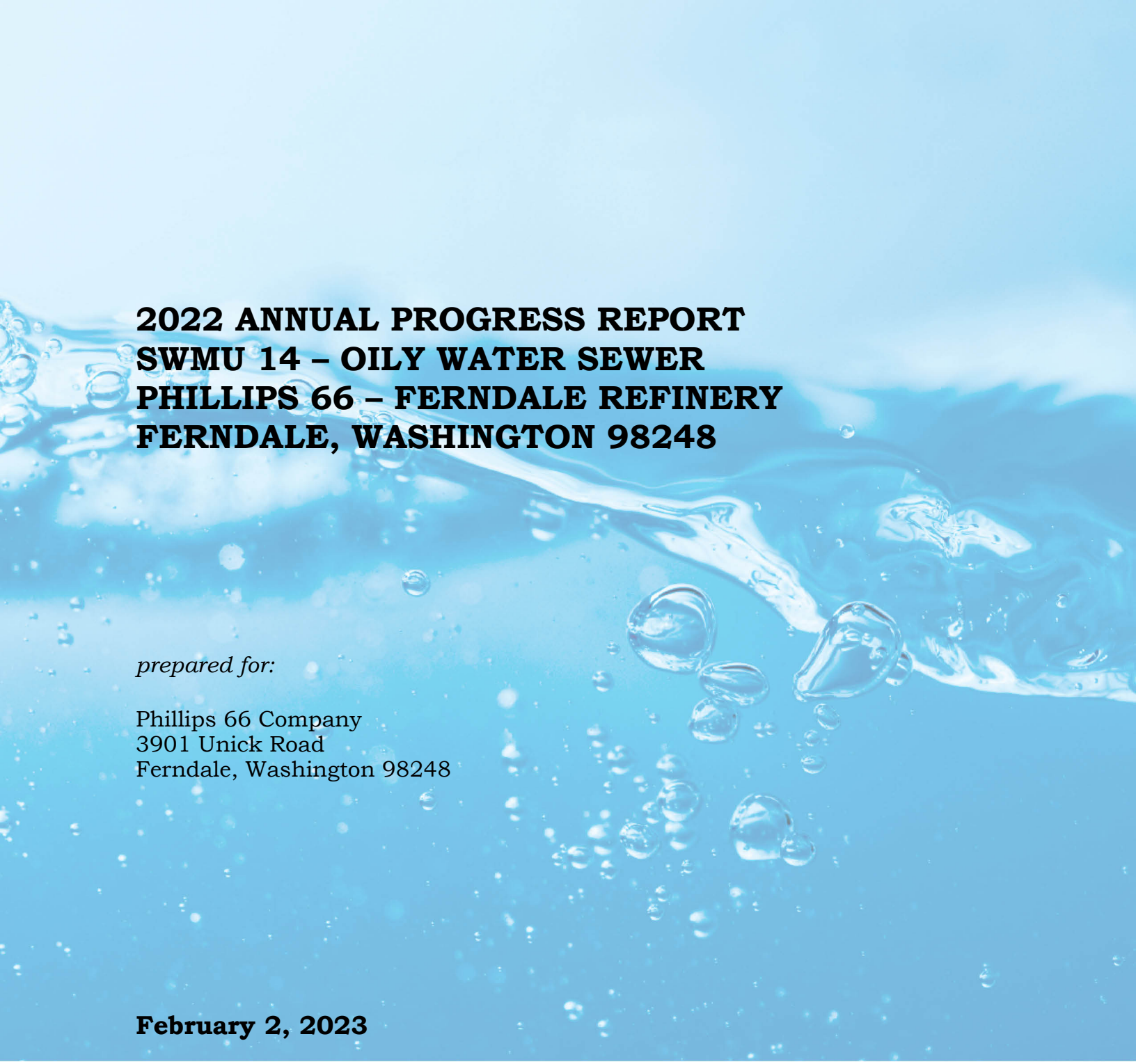


2022 ANNUAL PROGRESS REPORT
SWMU 14 – OILY WATER SEWER
PHILLIPS 66 – FERNDALE REFINERY
FERNDALE, WASHINGTON 98248

prepared for:

Phillips 66 Company
3901 Unick Road
Ferndale, Washington 98248

February 2, 2023

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SWMU 14 – OILY WATER SEWER
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ACRONYMS AND ABBREVIATIONS

AO	-	Agreed Order
AOC	-	Area of Concern
bgs	-	below ground surface
BTEX	-	Benzene, Toluene, Ethylbenzene, and Xylenes
COC	-	Contaminant/Chemical of Concern
CUL	-	Clean-up levels
Ecology	-	Washington State Department of Ecology
EPH	-	Extractable Petroleum Hydrocarbons
FOC	-	Fraction of Organic Carbon
GW	-	Groundwater
IRP	-	Investigation and Response Plan
LEL	-	Lower Explosive Limits
MTCA	-	Model Toxics Control Act
NASSCO	-	National Association of Sewer Service Companies
OWS	-	Oily Water Sewer
PAH	-	Polycyclic Aromatic Hydrocarbons
PID	-	Photoionization Detector
PCS	-	Petroleum Contaminated Soil
QA/QC	-	Quality Assurance/Quality Control
RCW	-	Revised Code of Washington
SAP	-	Sampling and Analysis Plan
TPH	-	Total Petroleum Hydrocarbons
VOC	-	Volatile Organic Compounds
VPH	-	Volatile Petroleum Hydrocarbons
WAC	-	Washington State Administrative Code
WWTP	-	Waste Water Treatment Plant

1.0 INTRODUCTION

This annual progress report has been prepared in accordance with the requirements in Section VII.C. of Agreed Order No DE 16297 (AO). The AO was entered into by the Washington State Department of Ecology (Ecology) and Phillips 66 Ferndale Refinery. The objective of the AO is to investigate and conduct remedial actions to the Phillips 66 Ferndale Refinery's oily water sewer (OWS) system, also referred to as Solid Waste Management Unit 14 (SWMU-14).

Per the AO, an Investigation and Response Plan (IRP) was prepared to provide a framework to investigate the integrity of the OWS and respond to any potential releases of contamination to soil and/or groundwater (GW). The IRP described four inspection phases of the major OWS trunk lines to be completed by December 31, 2029. Inspections required by Phase I were completed in 2021. The Phase 1 inspections completed in 2021 identified six locations rated as ER=4. As described in the 2021 annual report, soil samples were collected from each location identified as ER=4. Two soil samples contained petroleum concentrations which exceeded the target cleanup levels (samples *B-4-21* and *B-5-21*). The samples were located near manhole MH 3-4-1. This area was identified as Area of Concern-1 (AOC-1). Per the IRP requirements, further site characterization and remediation at the AOC-1 site was completed in 2022.

This annual progress report has been prepared in accordance with the requirements in the AO. This report describes the AOC-1 site characterization, remediation, and ongoing monitoring.

1.1 GENERAL SITE INFORMATION

The Phillips 66 Ferndale Refinery is located at 3901 Unick Road in Ferndale, Washington (parcel 390133197340). The refinery is in Section 32 in Township 39 North, Range 1 East. The refinery is situated on the Strait of Georgia approximately 6.03 miles west of I-5. The refinery has a median elevation of approximately 200 feet above mean sea level and the site topography generally slopes from the east/northeast to the west/southwest. A site location map is provided as Figure 1.

1.2 CONTACT INFORMATION

Contact information for the Ecology site manager, project consultant and property owner/facility operator are included below.

- Ecology Site Manager: Liem Nguyen
  - Address: 300 Desmond Drive SE, Lacey, WA 98503
  - Phone: (360) 790-4730
  - Email: lngu461@ecy.wa.gov

- Project Consultant: Whatcom Environmental Services, Inc.
  - Address: 228 E Champion St #101, Bellingham, WA 98225
  - Contact: Eric Libolt
  - Phone: (360) 752-9571
  - Email: elibolt@whatcom-es.com

- Property Owner/Facility Operator: Phillips 66
  - Address: 3901 Unick Road, Ferndale, WA 98248
  - Contact: Lester Keel
  - Phone: (360) 384-8375
  - Email: Lester.W.Keel@p66.com

2.0 OILY WATER SEWER INSPECTIONS

OWS inspections were completed in 2021 by Industrial Inspection Analysis (formerly Atlas Inspections) using CCTV equipment. All inspection videos were provided to TRC Environmental Corporation (TRC) for assessment using the National Association of Sewer Service Companies (NASSCO) rating system.

The findings of those inspections were described in the 2021 Annual Report (WES, 2021) and in a report completed by TRC Environmental Corporation titled "Phase I Oily Water Sewer Inspections and Repair Recommendations" dated February 11, 2022. That report was included in the 2021 Annual Report.

No internal camera inspections of oily water sewer components were completed in 2022. Phase 2 camera inspections are scheduled to be completed in 2023.

3.0 AOC-1 SITE CHARACTERIZATION

The Phase 1 inspections completed in 2021 identified six locations rated as ER=4. As described in the 2021 annual report, soil samples were collected from each location identified as ER=4. Two soil samples contained petroleum concentrations which exceeded the target cleanup levels (samples *B-4-21 3ft* and *B-5-21 5ft*). The samples were collected near manhole MH 3-4-1. This area was identified as AOC-1. The AOC-1 site location is shown on Figure 2.

Site characterization of the AOC-1 site was initiated in 2022. The site characterization was conducted to determine the horizontal and vertical extent of releases at AOC-1 and potential impacts to GW. As part of the site characterization, soil samples were collected, and three GW monitoring wells were installed to determine potential impacts to GW.

The subsurface conditions at the AOC-1 site were investigated in April and May 2022. The field activities were conducted in accordance with the sampling and analysis plan that was prepared for the site.

Seven soil borings were drilled at the AOC-1 site in April and May 2022 (B-1-22 through B-4-22 and MW-OWS-1 through MW-OWS-3). The borings were continuously cored to an average depth of 15 feet below grade. The locations of the soil borings are shown on Figure 3. Soil boring logs are included in Appendix A.

Groundwater monitoring wells were installed in the MW-OWS-1, MW-OWS-2, and MW-OWS-3 soil boring locations. The monitoring wells were installed to a depth of 15 feet bgs and were constructed with machine slotted, 2-inch diameter PVC pipe. The groundwater monitoring well construction diagrams are provided in Appendix B.

3.1 SOIL SAMPLE COLLECTION

Soil samples were collected from each soil boring location via EPA Method 5035A in sample containers provided by the lab. Soil samples were collected where field screening (PID organic vapor readings and sheen tests) and field observations indicated

the highest probability of hydrocarbon contamination. If no field indications of soil contamination were encountered, samples were collected from the terminus of the boring.

Soil samples were stored on ice in a cooler immediately after collection. Standard industry protocols regarding sample collection, preservation, chain-of-custody, and shipping were followed. The samples were identified by both the boring number from which they originated, the year the sample was collected, and the depth from which they were collected (i.e. *B-1-22 4ft*).

Soil samples were sent to Pace Analytical Laboratory in Minneapolis, Minnesota. Pace Analytical Laboratory is accredited by the Washington State Department of Ecology. Strict chain-of custody and QA/QC protocols were followed for each sample. The following laboratory methods were used to analyze the soil samples:

EPA Method 8260: Benzene, toluene, ethylbenzene, and total xylenes (BTEX)
EPA Method 8270 SIM: Naphthalenes and Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAH)
EPA Method 7471: Arsenic, Cadmium, Chromium VI, Chromium III, Lead, Nickel, and Mercury
EPA Method 9045: pH
NWTPH-EPH: Extractable Petroleum Hydrocarbons
NWTPH-VPH: Volatile Petroleum Hydrocarbons

It should be noted that fuel additives, methyl tert-butyl ether (MTBE), polychlorinated biphenyls (PCB), and PFAS were not analyzed per Table 7.2 of Ecology's Guidance for Remediation of Petroleum Contaminated Sites because the contaminants are not suspected to be associated with the Phase I ER=4 sewer segment.

3.1.1 Soil Sample Results

The soil sample locations are shown on Figure 3. The soil sample descriptions are provided in Table 1. The laboratory analytical results are summarized in Tables 2-6. The original laboratory analytical data reports are provided in Appendix C. All 2022 soil boring sample results met the cleanup levels specified in the IRP (MTCA Method C Direct Contact and Protection of Groundwater Cleanup Levels for all contaminants of concern).

3.1.2 Quality Assurance Review

A quality assurance review has been performed on all soil data generated during this investigation. The data set is 100% complete. The data review included an evaluation of:

- Field collection and handling
- Completeness
- Reporting limits
- Acceptability of test results for:
  - Method blanks
  - Analytical replicates
  - Laboratory control samples (blank spikes)
  - Surrogate recoveries
  - Matrix spikes and matrix spike duplicates

The quality assurance review has established confidence that accepted project data are of known and appropriate quality and sufficient to support their intended use. Data qualifiers were added where appropriate. No data were rejected. A summary of the quality assurance review is provided in Appendix D.

3.2 GROUNDWATER WELL INSTALLATION

On May 2-3, 2022, three GW monitoring wells were installed (MW-OWS-1, MW-OWS-2, MW-OWS-3) at depths of 15ft. Well MW-OWS-1 was installed with a flush well monument and wells MW-OWS-2 and MW-OWS-3 were installed with above-grade well monuments. Figure 4 shows the well locations and Appendix B shows the well construction diagrams including type of well, depth, casing diameter, and screen slot size.

Disposable bailers were used to develop the wells after installation. The wells were bailed until sufficient well casing volumes were removed for turbidity to be within allowable limits or until the well went dry.

3.2.1 Groundwater Sampling

Groundwater sampling was completed by using a low-flow sampling technique, recommended by the U.S. Environmental Protection Agency. This technique minimizes the impact of the purging process on GW chemistry which provides an accurate representation of the GW condition at the time of sampling. Depth to water is measured prior to purging and sample collection. Purging is considered adequate when water chemistry parameters stabilize. All samples were stored in laboratory supplied containers and immediately placed on ice in a cooler.

Groundwater sampling was completed for three calendar quarters on June 6, 2022, August 24, 2022, November 14 & 16, 2022 and December 15, 2022. The fourth quarter of sampling is scheduled to be completed within the first three months of 2023.

Groundwater samples were sent to Pace Analytical Laboratory in Minneapolis, Minnesota. Pace Analytical Laboratory is accredited by the Washington State Department of Ecology. Strict chain-of custody and QA/QC protocols were followed for each sample. The following laboratory methods were used to analyze the GW samples:

NWTPH-Gx: Gasoline Range Total Petroleum Hydrocarbons

NWTPH-Dx: Diesel Range Total Petroleum Hydrocarbons

EPA Method 8260: Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and halogenated volatile organic compounds (VOC)

EPA Method 8270 SIM: Naphthalenes and Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAH)

EPA Method 6020: Arsenic, Cadmium, Chromium VI, Chromium III, Lead, Nickel, Mercury, and Zinc

EPA Method 7470: Mercury

3.2.2 Groundwater Sampling Results

The groundwater analytical data are summarized in Tables 7-11. The original laboratory analytical data reports are provided in Appendix E. There were no sample results that exceeded the groundwater cleanup levels specified in the IRP (MTCA Method A Cleanup Levels for all contaminants of concern).

3.2.3 Quality Assurance Review

A quality assurance review has been performed on all GW data generated during this investigation. The laboratory flagged the NWTPH-Dx analysis for samples collected on November 14 and 16, 2022 for numerous issues related to surrogate recovery (flags S0 and S5) and laboratory control sample failures (flags R1 and L2). Due to these failures, the NWTPH-Dx results for all samples collected on November 14 and 16, 2022 were rejected. The wells were resampled on December 15, 2022.

There were no other quality assurance issues. A summary of the quality assurance review for the groundwater samples is included in Appendix F.

4.0 OWS REPAIRS AND REMEDIATION

Repairs for the defects noted at AOC-1 were initiated on July 19, 2022. MH 3-4-1 was discovered to have two large offset joints located approximately 10ft west and east of the manhole and multiple cracks on the manhole surface. Repairs to MH 3-4-1 included complete removal and replacement of the manhole, adjacent oily water sewer, and offset joints.

4.1 SOIL REMEDIATION AT AOC-1

On July 20, 2022, following the removal of manhole MH 3-4-1 and the failing sewer lines, all PCS located at AOC-1 was removed using a guzzler truck and excavator and placed in a covered roll-off box for treatment and disposal, adhering to Phillips 66 waste handling procedures. Approximately 40 cubic yards of PCS were removed from the site. The extent of the soil removal action is shown on Figure 3. Soil was removed to a depth of 6-8 feet bgs where native silty clay was encountered. PCS was transported to a permitted disposal facility (Waste Management Columbia Ridge site) for disposal.

4.1.1 Confirmation Soil Sampling

The soil remaining in the floor and sidewalls of the excavation was sampled to determine if all PCS was successfully removed from the site. Clean confirmation soil samples SS-1-22 through SS-8-22 were collected from the locations shown on Figure 3. Samples SS-1-22, SS-2-22, SS-3-22, SS-5-22, SS-7-22, and SS-8-22 were collected from the sidewalls of the excavation where field screening indicated the likely presence of petroleum contamination. Samples SS-4-22 and SS-6-22 were collected from the floor of the excavation. Sampling was conducted in accordance with the IRP and the Guidance for Remediation of Petroleum Contaminated Sites (Ecology 2016).

4.1.2 Confirmation Soil Sample Results

Soil sample descriptions are provided in Table 1. Table 2 provides the MTCATPH hazard index and risk calculation results. Table 3 provides the petroleum analytical results. Table 4 provides the analytical results for metal parameters. Table 5 provides the

cPAH analytical results. Table 6 provides the chlorinated volatile organic compounds analytical results. No samples contained concentrations of contaminants of concern that exceeded the cleanup levels specified in the IRP (MTCA Method C Direct Contact). Original laboratory reports for the confirmation soil sampling are provided in Appendix G. A review of the laboratory quality assurance data was conducted and no issues were noted. A summary of the quality assurance review for the groundwater samples is included in Appendix H.

Based on the sample results, all PCS was removed from AOC-1.

4.2 GROUNDWATER REMEDIATION AT AOC-1

Based on groundwater data collected from monitoring wells MW-OWS-1, MW-OWS-2, and MW-OWS-3 during the second, third, and fourth quarter of 2022, no groundwater remediation is needed at AOC-1 as all samples meet the cleanup levels specified in the IRP. Per Ecology guidance, four quarters of sampling are required to properly characterize a potential groundwater release. Per this guidance, one more round of groundwater sampling will be conducted in the first quarter of 2023. Further decisions regarding potential remedial actions will be made following the receipt of these results.

If the 2023 samples meet the target cleanup levels, no additional groundwater samples will be collected in 2023. If the samples contain concentrations of contaminants of concern above cleanup levels, additional groundwater characterization and remediation will be conducted per the IRP.

5.0 CLEANUP STANDARDS

Per the IRP, the soil cleanup standards were set using the MTCA Method C methodology as specified in WAC 173-340-745. MTCA Method C cleanup levels are based on the reasonable maximum exposure expected to occur at the site and were developed to evaluate direct contact, leaching, and vapor pathways using equations provided in WAC 173-340.

Direct contact cleanup levels for individual compounds are listed in CLARC and shown on Tables 2-6. The MTCATPH Workbook for Calculating Cleanup Levels for a Petroleum Mixture (available at https://ecology.wa.gov/) was used to calculate the site risk (under current conditions) and to calculate the Method C direct contact TPH cleanup level for the site. The MTCATPH workbook uses pre-established chemical and toxicity data, risk-based exposure assumptions, and user-defined site-specific information to calculate the site risk under current conditions. The risk and hazard index calculated by MTCATPH are shown for each sample in Table 2. The MTCATPH output worksheets for all samples are included in Appendix I.

The soil cleanup levels used for GW protection were obtained from the CLARC tables. The values in CLARC were calculated using the fixed parameter three-phase partitioning model for the vadose (unsaturated) zone as described in WAC 173-340-747(4) and based on Equation 747-1. However, the following analytes use the MTCA Method A Soil Cleanup Levels for protection of GW because they are applicable and relevant and appropriate requirements (ARARs) and are already adjusted for leaching and natural background concentrations:

- Benzene
- Arsenic
- Chromium IV
- Naphthalenes

6.0 PHASE I AOC-1 SITE GEOLOGY

6.1 SITE GEOLOGY

The Phillips 66 Ferndale Refinery is in the northern portion of the Puget Sound Basin. The region is characterized by thick sequences of Pleistocene glacial advance outwash and melt-water deposits that settled on a basement of tectonically deformed sedimentary and ancient metamorphic bedrock. The glacial deposits have been reworked by more recent fluvial, lacustrine, and aeolian actions into the landforms present today.

The stratigraphic sequence of major geologic units at the Ferndale Refinery has been described in reports previously submitted to Washington Department of Ecology (Ecology). The geologic units mapped beneath the Ferndale Refinery were summarized in the IRP.

A geologic cross section was prepared to show the geologic units in the vicinity of AOC-1. The cross-section location is shown on Figure 4. Geologic cross section A-A' is shown on Figure 5.

The geologic units of importance at AOC-1 are described below in stratigraphically descending order and are shown in cross section A-A' (Figure 5). The cross sections show the sewer profile, geologic units, and soil sample locations. Geologic units of importance at AOC-1 include:

Unit I Fill material consisting of silty clays with varying amounts of sand and gravel, resembling Unit III-type material.

Unit II Consists of native soils and thin surficial deposits which overlie the regional stratigraphic units. The unit is divided into two lithologic subunits:

- IIA (Native soil) Silty/sandy clay, silty clay, and clayey silt; dark brown; some gravel; firm; decomposed roots locally; slightly moist to wet; locally very wet. (thickness: 5 - <1 foot)
- IIB (Surficial deposits) Clayey/silty sand and clayey silt; light gray to greenish gray; some gravel; slightly firm; slightly wet to wet. (thickness: 5 - <1 foot)

Typically, the subunits are distinguishable based on color and textural differences; however, disturbances made during refinery construction often make this distinction difficult.

Unit III Glaciomarine drift (diamicton) represents the uppermost regionally continuous stratigraphic unit. The diamicton consists of brown silty clay, clayey silt, and clayey sand with minor to moderate amounts of sand, gravel, and matrix-supported pebbles, cobbles, and boulders. Occasionally the angular to rounded clasts are striated. The unit is consistently firm to very hard, depending on moisture content. Some orange and gray mottles are seen locally, as are thin (< 1 mm) vertical fractures in the uppermost portions. The unit is predominantly dry to slightly moist (thickness: 16 - <1 foot). As discussed below, this unit is the uppermost weathered portion of Unit IV.

Unit IV The deeper unweathered drift consists of light to dark gray silty clay with traces of sand, gravel, and matrix-supported pebbles, cobbles, and boulders. Occasionally the angular to rounded clasts are striated. The upper portions are firm to slightly plastic, and generally wet. With depth, the unit shows an increase in sand and often a significant increase in moisture content and plasticity (i.e., the material becomes very plastic, sticky, and very wet). Shells and shell fragments are common, confirming a marine origin (thickness: >40 - <1 foot).

The diamicton (Units III and IV) acts as an aquitard impeding the vertical migration of residual hydrocarbons.

6.2 SITE HYDROGEOLOGY

The hydrogeology of the Ferndale Refinery site has been characterized through the installation of numerous soil borings and monitoring wells, as well as the completion of bail tests, laboratory permeability tests, and grain size distribution tests.

The Ferndale Refinery area is underlain by a regionally continuous stratigraphic unit known as glaciomarine drift, or diamicton. The diamicton unit consists of moderately sorted to unsorted diamicton with lenses and discontinuous beds of moderately to well-sorted gravel, sand, silt, and clay. Bedding is massive to poorly stratified. Color is blue-gray to olive-gray depending on oxidation state. Thickness ranges to as much as 90 meters. Permeability is low and infiltration of precipitation is very poor.

Geotechnical samples have been collected in the diamicton. The data revealed that a fining-downward sequence is evident in the stratigraphic column. The average percentage of sand decreases with depth and the average percentage of silt and clay increases with depth. The bulk density of the samples increases with depth. The average vertical hydraulic conductivity decreases with depth from 1.26x10-07 cm/s in the upper

weathered portion of the diamicton to 7.86x10-08 cm/s in the deeper portion of the unit. The average horizontal saturated hydraulic conductivity in the deeper portion of the unit is 1.70x10-06 cm/s. The fining-downward grain-size distribution, the increasing bulk density with depth, and the decreasing vertical conductivity with depth all support the conclusion that the diamicton acts as a sufficient aquitard to inhibit the downward migration of precipitation and accidentally spilled petroleum products.

The uppermost zone of saturation consists of saturated portions of native deposits and fill material located above the diamicton. The diamicton at the site is known to be firm and dry and consists of brown silty clay with minor gravel. The unit acts as an aquitard impeding the vertical migration of contaminants and occurs at approximately 6-10 feet below grade at the site.

Groundwater contained in the shallow surficial deposits is perched atop the relatively impermeable silt and clay of the diamicton (Units III and IV). The unconfined perched water is contained in the fill material, Unit IIA soil layer, and Unit IIB sand layer. Water percolates downward and becomes perched above Unit III as a result of the textural disconformity between the diamicton and the overlying surficial units. The flow direction of the perched water atop the diamicton follows the structural contours of the upper surface of the diamicton.

