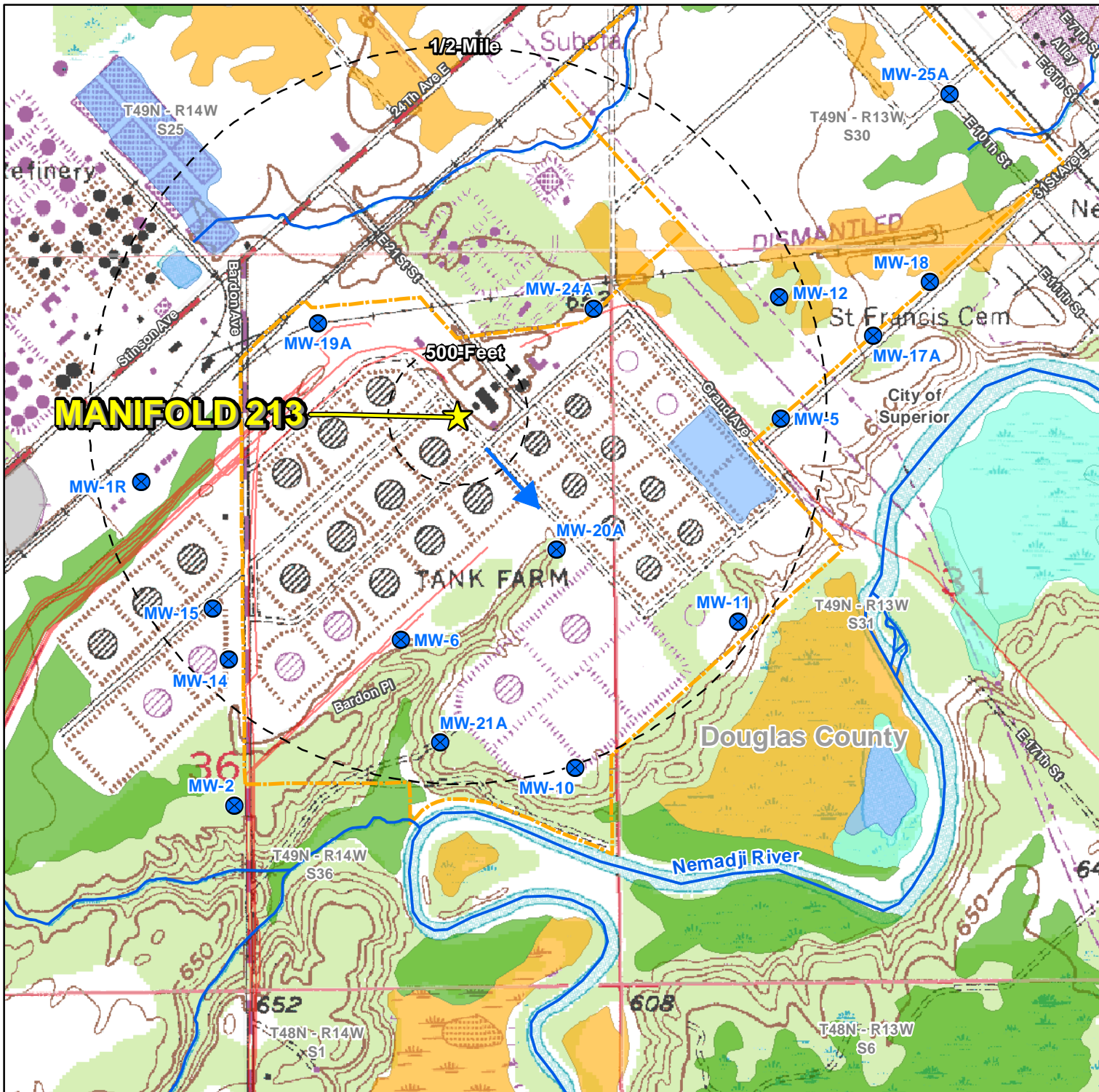
- Sample Locations
- ▨ Excavation Extent
- ▭ Facility-Wide BRRTS# 0216558988 - Manifold Corridor
- Pipeline Infrastructure
- - - Terminal Property Boundary



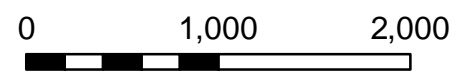
1 Inch = 10 Feet
 Nearmap Imagery Circa May, 2023

Figure 2
SITE LAYOUT
MANIFOLD 213 EXCAVATION
SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin





- Site Location
 - Enbridge Monitoring Well
 - Groundwater Flow Direction
 - 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 = 1,000 Feet
 Figure 3

**RECEPTOR SURVEY
 MANIFOLD 213 EXCAVATION
 SUPERIOR TERMINAL**
 Enbridge Energy, L.P.
 Superior, Wisconsin



Attachment A
WDNR Site Notification

From: Nick Larabel <nick.larabel@enbridge.com>
Sent: Friday, July 14, 2023 1:11 PM
To: Sager, John E - DNR
Subject: FW: WDNR Notification: Manifold 213 (BRRTS site 02-16-558988)

CAUTION: This email originated from outside of your organization.

Hi John,

Recently, excavation soil/water with an apparent petroleum impacts were identified during a Manifold 213 infrastructure project within the terminal (see below). The site was inspected and no active release was identified. When reviewing the existing files, the site falls within the previously identified and closed WDNR BRRTS site 02-16-558988 that is part of the Facility-wide site (BRRTS 01616560657). All soil and water with evidence of potential impacts that is removed from the excavation will be managed at an offsite facility.