The perched water above the diamicton would not be classified as potable per the definition in WAC 173-340-720 (2). The perched water at the site does not serve as a current source of drinking water and is not a potential future source of drinking water because the GW is likely present in insufficient quantity to yield greater than 0.5 gallons per minute on a sustainable basis.

The regional water table occurs within the Cherry Point Silt (Unit VI) at approximately 160 feet below ground surface. The direction of flow in the Cherry Point Silt is toward the west-northwest, where flowing GW discharges to the Strait of Georgia. The Cherry Point aquifer is not believed to be used as a water supply downgradient of the Ferndale Refinery as the flow direction is to the west-northwest toward the Strait of Georgia.

Based on the Phase I site characterization findings, the release documented at AOC-1 has occurred in the surficial deposits located above the diamicton. The groundwater flow direction was towards the west during the June and August sampling

events. And towards the southwest during the November sampling event. Groundwater contour maps are provided in Appendix J.

7.0 INACCESSIBLE CONTAMINATION

There was no inaccessible contamination identified in 2022. Contaminated soil at AOC-1 was removed from the site during replacement of the sewer and manhole at that location. No contaminated groundwater was encountered.

8.0 CONCLUSIONS

Site characterization and remediation was completed at the AOC-1 location in 2022. Site characterization and remediation activities were conducted in accordance with WAC 173-340 and Ecology's Guidance for Remediation of Petroleum Contaminated Sites (Publication 10-09-057). Confirmation soil samples and groundwater samples collected at AOC-1 indicate that soil and groundwater at the site meets the target cleanup levels.

Sewer repairs were completed at the AOC-1 site. The repairs involved the replacement of sewer lines and manhole 3-4-1.

No additional sewer inspections were completed in 2022. There were no deviations from the Investigation and Response Plan in 2022.

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Whatcom Environmental Services. March 28, 2022. 2021 Annual Progress Report, SWMU 14 – Oily Water Sewer, Phillips 66 Ferndale Refinery.



Prepared for:

Phillips 66 Company

Ferndale Refinery

Prepared by:

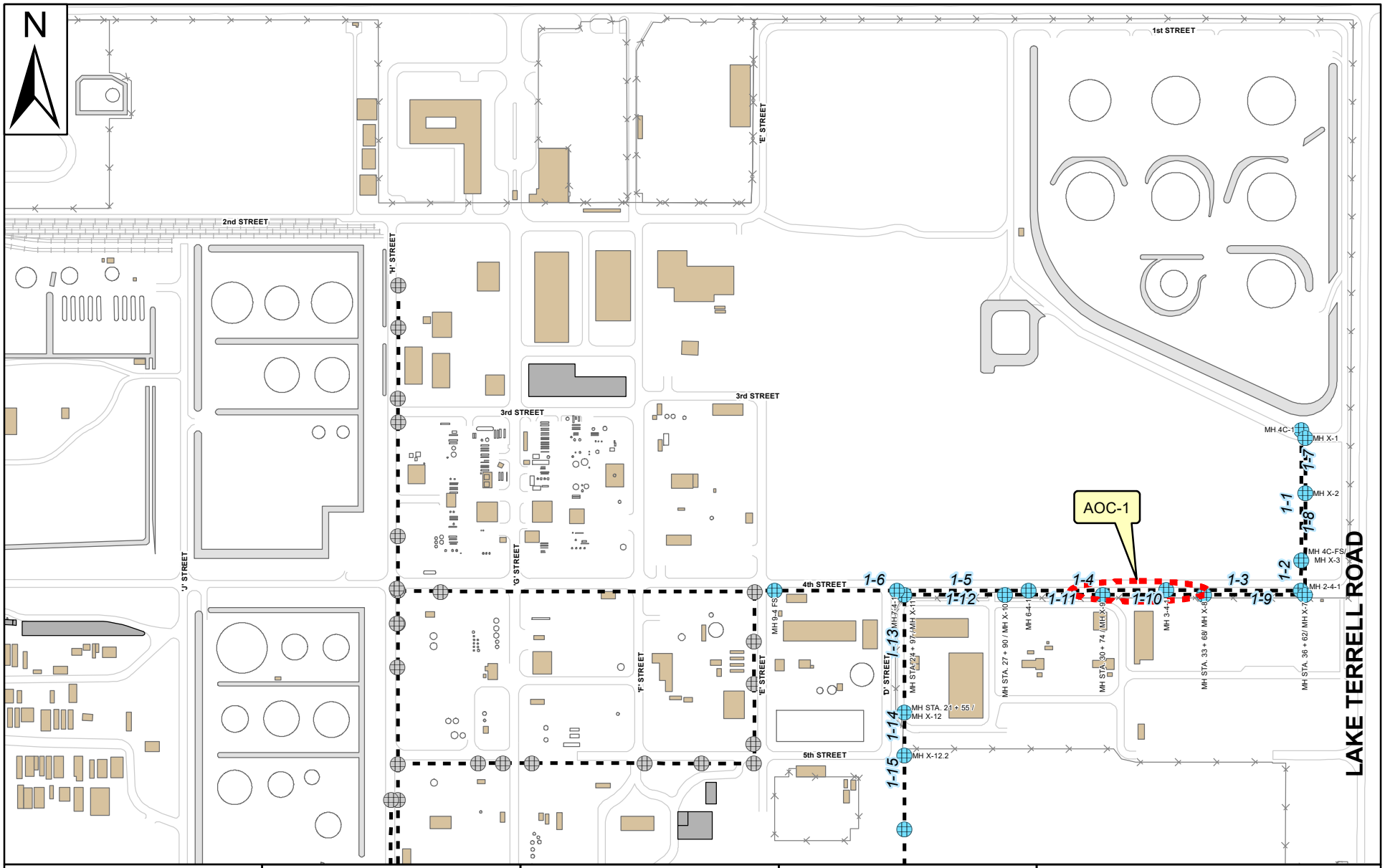
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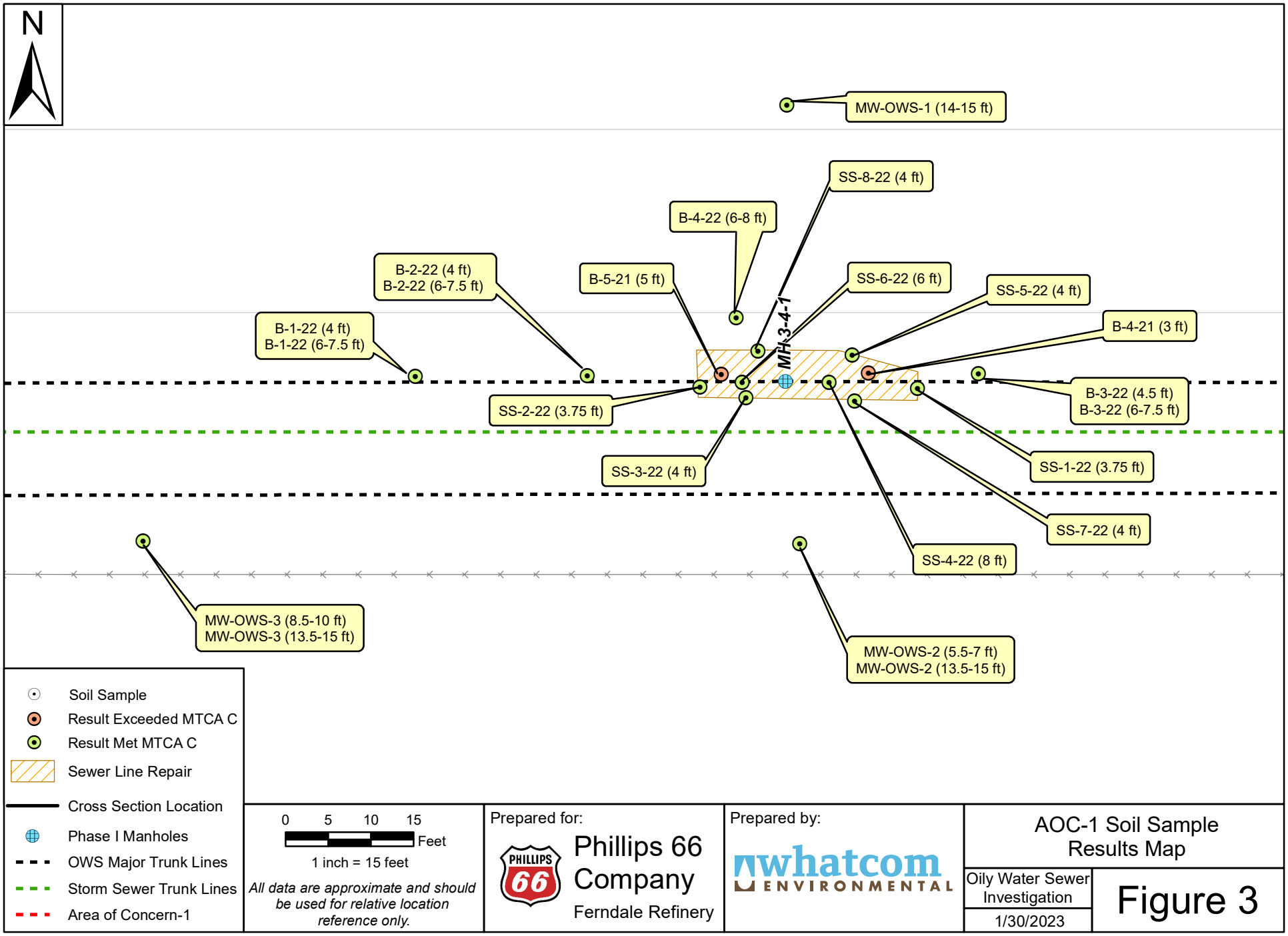
Site Location Map

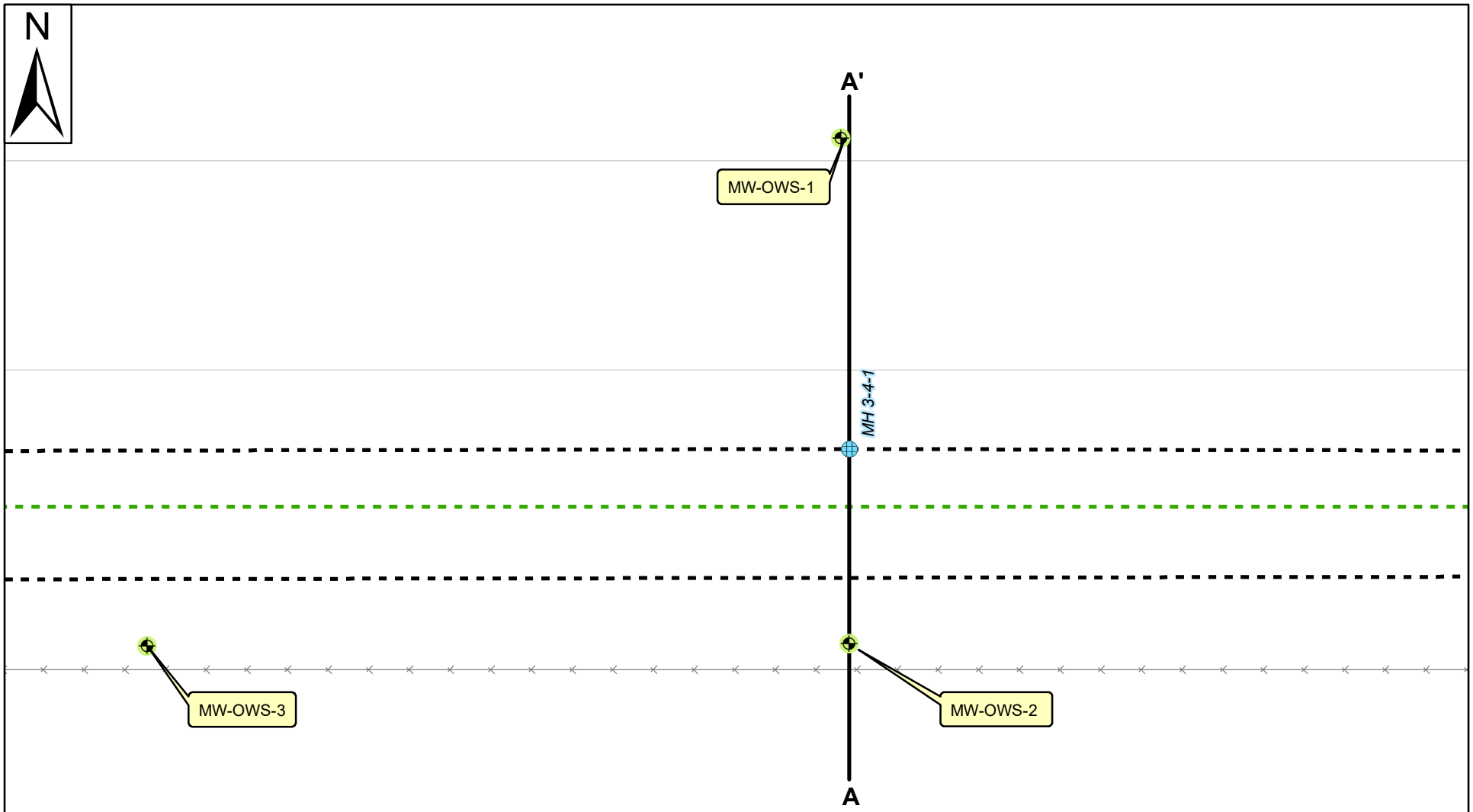
Oily Water Sewer Investigation

1/30/2023

Figure 1


N
1st STREET
2nd STREET
3rd STREET
4th STREET
5th STREET
'E' STREET
'F' STREET
'G' STREET
'H' STREET
'I' STREET
'D' STREET
LAKE TERRELL ROAD
AOC-1
1-1
1-2
1-3
1-4
1-5
1-6
1-7
1-8
1-9
1-10
1-11
1-12
1-13
1-14
1-15
MH 4C-1
MH X-1
MH X-2
MH 4C-FS/ MH X-3
MH 2-4-1
MH 3-4-1
MH X-12
MH X-12.2
Manholes
Phase I Manholes
Sewer Major Trunk Lines
Area of Concern (AOC-1)
0 100 200 400
Feet
1 inch = 400 feet
All data are approximate and should be used for relative location reference only.
Prepared for:
Phillips 66 Company
Ferndale Refinery
Prepared by:
whatcom ENVIRONMENTAL
AOC-1 Location Map
Oily Water Sewer Investigation
1/30/2023
Figure 2


N
MW-OWS-1 (14-15 ft)
SS-8-22 (4 ft)
B-4-22 (6-8 ft)
B-2-22 (4 ft)
B-2-22 (6-7.5 ft)
B-5-21 (5 ft)
SS-6-22 (6 ft)
SS-5-22 (4 ft)
B-4-21 (3 ft)
B-1-22 (4 ft)
B-1-22 (6-7.5 ft)
MH-3-4-1
B-3-22 (4.5 ft)
B-3-22 (6-7.5 ft)
SS-2-22 (3.75 ft)
SS-3-22 (4 ft)
SS-1-22 (3.75 ft)
SS-7-22 (4 ft)
SS-4-22 (8 ft)
MW-OWS-3 (8.5-10 ft)
MW-OWS-3 (13.5-15 ft)
MW-OWS-2 (5.5-7 ft)
MW-OWS-2 (13.5-15 ft)
Soil Sample
Result Exceeded MTCA C
Result Met MTCA C
Sewer Line Repair
Cross Section Location
Phase I Manholes
OWS Major Trunk Lines
Storm Sewer Trunk Lines
Area of Concern-1
0 5 10 15
Feet
1 inch = 15 feet
All data are approximate and should be used for relative location reference only.
Prepared for:
Phillips 66 Company
Ferndale Refinery
Prepared by:
whatcom ENVIRONMENTAL
AOC-1 Soil Sample Results Map
Oily Water Sewer Investigation
1/30/2023
Figure 3



GW Results Met CULs
Manholes
Phase I Manholes
OWS Major Trunk Lines
Storm Sewer Trunk Lines

0 5 10 15 Feet

1 inch = 15 feet

All data are approximate and should be used for relative location reference only.

Prepared for:

Phillips 66 Company

Ferndale Refinery

Prepared by:

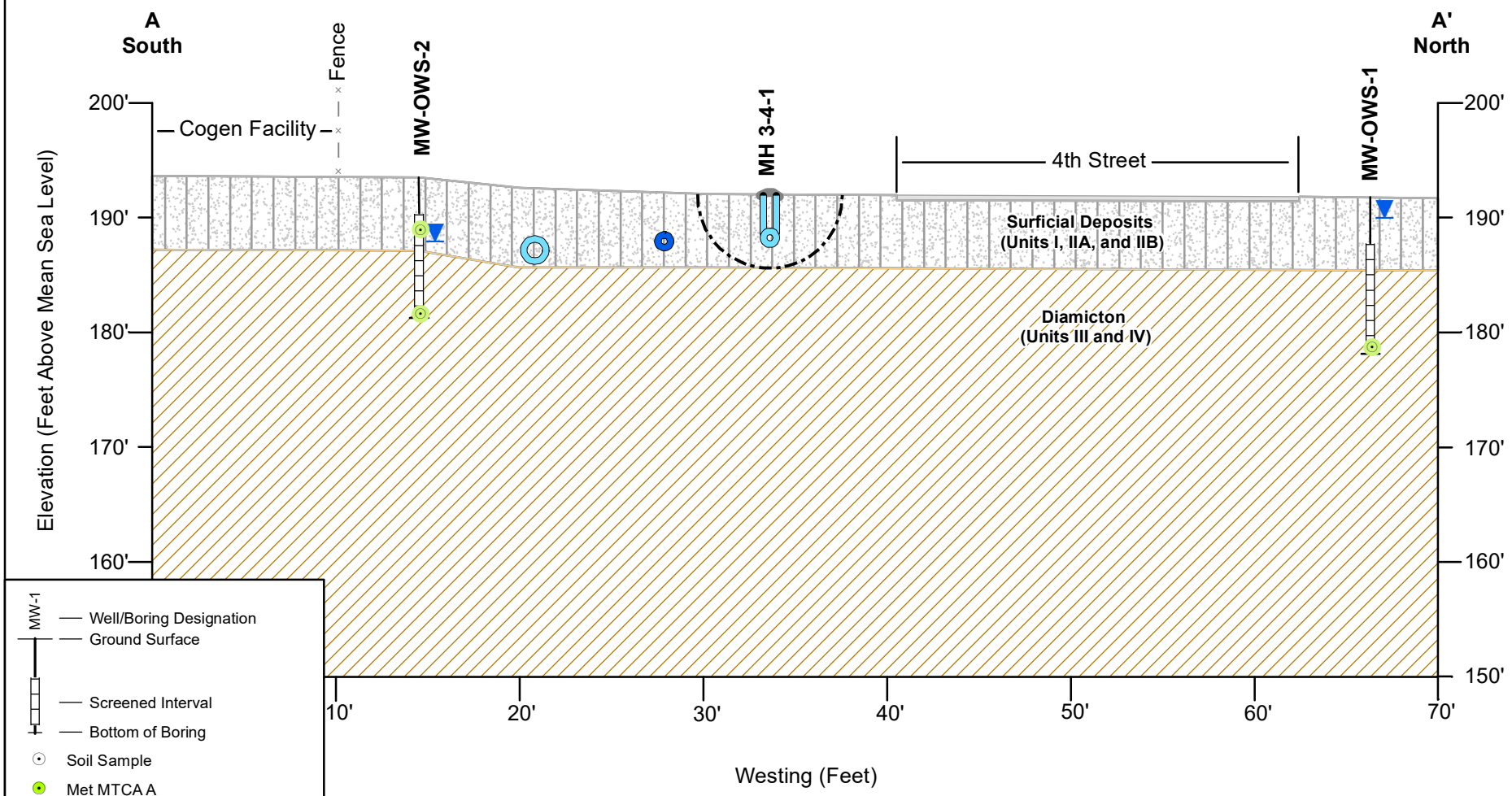
nwhatcom ENVIRONMENTAL

AOC-1 Groundwater Sample Results Map

Oily Water Sewer Investigation

1/30/2023

Figure 4



All data are approximate and should be used for relative location reference only.

HORIZONTAL SCALE:
1 inch = 8 ft

VERTICAL SCALE:
1 inch = 16 ft
(2x vertical exaggeration)

Prepared for: PHILLIPS 66

Prepared by: whatcom ENVIRONMENTAL

Geologic Cross Section A-A'

Oily Water Sewer Investigation

1/30/2023

Figure 5

Table 1. Soil Sample Descriptions

Sample ID	Date	Soil Sample Description	PID (ppm)	Sheen Test[a]
B-4-21 3ft	9/30/2021	Sandy silt with gravel, gray, loose, wet.	140.4	HS
B-5-21 5ft	9/30/2021	Sandy silt with gravel, gray, loose, wet.	40.8	HS
B-1-22 4ft	4/27/2022	Sandy silt with gravel, brown, loose, moist.	0.3	NS
B-1-22 6-7.5ft	5/2/2022	Silty clay, gray, firm, moist.	0.0	NS
B-2-22 4ft	4/27/2022	Sandy silt with gravel, brown, loose, moist.	0.5	NS
B-2-22 6-7.5ft	5/2/2022	Silty clay, gray, firm, moist.	0.0	NS
B-3-22 4.5ft	4/27/2022	Clayey silt with gravel, gray, firm, moist.	2.7	SS
B-3-22 6-7.5ft	5/2/2022	Silty sandy clay, gray, firm, moist.	0.0	NS
B-4-22 6-8ft	5/2/2022	Silty sand, brown, firm, moist.	0.0	VSS
MW-OWS-1 14-15ft	5/2/2022	Silty clay, gray, firm, moist.	0.0	NS
MW-OWS-2 5.5-7ft	5/3/2022	Silty sand with pebbles, brown, firm, moist.	0.0	NS
MW-OWS-2 13.5-15ft	5/3/2022	Clayey silt with tace sand, gray, hard, moist.	0.0	VSS
MW-OWS-3 8.5-10ft	5/3/2022	Clayey silty sand, gray, firm, moist.	0.0	VSS
MW-OWS-3 13.5-15ft	5/3/2022	Clayey sandy silt, gray, firm, moist.	0.0	VSS
SS-1-22 3.75 ft	7/20/2022	Sandy silt with gravel, brown, firm, moist.	22.6	SS
SS-2-22 3.75 ft	7/20/2022	Sandy silt with gravel, brown, firm, moist.	4.4	NS
SS-3-22 4 ft	7/20/2022	Silty sand with trace gravel, brown, hard, moist.	0.0	NS
SS-4-22 8 ft	7/20/2022	Sand with trace silt, gray, hard, moist.	0.0	NS
SS-5-22 4 ft	7/20/2022	Silty sand, brown and gray, firm, moist.	0.0	NS
SS-6-22 6 ft	7/20/2022	Sandy silt with trace clay, gray, soft, moist.	0.0	NS
SS-7-22 4 ft	7/20/2022	Silty sand with gravel, brown, soft, moist.	0.0	NS
SS-8-22 4 ft	7/20/2022	Silty sand with gravel, brown, soft, moist.	0.0	NS

[a] - NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

Table 2. Soil Sample MTCA TPH Hazard Index and Risk Results

Sample ID	Date	Measured Soil TPH Concentration (mg/kg)	Hazard Index Soil Direct Contact	Hazard Index Groundwater Protection	Risk Protection of Soil Direct Contact	Risk Potable GW Human Health Protection
MTCA Method C Protection of Soil Direct Contact:		47,031[a]	1	-	1.00E-05	-
Potable GW Human Health Protection:		-	-	1	-	1.00E-05
B-4-21 3ft	9/30/2021	3,964.38	7.63E-02	2.86E-01	1.09E-08	8.45E-07
B-5-21 5ft	9/30/2021	598.20	1.09E-02	3.93E-01	8.36E-09	6.92E-06
B-1-22 4ft	4/27/2022	20.78	4.65E-04	2.41E-01	3.15E-09	5.64E-06
B-1-22 6-7.5ft	5/2/2022	44.70	1.03E-03	5.38E-01	2.79E-09	4.55E-06
B-2-22 4ft	4/27/2022	20.92	4.74E-04	2.44E-01	3.15E-09	5.65E-06
B-2-22 6-7.5ft	5/2/2022	45.44	1.04E-03	5.45E-01	2.79E-09	4.55E-06
B-3-22 4.5ft	4/27/2022	33.02	7.06E-04	2.61E-01	3.10E-09	5.64E-06
B-3-22 6-7.5ft	5/2/2022	43.37	9.98E-04	5.28E-01	2.86E-09	4.56E-06
B-4-22 6-8ft	5/2/2022	41.56	9.55E-04	5.13E-01	2.79E-09	4.56E-06
MW-OWS-1 14-15ft	5/2/2022	42.24	9.81E-04	5.24E-01	2.92E-09	4.68E-06
MW-OWS-2 5.5-7ft	5/3/2022	43.12	9.88E-04	5.27E-01	2.90E-09	4.56E-06
MW-OWS-2 13.5-15ft	5/3/2022	46.40	1.07E-03	5.52E-01	3.09E-09	4.55E-06
MW-OWS-3 8.5-10ft	5/3/2022	42.55	9.75E-04	5.22E-01	2.76E-09	4.56E-06
MW-OWS-3 13.5-15ft	5/3/2022	47.21	1.22E-03	4.98E-01	2.86E-09	4.54E-06
SS-1-22 3.75 ft	7/20/2022	200.57	2.86E-03	1.96E-01	2.86E-09	4.13E-06
SS-2-22 3.75 ft	7/20/2022	30.08	6.27E-04	3.94E-01	3.00E-09	4.63E-06
SS-3-22 4 ft	7/20/2022	30.07	6.25E-04	3.93E-01	2.79E-09	4.62E-06
SS-4-22 8 ft	7/20/2022	30.07	6.26E-04	3.94E-01	2.86E-09	4.62E-06
SS-5-22 4 ft	7/20/2022	30.08	6.26E-04	3.94E-01	2.90E-09	4.62E-06
SS-6-22 6 ft	7/20/2022	30.08	6.28E-04	3.94E-01	3.07E-09	4.63E-06
SS-7-22 4 ft	7/20/2022	30.08	6.29E-04	3.94E-01	3.14E-09	4.63E-06
SS-8-22 4 ft	7/20/2022	30.07	6.27E-04	3.94E-01	2.95E-09	4.62E-06

a - All Method C cleanup levels for all samples were averaged to be used as the cleanup level for the site.

Table 3. Soil Sample BTEX Analytical Results

Sample ID	Date	EPA-8260 Benzene (mg/kg)	EPA-8260 Toluene (mg/kg)	EPA-8260 Ethylbenzene (mg/kg)	EPA-8260 Xylenes (mg/kg)	EPA-8260 n-Hexane (mg/kg)
MTCA Method C Direct Contact Cleanup Level[a]:		2,400	280,000	350,000	700,000	210,000
Protection of Groundwater (Vadose)[b]:		0.03[c]	4.5	5.9	14	72
B-4-21 3ft	9/30/2021	(ND<0.01)	(ND<0.04)	(ND<0.01)	(ND<0.02)	(ND<0.04)
B-5-21 5ft	9/30/2021	**0.033 J**	0.103 J	0.0534 J	0.57	(ND<0.08)
B-1-22 4ft	4/27/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.004)	(ND<0.01)
B-1-22 6-7.5ft	5/2/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	(ND<0.01)
B-2-22 4ft	4/27/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.004)	(ND<0.01)
B-2-22 6-7.5ft	5/2/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00349	(ND<0.01)
B-3-22 4.5ft	4/27/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.004)	(ND<0.01)
B-3-22 6-7.5ft	5/2/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00355	(ND<0.01)
B-4-22 6-8ft	5/2/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00339	(ND<0.01)
MW-OWS-1 14-15ft	5/2/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	(ND<0.01)
MW-OWS-2 5.5-7ft	5/3/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	(ND<0.01)
MW-OWS-2 13.5-15ft	5/3/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	(ND<0.01)
MW-OWS-3 8.5-10ft	5/3/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	(ND<0.01)
MW-OWS-3 13.5-15ft	5/3/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	(ND<0.01)
SS-1-22 3.75 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00631	(ND<0.01)
SS-2-22 3.75 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00514	(ND<0.01)
SS-3-22 4 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00415	(ND<0.01)
SS-4-22 8 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00561	(ND<0.01)
SS-5-22 4 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00499	(ND<0.01)
SS-6-22 6 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00476	(ND<0.01)
SS-7-22 4 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.00431	(ND<0.01)
SS-8-22 4 ft	7/20/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	0.0036	(ND<0.01)
WES-DUP-1	5/2/2022	(ND<0.001)	(ND<0.006)	(ND<0.001)	(ND<0.003)	NA

a - Method C cleanup levels obtained from CLARC tables calculated from WAC 173-340-745, Equation 745-2 (carcinogens) based on soil direct contact. If no carcinogenic value was listed then the non-carcinogenic value was applied.

b - Protection of groundwater values obtained from CLARC tables unless otherwise noted.

c - MTCA A cleanup level for industrial properties was chosen because it is an ARAR. MTCA A cleanup levels are already adjusted for leaching and natural background concentrations.

BOLD & shaded - indicates that the concentration in the sample exceeds the most stringent cleanup level.

Table 4. Soil Sample Metal Analytical Results

Sample ID	Date	EPA-6020B Arsenic (mg/kg)	EPA-6020B Cadmium (mg/kg)	EPA-7196 Chromium (VI) (mg/kg)	- Chromium (III) (mg/kg)	EPA-6020B Lead (mg/kg)	EPA-6020B Nickel (mg/kg)	EPA-6020B Mercury (mg/kg)	EPA-6020B Zinc (mg/kg)
MTCA Method C Direct Contact Cleanup Level[a]:		88	3,500	260	5,300,000	1000[c]	70,000	2[c]	1,100,000
Protection of Groundwater (Vadose)[b]:		20[c]	0.69	19[c]	480,000	3,000	130	2.1	6,000
B-4-21 3ft	9/30/2021	3.76	0.115 J	0.997 J	33.5	2.8	34.4	0.02	NA
B-5-21 5ft	9/30/2021	8.36	(ND<0.2)	ND(<0.5)	44.5	5.8	45.6	0.03	NA
B-1-22 4ft	4/27/2022	4.7	0.11	(ND<0.113)	30.1	2.5	31.2	0.025	48.7
B-1-22 6-7.5ft	5/2/2022	6.6	0.1	(ND<0.567)	24.9	3.3	27.8	0.025	41
B-2-22 4ft	4/27/2022	5	(ND<0.1)	0.128 J	27.8	1.9	27.9	(ND<0.02)	34.50
B-2-22 6-7.5ft	5/2/2022	3.7	0.099	(ND<0.557)	26	2.9	28.1	0.036	44.5
B-3-22 4.5ft	4/27/2022	5	0.19	0.211 J	32.8	3.5	35.9	0.02	51.70
B-3-22 6-7.5ft	5/2/2022	4.1	(ND<0.09)	(ND<0.752)	19.3	2.0	21.5	0.033	30.7
B-4-22 6-8ft	5/2/2022	4	0.11	(ND<0.537)	27.0	2.6	28.4	0.033	38.8
MW-OWS-1 14-15ft	5/2/2022	3.1	0.096	(ND<0.551)	24.5	2.6	25.5	0.055	38.3
MW-OWS-2 5.5-7ft	5/3/2022	4.4	0.1	(ND<0.58)	30.2	2.2	29.1	0.028	37.6
MW-OWS-2 13.5-15ft	5/3/2022	3.4	0.098	(ND<0.614)	26.1	2.7	26.5	0.026	40.2
MW-OWS-3 8.5-10ft	5/3/2022	5	0.12	(ND<0.546)	33.3	4.2	46.1	0.036	61.6
MW-OWS-3 13.5-15ft	5/3/2022	3.2	0.093	(ND<0.564)	29.1	2.9	29.4	0.043	42.6
SS-1-22 3.75 ft	7/20/2022	4.0	(ND<0.09)	0.131 J	23.3	2.7	23.0	0.035	31.2
SS-2-22 3.75 ft	7/20/2022	3.5	(ND<0.1)	0.139 J	31.3	2.5	27.7	0.035	26.5
SS-3-22 4 ft	7/20/2022	3.6	0.100	0.307 J	18.0	1.8	23.1	0.032	30.5
SS-4-22 8 ft	7/20/2022	3.2	(ND<0.09)	0.183 J	20.9	1.5	24.3	0.027	26.0
SS-5-22 4 ft	7/20/2022	2.9	(ND<0.09)	0.240 J	20.9	1.8	24.8	0.028	27.6
SS-6-22 6 ft	7/20/2022	4.3	(ND<0.1)	(ND<0.6)	26.2	2.8	25.6	0.037	32.9
SS-7-22 4 ft	7/20/2022	4.2	(ND<0.1)	0.233 J	21.8	22	21.6	0.037	26.8
SS-8-22 4 ft	7/20/2022	3.900	(ND<0.09)	0.226 J	24.500	2.3	25.900	0.033	32.200

a - Method C cleanup levels obtained from CLARC tables calculated from WAC 173-340-745, Equation 745-2 (carcinogens) based on soil direct contact. If no carcinogenic value was listed then the non-carcinogenic value was applied.

b - Protection of groundwater values obtained from CLARC tables unless otherwise noted.

c - MTCA A cleanup level for industrial properties was chosen because it is an ARAR. MTCA A cleanup levels are already adjusted for leaching and natural background concentrations.

J - Analyte detected below the reporting limit, therefore result is an estimate.

NA - Indicates that the sample was Not Analyzed for the specified analyte.

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

Table 5. Soil Sample cPAH Analytical Results

Sample ID		MTCA Method C Direct Contact Cleanup Level[a]:	Protection of Groundwater (Vadose)[b]:	Toxicity Equivalency Factor (TEF):	B-4-21 3 ft	B-5-21 5 ft	B-1-22 4 ft	B-1-22 6-7.5 ft	B-2-22 4 ft	B-2-22 6-7.5 ft	B-3-22 4.5 ft	B-3-22 6-7.5 ft	B-4-22 6-8 ft	MW-OWS-1 14-15 ft	MW-OWS-2 5.5-7	MW-OWS-2 13.5-15 ft	MW-OWS-3 8.5-10 ft	MW-OWS-3 13.5-15 ft	SS-1-22 3.75 ft	SS-2-22 3.75 ft	SS-3-22 4 ft	SS-4-22 8 ft	SS-5-22 4 ft	SS-6-22 6 ft	SS-7-22 4 ft	SS-8-22 4 ft
Date		mg/kg	mg/kg		9/30/2021	9/30/2021	4/27/2022	5/2/2022	4/27/2022	5/2/2022	4/27/2022	5/2/2022	5/2/2022	5/2/2022	5/3/2022	5/3/2022	5/3/2022	5/3/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) (EPA-8270 SIM)																										
Benzo[A]Anthracene	mg/kg	-	0.72[c]	0.1	0.194	0.0063	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	0.0131	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Benzo[A]Pyrene	mg/kg	130	3.9	1	(ND<0.0069)	(ND<0.0036)	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Benzo[B]Fluoranthene	mg/kg	-	2.46[c]	0.1	0.0394 J	0.0052	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Benzo[K]fluoranthene	mg/kg	-	2.46[c]	0.1	(ND<0.0059)	(ND<0.0031)	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Chrysene	mg/kg	-	0.8[c]	0.01	0.208	0.042	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	0.015	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Dibenz[A,H]Anthracene	mg/kg	-	3.57[c]	0.1	0.0166 J	(ND<0.0042)	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Indeno[1,2,3-Cd]Pyrene	mg/kg	-	6.94[c]	0.1	(ND<0.0066)	(ND<0.0034)	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Total cPAH Equivalent (TEq)[d]	mg/kg	130	-	-	0.026	0.004	0.010	0.008	0.010	0.008	0.009	0.009	0.008	0.009	0.009	0.010	0.009	0.009	0.009	0.009	0.008	0.009	0.009	0.009	0.010	0.009
Polycyclic Aromatic Hydrocarbons (PAHs) (EPA-8270 SIM)																										
Acenaphthene	mg/kg	210,000	49	-	0.177	0.101	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Anthracene	mg/kg	1,100,000	1,100	-	(ND<0.0039)	(ND<0.002)	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Biphenyl	mg/kg	16,000	0.58	-	(ND<0.013)	(ND<0.021)	(ND<0.394)	(ND<0.377)	(ND<0.407)	(ND<0.382)	(ND<0.411)	(ND<0.368)	(ND<0.37)	(ND<0.383)	(ND<0.392)	(ND<0.38)	(ND<0.372)	(ND<0.0115)	(ND<0.384)	(ND<0.425)	(ND<0.372)	(ND<0.377)	(ND<0.392)	(ND<0.394)	(ND<0.419)	(ND<0.383)
Dibenzofuran	mg/kg	3,500	1.5	-	0.222	0.0391	(ND<0.0128)	(ND<0.0112) L2	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Fluoranthene	mg/kg	140,000	630	-	(ND<0.0074)	0.0097	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	0.0186	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Fluorene	mg/kg	140,000	51	-	0.999	0.116	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	0.0139	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Naphthalenes[e]	mg/kg	70,000	5[f]	-	**5.52 E**	1.61	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	0.0498	(ND<0.0117)	(ND<0.0114)	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)
Pyrene	mg/kg	110,000	330	-	0.183	0.0513	(ND<0.0128)	(ND<0.0112)	(ND<0.0126)	(ND<0.0112)	(ND<0.0124)	(ND<0.0115)	(ND<0.0112)	(ND<0.0113)	(ND<0.0117)	0.0154	(ND<0.0111)	(ND<0.0115)	(ND<0.0115)	(ND<0.0121)	(ND<0.0112)	(ND<0.0115)	(ND<0.0117)	(ND<0.0124)	(ND<0.0127)	(ND<0.0119)

a - Method C cleanup levels obtained from CLARC tables calculated from WAC 173-340-745, Equation 745-2 (carcinogens) based on soil direct contact. If no carcinogenic value was listed then the non-carcinogenic value was applied.

b - Protection of groundwater values obtained from CLARC tables unless otherwise noted.

c - Values calculated from WAC 173-340-747, Equation 747-1. cPAHs were calculated using the MTCA Method A groundwater cleanup level for benzo[a]pyrene.

d - cPAH level calculated using Toxicity equivalency methodology provided in WAC 173-340-708(8)

e - Sum of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.

f - MTCA A cleanup level for industrial properties was chosen because it is an ARAR. MTCA A cleanup levels are already adjusted for leaching and natural background concentrations.

BOLD & shaded - indicates that the concentration in the sample exceeds the most stringent cleanup level.

E - Analyte concentration exceeded the calibration range. The reported result is estimated.

J - Analyte detected below the reporting limit, therefore result is an estimate.

L2 - Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

For ND values, the TEF was multiplied by one half the reporting limit

TEF - Toxicity Equivalency Factor (WAC 173-340-900 table 708.2)

TEq - Toxicity Equivalency to benzo(a)pyrene, calculated by multiplying result by appropriate TEF.

Table 6. Soil Sample Chlorinated Volatile Organic Compounds Analytical Results

Sample ID		MTCA Method C Direct Contact Cleanup Level:	Protection of Groundwater (Vadose)b:	B-1-22 4ft	B-1-22 6-7.5 ft	B-2-22 4 ft	B-2-22 6-7.5 ft	B-3-22 4 ft	B-3-22 6-7.5 ft	B-4-22 6-8 ft	MW-OWS-1 14-15 ft	MW-OWS-2 5.5-7 ft	MW-OWS-2 13.5-15 ft	MW-OWS-3 8.5-10 ft	MW-OWS-3 13.5-15 ft	SS-1-22 3.75 ft	SS-2-22 3.75 ft	SS-3-22 4 ft	SS-4-22 8 ft	SS-5-22 4 ft	SS-6-22 6 ft	SS-7-22 4 ft	SS-8-22 4 ft
Date		mg/kg	mg/kg	4/27/2022	5/2/2022	4/27/2022	5/2/2022	4/27/2022	5/2/2022	5/2/2022	5/2/2022	5/3/2022	5/3/2022	5/3/2022	5/3/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022
Chlorinated Volatile Organic Compounds (EPA-8260)																							
Acetone	mg/kg	3,200,000	29	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)	(ND<0.06)
Allyl Chloride	mg/kg	6,300	0.011	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0
Bromobenzene	mg/kg	28,000	0.56	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Bromochloromethane	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Bromodichloromethane	mg/kg	2,100	0.033	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Bromoform	mg/kg	17,000	0.36	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Bromomethane	mg/kg	4,900	0.051	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0	(ND<0.006) L0
n-Butylbenzene	mg/kg	180,000	14	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
sec-Butylbenzene	mg/kg	350,000	25	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
tert-Butylbenzene	mg/kg	350,000	20	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Carbon Tetrachloride	mg/kg	1,900	0.041	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Chlorobenzene	mg/kg	70,000	0.86	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Dibromochloromethane	mg/kg	1,600	0.024	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Chloroethane	mg/kg	-	-	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
Chloroform	mg/kg	4,200	0.074	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
Chloromethane	mg/kg	-	-	(ND<0.003)	(ND<0.003) C3	(ND<0.003)	(ND<0.003) C3	(ND<0.003)	(ND<0.003) C3	(ND<0.003) C3	(ND<0.003) C3	(ND<0.003) C3	(ND<0.003) C3	(ND<0.003) C3	(ND<0.003) C3	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)
2-Chlorotoluene	mg/kg	70,000	1.9	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
4-Chlorotoluene	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2-Dibromoethane (EDB)	mg/kg	66	0.00027	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2-Dibromo-3-chloropropane	mg/kg	160	0.00091	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
Dibromomethane	mg/kg	35,000	0.36	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2-Dichlorobenzene	mg/kg	320,000	7	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,3-Dichlorobenzene	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,4-Dichlorobenzene	mg/kg	24,000	1.2	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0
Dichlorodifluoromethane	mg/kg	700,000	38	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
Dichlorofluoromethane	mg/kg	-	-	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
1,1-Dichloroethane	mg/kg	23,000	0.041	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0	(ND<0.001) L0
1,2-Dichloroethane (EDC)	mg/kg	1,400	0.023	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,1-Dichloroethene	mg/kg	180,000	0.046	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
cis-1,2-Dichloroethene	mg/kg	7,000	0.079	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
trans-1,2-dichloroethene	mg/kg	70,000	0.52	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2-Dichloropropane	mg/kg	3,500	0.025	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,3-Dichloropropane	mg/kg	70,000	0.88	(ND<0.001) L0	(ND<0.001)	(ND<0.001) L0	(ND<0.001)	(ND<0.001) L0	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
2,2-Dichloropropane	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,1-Dichloropropene	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
cis-1,3-Dichloropropene	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
trans-1,3-Dichloropropene	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Diethyl ether	mg/kg	700,000	6.8	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Hexachloro-1,3-butadiene	mg/kg	1,700	0.012	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Cumene	mg/kg	350,000	15	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
p-Isopropyltoluene	mg/kg	-	-	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
2-Butanone (MEK)	mg/kg	2,100,000	20	(ND<0.001)	(ND<0.001) C3	(ND<0.001)	(ND<0.001) C3	(ND<0.001)	(ND<0.001) C3	(ND<0.001) C3	(ND<0.001) C3	(ND<0.001) C3	(ND<0.001) C3	(ND<0.001) C3	(ND<0.001) C3	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)
Methylene Chloride	mg/kg	66,000	0.022	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)

Table 6. Soil Sample Chlorinated Volatile Organic Compounds Analytical Results

Sample ID		MTCA Method C Direct Contact Cleanup Level:	Protection of Groundwater (Vadose)b:	B-1-22 4ft	B-1-22 6-7.5 ft	B-2-22 4 ft	B-2-22 6-7.5 ft	B-3-22 4 ft	B-3-22 6-7.5 ft	B-4-22 6-8 ft	MW-OWS-1 14-15 ft	MW-OWS-2 5.5-7 ft	MW-OWS-2 13.5-15 ft	MW-OWS-3 8.5-10 ft	MW-OWS-3 13.5-15 ft	SS-1-22 3.75 ft	SS-2-22 3.75 ft	SS-3-22 4 ft	SS-4-22 8 ft	SS-5-22 4 ft	SS-6-22 6 ft	SS-7-22 4 ft	SS-8-22 4 ft
Date		mg/kg	mg/kg	4/27/2022	5/2/2022	4/27/2022	5/2/2022	4/27/2022	5/2/2022	5/2/2022	5/2/2022	5/3/2022	5/3/2022	5/3/2022	5/3/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022	7/20/2022
4-Methyl-2-pentanone (MIBK)	mg/kg	280,000	2.7	(ND<0.001) C3	(ND<0.001)	(ND<0.001) C3	(ND<0.001)	(ND<0.001) C3	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)	(ND<0.01)
Methyl-tert-butyl ether (MTBE)	mg/kg	73,000	0.1	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
n-Propylbenzene	mg/kg	350,000	16	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Styrene	mg/kg	700,000	2.2	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,1,1,2-Tetrachloroethane	mg/kg	5,000	0.0098	(ND<0.001) C3	(ND<0.001)	(ND<0.001) C3	(ND<0.001)	(ND<0.001) C3	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,1,2,2-Tetrachloroethane	mg/kg	660	0.0012	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Tetrachloroethene	mg/kg	63,000	0.05	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Tetrahydrofuran	mg/kg	3,200,000	30	(ND<0.006)	(ND<0.006) C3	(ND<0.006)	(ND<0.006) C3	(ND<0.006)	(ND<0.006) C3	(ND<0.006) C3	(ND<0.006) C3	(ND<0.006) C3	(ND<0.006) C3	(ND<0.006) C3	(ND<0.006) C3	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
1,2,3-Trichlorobenzene	mg/kg	2,800	0.2	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2,4-Trichlorobenzene	mg/kg	4,500	0.56	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2,4-Trimethylbenzene	mg/kg	35,000	1.3	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,3,5-Trimethylbenzene	mg/kg	35,000	1.3	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,1,1-Trichloroethane	mg/kg	7,000,000	1.5	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,1,2-Trichloroethane	mg/kg	2,300	0.017	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Trichloroethene	mg/kg	2,900	0.025	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
Trichlorofluoromethane	mg/kg	1,100,000	23	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)	(ND<0.006)
1,1,2-Trichlorotrifluoroethane	mg/kg	110,000,000	7,600	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)
1,2,3-Trichloropropane	mg/kg	4	0.0000024	(ND<0.003) C3	(ND<0.003)	(ND<0.003) C3	(ND<0.003)	(ND<0.003)C3	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)	(ND<0.003)
Vinyl chloride	mg/kg	88	0.0017	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)	(ND<0.001)

a - Method C cleanup levels obtained from CLARC tables calculated from WAC 173-340-745, Equation 745-2 (carcinogens) based on soil direct contact. If no carcinogenic value was listed then the non-carcinogenic value was applied.
b - Protection of groundwater values obtained from CLARC tables unless otherwise noted.
C3 - The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
L0 - Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

Table 7. Groundwater Sample Petroleum Analytical Results

Well ID	Date	NWTPH-Gx Volatile Range	NWTPH-Dx Diesel Range	NWTPH-Dx Motor-Oil Range	Volatile Organic Compounds (VOC) (EPA-8260)					
					Benzene	Toluene	Ethylbenzene	Xylenes	n-Hexane	All Other VOCs[b]
		µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MTCA Method A Cleanup Levels:		1,000/800[a]	500	500	5	1,000	700	1,000		-
MW-OWS-1	6/6/2022	ND(<100)	ND(<0.42)	ND(<0.42)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	8/24/2022	ND(<100)	ND(>0.45)	ND(>0.45)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	11/16/2022	ND(<100)	ND(<0.40)	ND(<0.40)	ND (<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	11/16/2022 (WES-DUP-1)	ND(<100)	R	R	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	12/15/2022	NA	ND(<0.41)	ND(<0.41)	NA	NA	NA	NA	NA	Below CUL
	12/15/2022 (WES-DUP-1)	NA	ND(<0.41)	ND(<0.41)	NA	NA	NA	NA	NA	Below CUL
MW-OWS-2	6/6/2022	ND(<100)	ND(<0.43)	ND(<0.43)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	6/6/2022 (WES-DUP-1)	ND(<100)	ND(<0.43)	ND(<0.43)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	8/24/2022	ND(<100)	ND(<0.48)	ND(<0.48)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	11/14/2022	ND(<100)	R	R	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	12/15/2022	NA	ND(<0.40)	ND(<0.40)	NA	NA	NA	NA	NA	Below CUL
MW-OWS-3	6/6/2022	ND(<100)	ND(<0.42)	ND(<0.42)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	8/24/2022	ND(<100)	ND(<0.45)	ND(<0.45)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	8/24/2022 (WES-DUP-1)	ND(<100)	ND(<0.48)	ND(<0.48)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	11/16/2022	ND(<100)	R	R	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	12/15/2022	NA	ND(<0.42)	ND(<0.42)	NA	NA	NA	NA	NA	Below CUL
WES-FEB-1	6/6/2022	ND(<100)	ND(<0.42)	ND(<0.42)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	8/24/2022	ND(<100)	ND(<0.56)	ND(<0.56)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	11/14/2022	ND(<100)	R	R	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<3.0)	ND(<10)	Below CUL
	12/15/2022	NA	ND(<0.39)	ND(<0.39)	NA	NA	NA	NA	NA	Below CUL

a - Cleanup level dependent on BTEX concentrations

b - See laboratory data reports for result of individual analytes per EPA Method 8260 not listed in the data table.