I'm having our consultant, Barr assist with field work and they will collect the required field screening and analytical from the final excavation extents. Upon project completion, Barr will draft a short memo documenting the assessment and Enbridge's response actions. This memo will be provided to the WDNR for review.

Please let me know if you have any questions.



Thanks,

Nicholas B. Larabel, PG, CPG

Sr. Environment Advisor, Environment Remediation

ENBRIDGE

TEL: 269-330-3872

455 Leggitt Road, Marshall, MI 49068

enbridge.com

Safety. Integrity. Respect. Inclusion

Attachment B

Site Investigation Field Sampling and Screening Log

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Superior Manifold 213

Equipment used: Photo -ionization detector with 10.6 eV lamp

Background Headspace: 0.0 ppm

Date: 7/14/2023

Sampler: JSP

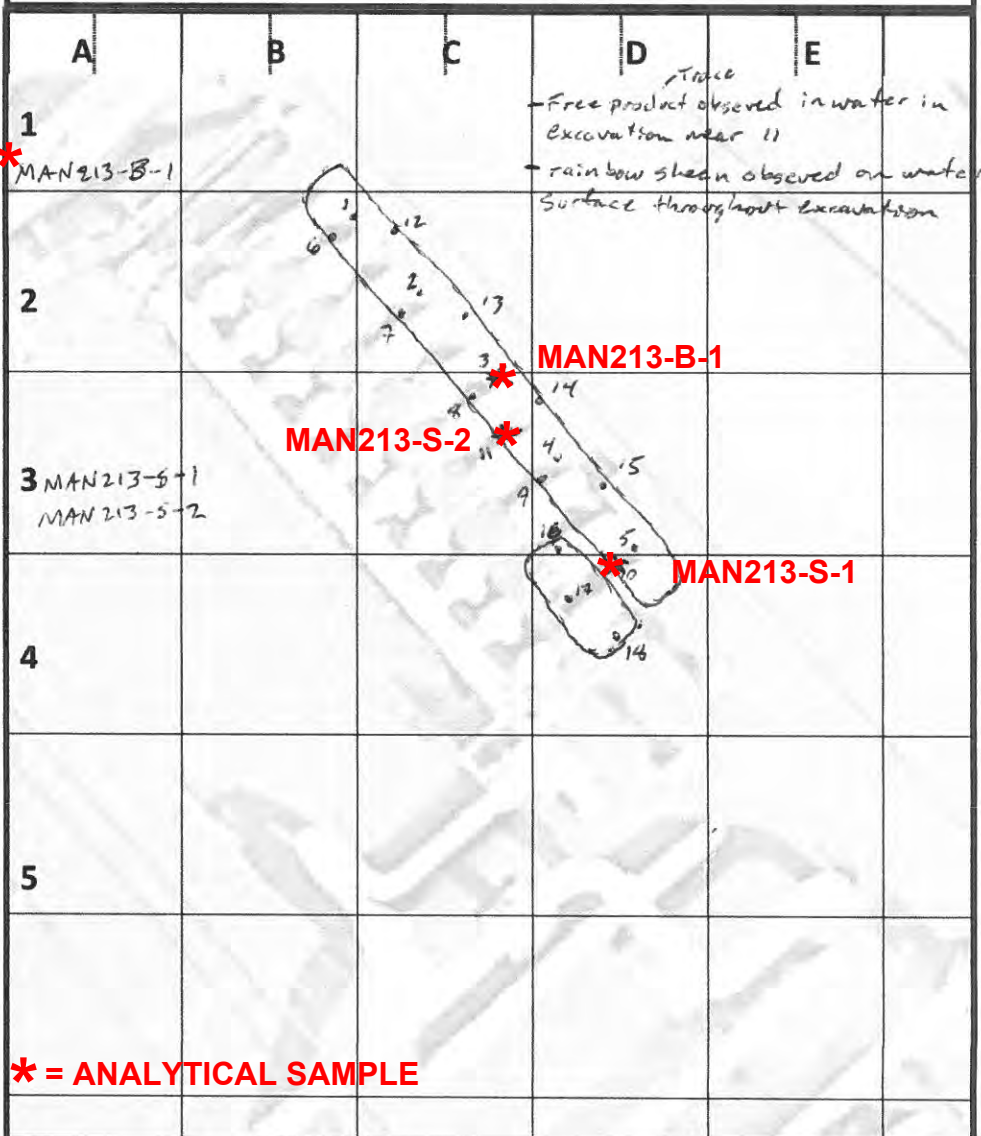
Calibration Time: 07:30

Sample Nomenclature (Location - sample type - #): MAN213 -

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

Sample ID	Depth (FT)	Date / Time (military)	Soil Type (USCS)	Color/ Discolor	Odor/ Sheen	Headspace Reading (ppm)
Example: A3-NE	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
B 1	3	04:55	SP	reddish brown	N/N	1.8
B 2	3	↓	↓	↓	N/N	2.1
B 3	3	↓	↓	↓	fast Petro	12.8 *
B 4	3	↓	↓	↓	N/N	3.3
B 5	3	08:54	↓	↓	N/N	1.0
S 6	2.5	09:02	SP	↓	N/N	3.0
S 7	1.5	↓	SP	↓	N/N	1.5
S 8	1.5	↓	CH	↓	N/N	3.4
S 9	1.5	↓	SP	↓	N/N	10.6
S 10	1.5	09:06	CH	↓	mod Petro / N	127.1 *
S 11	2.5	09:08	SP	red brown / brown	mod Petro / free Petro / present	360.4 *
S 12	1	09:23	SP	reddish brown	N/N	1.3
S 13	1	↓	↓	↓	N/N	1.5
S 14	1	↓	↓	↓	N/N	1.1
S 15	1	09:28	↓	↓	N/N	1.1
S 16	2	09:43	SP	reddish brown	N/N	1.0
B 17	3	09:44	SP	↓	N/N	1.8
S 18	2	09:45	SP	↓	N/N	1.6

SITE SKETCH: north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features... **1 inch/grid = 20 FEET**



Attachment C

Laboratory Report for Excavation Soil Samples



August 23, 2023

Jim Taraldsen
Barr Engineering Company
325 S Lake Ave
Duluth, MN 55802

RE: Project: 49161092.12 003 003 Manifold 2-Revised Report
Pace Project No.: 10661526

Dear Jim Taraldsen:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

This report was revised on August 23, 2023, to exclude results for 2-methylnaphthalene, m&p-xylene, and o-xylene by method 8260D on Pace sample 10665126003.

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

Sincerely,

Martha Hansen
martha.hansen@pacelabs.com
(612)607-6451
Project Manager

Enclosures

cc: Barr DM, Barr Engineering
Accounts Payable, Barr Engineering



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



CERTIFICATIONS

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW

Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

GMP+ Certification #: GMP050884

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification (A2LA) #: R-036

North Dakota Certification (MN) #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



SAMPLE SUMMARY

Project: 49161092.12 003 003 Manifold 2-Revised Report
Pace Project No.: 10661526

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10661526001	MAN213-B-1_3-3	Solid	07/14/23 10:11	07/14/23 18:55
10661526002	MAN213-S-1_1.5-1.5	Solid	07/14/23 10:20	07/14/23 18:55
10661526003	MAN213-S-2_2.5-2.5	Solid	07/14/23 10:28	07/14/23 18:55

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



SAMPLE ANALYTE COUNT

Project: 49161092.12 003 003 Manifold 2-Revised Report
Pace Project No.: 10661526

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10661526001	MAN213-B-1_3-3	ASTM D2974	IMB	1	PASI-M
		EPA 8260D	SB2	11	PASI-M
10661526002	MAN213-S-1_1.5-1.5	ASTM D2974	IMB	1	PASI-M
		EPA 8260D	SB2	11	PASI-M
10661526003	MAN213-S-2_2.5-2.5	ASTM D2974	IMB	1	PASI-M
		EPA 8260D	SB2	11	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



PROJECT NARRATIVE

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

Date: August 23, 2023

Case Narrative

Volatile Organics Analysis

8260D VOA

Batch 895488

Recovery for 2-methylnaphthalene in the continuing calibration verification on 7/21/23 was outside of laboratory control limits at 146.62% recovery (limits 80-120%). Analyte was not detected in the samples. Reported values may be biased high. As this analyte was not requested or reported, the batch qualifier describes conditions of the batch quality control data only.

Recovery for 2-methylnaphthalene in the continuing calibration verification on 7/28/23 was outside of laboratory control limits at 79.59% recovery (limits 80-120%). The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard. Reported values may be biased low. As this analyte was not requested or reported, the batch qualifier describes conditions of the batch quality control data only.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



ANALYTICAL RESULTS

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

Sample: **MAN213-B-1_3-3** Lab ID: **10661526001** Collected: 07/14/23 10:11 Received: 07/14/23 18:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	19.8	%	0.10	0.10	1		07/27/23 09:41		N2
8260D MSV UST									
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B									
Pace Analytical Services - Minneapolis									
Benzene	<7.9	ug/kg	23.5	7.9	1	07/21/23 09:48	07/24/23 19:00	71-43-2	
Ethylbenzene	<19.8	ug/kg	58.8	19.8	1	07/21/23 09:48	07/24/23 19:00	100-41-4	
Methyl-tert-butyl ether	<17.2	ug/kg	58.8	17.2	1	07/21/23 09:48	07/24/23 19:00	1634-04-4	
Naphthalene	46.0J	ug/kg	235	16.7	1	07/21/23 09:48	08/01/23 20:38	91-20-3	H5
Toluene	26.4J	ug/kg	58.8	13.7	1	07/21/23 09:48	08/01/23 20:38	108-88-3	H1
1,2,4-Trimethylbenzene	<17.1	ug/kg	58.8	17.1	1	07/21/23 09:48	07/24/23 19:00	95-63-6	
1,3,5-Trimethylbenzene	<16.5	ug/kg	58.8	16.5	1	07/21/23 09:48	07/24/23 19:00	108-67-8	
Xylene (Total)	<33.4	ug/kg	177	33.4	1	07/21/23 09:48	07/24/23 19:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	75-125		1	07/21/23 09:48	07/24/23 19:00	460-00-4	
Toluene-d8 (S)	103	%	75-125		1	07/21/23 09:48	07/24/23 19:00	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%	75-125		1	07/21/23 09:48	07/24/23 19:00	2199-69-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