ND - indicates that sample was non-detect for analyte at level indicated in parenthesis

Table 8. Groundwater Sample Metal Analytical Results

Well ID	Date	EPA-6020B Arsenic (Total) µg/L	EPA-6020B Arsenic (Dissolved) µg/L	EPA-6020B Cadmium (Total) µg/L	EPA-6020B Cadmium (Dissolved) µg/L	EPA-6020B Chromium (Total) µg/L	EPA-6020B Chromium (Dissolved) µg/L	EPA-6020B Lead (Total) µg/L	EPA-6020B Lead (Dissolved) µg/L	EPA-6020B Nickel (Total) µg/L	EPA-6020B Nickel (Dissolved) µg/L	EPA-7470A Mercury (Total) µg/L	EPA-7470A Mercury (Dissolved) µg/L	EPA-6020B Zinc (Total) µg/L	EPA-6020B Zinc (Dissolved) µg/L
MTCA Method A Cleanup Levels:		5	5	5	5	50	50	15	15	-	-	2	2	-	-
EPA Drinking Water MCL[a]:		10	10	-	-	-	-	-	-	-	-	-	-	-	-
MTCA Method B Cleanup Levels[b]:		-	-	-	-	-	-	-	-	320	320	-	-	4,800	4,800
MW-OWS-1	6/6/2022	9.3	9.6	ND(<0.08)	ND(<0.08)	3.8	ND(<2.0)	1.5	0.56	4.10	1.20	ND(<0.20)	ND(<0.20)	6.6	ND(<5.0)
	8/24/2022	8.1	8.2	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	0.74	0.55	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	11/16/2022	5.4	5.5	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	ND(<0.5)	ND(<0.50)	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	11/16/2022 (WES-DUP-1)	5.4	5.6	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	ND(<0.5)	ND(<0.50)	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
MW-OWS-2	6/6/2022	1.9	1.8	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	0.91	0.65	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	6/6/2022 (WES-DUP-1)	1.9	1.8	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	0.97	0.62	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	8/24/2022	2.7	2.8	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	0.79	0.70	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	11/14/2022	2.1	2.2	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	0.60	ND(<0.50)	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
MW-OWS-3	6/6/2022	2.3	2.5	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	0.73	0.68	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	8/24/2022	3.2	3.1	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	1.30	0.97	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	8/24/2022 (WES-DUP-1)	5.1	2.8	ND(<0.08)	ND(<0.08)	14.40	ND(<2.0)	2.7	ND(<0.50)	16.20	0.75	ND(<0.20)	ND(<0.20)	20.9	5.0
	11/16/2022	2.1	2.3	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	1.00	0.74	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
WES-FEB-1	6/6/2022	ND(<0.50)	ND(<0.50)	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	8/24/2022	ND(<0.50)	ND(<0.50)	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)
	11/14/2022	ND(<0.50)	ND(<0.50)	ND(<0.08)	ND(<0.08)	ND(<2.0)	ND(<2.0)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.20)	ND(<0.20)	ND(<5.0)	ND(<5.0)

a - EPA's current arsenic drinking water maximum contaminant level (MCL) was chosen as the cleanup level because it is an ARAR. EPA's MCL protects consumers from the effects of long-term, chronic exposure to arsenic.

b - Method B cleanup levels obtained from CLARC tables calculated from WAC 173-340-720, Equation 720-2 (carcinogens) based on drinking water beneficial use. If no carcinogenic value was listed then the non-carcinogenic value was applied.

BOLD & shaded - indicates that the concentration in the sample exceeds the most stringent cleanup level.

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

Table 9. Groundwater Sample cPAH Analytical Results

Sample ID	Date	EPA - 8270 Benzo[A]Anthracene µg/L	EPA - 8270 Benzo[A]Pyrene µg/L	EPA - 8270 Benzo[B]Fluoranthene µg/L	EPA - 8270 Benzo[K]fluoranthene µg/L	EPA - 8270 Chrysene µg/L	EPA - 8270 Dibenz[A,H]Anthracene µg/L	EPA - 8270 Indeno[1,2,3-Cd]Pyrene µg/L	Total cPAH Equivalent (TEq)b µg/L
Toxicity Equivalency Factor (TEF):		0.1	1	0.1	0.1	0.01	0.1	0.1	--
MTCA Method A Cleanup Level:		--	--	--	--	--	--	--	0.1[b]
MW-OWS-1	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	11/16/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	11/16/2022 (WES-DUP-1)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
MW-OWS-2	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	6/6/2022 (WES-DUP-1)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	11/14/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
MW-OWS-3	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	8/24/2022 (WES-DUP-1)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	11/16/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
WES-FEB-1	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044
	11/14/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	0.044

a - Method B cleanup levels obtained from CLARC tables calculated from WAC 173-340-720, Equation 720-2 (carcinogens) based on drinking water beneficial use. If no carcinogenic value was listed then the non-carcinogenic value was applied.

b - Method A cleanup level of Benzo(a)pyrene

c - Sum of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

For ND values, the TEF was multiplied by one half the reporting limit

TEF - Toxicity Equivalency Factor (WAC 173-340-900 table 708.2)

TEq - Toxicity Equivalency to benzo(a)pyrene, calculated by multiplying result by appropriate TEF.

Table 10. Groundwater Sample PAH Analytical Results

Sample ID	Date	EPA-8270 Acenaphthene µg/L	EPA-8270 Acenaphthylene µg/L	EPA-8270 Anthracene µg/L	EPA-8270 Benzo[G,H,I]Perylene µg/L	EPA-8270 Fluoranthene µg/L	EPA-8270 Fluorene µg/L	EPA-8270 Naphthalenes[b] µg/L	EPA-8270 Phenanthrene µg/L	EPA-8270 Pyrene µg/L
MTCA Method B Cleanup Level[a]:		480	-	2400	-	640	320	160	-	240
MW-OWS-1	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	11/16/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
MW-OWS-2	11/16/2022(WES-DUP-1)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	6/6/2022 (WES-DUP-1)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	11/14/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
MW-OWS-3	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	8/24/2022 (WES-DUP-1)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	11/16/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
WES-FEB-1	6/6/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	8/24/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)
	11/14/2022	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)	ND(<0.04)

a - Method B cleanup levels obtained from CLARC tables calculated from WAC 173-340-720, Equation 720-2 (carcinogens) based on drinking water beneficial use. If no carcinogenic value was listed then the non-carcinogenic value was applied.

b - Sum of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

Table 11. Groundwater Chemistry Parameters

Well ID	Date	DTW (ft)	GW Elevation (ft)	Temp (°C)	EC (mS/cm)	TDS (g/L)	Salinity (ppt)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)
MW-OWS-1	6/6/2022	2.29	189.67	15.58	0.256	0.166	0.12	3.95	9.49	-5.6	29.6
	8/24/2022	4.78	187.18	20.30	0.288	0.187	0.14	1.42	7.29	190.7	5.06
	11/16/2022	1.79	190.17	12.90	0.323	0.211	0.16	1.98	7.85	154	2.45
MW-OWS-2	6/6/2022	6.37	189.47	16.91	1.135	0.738	0.57	4.21	8.18	29.8	1.75
	8/24/2022	8.63	187.21	20.33	0.891	0.579	0.44	0.62	7.00	109.4	3.62
	11/14/2022	6.82	189.02	9.80	0.943	0.613	0.47	4.90	7.89	237.5	1.63
MW-OWS-3	6/6/2022	6.77	188.19	15.91	1.565	1.017	0.79	4.03	7.99	41.3	0.47
	8/24/2022	8.63	186.33	20.59	0.992	0.693	0.49	0.6	7.18	90.4	2.99
	11/16/2022	6.82	188.14	14	0.712	0.462	0.35	4.17	7.12	207.9	0.94

APPENDIX A

Soil Boring Logs

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: B-1-22
Location: 43.5 ft west of MH 3-4-1, north side of pipe
Date Completed: 5-2-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: ~5 ft
Total Depth: 10 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-5 ft	Fill material; Sandy silt with gravel, brown, loose, moist.	4'	0.3	NS	B-1-22 4 ft
5-6 ft	Sandy silt with trace clay, gray, firm, moist.	5-6 ft	0.0	NS	
6-10 ft	Silty clay, gray, firm, moist.	6-10 ft	0.0	NS	B-1-22 6-7.5 ft

Soil Sample Collection Depth

WHATCOM ENVIRONMENTAL SERVICES INC.

www.whatcomenvironmental.com

NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: B-2-22
Location: 23.5 ft west of MH 3-4-1, north side of pipe
Date Completed: 5-2-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: 8 ft
Total Depth: 10 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-5 ft	Fill material; Sandy silt with gravel, brown, loose, moist.	4 ft	0.5	NS	B-2-22 4 ft
5-10 ft	Silty clay, gray, firm, moist.	5-10 ft	0.0	NS	B-2-22 6-7.5 ft
	Soil Sample Collection Depth				

WHATCOM ENVIRONMENTAL SERVICES INC.

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: B-3-22
Location: 20 ft east of MH 3-4-1, north side of pipe
Date Completed: 5-2-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: ~5 ft
Total Depth: 10 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-4 ft	Fill material; Sandy silt with gravel, brown, loose, moist.	-	-	-	
4-5 ft	Clayey silt with gravel, gray, compact, moist.	4-5 ft	2.7	SS	B-3-22 4.5 ft
5-7 ft	Clay with trace sandy silty gravel, gray, firm, moist.	5-7 ft	0.0	NS	B-3-22 6-7.5 ft
7-10 ft	Silty clay, gray, firm, moist.	7-10 ft	0.0	NS	

Soil Sample Collection Depth

WHATCOM ENVIRONMENTAL SERVICES INC.

www.whatcomenvironmental.com

NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: B-4-22
Location: 7 ft north of MH 3-4-1 and 6 ft west
Date Completed: 5-2-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: ~5 ft
Total Depth: 10 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-0.3 ft	Asphalt	-	-	-	
0.3-5 ft	Cobbles with silty sand, brown, firm, moist.	-	-	-	
5-6 ft	Silty sand with gravel, brown, compact, moist.	5-6 ft	0.0	VSS	B-4-22 6-8 ft
6-8 ft	Sand with silt, brown, compact, moist.	6-8 ft	0.0	VSS	
8-10 ft	Clay, gray, hard, moist.	8-10 ft	0.0	VSS	
	Soil Sample Collection Depth				

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: MW-OWS-1
Location: 31.5 ft north of MH 3-4-1
Date Completed: 5-2-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: 10 ft
Total Depth: 15 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-5 ft	Cobbles with sandy gravel, brown, loose, moist.	-	-	-	
	5-10 ft - Poor recovery, only recovered 1 ft of material in the sleeve.				
5-10 ft	Silty sand with gravel, brown, loose, moist.	5-10 ft	0.0	NS	
10-14 ft	Sandy silty, brown, loose, wet.	10-14 ft	0.0	NS	
14-15 ft	Silty clay, gray, firm, moist.	14-15 ft	0.0	NS	MW-OWS-1 14-15 ft
	Soil Sample Collection Depth				

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: MW-OWS-2
Location: 2 ft east of MH 3-4-1 and 19 ft south along the fenceline
Date Completed: 5-3-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: ~10 ft
Total Depth: 15 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-5 ft	Cobbles with sandy silt and gravel, brown, loose, moist.	-	-	-	
5-7 ft	Silty sand with pebbles, brown, compact, moist.	5-7 ft	0.0	NS	MW-OWS-2 5.5- 7 ft
7-8 ft	Silty sand with pebbles, gray, hard, moist.	7-8 ft	0.0	NS	
8-10 ft	Clayey silty sand, gray, firm, moist.	8-10 ft	0.0	VSS (weathered)	
10-12 ft	Clayey silt with trace sand, gray, firm, moist.	10-12 ft	0.0	VSS (weathered)	
12-15 ft	Clayey silty with trace sand, gray, hard, moist.	12-15 ft	0.0	VSS	MW-OWS-2 13.5- 15 ft

Soil Sample Collection Depth

WHATCOM ENVIRONMENTAL SERVICES INC.

www.whatcomenvironmental.com

NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: P66 Oily Water Sewer (Phase I)
Client: Phillips 66 Ferndale Refinery
Boring Number: MW-OWS-3
Location: 77 ft west of MW-OWS-2
Date Completed: 5-3-22

Sheet: 1 of 1
Drilled by: Tim Watson (Cascade)
Logged by: Ashley Yamaura (WES)
First Encountered Water: ~10 ft
Total Depth: 15 ft

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
	Cleared to 5 ft with vactor truck				
0-5 ft	Cobbles with sandy silty and gravel, brown, loose, moist.	-	-	-	
5-7 ft	Silty fine sand, brown, compact, moist.	5-7 ft	0.0	NS	
7-8 ft	Clayey silty sandy, brown, firm, moist.	7-8 ft	0.0	NS	
8-10 ft	Clayey silty sand, gray, hard, moist.	8-10 ft	0.0	VSS	MW-OWS-2 8.5-10 ft
10-15 ft	Clayey sandy silt with trace gravel, gray, firm, moist.	10-15 ft	0.0	VSS	MW-OWS-2 13.5-15 ft
	Soil Sample Collection Depth				

WHATCOM ENVIRONMENTAL SERVICES INC.

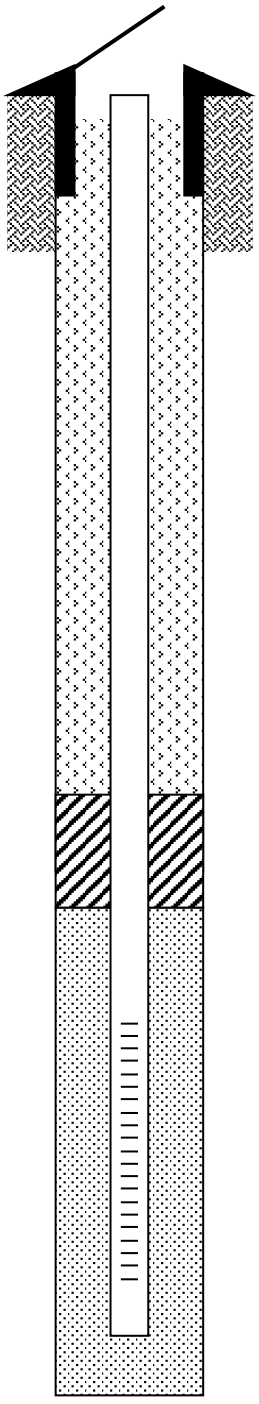
www.whatcomenvironmental.com

NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

APPENDIX B

Well Construction Diagrams

Well Design Specifications



Depths in Feet Below Ground Surface

2

4

5

14.5

15

15

Not to Scale

Elevations (feet): Top of Casing: 191.96
Mean Sea Level (MSL) Ground Elevation:

Coordinates: S: -1636.28 W: -555.66

Coordinate System: Refinery Plant Datum

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.01"

Screen Style: Machine Slot

Sand Pack: Cemex Lapis Lustre #2/12

Bentonite Seal: Cetco Pure Gold Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: Geoprobe 7822DT

Drilled by: Tim Watson

Logged by: Ashley Yamaura

Completion Date: 5/2/2022

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
6/6/2022	2.29	NA	9.49	0.256
8/24/2022	4.78		7.29	0.288
11/16/2022	1.79		7.85	0.323

Comments:

Project: P66 Oily Water Sewer (Phase I)

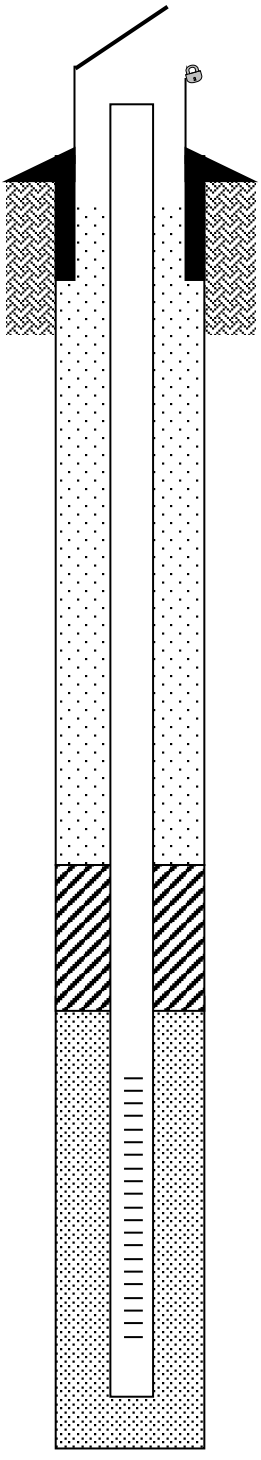
Location: 31.5 ft north of MH 3-4-1

Whatcom Environmental Services
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-OWS-1

Ecology Well ID:
BNC-974

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

2

4

5

14.5

15

15

Elevations (feet) Mean Sea Level (MSL): Top of Casing: 195.84; Ground Elevation:

Coordinates: S: -1690.52 W: -554.11

Coordinate System: Refinery Plant Datum

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.01"

Screen Style: Machine Slot

Sand Pack: Cemex Lapis Lustre #2/12

Bentonite Seal: Cetco Pure Gold Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: Geoprobe 7822DT

Drilled by: Tim Watson

Logged by: Ashley Yamaura

Completion Date: 5/3/2022

Date of Measurement	D-T-W	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
6/6/2022	6.37	NA	8.18	1.135
8/24/2022	8.63		7	0.891
11/14/2022	6.82		7.89	0.943

Comments:

Project: P66 Oily Water Sewer (Phase I)

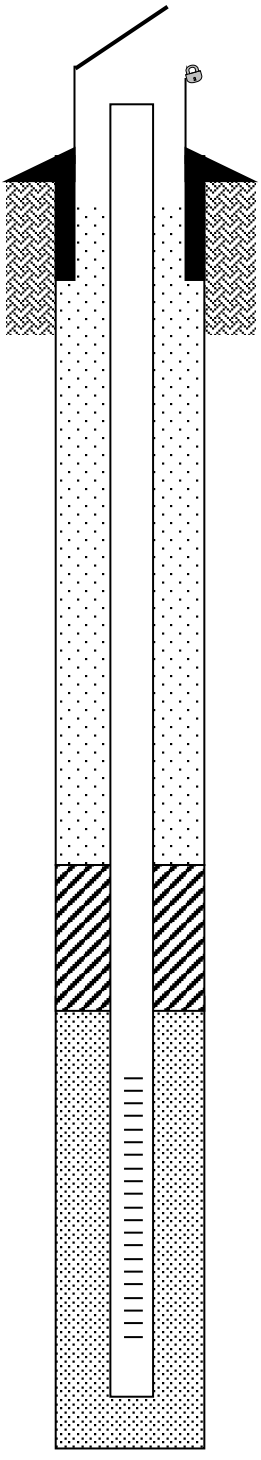
Location: 19 ft south and 2 ft east of MH 3-4-1

Whatcom Environmental Services
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-OWS-2

Ecology Well ID: **BNC-975**

Well Design Specifications



Depths in Feet Below Ground Surface

2

4

5

14.5

15

15

Not to Scale

Elevations (feet): Top of Casing: 194.96
Mean Sea Level (MSL) Ground Elevation:

Coordinates: S: -1690.36 W: -631.28

Coordinate System: Refinery Plant Datum

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.01"

Screen Style: Machine Slot

Sand Pack: Cemex Lapis Lustre #2/12

Bentonite Seal: Cetco Pure Gold Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: Geoprobe 7822DT

Drilled by: Tim Watson

Logged by: Ashley Yamaura

Completion Date: 5/3/2022

Date of Measurement	D-T-W	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
6/6/2022	6.77'	NA	7.99	1.565
8/24/2022	8.63'		7.18	0.992
11/16/2022	6.82'		7.12	0.712

Comments:

Project: P66 Oily Water Sewer (Phase I)

Location: 74.5 ft west of MW-OWS-2

Whatcom Environmental Services
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-OWS-3

Ecology Well ID: **BNC-976**

APPENDIX C

Soil Laboratory Analytical Data Reports

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

May 24, 2022

Joe Sumera
Phillips 66
P.O. Box 8
Ferndale, WA 98248

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Dear Joe Sumera:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2022. 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.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

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

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Ashley Yamaura, Whatcom Environmental Services

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Mold Certification #: LAB0152
Texas Certification #: T 104704245-17-14
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10606192001	**B-1-22 (4 FT)**	Solid	04/27/22 09:20	04/28/22 08:50
10606192002	**B-2-22 (4 FT)**	Solid	04/27/22 10:00	04/28/22 08:50
10606192003	**B-3-22 (4.5 FT)**	Solid	04/27/22 11:00	04/28/22 08:50

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10606192001	**B-1-22 (4 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JL5	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10606192002	**B-2-22 (4 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JL5	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10606192003	**B-3-22 (4.5 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JL5	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-1-22 (4 FT) **Lab ID: 10606192001** Collected: 04/27/22 09:20 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.7**	mg/kg	0.60	1	04/30/22 10:33	05/02/22 14:37	7440-38-2	
Cadmium	**0.11**	mg/kg	0.096	1	04/30/22 10:33	05/02/22 14:37	7440-43-9	
Chromium	**30.1**	mg/kg	2.4	1	04/30/22 10:33	05/02/22 14:37	7440-47-3	
Lead	**2.5**	mg/kg	0.60	1	04/30/22 10:33	05/02/22 14:37	7439-92-1	
Nickel	**31.2**	mg/kg	0.60	1	04/30/22 10:33	05/02/22 14:37	7440-02-0	
Zinc	**48.7**	mg/kg	6.0	1	04/30/22 10:33	05/02/22 14:37	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.025**	mg/kg	0.024	1	04/30/22 11:07	05/10/22 14:01	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**22.4**	%	0.10	1		05/02/22 13:54		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.394	1	05/10/22 09:25	05/11/22 11:10	92-52-4	
Surrogates								
2-Fluorophenol (S)	72.0	%	12.0-120	1	05/10/22 09:25	05/11/22 11:10	367-12-4	
Phenol-d5 (S)	68.4	%	10.0-120	1	05/10/22 09:25	05/11/22 11:10	4165-62-2	
Nitrobenzene-d5 (S)	69.0	%	10.0-122	1	05/10/22 09:25	05/11/22 11:10	4165-60-0	
2-Fluorobiphenyl (S)	70.2	%	15.0-120	1	05/10/22 09:25	05/11/22 11:10	321-60-8	
2,4,6-Tribromophenol (S)	75.3	%	10.0-127	1	05/10/22 09:25	05/11/22 11:10	118-79-6	
p-Terphenyl-d14 (S)	69.0	%	10.0-120	1	05/10/22 09:25	05/11/22 11:10	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	91-57-6	
Acenaphthene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	83-32-9	
Acenaphthylene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	208-96-8	
Anthracene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	207-08-9	
Chrysene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	53-70-3	
Dibenzofuran	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	132-64-9	
Fluoranthene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	206-44-0	
Fluorene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-1-22 (4 FT) **Lab ID: 10606192001** Collected: 04/27/22 09:20 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	91-20-3	
Phenanthrene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	85-01-8	
Pyrene	ND	ug/kg	12.8	1	05/04/22 15:07	05/04/22 20:02	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%.	59-125	1	05/04/22 15:07	05/04/22 20:02	321-60-8	
p-Terphenyl-d14 (S)	79	%.	65-125	1	05/04/22 15:07	05/04/22 20:02	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0592	1	04/27/22 09:20	05/04/22 18:16	67-64-1	
Allyl chloride	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	107-05-1	
Benzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	71-43-2	
Bromobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	108-86-1	
Bromochloromethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	75-27-4	
Bromoform	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	75-25-2	
Bromomethane	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	56-23-5	
Chlorobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	124-48-1	
Chloroethane	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	75-00-3	
Chloroform	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	67-66-3	
Chloromethane	ND	mg/kg	0.00296	1	04/27/22 09:20	05/04/22 18:16	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	96-12-8	
Dibromomethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	142-28-9	L0
2,2-Dichloropropane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	563-58-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-1-22 (4 FT) **Lab ID: 10606192001** Collected: 04/27/22 09:20 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	87-68-3	
n-Hexane	ND	mg/kg	0.0118	1	04/27/22 09:20	05/04/22 18:16	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0118	1	04/27/22 09:20	05/04/22 18:16	78-93-3	
Methylene Chloride	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0118	1	04/27/22 09:20	05/04/22 18:16	108-10-1	C3
Methyl-tert-butyl ether	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	1634-04-4	
Naphthalene	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	103-65-1	
Styrene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	79-34-5	C3
Tetrachloroethene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	109-99-9	
Toluene	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	79-00-5	
Trichloroethene	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00592	1	04/27/22 09:20	05/04/22 18:16	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00296	1	04/27/22 09:20	05/04/22 18:16	96-18-4	C3
Vinyl chloride	ND	mg/kg	0.00118	1	04/27/22 09:20	05/04/22 18:16	75-01-4	
Xylene (Total)	ND	mg/kg	0.00355	1	04/27/22 09:20	05/04/22 18:16	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%	70.0-130	1	04/27/22 09:20	05/04/22 18:16	17060-07-0	
Toluene-d8 (S)	90.0	%	75.0-131	1	04/27/22 09:20	05/04/22 18:16	2037-26-5	
4-Bromofluorobenzene (S)	111	%	67.0-138	1	04/27/22 09:20	05/04/22 18:16	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**84.5**	%		1	05/04/22 16:44	05/04/22 17:06		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**30.1**	mg/kg	1.0	1		05/24/22 09:51		