ANALYTICAL RESULTS

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

Sample: **MAN213-S-1_1.5-1.5** Lab ID: **10661526002** Collected: 07/14/23 10:20 Received: 07/14/23 18:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	19.7	%	0.10	0.10	1		07/27/23 09:45		N2
8260D MSV UST									
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B									
Pace Analytical Services - Minneapolis									
Benzene	<8.6	ug/kg	25.7	8.6	1	07/21/23 09:48	07/24/23 19:16	71-43-2	
Ethylbenzene	<21.6	ug/kg	64.2	21.6	1	07/21/23 09:48	07/24/23 19:16	100-41-4	
Methyl-tert-butyl ether	<18.7	ug/kg	64.2	18.7	1	07/21/23 09:48	07/24/23 19:16	1634-04-4	
Naphthalene	739	ug/kg	257	18.2	1	07/21/23 09:48	08/01/23 20:22	91-20-3	H5
Toluene	37.6J	ug/kg	64.2	14.9	1	07/21/23 09:48	08/01/23 20:22	108-88-3	H1
1,2,4-Trimethylbenzene	127	ug/kg	64.2	18.6	1	07/21/23 09:48	07/24/23 19:16	95-63-6	
1,3,5-Trimethylbenzene	32.4J	ug/kg	64.2	18.0	1	07/21/23 09:48	07/24/23 19:16	108-67-8	
Xylene (Total)	161J	ug/kg	193	36.5	1	07/21/23 09:48	07/24/23 19:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	110	%	75-125		1	07/21/23 09:48	07/24/23 19:16	460-00-4	
Toluene-d8 (S)	111	%	75-125		1	07/21/23 09:48	07/24/23 19:16	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	106	%	75-125		1	07/21/23 09:48	07/24/23 19:16	2199-69-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



ANALYTICAL RESULTS

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

Sample: **MAN213-S-2_2.5-2.5** Lab ID: **10661526003** Collected: 07/14/23 10:28 Received: 07/14/23 18:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974									
Analytical Method: ASTM D2974									
Pace Analytical Services - Minneapolis									
Percent Moisture	20.8	%	0.10	0.10	1		07/27/23 09:50		N2
8260D MSV UST									
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B									
Pace Analytical Services - Minneapolis									
Benzene	<8.6	ug/kg	25.5	8.6	1	07/21/23 09:48	07/24/23 19:31	71-43-2	
Ethylbenzene	<21.4	ug/kg	63.8	21.4	1	07/21/23 09:48	07/24/23 19:31	100-41-4	
Methyl-tert-butyl ether	<18.6	ug/kg	63.8	18.6	1	07/21/23 09:48	07/24/23 19:31	1634-04-4	
Naphthalene	106J	ug/kg	255	18.1	1	07/21/23 09:48	08/01/23 20:05	91-20-3	H5
Toluene	674	ug/kg	63.8	14.8	1	07/21/23 09:48	07/24/23 19:31	108-88-3	
1,2,4-Trimethylbenzene	75.1	ug/kg	63.8	18.5	1	07/21/23 09:48	07/24/23 19:31	95-63-6	
1,3,5-Trimethylbenzene	<17.9	ug/kg	63.8	17.9	1	07/21/23 09:48	07/24/23 19:31	108-67-8	
Xylene (Total)	<36.2	ug/kg	191	36.2	1	07/21/23 09:48	07/24/23 19:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	75-125		1	07/21/23 09:48	07/24/23 19:31	460-00-4	
Toluene-d8 (S)	108	%	75-125		1	07/21/23 09:48	07/24/23 19:31	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	99	%	75-125		1	07/21/23 09:48	07/24/23 19:31	2199-69-1	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

QC Batch:	896409	Analysis Method:	ASTM D2974
QC Batch Method:	ASTM D2974	Analysis Description:	Dry Weight / %M by ASTM D2974
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10661526001, 10661526002, 10661526003

SAMPLE DUPLICATE: 4722525

Parameter	Units	10661526001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.8	19.0	4	30	N2

SAMPLE DUPLICATE: 4722526

Parameter	Units	10662361009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.3	19.1	1	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

QC Batch: 895180 Analysis Method: EPA 8260D
 QC Batch Method: EPA 5035/5030B Analysis Description: 8260D MSV UST
 Laboratory: Pace Analytical Services - Minneapolis
 Associated Lab Samples: 10661526001, 10661526002, 10661526003

METHOD BLANK: 4716447 Matrix: Solid
 Associated Lab Samples: 10661526001, 10661526002, 10661526003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	<14.5	50.0	07/21/23 12:21	
1,3,5-Trimethylbenzene	ug/kg	<14.0	50.0	07/21/23 12:21	
Benzene	ug/kg	<6.7	20.0	07/21/23 12:21	
Ethylbenzene	ug/kg	<16.8	50.0	07/21/23 12:21	
Methyl-tert-butyl ether	ug/kg	<14.6	50.0	07/21/23 12:21	
Naphthalene	ug/kg	<14.2	200	07/21/23 12:21	
Toluene	ug/kg	<11.6	50.0	07/21/23 12:21	
Xylene (Total)	ug/kg	<28.4	150	07/21/23 12:21	
1,2-Dichlorobenzene-d4 (S)	%	98	75-125	07/21/23 12:21	
4-Bromofluorobenzene (S)	%	112	75-125	07/21/23 12:21	
Toluene-d8 (S)	%	106	75-125	07/21/23 12:21	

LABORATORY CONTROL SAMPLE: 4716448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1000	939	94	75-134	
1,3,5-Trimethylbenzene	ug/kg	1000	946	95	75-132	
Benzene	ug/kg	1000	1110	111	72-125	
Ethylbenzene	ug/kg	1000	985	98	75-130	
Methyl-tert-butyl ether	ug/kg	1000	1070	107	70-125	
Naphthalene	ug/kg	1000	993	99	71-141	
Toluene	ug/kg	1000	1150	115	75-125	
Xylene (Total)	ug/kg	3000	3030	101	75-126	
1,2-Dichlorobenzene-d4 (S)	%			102	75-125	
4-Bromofluorobenzene (S)	%			104	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4716450 4716451

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10661526003 Result	Spike Conc.	Spike Conc.	MS Result						
1,2,4-Trimethylbenzene	ug/kg	75.1	1280	1280	1110	1100	81	80	61-135	1	30
1,3,5-Trimethylbenzene	ug/kg	<17.9	1280	1280	1090	1100	84	85	65-133	1	30
Benzene	ug/kg	<8.6	1280	1280	1320	1240	103	98	66-125	6	30
Ethylbenzene	ug/kg	<21.4	1280	1280	1140	1110	88	85	70-130	3	30
Methyl-tert-butyl ether	ug/kg	<18.6	1280	1280	1320	1230	104	96	67-125	7	30
Naphthalene	ug/kg	106J	1280	1280	1060	1150	75	82	30-150	9	30 H5

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

Parameter	Units	4716450		4716451		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10661526003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Toluene	ug/kg	674	1280	1280	1950	1880	100	94	69-125	4	30		
Xylene (Total)	ug/kg	<36.2	3830	3830	3630	3480	94	91	68-129	4	30		
1,2-Dichlorobenzene-d4 (S)	%						97	98	75-125				
4-Bromofluorobenzene (S)	%						101	100	75-125				
Toluene-d8 (S)	%						96	96	75-125				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



QUALIFIERS

Project: 49161092.12 003 003 Manifold 2-Revised Report

Pace Project No.: 10661526

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

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

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 895488

[1] On 7/21/2023 continuing calibration verification was above the method acceptance limit for 2-methylnaphthalene. Any detection for the analyte in the associated samples may have a high bias.

ANALYTE QUALIFIERS

H1 Analysis conducted outside the recognized method holding time.

H5 Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092.12 003 003 Manifold 2-Revised Report
 Pace Project No.: 10661526

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10661526001	MAN213-B-1_3-3	ASTM D2974	896409		
10661526002	MAN213-S-1_1.5-1.5	ASTM D2974	896409		
10661526003	MAN213-S-2_2.5-2.5	ASTM D2974	896409		
10661526001	MAN213-B-1_3-3	EPA 5035/5030B	895180	EPA 8260D	895488
10661526002	MAN213-S-1_1.5-1.5	EPA 5035/5030B	895180	EPA 8260D	895488
10661526003	MAN213-S-2_2.5-2.5	EPA 5035/5030B	895180	EPA 8260D	895488

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
 without the written consent of Pace Analytical Services, LLC.



Barr Engineering Co. Chain of Custody

WO#: 10661526

Sample Origination State

CO MI MN MO ND NV TX UT WI WY Other: _____



10661526

COC Number: **№ 591720**

COC 1 of 1

REPORT TO	INVOICE TO
Company: <i>Barr Engineering</i>	Company: <i>same</i>
Address: <i>325 S. Lake Ave</i>	Address: <i>same</i>
Address: <i>Duluth, MN 55802</i>	Address: <i>same</i>
Name: <i>Ryan Erickson</i>	Name: <i>same</i>
email: <i>RErickson@barr.com</i>	email: <i>same</i>
Copy to: <i>BarrDM@barr.com / jet@barr.com</i>	P.O.:
Project Name: <i>Manifold 213</i>	Barr Project No: <i>49161092.12 003 003</i>

Matrix Code:
 GW = Groundwater
 SW = Surface Water
 DW = Drinking Water
 PW = Pore Water
 WW = Waste Water
 WQ = TB, FB, EB, etc.
 W = Unspecified
 S = Soil/Solid
 SD = Sediment
 SQ = MeOH blank
 OTH = Other (Oil, etc.)

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

Location	Sample Depth			Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y/N	Total Number Of Containers	P/OCs + Naphthalene	% Solids
	Start	Stop	Unit (m./ft. or in.)							
1. MAN213-B-1	3	3	ft	07/14/2023	10:11	S	N	3	X	X
2. MAN213-S-1	1.5	1.5	ft	07/14/2023	10:20	S	N	3	X	X
3. MAN213-S-2	2.5	2.5	ft	07/14/2023	10:28	S	N	3	X	X
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Preservative Code
 Field Filtered Y/N

001
002
003

BARR USE ONLY

Sampled by: *JSP*

Barr Proj. Manager: *REE*

Barr DQ Manager: *JET*

Lab Name: *Pace*

Lab Location: *Duluth*

Relinquished by: *[Signature]* On Ice? N Date: *07/14/23* Time: *12:21*

Relinquished by: *[Signature]* On Ice? N Date: *7/14/23* Time: *12:23*

Samples Shipped VIA: Ground Courier Air Carrier

Sampler Other: _____

Lab WO: _____ Temperature on Receipt (°C): *3.8* Custody Seal Intact? Y N None

Received by: *[Signature]* Date: *7/14* Time: *12:21*

Received by: *Mr. Pace* Date: *7/14/23* Time: *18:55:16*

Air Bill Number: _____

Requested Due Date: _____

Standard Turn Around Time

Rush _____ (mm/dd/yyyy)