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-2-22 (4 FT) **Lab ID: 10606192002** Collected: 04/27/22 10:00 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**5.0**	mg/kg	0.62	1	04/30/22 10:33	05/02/22 14:47	7440-38-2	
Cadmium	ND	mg/kg	0.10	1	04/30/22 10:33	05/02/22 14:47	7440-43-9	
Chromium	**27.9**	mg/kg	2.5	1	04/30/22 10:33	05/02/22 14:47	7440-47-3	
Lead	**1.9**	mg/kg	0.62	1	04/30/22 10:33	05/02/22 14:47	7439-92-1	
Nickel	**27.9**	mg/kg	0.62	1	04/30/22 10:33	05/02/22 14:47	7440-02-0	
Zinc	**34.5**	mg/kg	6.2	1	04/30/22 10:33	05/02/22 14:47	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	ND	mg/kg	0.023	1	04/30/22 11:07	05/10/22 14:06	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**21.5**	%	0.10	1		05/02/22 13:54		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.407	1	05/10/22 09:25	05/11/22 11:33	92-52-4	
Surrogates								
2-Fluorophenol (S)	73.9	%	12.0-120	1	05/10/22 09:25	05/11/22 11:33	367-12-4	
Phenol-d5 (S)	69.1	%	10.0-120	1	05/10/22 09:25	05/11/22 11:33	4165-62-2	
Nitrobenzene-d5 (S)	69.8	%	10.0-122	1	05/10/22 09:25	05/11/22 11:33	4165-60-0	
2-Fluorobiphenyl (S)	69.5	%	15.0-120	1	05/10/22 09:25	05/11/22 11:33	321-60-8	
2,4,6-Tribromophenol (S)	78.4	%	10.0-127	1	05/10/22 09:25	05/11/22 11:33	118-79-6	
p-Terphenyl-d14 (S)	72.0	%	10.0-120	1	05/10/22 09:25	05/11/22 11:33	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	91-57-6	
Acenaphthene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	83-32-9	
Acenaphthylene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	208-96-8	
Anthracene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	207-08-9	
Chrysene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	53-70-3	
Dibenzofuran	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	132-64-9	
Fluoranthene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	206-44-0	
Fluorene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-2-22 (4 FT) **Lab ID: 10606192002** Collected: 04/27/22 10:00 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	91-20-3	
Phenanthrene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	85-01-8	
Pyrene	ND	ug/kg	12.6	1	05/10/22 17:38	05/12/22 16:41	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	72	%.	59-125	1	05/10/22 17:38	05/12/22 16:41	321-60-8	
p-Terphenyl-d14 (S)	82	%.	65-125	1	05/10/22 17:38	05/12/22 16:41	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0611	1	04/27/22 10:00	05/04/22 18:38	67-64-1	
Allyl chloride	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	107-05-1	
Benzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	71-43-2	
Bromobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	108-86-1	
Bromochloromethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	75-27-4	
Bromoform	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	75-25-2	
Bromomethane	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	56-23-5	
Chlorobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	124-48-1	
Chloroethane	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	75-00-3	
Chloroform	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	67-66-3	
Chloromethane	ND	mg/kg	0.00305	1	04/27/22 10:00	05/04/22 18:38	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	96-12-8	
Dibromomethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	142-28-9	L0
2,2-Dichloropropane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	563-58-6	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-2-22 (4 FT) **Lab ID: 10606192002** Collected: 04/27/22 10:00 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	87-68-3	
n-Hexane	ND	mg/kg	0.0122	1	04/27/22 10:00	05/04/22 18:38	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0122	1	04/27/22 10:00	05/04/22 18:38	78-93-3	
Methylene Chloride	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0122	1	04/27/22 10:00	05/04/22 18:38	108-10-1	C3
Methyl-tert-butyl ether	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	1634-04-4	
Naphthalene	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	103-65-1	
Styrene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	79-34-5	C3
Tetrachloroethene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	109-99-9	
Toluene	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	79-00-5	
Trichloroethene	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00611	1	04/27/22 10:00	05/04/22 18:38	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00305	1	04/27/22 10:00	05/04/22 18:38	96-18-4	C3
Vinyl chloride	ND	mg/kg	0.00122	1	04/27/22 10:00	05/04/22 18:38	75-01-4	
Xylene (Total)	ND	mg/kg	0.00366	1	04/27/22 10:00	05/04/22 18:38	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	04/27/22 10:00	05/04/22 18:38	17060-07-0	
Toluene-d8 (S)	89.1	%	75.0-131	1	04/27/22 10:00	05/04/22 18:38	2037-26-5	
4-Bromofluorobenzene (S)	112	%	67.0-138	1	04/27/22 10:00	05/04/22 18:38	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**81.9**	%		1	05/04/22 16:44	05/04/22 17:06		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**27.8**	mg/kg	1.0	1		05/24/22 09:51		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-3-22 (4.5 FT) **Lab ID: 10606192003** Collected: 04/27/22 11:00 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**5.0**	mg/kg	0.62	1	04/30/22 10:33	05/02/22 14:51	7440-38-2	
Cadmium	**0.19**	mg/kg	0.099	1	04/30/22 10:33	05/02/22 14:51	7440-43-9	
Chromium	**33.0**	mg/kg	2.5	1	04/30/22 10:33	05/02/22 14:51	7440-47-3	
Lead	**3.5**	mg/kg	0.62	1	04/30/22 10:33	05/02/22 14:51	7439-92-1	
Nickel	**35.9**	mg/kg	0.62	1	04/30/22 10:33	05/02/22 14:51	7440-02-0	
Zinc	**51.7**	mg/kg	6.2	1	04/30/22 10:33	05/02/22 14:51	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.022**	mg/kg	0.021	1	04/30/22 11:07	05/10/22 14:07	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**20.2**	%	0.10	1		05/02/22 13:54		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.411	1	05/10/22 09:25	05/11/22 14:12	92-52-4	
Surrogates								
2-Fluorophenol (S)	72.6	%	12.0-120	1	05/10/22 09:25	05/11/22 14:12	367-12-4	
Phenol-d5 (S)	70.2	%	10.0-120	1	05/10/22 09:25	05/11/22 14:12	4165-62-2	
Nitrobenzene-d5 (S)	71.2	%	10.0-122	1	05/10/22 09:25	05/11/22 14:12	4165-60-0	
2-Fluorobiphenyl (S)	69.7	%	15.0-120	1	05/10/22 09:25	05/11/22 14:12	321-60-8	
2,4,6-Tribromophenol (S)	78.5	%	10.0-127	1	05/10/22 09:25	05/11/22 14:12	118-79-6	
p-Terphenyl-d14 (S)	75.5	%	10.0-120	1	05/10/22 09:25	05/11/22 14:12	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	91-57-6	
Acenaphthene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	83-32-9	
Acenaphthylene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	208-96-8	
Anthracene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	207-08-9	
Chrysene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	53-70-3	
Dibenzofuran	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	132-64-9	
Fluoranthene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	206-44-0	
Fluorene	**13.9**	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-3-22 (4.5 FT) **Lab ID: 10606192003** Collected: 04/27/22 11:00 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	91-20-3	
Phenanthrene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	85-01-8	
Pyrene	ND	ug/kg	12.4	1	05/04/22 15:07	05/04/22 20:45	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	59-125	1	05/04/22 15:07	05/04/22 20:45	321-60-8	
p-Terphenyl-d14 (S)	77	%.	65-125	1	05/04/22 15:07	05/04/22 20:45	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0617	1	04/27/22 11:00	05/04/22 19:00	67-64-1	
Allyl chloride	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	107-05-1	
Benzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	71-43-2	
Bromobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	108-86-1	
Bromochloromethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	75-27-4	
Bromoform	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	75-25-2	
Bromomethane	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	56-23-5	
Chlorobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	124-48-1	
Chloroethane	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	75-00-3	
Chloroform	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	67-66-3	
Chloromethane	ND	mg/kg	0.00309	1	04/27/22 11:00	05/04/22 19:00	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	96-12-8	
Dibromomethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	142-28-9	L0
2,2-Dichloropropane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	563-58-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Sample: B-3-22 (4.5 FT) **Lab ID: 10606192003** Collected: 04/27/22 11:00 Received: 04/28/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	87-68-3	
n-Hexane	ND	mg/kg	0.0123	1	04/27/22 11:00	05/04/22 19:00	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0123	1	04/27/22 11:00	05/04/22 19:00	78-93-3	
Methylene Chloride	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0123	1	04/27/22 11:00	05/04/22 19:00	108-10-1	C3
Methyl-tert-butyl ether	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	1634-04-4	
Naphthalene	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	103-65-1	
Styrene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	79-34-5	C3
Tetrachloroethene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	109-99-9	
Toluene	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	79-00-5	
Trichloroethene	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00617	1	04/27/22 11:00	05/04/22 19:00	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00309	1	04/27/22 11:00	05/04/22 19:00	96-18-4	C3
Vinyl chloride	ND	mg/kg	0.00123	1	04/27/22 11:00	05/04/22 19:00	75-01-4	
Xylene (Total)	ND	mg/kg	0.00370	1	04/27/22 11:00	05/04/22 19:00	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70.0-130	1	04/27/22 11:00	05/04/22 19:00	17060-07-0	
Toluene-d8 (S)	89.9	%	75.0-131	1	04/27/22 11:00	05/04/22 19:00	2037-26-5	
4-Bromofluorobenzene (S)	123	%	67.0-138	1	04/27/22 11:00	05/04/22 19:00	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**81.0**	%		1	05/04/22 16:44	05/04/22 17:06		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**32.8**	mg/kg	1.0	1		05/24/22 09:51		

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 812187
QC Batch Method: EPA 7471B
Analysis Method: EPA 7471B
Analysis Description: 7471B Mercury Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10606192001, 10606192002, 10606192003

METHOD BLANK: 4307147 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192002, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.019	05/10/22 13:58	

LABORATORY CONTROL SAMPLE: 4307148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.5	0.51	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4307149 4307150

Parameter	Units	10606192001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.025	0.61	0.58	0.63	0.58	101	96	80-120	8	20	

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.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 812185
QC Batch Method: EPA 3050B
Analysis Method: EPA 6020B
Analysis Description: 6020B Solids UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10606192001, 10606192002, 10606192003

METHOD BLANK: 4307139 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192002, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.49	05/02/22 14:09	
Cadmium	mg/kg	ND	0.078	05/02/22 14:09	
Chromium	mg/kg	ND	2.0	05/02/22 14:09	
Lead	mg/kg	ND	0.49	05/02/22 14:09	
Nickel	mg/kg	ND	0.49	05/02/22 14:09	
Zinc	mg/kg	ND	4.9	05/02/22 14:09	

LABORATORY CONTROL SAMPLE: 4307140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48.5	46.4	96	80-120	
Cadmium	mg/kg	48.5	45.5	94	80-120	
Chromium	mg/kg	48.5	47.9	99	80-120	
Lead	mg/kg	48.5	47.3	97	80-120	
Nickel	mg/kg	48.5	48.1	99	80-120	
Zinc	mg/kg	48.5	47.0	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4307141 4307142

Parameter	Units	10606230001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	3.6	57.1	53.4	46.7	43.8	75	75	75-125	6	20	
Cadmium	mg/kg	0.17	57.1	53.4	43.5	41.0	76	76	75-125	6	20	
Chromium	mg/kg	17.7	57.1	53.4	59.9	56.9	74	73	75-125	5	20	M1
Lead	mg/kg	17.5	57.1	53.4	69.6	74.2	91	106	75-125	6	20	
Nickel	mg/kg	17.3	57.1	53.4	58.0	55.0	71	71	75-125	5	20	M1
Zinc	mg/kg	31.8	57.1	53.4	73.4	72.8	73	77	75-125	1	20	M1

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1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 812540
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10606192001, 10606192002, 10606192003

SAMPLE DUPLICATE: 4308786

Parameter	Units	10606192001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.4	20.9	7	30	N2

SAMPLE DUPLICATE: 4308812

Parameter	Units	10606165001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	27.8	25.3	9	30	N2

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 1860625
QC Batch Method: 3546
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10606192001, 10606192002, 10606192003

METHOD BLANK: R3790706-2 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192002, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	mg/kg	ND	0.333	05/11/22 07:51	
2-Fluorophenol (S)	%	81.2	12.0-120	05/11/22 07:51	
Phenol-d5 (S)	%	77.8	10.0-120	05/11/22 07:51	
Nitrobenzene-d5 (S)	%	77.5	10.0-122	05/11/22 07:51	
2-Fluorobiphenyl (S)	%	79.9	15.0-120	05/11/22 07:51	
2,4,6-Tribromophenol (S)	%	78.4	10.0-127	05/11/22 07:51	
p-Terphenyl-d14 (S)	%	80.8	10.0-120	05/11/22 07:51	

LABORATORY CONTROL SAMPLE: R3790706-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	mg/kg	0.666	0.538	80.8	39.0-120	
2-Fluorophenol (S)	%			79.9	12.0-120	
Phenol-d5 (S)	%			79.0	10.0-120	
Nitrobenzene-d5 (S)	%			67.3	10.0-122	
2-Fluorobiphenyl (S)	%			80.5	15.0-120	
2,4,6-Tribromophenol (S)	%			95.0	10.0-127	
p-Terphenyl-d14 (S)	%			83.8	10.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3790706-3 R3790706-4

Parameter	Units	L1487950-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	mg/kg	ND	0.798	0.796	0.457	0.451	57.2	56.6	15.0-120	1.32	33	
2-Fluorophenol (S)	%						61.0	55.7	12.0-120			
Phenol-d5 (S)	%						61.3	56.9	10.0-120			
Nitrobenzene-d5 (S)	%						50.0	47.7	10.0-122			
2-Fluorobiphenyl (S)	%						60.5	56.5	15.0-120			
2,4,6-Tribromophenol (S)	%						78.2	71.5	10.0-127			
p-Terphenyl-d14 (S)	%						62.7	58.9	10.0-120			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 1858599
QC Batch Method: 5035A
Analysis Method: EPA 8260D
Analysis Description: VOA (GC/MS) 8260D
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10606192001, 10606192002, 10606192003

METHOD BLANK: R3788392-3 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192002, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	mg/kg	ND	0.0500	05/04/22 13:58	
Allyl chloride	mg/kg	ND	0.00500	05/04/22 13:58	
Benzene	mg/kg	ND	0.00100	05/04/22 13:58	
Bromobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
Bromochloromethane	mg/kg	ND	0.00100	05/04/22 13:58	
Bromodichloromethane	mg/kg	ND	0.00100	05/04/22 13:58	
Bromoform	mg/kg	ND	0.00100	05/04/22 13:58	
Bromomethane	mg/kg	ND	0.00500	05/04/22 13:58	
n-Butylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
sec-Butylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
tert-Butylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
Carbon tetrachloride	mg/kg	ND	0.00100	05/04/22 13:58	
Chlorobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
Dibromochloromethane	mg/kg	ND	0.00100	05/04/22 13:58	
Chloroethane	mg/kg	ND	0.00500	05/04/22 13:58	
Chloroform	mg/kg	ND	0.00500	05/04/22 13:58	
Chloromethane	mg/kg	ND	0.00250	05/04/22 13:58	
2-Chlorotoluene	mg/kg	ND	0.00100	05/04/22 13:58	
4-Chlorotoluene	mg/kg	ND	0.00100	05/04/22 13:58	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	05/04/22 13:58	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	05/04/22 13:58	
Dibromomethane	mg/kg	ND	0.00100	05/04/22 13:58	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
Dichlorodifluoromethane	mg/kg	ND	0.00500	05/04/22 13:58	
Dichlorofluoromethane	mg/kg	ND	0.00500	05/04/22 13:58	
1,1-Dichloroethane	mg/kg	ND	0.00100	05/04/22 13:58	
1,2-Dichloroethane	mg/kg	ND	0.00100	05/04/22 13:58	
1,1-Dichloroethene	mg/kg	ND	0.00100	05/04/22 13:58	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	05/04/22 13:58	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	05/04/22 13:58	
1,2-Dichloropropane	mg/kg	ND	0.00100	05/04/22 13:58	
1,3-Dichloropropane	mg/kg	ND	0.00100	05/04/22 13:58	
2,2-Dichloropropane	mg/kg	ND	0.00100	05/04/22 13:58	
1,1-Dichloropropene	mg/kg	ND	0.00100	05/04/22 13:58	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	05/04/22 13:58	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	05/04/22 13:58	
Ethylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	05/04/22 13:58	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

METHOD BLANK: R3788392-3 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192002, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	05/04/22 13:58	
n-Hexane	mg/kg	ND	0.0100	05/04/22 13:58	
Isopropylbenzene (Cumene)	mg/kg	ND	0.00100	05/04/22 13:58	
p-Isopropyltoluene	mg/kg	ND	0.00100	05/04/22 13:58	
2-Butanone (MEK)	mg/kg	ND	0.0100	05/04/22 13:58	
Methylene Chloride	mg/kg	ND	0.00500	05/04/22 13:58	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	05/04/22 13:58	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	05/04/22 13:58	
Naphthalene	mg/kg	ND	0.00500	05/04/22 13:58	
n-Propylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
Styrene	mg/kg	ND	0.00100	05/04/22 13:58	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	05/04/22 13:58	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	05/04/22 13:58	
Tetrachloroethene	mg/kg	ND	0.00100	05/04/22 13:58	
Tetrahydrofuran	mg/kg	ND	0.00500	05/04/22 13:58	
Toluene	mg/kg	ND	0.00500	05/04/22 13:58	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	05/04/22 13:58	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	05/04/22 13:58	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	05/04/22 13:58	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	05/04/22 13:58	
Trichloroethene	mg/kg	ND	0.00100	05/04/22 13:58	
Trichlorofluoromethane	mg/kg	ND	0.00500	05/04/22 13:58	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	05/04/22 13:58	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	05/04/22 13:58	
Vinyl chloride	mg/kg	ND	0.00100	05/04/22 13:58	
Xylene (Total)	mg/kg	ND	0.00300	05/04/22 13:58	
1,2-Dichloroethane-d4 (S)	%	87.8	70.0-130	05/04/22 13:58	
Toluene-d8 (S)	%	91	75.0-131	05/04/22 13:58	
4-Bromofluorobenzene (S)	%	110	67.0-138	05/04/22 13:58	

LABORATORY CONTROL SAMPLE: R3788392-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	mg/kg	0.125	0.128	102	10.0-160	
Allyl chloride	mg/kg	0.125	0.143	114	70.0-131	
Benzene	mg/kg	0.0250	0.0263	105	70.0-123	
Bromobenzene	mg/kg	0.0250	0.0219	87.6	73.0-121	
Bromochloromethane	mg/kg	0.0250	0.0262	105	77.0-128	
Bromodichloromethane	mg/kg	0.0250	0.0263	105	73.0-121	
Bromoform	mg/kg	0.0250	0.0215	86.0	64.0-132	
Bromomethane	mg/kg	0.0250	0.0237	94.8	56.0-147	
n-Butylbenzene	mg/kg	0.0250	0.0240	96.0	68.0-135	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

LABORATORY CONTROL SAMPLE: R3788392-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
sec-Butylbenzene	mg/kg	0.0250	0.0236	94.4	74.0-130	
tert-Butylbenzene	mg/kg	0.0250	0.0236	94.4	75.0-127	
Carbon tetrachloride	mg/kg	0.0250	0.0297	119	66.0-128	
Chlorobenzene	mg/kg	0.0250	0.0224	89.6	76.0-128	
Dibromochloromethane	mg/kg	0.0250	0.0209	83.6	74.0-127	
Chloroethane	mg/kg	0.0250	0.0241	96.4	61.0-134	
Chloroform	mg/kg	0.0250	0.0281	112	72.0-123	
Chloromethane	mg/kg	0.0250	0.0335	134	51.0-138	
2-Chlorotoluene	mg/kg	0.0250	0.0238	95.2	75.0-124	
4-Chlorotoluene	mg/kg	0.0250	0.0244	97.6	75.0-124	
1,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0194	77.6	74.0-128	
1,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0213	85.2	59.0-130	
Dibromomethane	mg/kg	0.0250	0.0225	90.0	75.0-122	
1,2-Dichlorobenzene	mg/kg	0.0250	0.0220	88.0	76.0-124	
1,3-Dichlorobenzene	mg/kg	0.0250	0.0242	96.8	76.0-125	
1,4-Dichlorobenzene	mg/kg	0.0250	0.0228	91.2	77.0-121	
Dichlorodifluoromethane	mg/kg	0.0250	0.0319	128	43.0-156	
Dichlorofluoromethane	mg/kg	0.0250	0.0267	107	65.0-137	
1,1-Dichloroethane	mg/kg	0.0250	0.0290	116	70.0-127	
1,2-Dichloroethane	mg/kg	0.0250	0.0244	97.6	65.0-131	
1,1-Dichloroethene	mg/kg	0.0250	0.0296	118	65.0-131	
cis-1,2-Dichloroethene	mg/kg	0.0250	0.0282	113	73.0-125	
trans-1,2-Dichloroethene	mg/kg	0.0250	0.0290	116	71.0-125	
1,2-Dichloropropane	mg/kg	0.0250	0.0252	101	74.0-125	
1,3-Dichloropropane	mg/kg	0.0250	0.0194	77.6	80.0-125	L0
2,2-Dichloropropane	mg/kg	0.0250	0.0308	123	59.0-135	
1,1-Dichloropropene	mg/kg	0.0250	0.0276	110	73.0-125	
cis-1,3-Dichloropropene	mg/kg	0.0250	0.0249	99.6	76.0-127	
trans-1,3-Dichloropropene	mg/kg	0.0250	0.0200	80.0	73.0-127	
Ethylbenzene	mg/kg	0.0250	0.0228	91.2	74.0-126	
Diethyl ether (Ethyl ether)	mg/kg	0.0250	0.0259	104	64.0-137	
Hexachloro-1,3-butadiene	mg/kg	0.0250	0.0237	94.8	57.0-150	
n-Hexane	mg/kg	0.0250	0.0269	108	55.0-137	
Isopropylbenzene (Cumene)	mg/kg	0.0250	0.0256	102	72.0-127	
p-Isopropyltoluene	mg/kg	0.0250	0.0241	96.4	72.0-133	
2-Butanone (MEK)	mg/kg	0.125	0.104	83.2	30.0-160	
Methylene Chloride	mg/kg	0.0250	0.0261	104	68.0-123	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.125	0.0847	67.8	56.0-143	
Methyl-tert-butyl ether	mg/kg	0.0250	0.0258	103	66.0-132	
Naphthalene	mg/kg	0.0250	0.0213	85.2	59.0-130	
n-Propylbenzene	mg/kg	0.0250	0.0235	94.0	74.0-126	
Styrene	mg/kg	0.0250	0.0252	101	72.0-127	
1,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0226	90.4	74.0-129	
1,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0184	73.6	68.0-128	
Tetrachloroethene	mg/kg	0.0250	0.0236	94.4	70.0-136	
Tetrahydrofuran	mg/kg	0.0250	0.0211	84.4	37.0-146	
Toluene	mg/kg	0.0250	0.0219	87.6	75.0-121	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

LABORATORY CONTROL SAMPLE: R3788392-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichlorobenzene	mg/kg	0.0250	0.0262	105	59.0-139	
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0276	110	62.0-137	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0243	97.2	70.0-126	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0241	96.4	73.0-127	
1,1,1-Trichloroethane	mg/kg	0.0250	0.0292	117	69.0-126	
1,1,2-Trichloroethane	mg/kg	0.0250	0.0196	78.4	78.0-123	
Trichloroethene	mg/kg	0.0250	0.0262	105	76.0-126	
Trichlorofluoromethane	mg/kg	0.0250	0.0298	119	61.0-142	
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0288	115	61.0-139	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0183	73.2	67.0-129	
Vinyl chloride	mg/kg	0.0250	0.0282	113	63.0-134	
Xylene (Total)	mg/kg	0.0750	0.0704	93.9	72.0-127	
1,2-Dichloroethane-d4 (S)	%			104	70.0-130	
Toluene-d8 (S)	%			87.4	75.0-131	
4-Bromofluorobenzene (S)	%			115	67.0-138	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 813052
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10606192001, 10606192003

METHOD BLANK: 4311018 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/04/22 17:08	
2-Methylnaphthalene	ug/kg	ND	10.0	05/04/22 17:08	
Acenaphthene	ug/kg	ND	10.0	05/04/22 17:08	
Acenaphthylene	ug/kg	ND	10.0	05/04/22 17:08	
Anthracene	ug/kg	ND	10.0	05/04/22 17:08	
Benzo(a)anthracene	ug/kg	ND	10.0	05/04/22 17:08	
Benzo(a)pyrene	ug/kg	ND	10.0	05/04/22 17:08	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/04/22 17:08	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	05/04/22 17:08	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/04/22 17:08	
Chrysene	ug/kg	ND	10.0	05/04/22 17:08	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/04/22 17:08	
Dibenzofuran	ug/kg	ND	10.0	05/04/22 17:08	
Fluoranthene	ug/kg	ND	10.0	05/04/22 17:08	
Fluorene	ug/kg	ND	10.0	05/04/22 17:08	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/04/22 17:08	
Naphthalene	ug/kg	ND	10.0	05/04/22 17:08	
Phenanthrene	ug/kg	ND	10.0	05/04/22 17:08	
Pyrene	ug/kg	ND	10.0	05/04/22 17:08	
2-Fluorobiphenyl (S)	%.	72	59-125	05/04/22 17:08	
p-Terphenyl-d14 (S)	%.	86	65-125	05/04/22 17:08	

LABORATORY CONTROL SAMPLE: 4311019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	91.4	91	50-125	
2-Methylnaphthalene	ug/kg	100	76.3	76	55-125	
Acenaphthene	ug/kg	100	83.0	83	60-125	
Acenaphthylene	ug/kg	100	82.0	82	59-125	
Anthracene	ug/kg	100	95.9	96	62-125	
Benzo(a)anthracene	ug/kg	100	83.5	83	64-125	
Benzo(a)pyrene	ug/kg	100	91.1	91	64-125	
Benzo(b)fluoranthene	ug/kg	100	83.5	84	65-125	
Benzo(g,h,i)perylene	ug/kg	100	92.7	93	66-125	
Benzo(k)fluoranthene	ug/kg	100	92.4	92	66-125	
Chrysene	ug/kg	100	91.8	92	66-125	
Dibenz(a,h)anthracene	ug/kg	100	93.4	93	67-125	
Dibenzofuran	ug/kg	100	80.3	80	70-130	
Fluoranthene	ug/kg	100	87.0	87	65-125	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