Effective Date: 4/14/2023

Sample Condition Upon Receipt
 Client Name: Bar engineering

Project #: **WO#: 10661526**
 PM: MKH Due Date: 07/31/23
 CLIENT: BARR

Courier: FedEx UPS USPS Client
 Pace Speedee Commercial

Tracking Number: _____ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No
 Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: T1 (0461) T2 (0436) T3 (0459) T4 (0402) T5 (0178)
 T6 (0235) T7 (0042) T8 (0775) T9(0727) 01339252/1710
 Biological Tissue Frozen? Yes No N/A
 Temp Blank? Yes No
 Type of Ice: Wet Blue Dry None
 Melted

Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? Yes No N/A
 Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: 1.6 °C
 Average Corrected Temp (no temp blank only): _____ °C
 Correction Factor: True Cooler Temp Corrected w/temp blank: 1.6 °C
 See Exceptions ENV-FRM-MIN4-0142 1 Container

USDA Regulated Soil: (N/A, water sample/other: _____) Date/Initials of Person Examining Contents: 7/14/23
 Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): <input type="checkbox"/> Duluth <input checked="" type="checkbox"/> Minneapolis <input type="checkbox"/> Virginia	COMMENTS
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other _____
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Sample Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input type="checkbox"/> Water <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (*If adding preservative to a container, it must be added to associated field and equipment blanks—verify with PM first.)	pH Paper Lot # Residual Chlorine <input type="checkbox"/> 0-6 Roll <input type="checkbox"/> 0-6 Strip <input type="checkbox"/> 0-14 Strip
Headspace in Methyl Mercury Container? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
3 Trip Blanks Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____
 Project Manager Review: _____ Date: 7/17/23

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).
 Labeled By: NA Line: 2 Page 15 of 15

Attachment D
Material Management Documentation



Cassidy Potter
Sales Representative
1100 West Gary Street
Duluth, MN 55808

Office: 218.626.3867
Mobile: 218.395.0315
Fax: 218.626.1009
CPotter@VoncoUSA.com

July 24, 2023

Enbridge Energy
Nick Larabel
Po Box 1411
Houston, TX 77251

RE: Profile 23-049-I/ hydrocarbon impacted soil

Nick,

Please be advised that the above described waste material is acceptable for 500/yards for 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 4\14\2025.

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: (218)-395-0315.

We look forward to working with you,

Vonco V Duluth, LLC





Vonco V Duluth LLC
1100 West Gary Street
Duluth, MN 55808
Permit: SW 536

<i>Enbridge Energy</i>					
Date	Ticket	Profile/Job	Truck	Material	Tons
08/02/2023	363592	23-049-I Manifold 213 Spill Superior	G22 4AXE	Contaminated Soil - Tons	8.54
08/02/2023	363599	23-049-I Manifold 213 Spill Superior	T18529Z 6AXE	Contaminated Soil - Tons	18.58
08/02/2023	363600	23-049-I Manifold 213 Spill Superior	T17192Z 5AXE	Contaminated Soil - Tons	13.78
08/02/2023	363609	23-049-I Manifold 213 Spill Superior	G22 4AXE	Contaminated Soil - Tons	21.33
08/02/2023	363617	23-049-I Manifold 213 Spill Superior	T18529Z 6AXE	Contaminated Soil - Tons	18.83
08/30/2023	364778	23-049-I Manifold 213 Spill Superior	R11847Z 5AXE	Contaminated Soil - Tons	17.55
08/30/2023	364779	23-049-I Manifold 213 Spill Superior	6271PRA	Contaminated Soil - Tons	18.31
09/07/2023	365034	23-049-I Manifold 213 Spill Superior	T17192Z 5AXE	Contaminated Soil - Tons	20.84
				<i>Total Tons</i>	<i>137.76</i>
				<i>Total Loads</i>	<i>8</i>



July 21, 2023

Jim Taraldsen
Barr Engineering Company
325 S Lake Ave
Duluth, MN 55802

RE: Project: 49161092.12 003 003 Manifold
Pace Project No.: 10661524

Dear Jim Taraldsen:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - Minneapolis

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

Sincerely,

Martha Hansen
martha.hansen@pacelabs.com
(612)607-6451
Project Manager

Enclosures

cc: Barr DM, Barr Engineering
Accounts Payable, Barr Engineering



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



CERTIFICATIONS

Project: 49161092.12 003 003 Manifold

Pace Project No.: 10661524

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

GMP+ Certification #: GMP050884

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification (A2LA) #: R-036

North Dakota Certification (MN) #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



SAMPLE SUMMARY

Project: 49161092.12 003 003 Manifold
Pace Project No.: 10661524

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10661524001	MAN213-Stockpile-1	Solid	07/14/23 11:00	07/14/23 18:55

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



SAMPLE ANALYTE COUNT

Project: 49161092.12 003 003 Manifold
Pace Project No.: 10661524

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10661524001	MAN213-Stockpile-1	WI MOD DRO	EB3	2	PASI-M
		EPA 8260D	SB2	7	PASI-M
		ASTM D2974-87	MJV	1	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



ANALYTICAL RESULTS

Project: 49161092.12 003 003 Manifold

Pace Project No.: 10661524

Sample: **MAN213-Stockpile-1** Lab ID: **10661524001** Collected: 07/14/23 11:00 Received: 07/14/23 18:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Pace Analytical Services - Minneapolis									
WDRO C10-C28	45.7	mg/kg	10.3	3.9	1	07/17/23 09:32	07/18/23 21:40		T6
Surrogates									
n-Triacontane (S)	63	%	50-150		1	07/17/23 09:32	07/18/23 21:40		
8260D MSV UST									
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B									
Pace Analytical Services - Minneapolis									
Benzene	<0.0074	mg/kg	0.025	0.0074	1	07/18/23 11:08	07/20/23 00:21	71-43-2	
Ethylbenzene	<0.011	mg/kg	0.061	0.011	1	07/18/23 11:08	07/20/23 00:21	100-41-4	
Toluene	<0.023	mg/kg	0.061	0.023	1	07/18/23 11:08	07/20/23 00:21	108-88-3	
Xylene (Total)	<0.023	mg/kg	0.18	0.023	1	07/18/23 11:08	07/20/23 00:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	75-125		1	07/18/23 11:08	07/20/23 00:21	460-00-4	
Toluene-d8 (S)	110	%	75-125		1	07/18/23 11:08	07/20/23 00:21	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	101	%	75-125		1	07/18/23 11:08	07/20/23 00:21	2199-69-1	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	20.4	%	0.10	0.10	1		07/18/23 15:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: 49161092.12 003 003 Manifold

Pace Project No.: 10661524

QC Batch: 894281

Analysis Method: EPA 8260D

QC Batch Method: EPA 5035/5030B

Analysis Description: 8260D MSV UST

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10661524001

METHOD BLANK: 4711889

Matrix: Solid

Associated Lab Samples: 10661524001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	mg/kg	<0.0061	0.020	07/19/23 18:47	
Ethylbenzene	mg/kg	<0.0086	0.050	07/19/23 18:47	
Toluene	mg/kg	<0.019	0.050	07/19/23 18:47	
Xylene (Total)	mg/kg	<0.019	0.15	07/19/23 18:47	
1,2-Dichlorobenzene-d4 (S)	%	100	75-125	07/19/23 18:47	
4-Bromofluorobenzene (S)	%	100	75-125	07/19/23 18:47	
Toluene-d8 (S)	%	110	75-125	07/19/23 18:47	

LABORATORY CONTROL SAMPLE: 4711890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	mg/kg	1	1.1	112	72-125	
Ethylbenzene	mg/kg	1	1.0	101	75-130	
Toluene	mg/kg	1	1.2	115	75-125	
Xylene (Total)	mg/kg	3	3.1	104	75-126	
1,2-Dichlorobenzene-d4 (S)	%			102	75-125	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4711903 4711904

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10661524001 Result	Spike Conc.	Spike Conc.	Result						
Benzene	mg/kg	<0.0074	1.2	1.2	1.2	101	100	66-125	1	30	
Ethylbenzene	mg/kg	<0.011	1.2	1.2	1.1	86	88	70-130	2	30	
Toluene	mg/kg	<0.023	1.2	1.2	1.3	103	106	69-125	3	30	
Xylene (Total)	mg/kg	<0.023	3.6	3.6	3.2	88	89	68-129	1	30	
1,2-Dichlorobenzene-d4 (S)	%					103	103	75-125			
4-Bromofluorobenzene (S)	%					100	98	75-125			
Toluene-d8 (S)	%					98	100	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: 49161092.12 003 003 Manifold

Pace Project No.: 10661524

QC Batch: 893888

Analysis Method: WI MOD DRO

QC Batch Method: WI MOD DRO

Analysis Description: WIDRO GCS

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10661524001

METHOD BLANK: 4710534

Matrix: Solid

Associated Lab Samples: 10661524001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
WDRO C10-C28	mg/kg	<3.7	10.0	07/18/23 20:02	
n-Triacontane (S)	%.	92	50-150	07/18/23 20:02	

LABORATORY CONTROL SAMPLE & LCSD: 4710535

4710536

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
WDRO C10-C28	mg/kg	80	60.0	68.0	75	85	70-120	13	20	
n-Triacontane (S)	%.				78	85	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: 49161092.12 003 003 Manifold

Pace Project No.: 10661524

QC Batch: 450009

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 10661524001

SAMPLE DUPLICATE: 2585217

Parameter	Units	40265240003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.5	4.4	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



QUALIFIERS

Project: 49161092.12 003 003 Manifold

Pace Project No.: 10661524

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

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

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 894498

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

T6 High boiling point hydrocarbons are present in the sample.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092.12 003 003 Manifold
Pace Project No.: 10661524

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10661524001	MAN213-Stockpile-1	WI MOD DRO	893888	WI MOD DRO	894498
10661524001	MAN213-Stockpile-1	EPA 5035/5030B	894281	EPA 8260D	895023
10661524001	MAN213-Stockpile-1	ASTM D2974-87	450009		

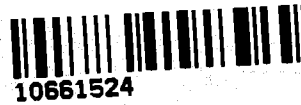
REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



Barr Engineering Co. Chain of Custody

WO#: 10661524



Sample Origination State

CO MI MN MO ND NV TX UT WI WY O

COC Number: **No 591721**

COC 1 of 1

REPORT TO	INVOICE TO
Company: <i>Barr Engineering</i>	Company:
Address: <i>325 S. Lake Ave</i>	Address:
Address: <i>Duluth, MN 55802</i>	Address: <i>SAME</i>
Name: <i>Ryan Erickson</i>	Name:
email: <i>RErickson@barr.com</i>	email:
Copy to: <i>BarrDM@barr.com / jet@barr.com</i>	P.O.:
Project Name: <i>Manifold 213</i>	Barr Project No: <i>49161092-12 003 003</i>

Matrix Code:
 GW = Groundwater
 SW = Surface Water
 DW = Drinking Water
 PW = Pore Water
 WW = Waste Water
 WQ = TB, FB, EB, etc.
 W = Unspecified
 S = Soil/Solid
 SD = Sediment
 SQ = MeOH blank
 OTH = Other (Oil, etc.)