LABORATORY CONTROL SAMPLE: 4311019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	100	82.3	82	60-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	91.3	91	64-125	
Naphthalene	ug/kg	100	81.4	81	48-125	
Phenanthrene	ug/kg	100	77.3	77	62-125	
Pyrene	ug/kg	100	86.1	86	68-125	
2-Fluorobiphenyl (S)	%.			78	59-125	
p-Terphenyl-d14 (S)	%.			84	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4311024 4311025

Parameter	Units	10606423001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	626	124	124	988	550	293	-61	60-125	57	30	M1,R1
2-Methylnaphthalene	ug/kg	692	124	124	1200	852	410	128	59-125	34	30	M1,R1
Acenaphthene	ug/kg	4060	124	124	5620	4710	1260	519	70-125	18	30	M1
Acenaphthylene	ug/kg	ND	124	124	225	209	103	90	30-150	7	30	
Anthracene	ug/kg	32900	124	124	12000	10600	-16800	-17900	67-125	12	30	M1
Benzo(a)anthracene	ug/kg	81000	124	124	32500	31900	-39100	-39500	64-125	2	30	P6
Benzo(a)pyrene	ug/kg	57600	124	124	25200	23200	-26100	-27700	40-137	8	30	P6
Benzo(b)fluoranthene	ug/kg	82800	124	124	35400	30900	-38300	-41800	30-150	13	30	P6
Benzo(g,h,i)perylene	ug/kg	35000	124	124	15300	14000	-15900	-17000	69-125	9	30	P6
Benzo(k)fluoranthene	ug/kg	34800	124	124	15800	12700	-15400	-17800	48-133	21	30	P6
Chrysene	ug/kg	80600	124	124	30300	28800	-40600	-41700	62-125	5	30	P6
Dibenz(a,h)anthracene	ug/kg	4600	124	124	5170	5340	459	591	57-125	3	30	M1
Dibenzofuran	ug/kg	2000	124	124	2630	2240	511	198	70-130	16	30	M1
Fluoranthene	ug/kg	156000	124	124	58500	54300	-78700	-81900	60-125	7	30	P6
Fluorene	ug/kg	3500	124	124	4790	3760	1040	206	53-125	24	30	M1
Indeno(1,2,3-cd)pyrene	ug/kg	39900	124	124	17900	16000	-17800	-19300	49-130	11	30	P6
Naphthalene	ug/kg	483	124	124	965	658	390	141	46-125	38	30	M1,R1
Phenanthrene	ug/kg	92800	124	124	36400	32600	-45500	-48500	61-125	11	30	P6
Pyrene	ug/kg	123000	124	124	49900	45000	-58700	-62500	58-125	10	30	P6
2-Fluorobiphenyl (S)	%.						95	88	59-125			D3
p-Terphenyl-d14 (S)	%.						99	95	65-125			

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 814379
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10606192002

METHOD BLANK: 4317234 Matrix: Solid
Associated Lab Samples: 10606192002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/12/22 09:55	
2-Methylnaphthalene	ug/kg	ND	10.0	05/12/22 09:55	
Acenaphthene	ug/kg	ND	10.0	05/12/22 09:55	
Acenaphthylene	ug/kg	ND	10.0	05/12/22 09:55	
Anthracene	ug/kg	ND	10.0	05/12/22 09:55	
Benzo(a)anthracene	ug/kg	ND	10.0	05/12/22 09:55	
Benzo(a)pyrene	ug/kg	ND	10.0	05/12/22 09:55	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/12/22 09:55	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	05/12/22 09:55	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/12/22 09:55	
Chrysene	ug/kg	ND	10.0	05/12/22 09:55	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/12/22 09:55	
Dibenzofuran	ug/kg	ND	10.0	05/12/22 09:55	
Fluoranthene	ug/kg	ND	10.0	05/12/22 09:55	
Fluorene	ug/kg	ND	10.0	05/12/22 09:55	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/12/22 09:55	
Naphthalene	ug/kg	ND	10.0	05/12/22 09:55	
Phenanthrene	ug/kg	ND	10.0	05/12/22 09:55	
Pyrene	ug/kg	ND	10.0	05/12/22 09:55	
2-Fluorobiphenyl (S)	%.	66	59-125	05/12/22 09:55	
p-Terphenyl-d14 (S)	%.	98	65-125	05/12/22 09:55	

LABORATORY CONTROL SAMPLE: 4317235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	63.7	64	50-125	
2-Methylnaphthalene	ug/kg	100	64.2	64	55-125	
Acenaphthene	ug/kg	100	73.3	73	60-125	
Acenaphthylene	ug/kg	100	73.7	74	59-125	
Anthracene	ug/kg	100	83.1	83	62-125	
Benzo(a)anthracene	ug/kg	100	91.6	92	64-125	
Benzo(a)pyrene	ug/kg	100	80.6	81	64-125	
Benzo(b)fluoranthene	ug/kg	100	87.3	87	65-125	
Benzo(g,h,i)perylene	ug/kg	100	90.0	90	66-125	
Benzo(k)fluoranthene	ug/kg	100	92.3	92	66-125	
Chrysene	ug/kg	100	86.0	86	66-125	
Dibenz(a,h)anthracene	ug/kg	100	92.0	92	67-125	
Dibenzofuran	ug/kg	100	76.9	77	70-130	
Fluoranthene	ug/kg	100	90.1	90	65-125	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

LABORATORY CONTROL SAMPLE: 4317235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	100	79.8	80	60-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	85.3	85	64-125	
Naphthalene	ug/kg	100	67.6	68	48-125	
Phenanthrene	ug/kg	100	83.8	84	62-125	
Pyrene	ug/kg	100	89.3	89	68-125	
2-Fluorobiphenyl (S)	%.			70	59-125	
p-Terphenyl-d14 (S)	%.			92	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4317236 4317237

Parameter	Units	10607640001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	ND	105	104	320J	657	306	629	60-125		30	P6
2-Methylnaphthalene	ug/kg	ND	105	104	284J	598	272	573	59-125		30	P6
Acenaphthene	ug/kg	0.45 mg/kg	105	104	613	1210	155	731	70-125	66	30	P6,R1
Acenaphthylene	ug/kg	3.6 mg/kg	105	104	2460	3380	-1060	-173	30-150	32	30	P6,R1
Anthracene	ug/kg	4.9 mg/kg	105	104	4470	6820	-415	1840	67-125	42	30	P6,R1
Benzo(a)anthracene	ug/kg	9.4 mg/kg	105	104	7720	10800	-1620	1280	64-125	33	30	P6,R1
Benzo(a)pyrene	ug/kg	13.0 mg/kg	105	104	10000	12300	-2840	-679	40-137	20	30	P6
Benzo(b)fluoranthene	ug/kg	15.5 mg/kg	105	104	12400	14600	-2910	-806	30-150	16	30	P6
Benzo(g,h,i)perylene	ug/kg	10.6 mg/kg	105	104	8240	10000	-2290	-605	69-125	19	30	P6
Benzo(k)fluoranthene	ug/kg	6.4 mg/kg	105	104	5220	5800	-1140	-576	48-133	11	30	P6
Chrysene	ug/kg	11.2 mg/kg	105	104	8560	11500	-2500	352	62-125	30	30	P6
Dibenz(a,h)anthracene	ug/kg	2.2 mg/kg	105	104	2250	2600	10	342	57-125	14	30	P6
Dibenzofuran	ug/kg	699	105	104	671	1920	-27	1170	70-130	96	30	P6,R1
Fluoranthene	ug/kg	21.8 mg/kg	105	104	17700	25500	-3920	3590	60-125	36	30	P6,R1
Fluorene	ug/kg	1.5 mg/kg	105	104	1370	2440	-94	930	53-125	56	30	P6,R1
Indeno(1,2,3-cd)pyrene	ug/kg	11.6 mg/kg	105	104	8980	10900	-2540	-756	49-130	19	30	P6
Naphthalene	ug/kg	0.85 mg/kg	105	104	585	2950	-254	2010	46-125	134	30	P6,R1
Phenanthrene	ug/kg	10.6 mg/kg	105	104	8700	19300	-1800	8330	61-125	76	30	P6,R1
Pyrene	ug/kg	18.4 mg/kg	105	104	14400	20200	-3830	1710	58-125	33	30	P6,R1
2-Fluorobiphenyl (S)	%.						75	79	59-125			D4
p-Terphenyl-d14 (S)	%.						85	85	65-125			

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

QC Batch: 1858301 Analysis Method: SM 2540G
QC Batch Method: SM 2540 G Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10606192001, 10606192002, 10606192003

METHOD BLANK: R3788320-1 Matrix: Solid
Associated Lab Samples: 10606192001, 10606192002, 10606192003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	ND		05/04/22 17:06	

LABORATORY CONTROL SAMPLE: R3788320-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3788320-3

Parameter	Units	10606192003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	81.0	78.5	3.15	10	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
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.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10606192

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10606192001	**B-1-22 (4 FT)**	EPA 3050B	812185	EPA 6020B	812475
10606192002	**B-2-22 (4 FT)**	EPA 3050B	812185	EPA 6020B	812475
10606192003	**B-3-22 (4.5 FT)**	EPA 3050B	812185	EPA 6020B	812475
10606192001	**B-1-22 (4 FT)**	EPA 7471B	812187	EPA 7471B	812465
10606192002	**B-2-22 (4 FT)**	EPA 7471B	812187	EPA 7471B	812465
10606192003	**B-3-22 (4.5 FT)**	EPA 7471B	812187	EPA 7471B	812465
10606192001	**B-1-22 (4 FT)**	ASTM D2974	812540		
10606192002	**B-2-22 (4 FT)**	ASTM D2974	812540		
10606192003	**B-3-22 (4.5 FT)**	ASTM D2974	812540		
10606192001	**B-1-22 (4 FT)**	3546	1860625	EPA 8270E	1860625
10606192002	**B-2-22 (4 FT)**	3546	1860625	EPA 8270E	1860625
10606192003	**B-3-22 (4.5 FT)**	3546	1860625	EPA 8270E	1860625
10606192001	**B-1-22 (4 FT)**	EPA 3546	813052	EPA 8270E by SIM	813354
10606192002	**B-2-22 (4 FT)**	EPA 3546	814379	EPA 8270E by SIM	814600
10606192003	**B-3-22 (4.5 FT)**	EPA 3546	813052	EPA 8270E by SIM	813354
10606192001	**B-1-22 (4 FT)**	5035A	1858599	EPA 8260D	1858599
10606192002	**B-2-22 (4 FT)**	5035A	1858599	EPA 8260D	1858599
10606192003	**B-3-22 (4.5 FT)**	5035A	1858599	EPA 8260D	1858599
10606192001	**B-1-22 (4 FT)**	SM 2540 G	1858301	SM 2540G	1858301
10606192002	**B-2-22 (4 FT)**	SM 2540 G	1858301	SM 2540G	1858301
10606192003	**B-3-22 (4.5 FT)**	SM 2540 G	1858301	SM 2540G	1858301
10606192001	**B-1-22 (4 FT)**	Trivalent Chromium Calculation	817237		
10606192002	**B-2-22 (4 FT)**	Trivalent Chromium Calculation	817237		
10606192003	**B-3-22 (4.5 FT)**	Trivalent Chromium Calculation	817237		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company:	Phillips 66 Ferndale Refinery
Address:	PO Box 8
	Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com
Phone:	(360) 384-8377 Fax (360) 384-8422
Requested Due Date/TAT:	**Standard TAT**

Section B — Required Project Information:

Report To:	Joe Sumera
Copy To:	Ashley Yamaura
	ayamaura@whatcom-es.com / 360-752-9571
Purchase Order No.	PO # 4300035146
Client Project ID:	P66: Oily Water Sewer
Container Order Number:	

Section C — Invoice Information:

Attention:	Joe Sumera
Company Name:	Phillips 66
Address:	PO Box 8, Ferndale, WA 98248
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

Regulatory Agency

State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
1	B-1-22 (4 FT)	SL	G	4/27/22		-	-			TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars	X X X X X X X X X X		pH not collected needed on 2
2	B-2-22 (4 FT)	SL	G	4/27/22		-	-			TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars	X X X X X X X X X X		
3	B-3-22 (4.5 FT)	SL	G	4/27/22		-	-			TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars	X X X X X X X X X X		on 3
4													
5													
6													
7													
8													
9													

Analyses Test: BTEX - EPA 8260; NWTPH - VPH; NWTPH - EPH; PAHs/cPAHs - 8270 SIM (see attached list); Naphthalenes 8270 SIM; As, Cd, Cr (III & VI), Pb, Ni, Zn - EPA 6020; Mercury - EPA 7471; pH; Chlorinated VOCs EPA 8260; Hexane

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Please email results to both Phillips 66, and Whatcom Environmental	/ Whatcom Environmental			/ PACE	4/28/22	8:50
See attached page for requested reporting limits.						
VPH and EPH analysis will be subbed to Fremont Analytical						

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ashley Yamaura — Ashley Yamaura

SIGNATURE of SAMPLER: — DATE Signed: 4/27/22

WO# : 10906192

10906192

PHILLIPS 66 / WHATCOM ENVIRONMENTAL

4-12-21

REQUESTED LIMITS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS
Benzene	EPA-8021	U	0.030	1	MG/KG
Toluene	EPA-8021	U	0.050	1	MG/KG
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG
Xylenes	EPA-8021	U	0.20	1	MG/KG
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG
Hexane	NWVPH	U	0.20	1	MG/KG
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG
Chrysene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG
Mercury	EPA-7471	0.038	0.020	1	MG/KG

Table 3. Contaminants of Concern and Analytical Methods

	Analytical Method (Soil)	Analytical Method (Groundwater)
Total Petroleum Hydrocarbons		
Gasoline Range TPH	NWVPH*	NWTPH-Gx*
Diesel Range TPH	NWEPH*	NWTPH-Dx*
Volatile Organic Compounds (VOC)		
Benzene	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Toluene	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Ethylbenzene	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Total Xylenes	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
All Standard Chlorinated VOCs	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Polycyclic Aromatic Hydrocarbons (PAH)		
Acenaphthene	EPA-8270 SIM*	EPA-8270 SIM*
Anthracene	EPA-8270 SIM*	EPA-8270 SIM*
Benz[a]anthracene	EPA-8270 SIM*	EPA-8270 SIM*
Benzo(a)pyrene	EPA-8270 SIM*	EPA-8270 SIM*
Benzo(b)fluoranthene	EPA-8270 SIM*	EPA-8270 SIM*
Benzo(k)fluoranthene	EPA-8270 SIM*	EPA-8270 SIM*
Biphenyl	EPA-8270*	EPA-8270*
Chrysene	EPA-8270 SIM*	EPA-8270 SIM*
Dibenzo(a,h)anthracene	EPA-8270 SIM*	EPA-8270 SIM*
Dibenzofuran	EPA-8270 SIM*	EPA-8270 SIM*
Fluoranthene	EPA-8270 SIM*	EPA-8270 SIM*
Fluorene	EPA-8270 SIM*	EPA-8270 SIM*
Indeno(1,2,3-cd)pyrene	EPA-8270 SIM*	EPA-8270 SIM*
2-Methylnaphthalene	EPA-8270 SIM*	EPA-8270 SIM*
1-Methylnaphthalene	EPA-8270 SIM*	EPA-8270 SIM*
Naphthalene	EPA-8270 SIM*	EPA-8270 SIM*
Pyrene	EPA-8270 SIM*	EPA-8270 SIM*
Metals		
Arsenic	EPA-6020*	EPA-200.8*
Cadmium	EPA-6020*	EPA-200.8*
Chromium (III)	EPA-6020*	EPA-200.8*
Lead	EPA-6020*	EPA-200.8*
Mercury	EPA-7471*	EPA-245.1*
Nickel	EPA-6020*	EPA-200.8*
Zinc	EPA-6020*	EPA-200.8*

* - or equivalent method

	DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)
Pace ANALYTICAL SERVICES	Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Phillip 66 Ferndale Refinery

Project #:

WO#: 10606192

PM: JMG **Due Date: 05/12/22**

CLIENT: COP

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

See Exceptions ☐ ENV-FRM-MIN4-0142

Tracking Number: 5965 1015 5252

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: Plastic Bags Temp Blank? ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☑ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235) ☐ T7(0042) ☐ 01339252/1710 ☐ 122659816 ☐ 140792808

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ 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: 1.5 °C

Correction Factor: True

Cooler Temp Corrected w/temp blank: 1.5 °C

Average Corrected Temp (no temp blank only): °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other:)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Date/Initials of Person Examining Contents: KN 04/29/22

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): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other-	☑ Yes	☐ No		11. If no, write ID/ Date/Time on Container Below: Times on containers 9:20, 10:00, 11:00 respectively. See Exception ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☑ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No pH Paper Lot# See Exception ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☑ No	☐ N/A	13. See Exception ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☑ No	☐ N/A	
Trip Blank Present?	☐ Yes	☑ No	☐ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☑ No	☐ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Date/Time: Field Data Required? ☐ Yes ☐ No

Comments/Resolution:

Project Manager Review: Jenna Gross Date: 4/29/22

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: CM (2)

F022

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WA
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 4/28/2022 Results Requested By: 5/12/2022

Workorder: 10606192 **Workorder Name:** P66: Oily Water Sewer

Report To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: VG9H	Preserved Containers: JGCU Unpreserved					Requested Analysis: 8260D AP9 LL VOCs (PACE-TN)	Requested Analysis: 8270E Biphenyl (PACE-TN)	Requested Analysis: Total Solids (PACE-TN)										LAB USE ONLY: L1488167
1	B-1-22 (4 FT)	PS	4/27/2022 09:20	10606192001	Solid	2	1					X	X	X										-01
2	B-2-22 (4 FT)	PS	4/27/2022 10:00	10606192002	Solid	2	1					X	X	X										-02
3	B-3-22 (4.5 FT)	PS	4/27/2022 11:00	10606192003	Solid	2	1					X	X	X										-03
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/Pace	4.29.22 15:05		4/30/22 9:00
2				
3				

Comments
8260D AP9: Use stir bars
8260D: Full list chlorinated VOCs+BTEX+hexane

Cooler Temperature on Receipt ____ °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

4.9 to = 4.9 DRAT

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota
Jenni Gross
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: P66: Oily Water Sewer
Work Order Number: 2205142

May 20, 2022

Attention Jenni Gross:

Fremont Analytical, Inc. received 3 sample(s) on 5/5/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Hexavalent Chromium by EPA Method 7196
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,



Brianna Barnes
Project Manager

Date: *05/24/2022*

CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer
Work Order: 2205142

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205142-001	B-1-22 (4 FT)	04/27/2022 9:20 AM	05/05/2022 3:37 PM
2205142-002	B-2-22 (4 FT)	04/27/2022 10:00 AM	05/05/2022 3:37 PM
2205142-003	B-3-22 (4.5 FT)	04/27/2022 11:00 AM	05/05/2022 3:37 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Revision v1

Case Narrative

WO#: **2205142**
Date: **5/20/2022**

CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

5/24/2022: Revision 1 includes correction to a sample ID per client request.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2205142**
Date Reported: **5/20/2022**

CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

Lab ID: 2205142-001 **Collection Date:** 4/27/2022 9:20:00 AM
Client Sample ID: **B-1-22 (4 FT)** **Matrix:** Solid

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	4.82		mg/Kg-dry	1	5/19/2022 4:52:41 PM
Aliphatic Hydrocarbon (C12-C16)	ND	2.05		mg/Kg-dry	1	5/19/2022 4:52:41 PM
Aliphatic Hydrocarbon (C16-C21)	ND	4.10		mg/Kg-dry	1	5/19/2022 4:52:41 PM
Aliphatic Hydrocarbon (C21-C34)	ND	6.59		mg/Kg-dry	1	5/19/2022 4:52:41 PM
Aromatic Hydrocarbon (C10-C12)	ND	3.42		mg/Kg-dry	1	5/19/2022 9:58:47 PM
Aromatic Hydrocarbon (C12-C16)	ND	2.36		mg/Kg-dry	1	5/19/2022 9:58:47 PM
Aromatic Hydrocarbon (C16-C21)	ND	5.44		mg/Kg-dry	1	5/19/2022 9:58:47 PM
Aromatic Hydrocarbon (C21-C34)	ND	8.04		mg/Kg-dry	1	5/19/2022 9:58:47 PM
Surr: 1-Chlorooctadecane	88.3	60 - 140		%Rec	1	5/19/2022 4:52:41 PM
Surr: o-Terphenyl	90.1	60 - 140		%Rec	1	5/19/2022 9:58:47 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.09	H	mg/Kg-dry	1	5/13/2022 9:14:09 AM
Aliphatic Hydrocarbon (C6-C8)	0.599	0.367	JH	mg/Kg-dry	1	5/13/2022 9:14:09 AM
Aliphatic Hydrocarbon (C8-C10)	ND	1.07	H	mg/Kg-dry	1	5/13/2022 9:14:09 AM
Aromatic Hydrocarbon (C8-C10)	ND	1.38	H	mg/Kg-dry	1	5/13/2022 9:14:09 AM
Surr: 1,4-Difluorobenzene	76.2	60 - 140	H	%Rec	1	5/13/2022 9:14:09 AM
Surr: Bromofluorobenzene	87.5	60 - 140	H	%Rec	1	5/13/2022 9:14:09 AM
Sample Moisture (Percent Moisture)				Batch ID: R75246		Analyst: me
Percent Moisture	15.3	0.100		wt%	1	5/6/2022 2:15:23 PM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36395		Analyst: TN
Chromium, Hexavalent	ND	0.113		mg/Kg-dry	1	5/11/2022 5:11:00 PM

Analytical Report

Work Order: **2205142**
Date Reported: **5/20/2022**

CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

Lab ID: 2205142-002 **Collection Date:** 4/27/2022 10:00:00 AM
Client Sample ID: **B-2-22 (4 FT)** **Matrix:** Solid

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	4.97		mg/Kg-dry	1	5/19/2022 5:13:05 PM
Aliphatic Hydrocarbon (C12-C16)	ND	2.12		mg/Kg-dry	1	5/19/2022 5:13:05 PM
Aliphatic Hydrocarbon (C16-C21)	ND	4.23		mg/Kg-dry	1	5/19/2022 5:13:05 PM
Aliphatic Hydrocarbon (C21-C34)	ND	6.80		mg/Kg-dry	1	5/19/2022 5:13:05 PM
Aromatic Hydrocarbon (C10-C12)	ND	3.53		mg/Kg-dry	1	5/19/2022 10:19:02 PM
Aromatic Hydrocarbon (C12-C16)	ND	2.43		mg/Kg-dry	1	5/19/2022 10:19:02 PM
Aromatic Hydrocarbon (C16-C21)	ND	5.61		mg/Kg-dry	1	5/19/2022 10:19:02 PM
Aromatic Hydrocarbon (C21-C34)	ND	8.30		mg/Kg-dry	1	5/19/2022 10:19:02 PM
Surr: 1-Chlorooctadecane	87.2	60 - 140		%Rec	1	5/19/2022 5:13:05 PM
Surr: o-Terphenyl	92.1	60 - 140		%Rec	1	5/19/2022 10:19:02 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	0.958	H	mg/Kg-dry	1	5/13/2022 9:55:28 AM
Aliphatic Hydrocarbon (C6-C8)	0.359	0.324	JH	mg/Kg-dry	1	5/13/2022 9:55:28 AM
Aliphatic Hydrocarbon (C8-C10)	ND	0.947	H	mg/Kg-dry	1	5/13/2022 9:55:28 AM
Aromatic Hydrocarbon (C8-C10)	ND	1.22	H	mg/Kg-dry	1	5/13/2022 9:55:28 AM
Surr: 1,4-Difluorobenzene	74.6	60 - 140	H	%Rec	1	5/13/2022 9:55:28 AM
Surr: Bromofluorobenzene	87.3	60 - 140	H	%Rec	1	5/13/2022 9:55:28 AM
Sample Moisture (Percent Moisture)				Batch ID: R75246		Analyst: me
Percent Moisture	17.4	0.100		wt%	1	5/6/2022 2:15:23 PM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36395		Analyst: TN
Chromium, Hexavalent	0.128	0.118	J	mg/Kg-dry	1	5/11/2022 5:49:00 PM

Analytical Report

Work Order: **2205142**
Date Reported: **5/20/2022**

CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

Lab ID: 2205142-003 **Collection Date:** 4/27/2022 11:00:00 AM
Client Sample ID: **B-3-22 (4.5 FT)** **Matrix:** Solid

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	5.10		mg/Kg-dry	1	5/19/2022 6:14:28 PM
Aliphatic Hydrocarbon (C12-C16)	5.30	2.17	J	mg/Kg-dry	1	5/19/2022 6:14:28 PM
Aliphatic Hydrocarbon (C16-C21)	ND	4.34		mg/Kg-dry	1	5/19/2022 6:14:28 PM
Aliphatic Hydrocarbon (C21-C34)	9.45	6.98	J	mg/Kg-dry	1	5/19/2022 6:14:28 PM
Aromatic Hydrocarbon (C10-C12)	ND	3.63		mg/Kg-dry	1	5/19/2022 11:19:48 PM
Aromatic Hydrocarbon (C12-C16)	ND	2.50		mg/Kg-dry	1	5/19/2022 11:19:48 PM
Aromatic Hydrocarbon (C16-C21)	ND	5.76		mg/Kg-dry	1	5/19/2022 11:19:48 PM
Aromatic Hydrocarbon (C21-C34)	ND	8.52		mg/Kg-dry	1	5/19/2022 11:19:48 PM
Surr: 1-Chlorooctadecane	84.6	60 - 140		%Rec	1	5/19/2022 6:14:28 PM
Surr: o-Terphenyl	85.1	60 - 140		%Rec	1	5/19/2022 11:19:48 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.14	H	mg/Kg-dry	1	5/13/2022 10:36:50 AM
Aliphatic Hydrocarbon (C6-C8)	0.517	0.384	JH	mg/Kg-dry	1	5/13/2022 10:36:50 AM
Aliphatic Hydrocarbon (C8-C10)	ND	1.12	H	mg/Kg-dry	1	5/13/2022 10:36:50 AM
Aromatic Hydrocarbon (C8-C10)	1.69	1.45	JH	mg/Kg-dry	1	5/13/2022 10:36:50 AM
Surr: 1,4-Difluorobenzene	75.8	60 - 140	H	%Rec	1	5/13/2022 10:36:50 AM
Surr: Bromofluorobenzene	97.7	60 - 140	H	%Rec	1	5/13/2022 10:36:50 AM
Sample Moisture (Percent Moisture)				Batch ID: R75246		Analyst: me
Percent Moisture	20.8	0.100		wt%	1	5/6/2022 2:15:23 PM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36395		Analyst: TN
Chromium, Hexavalent	0.211	0.120	J	mg/Kg-dry	1	5/11/2022 5:52:00 PM

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Hexavalent Chromium by EPA Method 7196

Sample ID: **MB-36395**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **5/11/2022**			RunNo: **75333**		
Client ID: **MBLKS**	Batch ID: **36395**					Analysis Date: **5/11/2022**			SeqNo: **1545722**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.500									

Sample ID: **LCS-36395**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **5/11/2022**			RunNo: **75333**		
Client ID: **LCSS**	Batch ID: **36395**					Analysis Date: **5/11/2022**			SeqNo: **1545723**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.63	0.500	2.500	0	105	80	121				

Sample ID: **2205142-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **5/11/2022**			RunNo: **75333**		
Client ID: **B-1-22 (4 FT)**	Batch ID: **36395**					Analysis Date: **5/11/2022**			SeqNo: **1545725**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.585						0	0	30	

Sample ID: **2205142-001AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **5/11/2022**			RunNo: **75333**		
Client ID: **B-1-22 (4 FT)**	Batch ID: **36395**					Analysis Date: **5/11/2022**			SeqNo: **1545726**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	3.12	0.593	2.965	0	105	80	121				

Sample ID: **2205142-001AMSD**	SampType: **MSD**			Units: **mg/Kg-dry**		Prep Date: **5/11/2022**			RunNo: **75333**		
Client ID: **B-1-22 (4 FT)**	Batch ID: **36395**					Analysis Date: **5/11/2022**			SeqNo: **1545727**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.99	0.589	2.947	0	101	80	121	3.120	4.40	30	

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-36398**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **5/11/2022**		RunNo: **75568**		
Client ID: **MBLKS**	Batch ID: **36398**					Analysis Date: **5/19/2022**		SeqNo: **1550938**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	72.6		100.0		72.6	60	140				

Sample ID: **LCS-36398**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **5/11/2022**		RunNo: **75568**		
Client ID: **LCSS**	Batch ID: **36398**					Analysis Date: **5/19/2022**		SeqNo: **1550939**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	87.8	10.0	125.0	0	70.2	70	130				
Aliphatic Hydrocarbon (C12-C16)	96.1	10.0	125.0	0	76.9	70	130				
Aliphatic Hydrocarbon (C16-C21)	97.1	10.0	125.0	0	77.7	70	130				
Aliphatic Hydrocarbon (C21-C34)	112	10.0	125.0	0	89.9	70	130				
Surr: 1-Chlorooctadecane	95.4		100.0		95.4	60	140				

Sample ID: **2205142-002AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **5/11/2022**		RunNo: **75568**		
Client ID: **B-2-22 (4 FT)**	Batch ID: **36398**					Analysis Date: **5/19/2022**		SeqNo: **1550942**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	89.6	11.3	141.5	0	63.3	70	130				S
Aliphatic Hydrocarbon (C12-C16)	102	11.3	141.5	0	72.4	70	130				
Aliphatic Hydrocarbon (C16-C21)	103	11.3	141.5	0	72.7	70	130				
Aliphatic Hydrocarbon (C21-C34)	118	11.3	141.5	0	83.1	70	130				
Surr: 1-Chlorooctadecane	95.5		113.2		84.3	60	140				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2205142-002AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **5/11/2022**	RunNo: **75568**
Client ID: **B-2-22 (4 FT)**	Batch ID: **36398**		Analysis Date: **5/19/2022**	SeqNo: **1550943**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	92.2	11.2	139.4	0	66.1	70	130	89.58	2.85	30	S
Aliphatic Hydrocarbon (C12-C16)	110	11.2	139.4	0	78.8	70	130	102.5	6.93	30	
Aliphatic Hydrocarbon (C16-C21)	101	11.2	139.4	0	72.6	70	130	102.9	1.64	30	
Aliphatic Hydrocarbon (C21-C34)	117	11.2	139.4	0	83.8	70	130	117.5	0.642	30	
Surr: 1-Chlorooctadecane	92.0		111.5		82.5	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **MB-36398**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **5/11/2022**	RunNo: **75584**
Client ID: **MBLKS**	Batch ID: **36398**		Analysis Date: **5/19/2022**	SeqNo: **1550968**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	88.4		100.0		88.4	60	140				

Sample ID: **LCS-36398**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **5/11/2022**	RunNo: **75584**
Client ID: **LCSS**	Batch ID: **36398**		Analysis Date: **5/19/2022**	SeqNo: **1550969**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	90.7	10.0	125.0	0	72.5	70	130				
Aromatic Hydrocarbon (C12-C16)	95.6	10.0	125.0	0	76.5	70	130				
Aromatic Hydrocarbon (C16-C21)	97.5	10.0	125.0	0	78.0	70	130				
Aromatic Hydrocarbon (C21-C34)	94.0	10.0	125.0	0	75.2	70	130				
Surr: o-Terphenyl	94.7		100.0		94.7	60	140				

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2205142-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **B-2-22 (4 FT)** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550972**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	110	11.3	141.5	0	77.7	70	130				
Aromatic Hydrocarbon (C12-C16)	112	11.3	141.5	0	78.9	70	130				
Aromatic Hydrocarbon (C16-C21)	110	11.3	141.5	0	77.6	70	130				
Aromatic Hydrocarbon (C21-C34)	ND	11.3	141.5	0	0	70	130				S
Surr: o-Terphenyl	99.6		113.2		88.0	60	140				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2205142-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **B-2-22 (4 FT)** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550973**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	105	11.2	139.4	0	75.0	70	130	109.9	4.99	30	
Aromatic Hydrocarbon (C12-C16)	109	11.2	139.4	0	78.2	70	130	111.6	2.32	30	
Aromatic Hydrocarbon (C16-C21)	113	11.2	139.4	0	81.2	70	130	109.8	3.02	30	
Aromatic Hydrocarbon (C21-C34)	ND	11.2	139.4	0	0	70	130	0	0	30	S
Surr: o-Terphenyl	101		111.5		90.7	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-36426**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **LCSS**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550951**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	58.6	2.50	30.00	0	195	70	130				S
Aliphatic Hydrocarbon (C6-C8)	8.35	1.50	10.00	0	83.5	70	130				
Aliphatic Hydrocarbon (C8-C10)	11.0	2.50	10.00	0	110	70	130				
Aromatic Hydrocarbon (C8-C10)	42.9	3.00	40.00	0	107	70	130				
Surr: 1,4-Difluorobenzene	2.71		2.500		109	60	140				
Surr: Bromofluorobenzene	2.50		2.500		99.9	60	140				

NOTES:
S - Outlying spike recovery observed for Aliphatic C5-C6 (high bias). Detections will be qualified with a Q.

Sample ID: **MB-36426**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **MBLKS**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	0.574	1.50		0	0						J
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Surr: 1,4-Difluorobenzene	2.00		2.500		80.1	60	140				
Surr: Bromofluorobenzene	2.33		2.500		93.1	60	140				

Sample ID: **2205142-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **B-3-22 (4.5 FT)**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.35		0	0			0	0	25	H
Aliphatic Hydrocarbon (C6-C8)	0.630	1.41		0	0			0.5169	19.7	25	JH
Aliphatic Hydrocarbon (C8-C10)	ND	2.35		0	0			0	0	25	H
Aromatic Hydrocarbon (C8-C10)	1.73	2.82		0	0			1.692	2.37	25	JH
Surr: 1,4-Difluorobenzene	1.76		2.351		74.8	60	140		0		H
Surr: Bromofluorobenzene	2.29		2.351		97.4	60	140		0		H

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2205142-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **5/12/2022** RunNo: **75580**
Client ID: **B-3-22 (4.5 FT)** Batch ID: **36426** Analysis Date: **5/13/2022** SeqNo: **1550767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
Q - Associated calibration verification is above acceptance criteria (138%, nominal 80-120%). Result may be high-biased.

Sample ID: **2205201-001BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **5/12/2022** RunNo: **75580**
Client ID: **BATCH** Batch ID: **36426** Analysis Date: **5/13/2022** SeqNo: **1550772**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	19.9	1.84	22.10	0	90.2	70	130				
Aliphatic Hydrocarbon (C6-C8)	6.36	1.10	7.366	0.6811	77.1	70	130				
Aliphatic Hydrocarbon (C8-C10)	3.38	1.84	7.366	0	46.0	70	130				S
Aromatic Hydrocarbon (C8-C10)	29.2	2.21	29.46	0	99.1	70	130				
Surr: 1,4-Difluorobenzene	1.76		1.841		95.8	60	140				
Surr: Bromofluorobenzene	1.75		1.841		95.2	60	140				

NOTES:
S - Outlying spike recovery observed for Aliphatic C8-C10. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2205201-001BMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **5/12/2022** RunNo: **75580**
Client ID: **BATCH** Batch ID: **36426** Analysis Date: **5/13/2022** SeqNo: **1550773**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	18.2	1.84	22.10	0	82.2	70	130	19.93	9.26	30	
Aliphatic Hydrocarbon (C6-C8)	4.91	1.10	7.366	0.6811	57.4	70	130	6.360	25.8	30	RS
Aliphatic Hydrocarbon (C8-C10)	3.90	1.84	7.366	0	52.9	70	130	3.385	14.1	30	S
Aromatic Hydrocarbon (C8-C10)	28.0	2.21	29.46	0	95.1	70	130	29.19	4.08	30	
Surr: 1,4-Difluorobenzene	1.68		1.841		91.1	60	140		0		
Surr: Bromofluorobenzene	1.70		1.841		92.3	60	140		0		

NOTES:
S - Outlying spike recovery observed for Aliphatic C8-C10. A duplicate analysis was performed with similar results indicating a possible matrix effect.
S - Outlying spike recovery(ies) observed for Aromatic C10-C12 and C12-C13. A duplicate analysis was performed and recovered within range.
R - High RPD observed.

Work Order: 2205142
CLIENT: Pace Analytical Minnesota
Project: P66: Oily Water Sewer

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2205202-002BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **5/12/2022** RunNo: **75580**
Client ID: **BATCH** Batch ID: **36426** Analysis Date: **5/14/2022** SeqNo: **1550783**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.78		0	0			0	0	25	H
Aliphatic Hydrocarbon (C6-C8)	1.11	1.67		0	0			1.404	23.3	25	JH
Aliphatic Hydrocarbon (C8-C10)	4.10	2.78		0	0			5.041	20.5	25	H
Aromatic Hydrocarbon (C8-C10)	15.5	3.34		0	0			19.11	21.2	25	RH
Surr: 1,4-Difluorobenzene	2.15		2.780		77.2	60	140		0		H
Surr: Bromofluorobenzene	2.89		2.780		104	60	140		0		H

NOTES:
R - High RPD due to high analyte concentration. In this range, high RPD's may be expected.

Sample Log-In Check List

Client Name:	PACEMI	Work Order Number:	2205142
Logged by:	Gabrielle Coeuille	Date Received:	5/5/2022 3:37:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No	☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	4.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody

PASI Minnesota Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 10606192 **Workorder Name:** P66: Oily Water Sewer **Results Requested By:** 5/12/2022 2205142

Report / Invoice To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700 Email: jennifer.gross@pacelabs.com	Fremont Analytical 3600 Fremont Ave. N. Seattle, WA 98103 206-352-3790 P.O. 10606192

State of Sample Origin: WA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: VG9M	Preserved Containers: Unpreserved JGCU					Requested Analysis: 7196 Hex Cr (Fremont)	NW-EPH	NW-VPH	Dry Weight									LAB USE ONLY
1	B-1-22 (4 FT)	4/27/2022 09:20	10606192001	Solid	2	1					X	X	X	X									
2	B-2-22 (4 FT)	4/27/2022 10:00	10606192002	Solid	2	1					X	X	X	X									
3	B-3-22 (4.5 FT)	4/27/2022 11:00	10606192003	Solid	2	1					X	X	X	X									
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	PACE	5/4/22 1516	Elsall Sammy	5/5/22 15:37
2				
3				

Comments

Report to MDL.

Cooler Temperature on Receipt ____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

C5-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

June 14, 2022

Joe Sumera
Phillips 66
P.O. Box 8
Ferndale, WA 98248

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Dear Lester Keel:

Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2022. 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.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

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

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Ashley Yamaura, Whatcom Environmental Services

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

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street
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(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10607135001	**B-1-22 (6-7.5 FT)**	Solid	05/02/22 11:00	05/05/22 08:50
10607135002	**B-2-22 (6-7.5 FT)**	Solid	05/02/22 11:10	05/05/22 08:50
10607135003	**B-3-22 (6-7.5 FT)**	Solid	05/02/22 11:30	05/05/22 08:50
10607135004	**B-4-22 (6-8 FT)**	Solid	05/02/22 11:20	05/05/22 08:50
10607135005	**MW-OWS-1 (14-15 FT)**	Solid	05/02/22 02:00	05/05/22 08:50
10607135006	**MW-OWS-2 (5.5-7 FT)**	Solid	05/03/22 09:15	05/05/22 08:50
10607135007	**MW-OWS-2 (13.5-15 FT)**	Solid	05/03/22 09:30	05/05/22 08:50
10607135008	**MW-OWS-3 (8.5-10 FT)**	Solid	05/03/22 10:15	05/05/22 08:50
10607135009	**MW-OWS-3 (13.5-15 FT)**	Solid	05/03/22 10:30	05/05/22 08:50
10607135010	**WES-DUP-1**	Solid	05/02/22 08:00	05/05/22 08:50

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(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10607135001	**B-1-22 (6-7.5 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135002	**B-2-22 (6-7.5 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	JNG	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135003	**B-3-22 (6-7.5 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	JNG	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135004	**B-4-22 (6-8 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135005	**MW-OWS-1 (14-15 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	AGW	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M

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1700 Elm Street
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(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135006	**MW-OWS-2 (5.5-7 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	ADF	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135007	**MW-OWS-2 (13.5-15 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	ADF	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135008	**MW-OWS-3 (8.5-10 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	ADF	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135009	**MW-OWS-3 (13.5-15 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	ADF	7	PAN
		EPA 8270E by SIM	SP2	21	PASI-M
		EPA 8260D	ADM	71	PAN
		SM 2540G	JAV	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10607135010	**WES-DUP-1**	EPA 8260D	ADM	7	PAN
		SM 2540G	JAV	1	PAN

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-1-22 (6-7.5 FT) **Lab ID: 10607135001** Collected: 05/02/22 11:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**6.6**	mg/kg	0.51	1	05/10/22 14:30	05/20/22 04:13	7440-38-2	
Cadmium	**0.10**	mg/kg	0.082	1	05/10/22 14:30	05/20/22 04:13	7440-43-9	
Chromium	**24.9**	mg/kg	2.0	1	05/10/22 14:30	05/20/22 04:13	7440-47-3	
Lead	**3.3**	mg/kg	0.51	1	05/10/22 14:30	05/20/22 04:13	7439-92-1	
Nickel	**27.8**	mg/kg	0.51	1	05/10/22 14:30	05/20/22 04:13	7440-02-0	
Zinc	**41.0**	mg/kg	5.1	1	05/10/22 14:30	05/20/22 04:13	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.025**	mg/kg	0.021	1	05/11/22 18:16	05/17/22 12:37	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**11.1**	%	0.10	1		05/16/22 15:25		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.377	1	05/13/22 03:12	05/13/22 15:13	92-52-4	
Surrogates								
2-Fluorophenol (S)	58.9	%	12.0-120	1	05/13/22 03:12	05/13/22 15:13	367-12-4	
Phenol-d5 (S)	57.3	%	10.0-120	1	05/13/22 03:12	05/13/22 15:13	4165-62-2	
Nitrobenzene-d5 (S)	60.8	%	10.0-122	1	05/13/22 03:12	05/13/22 15:13	4165-60-0	
2-Fluorobiphenyl (S)	57.0	%	15.0-120	1	05/13/22 03:12	05/13/22 15:13	321-60-8	
2,4,6-Tribromophenol (S)	63.5	%	10.0-127	1	05/13/22 03:12	05/13/22 15:13	118-79-6	
p-Terphenyl-d14 (S)	60.2	%	10.0-120	1	05/13/22 03:12	05/13/22 15:13	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	91-57-6	
Acenaphthene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	83-32-9	
Acenaphthylene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	208-96-8	
Anthracene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	207-08-9	
Chrysene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	53-70-3	
Dibenzofuran	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	132-64-9	L2
Fluoranthene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	206-44-0	
Fluorene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-1-22 (6-7.5 FT) **Lab ID: 10607135001** Collected: 05/02/22 11:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	91-20-3	
Phenanthrene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	85-01-8	
Pyrene	ND	ug/kg	11.2	1	05/09/22 10:12	05/16/22 23:03	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	64	%.	59-125	1	05/09/22 10:12	05/16/22 23:03	321-60-8	
p-Terphenyl-d14 (S)	77	%.	65-125	1	05/09/22 10:12	05/16/22 23:03	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0566	1	05/02/22 11:00	05/13/22 18:52	67-64-1	
Allyl chloride	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	107-05-1	
Benzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	71-43-2	
Bromobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	108-86-1	
Bromochloromethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	75-27-4	
Bromoform	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	75-25-2	
Bromomethane	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	56-23-5	
Chlorobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	124-48-1	
Chloroethane	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	75-00-3	
Chloroform	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	67-66-3	
Chloromethane	ND	mg/kg	0.00283	1	05/02/22 11:00	05/13/22 18:52	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	96-12-8	
Dibromomethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	563-58-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-1-22 (6-7.5 FT) **Lab ID: 10607135001** Collected: 05/02/22 11:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	87-68-3	
n-Hexane	ND	mg/kg	0.0113	1	05/02/22 11:00	05/13/22 18:52	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0113	1	05/02/22 11:00	05/13/22 18:52	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0113	1	05/02/22 11:00	05/13/22 18:52	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	1634-04-4	
Naphthalene	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	103-65-1	
Styrene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/16/22 13:03	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	109-99-9	C3
Toluene	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	79-00-5	
Trichloroethene	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00566	1	05/02/22 11:00	05/13/22 18:52	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00283	1	05/02/22 11:00	05/13/22 18:52	96-18-4	
Vinyl chloride	ND	mg/kg	0.00113	1	05/02/22 11:00	05/13/22 18:52	75-01-4	
Xylene (Total)	ND	mg/kg	0.00339	1	05/02/22 11:00	05/13/22 18:52	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	70.0-130	1	05/02/22 11:00	05/13/22 18:52	17060-07-0	
1,2-Dichloroethane-d4 (S)	108	%	70.0-130	1	05/02/22 11:00	05/16/22 13:03	17060-07-0	
Toluene-d8 (S)	108	%	75.0-131	1	05/02/22 11:00	05/13/22 18:52	2037-26-5	
Toluene-d8 (S)	107	%	75.0-131	1	05/02/22 11:00	05/16/22 13:03	2037-26-5	
4-Bromofluorobenzene (S)	97.8	%	67.0-138	1	05/02/22 11:00	05/13/22 18:52	460-00-4	
4-Bromofluorobenzene (S)	99.6	%	67.0-138	1	05/02/22 11:00	05/16/22 13:03	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**88.4**	%		1	05/14/22 17:53	05/14/22 18:12		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-1-22 (6-7.5 FT) **Lab ID: 10607135001** Collected: 05/02/22 11:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**24.9**	mg/kg	1.0	1		05/26/22 15:56		

Sample: B-2-22 (6-7.5 FT) **Lab ID: 10607135002** Collected: 05/02/22 11:10 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.7**	mg/kg	0.55	1	05/10/22 14:30	05/20/22 04:17	7440-38-2	
Cadmium	**0.099**	mg/kg	0.088	1	05/10/22 14:30	05/20/22 04:17	7440-43-9	
Chromium	**26.0**	mg/kg	2.2	1	05/10/22 14:30	05/20/22 04:17	7440-47-3	
Lead	**2.9**	mg/kg	0.55	1	05/10/22 14:30	05/20/22 04:17	7439-92-1	
Nickel	**28.1**	mg/kg	0.55	1	05/10/22 14:30	05/20/22 04:17	7440-02-0	
Zinc	**44.5**	mg/kg	5.5	1	05/10/22 14:30	05/20/22 04:17	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.036**	mg/kg	0.022	1	05/11/22 18:16	05/17/22 12:42	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**11.9**	%	0.10	1		05/16/22 15:25		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.382	1	05/13/22 03:12	05/13/22 15:34	92-52-4	
Surrogates								
2-Fluorophenol (S)	48.5	%	12.0-120	1	05/13/22 03:12	05/13/22 15:34	367-12-4	
Phenol-d5 (S)	49.1	%	10.0-120	1	05/13/22 03:12	05/13/22 15:34	4165-62-2	
Nitrobenzene-d5 (S)	49.2	%	10.0-122	1	05/13/22 03:12	05/13/22 15:34	4165-60-0	
2-Fluorobiphenyl (S)	44.1	%	15.0-120	1	05/13/22 03:12	05/13/22 15:34	321-60-8	
2,4,6-Tribromophenol (S)	56.3	%	10.0-127	1	05/13/22 03:12	05/13/22 15:34	118-79-6	
p-Terphenyl-d14 (S)	52.0	%	10.0-120	1	05/13/22 03:12	05/13/22 15:34	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	91-57-6	
Acenaphthene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	83-32-9	
Acenaphthylene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	208-96-8	
Anthracene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	56-55-3	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-2-22 (6-7.5 FT) **Lab ID: 10607135002** Collected: 05/02/22 11:10 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Benzo(a)pyrene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	207-08-9	
Chrysene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	53-70-3	
Dibenzofuran	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	132-64-9	
Fluoranthene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	206-44-0	
Fluorene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	193-39-5	
Naphthalene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	91-20-3	
Phenanthrene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	85-01-8	L1
Pyrene	ND	ug/kg	11.2	1	05/13/22 16:41	05/16/22 19:08	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	65	%.	59-125	1	05/13/22 16:41	05/16/22 19:08	321-60-8	
p-Terphenyl-d14 (S)	83	%.	65-125	1	05/13/22 16:41	05/16/22 19:08	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0574	1	05/02/22 11:10	05/13/22 19:16	67-64-1	
Allyl chloride	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	107-05-1	
Benzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	71-43-2	
Bromobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	108-86-1	
Bromochloromethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	75-27-4	
Bromoform	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	75-25-2	
Bromomethane	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	56-23-5	
Chlorobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	124-48-1	
Chloroethane	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	75-00-3	
Chloroform	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	67-66-3	
Chloromethane	ND	mg/kg	0.00287	1	05/02/22 11:10	05/13/22 19:16	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	96-12-8	
Dibromomethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	75-71-8	

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-2-22 (6-7.5 FT) **Lab ID: 10607135002** Collected: 05/02/22 11:10 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Dichlorofluoromethane	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	87-68-3	
n-Hexane	ND	mg/kg	0.0115	1	05/02/22 11:10	05/13/22 19:16	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0115	1	05/02/22 11:10	05/13/22 19:16	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0115	1	05/02/22 11:10	05/13/22 19:16	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	1634-04-4	
Naphthalene	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	103-65-1	
Styrene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/16/22 13:28	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	109-99-9	C3
Toluene	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	79-00-5	
Trichloroethene	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00574	1	05/02/22 11:10	05/13/22 19:16	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00287	1	05/02/22 11:10	05/13/22 19:16	96-18-4	
Vinyl chloride	ND	mg/kg	0.00115	1	05/02/22 11:10	05/13/22 19:16	75-01-4	
Xylene (Total)	**0.00349**	mg/kg	0.00345	1	05/02/22 11:10	05/13/22 19:16	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	70.0-130	1	05/02/22 11:10	05/13/22 19:16	17060-07-0	
1,2-Dichloroethane-d4 (S)	109	%	70.0-130	1	05/02/22 11:10	05/16/22 13:28	17060-07-0	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-2-22 (6-7.5 FT) **Lab ID: 10607135002** Collected: 05/02/22 11:10 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Surrogates								
Toluene-d8 (S)	112	%	75.0-131	1	05/02/22 11:10	05/13/22 19:16	2037-26-5	
Toluene-d8 (S)	109	%	75.0-131	1	05/02/22 11:10	05/16/22 13:28	2037-26-5	
4-Bromofluorobenzene (S)	99.0	%	67.0-138	1	05/02/22 11:10	05/13/22 19:16	460-00-4	
4-Bromofluorobenzene (S)	101	%	67.0-138	1	05/02/22 11:10	05/16/22 13:28	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**87.1**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**26.0**	mg/kg	1.0	1		05/26/22 15:56		