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

Location	Sample Depth			Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y/N	Total Number of Containers	T	A	A	%	Solids	Preservative Code	Field Filtered Y/N
	Start	Stop	Unit (m./ft. or in.)												
1. <i>MAN 213-Stackpile-1</i>				<i>07/14/2023</i>	<i>11:00</i>	<i>S</i>	<i>N</i>	<i>4</i>	<i>X</i>	<i>X</i>	<i>X</i>			<i>OC1</i>	
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

BARR USE ONLY		Relinquished by: <i>[Signature]</i>	On Ice? <input checked="" type="radio"/> Y <input type="radio"/> N	Date: <i>07/14/23</i>	Time: <i>12:21</i>	Received by: <i>[Signature]</i>	Date: <i>7/14</i>	Time: <i>12:21</i>
Sampled by: <i>JSP</i>		Relinquished by: <i>[Signature]</i>	On Ice? <input checked="" type="radio"/> Y <input type="radio"/> N	Date: <i>7/14</i>	Time: <i>12:23</i>	Received by: <i>[Signature]</i>	Date: <i>7/14/23</i>	Time: <i>18:55</i>
Barr Proj. Manager: <i>REE</i>		Samples Shipped Via: <input type="checkbox"/> Ground Courier <input type="checkbox"/> Air Carrier		Air Bill Number:		Requested Due Date: <input type="checkbox"/> Standard Turn Around Time		
Barr DQ Manager: <i>JET</i>		<input checked="" type="checkbox"/> Sampler <input type="checkbox"/> Other: _____		Custody Seal Intact? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> None		<input checked="" type="checkbox"/> Rush <i>ASAP</i> (mm/dd/yyyy)		
Lab Name: <i>Pace</i>		Lab WO:	Temperature on Receipt (°C): <i>3.8</i>					
Lab Location: <i>Duluth</i>								

Effective Date: 4/14/2023

Sample Condition Upon Receipt	Client Name: <u>Bar engineering</u>	Project #:	WO#: 10661524
Courier: <input type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input checked="" type="checkbox"/> Pace <input type="checkbox"/> Speedee <input type="checkbox"/> Commercial		PM: MKH Due Date: 07/31/23 CLIENT: BARR	
Tracking Number: _____		<input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142	

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank? Yes No
 Thermometer: T1 (0461) T2 (0436) T3 (0459) T4 (0402) T5 (0178) Type of Ice: Wet Blue Dry None
 T6 (0235) T7 (0042) T8 (0775) T9 (0727) 01339252/1710 Melted

Did Samples Originate in West Virginia? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Were All Container Temps Taken? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: <u>1.6</u> °C	Average Corrected Temp (no temp blank only): _____ °C
Correction Factor: <u>True</u> Cooler Temp Corrected w/temp blank: <u>1.6</u> °C	<input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 <input type="checkbox"/> 1 Container

USDA Regulated Soil: N/A, water sample/other: _____ Date/Initials of Person Examining Contents: 7/14/23
 Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): <input type="checkbox"/> Duluth <input checked="" type="checkbox"/> Minneapolis <input type="checkbox"/> Virginia	COMMENTS
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 4. If fecal: <input type="checkbox"/> <8 hrs <input type="checkbox"/> >8 hr, <24 <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E.coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrom <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 6. <u>ASAP</u>
Sufficient Sample Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A 10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input type="checkbox"/> Water <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/Date/Time of container below: <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A 12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> NaOH <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	Positive for Residual Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 pH Paper Lot # Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in Methyl Mercury Container?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A 13.
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A 14. <input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
3 Trip Blanks Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A 15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: Lab approved 3-4 business day TAT
 Project Manager Review: [Signature] Date: 7/17/23

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

Effective Date: 8/16/2022

Sample Preservation Receipt Form

Client Name: MN IRWO

Project # 40265239

All containers needing preservation have been checked and noted below.
Lab Lot# of pH paper

Yes No N/A

Lab Std #/ID of preservation (if pH adjusted)

Initial when completed

Date/Time

Pace Lab #	Glass					Plastic					Vials					Jars				General		VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)									
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U								WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2			
001																																					2.5 / 5
002																																					2.5 / 5
003																																					2.5 / 5
004																																					2.5 / 5
005																																					2.5 / 5
006																																					2.5 / 5
007																																					2.5 / 5
008																																					2.5 / 5
009																																					2.5 / 5
010																																					2.5 / 5
011																																					2.5 / 5
012																																					2.5 / 5
013																																					2.5 / 5
014																																					2.5 / 5
015																																					2.5 / 5
016																																					2.5 / 5
017																																					2.5 / 5
018																																					2.5 / 5
019																																					2.5 / 5
020																																					2.5 / 5

7/18/23
JAS

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other N/A Headspace in VOA Vials (>6mm) Yes No N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	2oz poly unpres
						GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: MN IRWO

WO#: **40265239**

Courier: CS Logistics Fed Ex Speedee UPS Waltco
 Client Pace Other: _____



Tracking #: 3625921-1

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used SR - 118 Type of Ice: Wet Blue Dry None Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr: LS

Temp Blank Present: yes no

Biological Tissue is Frozen: yes no

Person examining contents:

Date: 7/18/23 /Initials: JB

Labeled By Initials: mt

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	4. <u>IRWO mt 7/18/23</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- DI VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Correct Type: <u>Pace Green Bay</u> , Pace IR, Non-Pace		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>S</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logit