Sample: B-3-22 (6-7.5 FT) **Lab ID: 10607135003** Collected: 05/02/22 11:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.1**	mg/kg	0.57	1	05/10/22 14:30	05/20/22 04:28	7440-38-2	
Cadmium	ND	mg/kg	0.091	1	05/10/22 14:30	05/20/22 04:28	7440-43-9	
Chromium	**20.1**	mg/kg	2.3	1	05/10/22 14:30	05/20/22 04:28	7440-47-3	
Lead	**2.0**	mg/kg	0.57	1	05/10/22 14:30	05/20/22 04:28	7439-92-1	
Nickel	**21.5**	mg/kg	0.57	1	05/10/22 14:30	05/20/22 04:28	7440-02-0	
Zinc	**30.7**	mg/kg	5.7	1	05/10/22 14:30	05/20/22 04:28	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.033**	mg/kg	0.022	1	05/11/22 18:16	05/17/22 12:47	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**12.9**	%	0.10	1		05/16/22 15:25		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.368	1	05/13/22 03:12	05/13/22 14:31	92-52-4	
Surrogates								
2-Fluorophenol (S)	55.6	%	12.0-120	1	05/13/22 03:12	05/13/22 14:31	367-12-4	
Phenol-d5 (S)	56.3	%	10.0-120	1	05/13/22 03:12	05/13/22 14:31	4165-62-2	
Nitrobenzene-d5 (S)	57.4	%	10.0-122	1	05/13/22 03:12	05/13/22 14:31	4165-60-0	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-3-22 (6-7.5 FT) **Lab ID: 10607135003** Collected: 05/02/22 11:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Surrogates								
2-Fluorobiphenyl (S)	54.9	%	15.0-120	1	05/13/22 03:12	05/13/22 14:31	321-60-8	
2,4,6-Tribromophenol (S)	65.7	%	10.0-127	1	05/13/22 03:12	05/13/22 14:31	118-79-6	
p-Terphenyl-d14 (S)	62.0	%	10.0-120	1	05/13/22 03:12	05/13/22 14:31	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	91-57-6	
Acenaphthene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	83-32-9	
Acenaphthylene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	208-96-8	
Anthracene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	207-08-9	
Chrysene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	53-70-3	
Dibenzofuran	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	132-64-9	
Fluoranthene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	206-44-0	
Fluorene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	193-39-5	
Naphthalene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	91-20-3	
Phenanthrene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	85-01-8	L1
Pyrene	ND	ug/kg	11.5	1	05/13/22 16:41	05/16/22 19:28	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%.	59-125	1	05/13/22 16:41	05/16/22 19:28	321-60-8	
p-Terphenyl-d14 (S)	81	%.	65-125	1	05/13/22 16:41	05/16/22 19:28	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0553	1	05/02/22 11:30	05/13/22 19:40	67-64-1	
Allyl chloride	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	107-05-1	
Benzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	71-43-2	
Bromobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	108-86-1	
Bromochloromethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	75-27-4	
Bromoform	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	75-25-2	
Bromomethane	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	56-23-5	
Chlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	108-90-7	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-3-22 (6-7.5 FT) **Lab ID: 10607135003** Collected: 05/02/22 11:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Dibromochloromethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	124-48-1	
Chloroethane	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	75-00-3	
Chloroform	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	67-66-3	
Chloromethane	ND	mg/kg	0.00276	1	05/02/22 11:30	05/13/22 19:40	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	96-12-8	
Dibromomethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	87-68-3	
n-Hexane	ND	mg/kg	0.0111	1	05/02/22 11:30	05/13/22 19:40	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0111	1	05/02/22 11:30	05/13/22 19:40	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0111	1	05/02/22 11:30	05/13/22 19:40	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	1634-04-4	
Naphthalene	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	103-65-1	
Styrene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/16/22 13:50	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	109-99-9	C3
Toluene	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	120-82-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-3-22 (6-7.5 FT) **Lab ID: 10607135003** Collected: 05/02/22 11:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
1,2,4-Trimethylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	79-00-5	
Trichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00553	1	05/02/22 11:30	05/13/22 19:40	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00276	1	05/02/22 11:30	05/13/22 19:40	96-18-4	
Vinyl chloride	ND	mg/kg	0.00111	1	05/02/22 11:30	05/13/22 19:40	75-01-4	
Xylene (Total)	**0.00355**	mg/kg	0.00332	1	05/02/22 11:30	05/13/22 19:40	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	05/02/22 11:30	05/13/22 19:40	17060-07-0	
1,2-Dichloroethane-d4 (S)	106	%	70.0-130	1	05/02/22 11:30	05/16/22 13:50	17060-07-0	
Toluene-d8 (S)	113	%	75.0-131	1	05/02/22 11:30	05/13/22 19:40	2037-26-5	
Toluene-d8 (S)	110	%	75.0-131	1	05/02/22 11:30	05/16/22 13:50	2037-26-5	
4-Bromofluorobenzene (S)	93.2	%	67.0-138	1	05/02/22 11:30	05/13/22 19:40	460-00-4	
4-Bromofluorobenzene (S)	99.3	%	67.0-138	1	05/02/22 11:30	05/16/22 13:50	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**90.5**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**19.3**	mg/kg	1.0	1		05/26/22 15:56		

Sample: B-4-22 (6-8 FT) **Lab ID: 10607135004** Collected: 05/02/22 11:20 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.0**	mg/kg	0.53	1	05/10/22 14:30	05/20/22 04:32	7440-38-2	
Cadmium	**0.11**	mg/kg	0.084	1	05/10/22 14:30	05/20/22 04:32	7440-43-9	
Chromium	**27.0**	mg/kg	2.1	1	05/10/22 14:30	05/20/22 04:32	7440-47-3	
Lead	**2.6**	mg/kg	0.53	1	05/10/22 14:30	05/20/22 04:32	7439-92-1	
Nickel	**28.4**	mg/kg	0.53	1	05/10/22 14:30	05/20/22 04:32	7440-02-0	
Zinc	**38.8**	mg/kg	5.3	1	05/10/22 14:30	05/20/22 04:32	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.033**	mg/kg	0.021	1	05/11/22 18:16	05/17/22 12:49	7439-97-6	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-4-22 (6-8 FT) **Lab ID: 10607135004** Collected: 05/02/22 11:20 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**11.5**	%	0.10	1		05/16/22 15:25		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.370	1	05/13/22 03:12	05/13/22 13:49	92-52-4	
Surrogates								
2-Fluorophenol (S)	55.4	%	12.0-120	1	05/13/22 03:12	05/13/22 13:49	367-12-4	
Phenol-d5 (S)	52.8	%	10.0-120	1	05/13/22 03:12	05/13/22 13:49	4165-62-2	
Nitrobenzene-d5 (S)	56.2	%	10.0-122	1	05/13/22 03:12	05/13/22 13:49	4165-60-0	
2-Fluorobiphenyl (S)	51.2	%	15.0-120	1	05/13/22 03:12	05/13/22 13:49	321-60-8	
2,4,6-Tribromophenol (S)	63.7	%	10.0-127	1	05/13/22 03:12	05/13/22 13:49	118-79-6	
p-Terphenyl-d14 (S)	54.9	%	10.0-120	1	05/13/22 03:12	05/13/22 13:49	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	91-57-6	
Acenaphthene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	83-32-9	
Acenaphthylene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	208-96-8	
Anthracene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	207-08-9	
Chrysene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	53-70-3	
Dibenzofuran	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	132-64-9	
Fluoranthene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	206-44-0	
Fluorene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	193-39-5	
Naphthalene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	91-20-3	
Phenanthrene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	85-01-8	
Pyrene	ND	ug/kg	11.2	1	05/09/22 16:30	05/10/22 12:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	59	%.	59-125	1	05/09/22 16:30	05/10/22 12:13	321-60-8	
p-Terphenyl-d14 (S)	87	%.	65-125	1	05/09/22 16:30	05/10/22 12:13	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0556	1	05/02/22 11:20	05/13/22 20:05	67-64-1	
Allyl chloride	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	107-05-1	
Benzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	71-43-2	
Bromobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	108-86-1	
Bromochloromethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	74-97-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-4-22 (6-8 FT) **Lab ID: 10607135004** Collected: 05/02/22 11:20 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Bromodichloromethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	75-27-4	
Bromoform	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	75-25-2	
Bromomethane	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	56-23-5	
Chlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	124-48-1	
Chloroethane	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	75-00-3	
Chloroform	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	67-66-3	
Chloromethane	ND	mg/kg	0.00278	1	05/02/22 11:20	05/13/22 20:05	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	96-12-8	
Dibromomethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	87-68-3	
n-Hexane	ND	mg/kg	0.0111	1	05/02/22 11:20	05/13/22 20:05	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0111	1	05/02/22 11:20	05/13/22 20:05	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0111	1	05/02/22 11:20	05/13/22 20:05	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	1634-04-4	
Naphthalene	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	103-65-1	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: B-4-22 (6-8 FT) **Lab ID: 10607135004** Collected: 05/02/22 11:20 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Styrene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	109-99-9	C3
Toluene	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	79-00-5	
Trichloroethene	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00556	1	05/02/22 11:20	05/13/22 20:05	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00278	1	05/02/22 11:20	05/13/22 20:05	96-18-4	
Vinyl chloride	ND	mg/kg	0.00111	1	05/02/22 11:20	05/13/22 20:05	75-01-4	
Xylene (Total)	**0.00339**	mg/kg	0.00333	1	05/02/22 11:20	05/13/22 20:05	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70.0-130	1	05/02/22 11:20	05/13/22 20:05	17060-07-0	
Toluene-d8 (S)	110	%	75.0-131	1	05/02/22 11:20	05/13/22 20:05	2037-26-5	
4-Bromofluorobenzene (S)	94.6	%	67.0-138	1	05/02/22 11:20	05/13/22 20:05	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**90.0**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**27.0**	mg/kg	1.0	1		05/26/22 15:56		

Sample: MW-OWS-1 (14-15 FT) **Lab ID: 10607135005** Collected: 05/02/22 02:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.1**	mg/kg	0.56	1	05/10/22 14:30	05/20/22 04:36	7440-38-2	
Cadmium	**0.096**	mg/kg	0.089	1	05/10/22 14:30	05/20/22 04:36	7440-43-9	
Chromium	**24.5**	mg/kg	2.2	1	05/10/22 14:30	05/20/22 04:36	7440-47-3	
Lead	**2.6**	mg/kg	0.56	1	05/10/22 14:30	05/20/22 04:36	7439-92-1	
Nickel	**25.5**	mg/kg	0.56	1	05/10/22 14:30	05/20/22 04:36	7440-02-0	
Zinc	**38.3**	mg/kg	5.6	1	05/10/22 14:30	05/20/22 04:36	7440-66-6	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-1 (14-15 FT) **Lab ID: 10607135005** Collected: 05/02/22 02:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.055**	mg/kg	0.022	1	05/11/22 18:16	05/17/22 12:50	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**12.1**	%	0.10	1		05/16/22 15:25		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.383	1	05/13/22 03:12	05/13/22 14:52	92-52-4	
Surrogates								
2-Fluorophenol (S)	63.9	%	12.0-120	1	05/13/22 03:12	05/13/22 14:52	367-12-4	
Phenol-d5 (S)	62.8	%	10.0-120	1	05/13/22 03:12	05/13/22 14:52	4165-62-2	
Nitrobenzene-d5 (S)	59.9	%	10.0-122	1	05/13/22 03:12	05/13/22 14:52	4165-60-0	
2-Fluorobiphenyl (S)	58.1	%	15.0-120	1	05/13/22 03:12	05/13/22 14:52	321-60-8	
2,4,6-Tribromophenol (S)	73.2	%	10.0-127	1	05/13/22 03:12	05/13/22 14:52	118-79-6	
p-Terphenyl-d14 (S)	63.0	%	10.0-120	1	05/13/22 03:12	05/13/22 14:52	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	**17.9**	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	90-12-0	
2-Methylnaphthalene	**17.9**	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	91-57-6	
Acenaphthene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	83-32-9	
Acenaphthylene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	208-96-8	
Anthracene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	207-08-9	
Chrysene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	53-70-3	
Dibenzofuran	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	132-64-9	
Fluoranthene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	206-44-0	
Fluorene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	193-39-5	
Naphthalene	**14.0**	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	91-20-3	
Phenanthrene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	85-01-8	
Pyrene	ND	ug/kg	11.3	1	05/09/22 16:30	05/10/22 19:34	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	82	%.	59-125	1	05/09/22 16:30	05/10/22 19:34	321-60-8	
p-Terphenyl-d14 (S)	91	%.	65-125	1	05/09/22 16:30	05/10/22 19:34	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0575	1	05/02/22 02:00	05/13/22 20:29	67-64-1	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-1 (14-15 FT) **Lab ID: 10607135005** Collected: 05/02/22 02:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Allyl chloride	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	107-05-1	
Benzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	71-43-2	
Bromobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	108-86-1	
Bromochloromethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	75-27-4	
Bromoform	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	75-25-2	
Bromomethane	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	56-23-5	
Chlorobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	124-48-1	
Chloroethane	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	75-00-3	
Chloroform	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	67-66-3	
Chloromethane	ND	mg/kg	0.00288	1	05/02/22 02:00	05/13/22 20:29	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	96-12-8	
Dibromomethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	87-68-3	
n-Hexane	ND	mg/kg	0.0115	1	05/02/22 02:00	05/13/22 20:29	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0115	1	05/02/22 02:00	05/13/22 20:29	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	75-09-2	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-1 (14-15 FT) **Lab ID: 10607135005** Collected: 05/02/22 02:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0115	1	05/02/22 02:00	05/13/22 20:29	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	1634-04-4	
Naphthalene	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	103-65-1	
Styrene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	109-99-9	C3
Toluene	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	79-00-5	
Trichloroethene	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00575	1	05/02/22 02:00	05/13/22 20:29	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00288	1	05/02/22 02:00	05/13/22 20:29	96-18-4	
Vinyl chloride	ND	mg/kg	0.00115	1	05/02/22 02:00	05/13/22 20:29	75-01-4	
Xylene (Total)	ND	mg/kg	0.00345	1	05/02/22 02:00	05/13/22 20:29	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	70.0-130	1	05/02/22 02:00	05/13/22 20:29	17060-07-0	
Toluene-d8 (S)	108	%	75.0-131	1	05/02/22 02:00	05/13/22 20:29	2037-26-5	
4-Bromofluorobenzene (S)	98.8	%	67.0-138	1	05/02/22 02:00	05/13/22 20:29	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**86.9**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**24.5**	mg/kg	1.0	1		05/26/22 15:56		

Sample: MW-OWS-2 (5.5-7 FT) **Lab ID: 10607135006** Collected: 05/03/22 09:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.4**	mg/kg	0.55	1	05/10/22 14:30	05/20/22 04:40	7440-38-2	
Cadmium	**0.10**	mg/kg	0.088	1	05/10/22 14:30	05/20/22 04:40	7440-43-9	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-2 (5.5-7 FT) **Lab ID: 10607135006** Collected: 05/03/22 09:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Chromium	**30.2**	mg/kg	2.2	1	05/10/22 14:30	05/20/22 04:40	7440-47-3	
Lead	**2.2**	mg/kg	0.55	1	05/10/22 14:30	05/20/22 04:40	7439-92-1	
Nickel	**29.1**	mg/kg	0.55	1	05/10/22 14:30	05/20/22 04:40	7440-02-0	
Zinc	**37.6**	mg/kg	5.5	1	05/10/22 14:30	05/20/22 04:40	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.028**	mg/kg	0.020	1	05/11/22 18:16	05/17/22 12:52	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**14.8**	%	0.10	1		05/16/22 15:26		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.392	1	05/17/22 03:15	05/18/22 13:20	92-52-4	
Surrogates								
2-Fluorophenol (S)	56.4	%	12.0-120	1	05/17/22 03:15	05/18/22 13:20	367-12-4	
Phenol-d5 (S)	50.9	%	10.0-120	1	05/17/22 03:15	05/18/22 13:20	4165-62-2	
Nitrobenzene-d5 (S)	50.6	%	10.0-122	1	05/17/22 03:15	05/18/22 13:20	4165-60-0	
2-Fluorobiphenyl (S)	50.9	%	15.0-120	1	05/17/22 03:15	05/18/22 13:20	321-60-8	
2,4,6-Tribromophenol (S)	59.9	%	10.0-127	1	05/17/22 03:15	05/18/22 13:20	118-79-6	
p-Terphenyl-d14 (S)	51.3	%	10.0-120	1	05/17/22 03:15	05/18/22 13:20	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	91-57-6	
Acenaphthene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	83-32-9	
Acenaphthylene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	208-96-8	
Anthracene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	207-08-9	
Chrysene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	53-70-3	
Dibenzofuran	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	132-64-9	
Fluoranthene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	206-44-0	
Fluorene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	193-39-5	
Naphthalene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	91-20-3	
Phenanthrene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	85-01-8	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-2 (5.5-7 FT) **Lab ID: 10607135006** Collected: 05/03/22 09:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Pyrene	ND	ug/kg	11.7	1	05/09/22 16:30	05/10/22 19:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	83	%.	59-125	1	05/09/22 16:30	05/10/22 19:54	321-60-8	
p-Terphenyl-d14 (S)	84	%.	65-125	1	05/09/22 16:30	05/10/22 19:54	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0588	1	05/03/22 09:15	05/13/22 20:53	67-64-1	
Allyl chloride	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	107-05-1	
Benzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	71-43-2	
Bromobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	108-86-1	
Bromochloromethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	75-27-4	
Bromoform	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	75-25-2	
Bromomethane	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	56-23-5	
Chlorobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	124-48-1	
Chloroethane	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	75-00-3	
Chloroform	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	67-66-3	
Chloromethane	ND	mg/kg	0.00294	1	05/03/22 09:15	05/13/22 20:53	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	96-12-8	
Dibromomethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	10061-02-6	

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1700 Elm Street
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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-2 (5.5-7 FT) **Lab ID: 10607135006** Collected: 05/03/22 09:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Ethylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	87-68-3	
n-Hexane	ND	mg/kg	0.0118	1	05/03/22 09:15	05/13/22 20:53	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0118	1	05/03/22 09:15	05/13/22 20:53	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0118	1	05/03/22 09:15	05/13/22 20:53	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	1634-04-4	
Naphthalene	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	103-65-1	
Styrene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	109-99-9	C3
Toluene	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	79-00-5	
Trichloroethene	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00588	1	05/03/22 09:15	05/13/22 20:53	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00294	1	05/03/22 09:15	05/13/22 20:53	96-18-4	
Vinyl chloride	ND	mg/kg	0.00118	1	05/03/22 09:15	05/13/22 20:53	75-01-4	
Xylene (Total)	ND	mg/kg	0.00353	1	05/03/22 09:15	05/13/22 20:53	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	70.0-130	1	05/03/22 09:15	05/13/22 20:53	17060-07-0	
Toluene-d8 (S)	109	%	75.0-131	1	05/03/22 09:15	05/13/22 20:53	2037-26-5	
4-Bromofluorobenzene (S)	95.1	%	67.0-138	1	05/03/22 09:15	05/13/22 20:53	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**85.0**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**30.2**	mg/kg	1.0	1		05/26/22 15:56		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-2 (13.5-15 FT) **Lab ID: 10607135007** Collected: 05/03/22 09:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.4**	mg/kg	0.54	1	05/10/22 14:30	05/20/22 04:43	7440-38-2	
Cadmium	**0.098**	mg/kg	0.086	1	05/10/22 14:30	05/20/22 04:43	7440-43-9	
Chromium	**26.7**	mg/kg	2.2	1	05/10/22 14:30	05/20/22 04:43	7440-47-3	
Lead	**2.7**	mg/kg	0.54	1	05/10/22 14:30	05/20/22 04:43	7439-92-1	
Nickel	**26.5**	mg/kg	0.54	1	05/10/22 14:30	05/20/22 04:43	7440-02-0	
Zinc	**40.2**	mg/kg	5.4	1	05/10/22 14:30	05/20/22 04:43	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.026**	mg/kg	0.021	1	05/11/22 18:16	05/17/22 12:53	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**13.3**	%	0.10	1		05/16/22 15:26		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.380	1	05/17/22 03:06	05/17/22 18:18	92-52-4	
Surrogates								
2-Fluorophenol (S)	49.8	%	12.0-120	1	05/17/22 03:06	05/17/22 18:18	367-12-4	
Phenol-d5 (S)	44.5	%	10.0-120	1	05/17/22 03:06	05/17/22 18:18	4165-62-2	
Nitrobenzene-d5 (S)	43.7	%	10.0-122	1	05/17/22 03:06	05/17/22 18:18	4165-60-0	
2-Fluorobiphenyl (S)	41.2	%	15.0-120	1	05/17/22 03:06	05/17/22 18:18	321-60-8	
2,4,6-Tribromophenol (S)	47.8	%	10.0-127	1	05/17/22 03:06	05/17/22 18:18	118-79-6	
p-Terphenyl-d14 (S)	49.2	%	10.0-120	1	05/17/22 03:06	05/17/22 18:18	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	91-57-6	
Acenaphthene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	83-32-9	
Acenaphthylene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	208-96-8	
Anthracene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	120-12-7	
Benzo(a)anthracene	**13.1**	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	207-08-9	
Chrysene	**15.0**	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	53-70-3	
Dibenzofuran	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	132-64-9	
Fluoranthene	**18.6**	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	206-44-0	
Fluorene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	193-39-5	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-2 (13.5-15 FT) **Lab ID: 10607135007** Collected: 05/03/22 09:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	91-20-3	
Phenanthrene	ND	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	85-01-8	
Pyrene	**15.4**	ug/kg	11.4	1	05/09/22 16:30	05/10/22 20:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	59-125	1	05/09/22 16:30	05/10/22 20:15	321-60-8	
p-Terphenyl-d14 (S)	87	%.	65-125	1	05/09/22 16:30	05/10/22 20:15	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0571	1	05/03/22 09:30	05/13/22 21:17	67-64-1	
Allyl chloride	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	107-05-1	
Benzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	71-43-2	
Bromobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	108-86-1	
Bromochloromethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	75-27-4	
Bromoform	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	75-25-2	
Bromomethane	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	56-23-5	
Chlorobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	124-48-1	
Chloroethane	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	75-00-3	
Chloroform	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	67-66-3	
Chloromethane	ND	mg/kg	0.00286	1	05/03/22 09:30	05/13/22 21:17	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	96-12-8	
Dibromomethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	563-58-6	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-2 (13.5-15 FT) **Lab ID: 10607135007** Collected: 05/03/22 09:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	87-68-3	
n-Hexane	ND	mg/kg	0.0114	1	05/03/22 09:30	05/13/22 21:17	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0114	1	05/03/22 09:30	05/13/22 21:17	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0114	1	05/03/22 09:30	05/13/22 21:17	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	1634-04-4	
Naphthalene	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	103-65-1	
Styrene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	109-99-9	C3
Toluene	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	79-00-5	
Trichloroethene	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00571	1	05/03/22 09:30	05/13/22 21:17	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00286	1	05/03/22 09:30	05/13/22 21:17	96-18-4	
Vinyl chloride	ND	mg/kg	0.00114	1	05/03/22 09:30	05/13/22 21:17	75-01-4	
Xylene (Total)	ND	mg/kg	0.00343	1	05/03/22 09:30	05/13/22 21:17	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%	70.0-130	1	05/03/22 09:30	05/13/22 21:17	17060-07-0	
Toluene-d8 (S)	110	%	75.0-131	1	05/03/22 09:30	05/13/22 21:17	2037-26-5	
4-Bromofluorobenzene (S)	98.4	%	67.0-138	1	05/03/22 09:30	05/13/22 21:17	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**87.5**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**26.1**	mg/kg	1.0	1		05/26/22 15:56		

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-3 (8.5-10 FT) **Lab ID: 10607135008** Collected: 05/03/22 10:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**5.0**	mg/kg	0.54	1	05/10/22 14:30	05/20/22 04:47	7440-38-2	
Cadmium	**0.12**	mg/kg	0.087	1	05/10/22 14:30	05/20/22 04:47	7440-43-9	
Chromium	**33.3**	mg/kg	2.2	1	05/10/22 14:30	05/20/22 04:47	7440-47-3	
Lead	**4.2**	mg/kg	0.54	1	05/10/22 14:30	05/20/22 04:47	7439-92-1	
Nickel	**46.1**	mg/kg	0.54	1	05/10/22 14:30	05/20/22 04:47	7440-02-0	
Zinc	**61.6**	mg/kg	5.4	1	05/10/22 14:30	05/20/22 04:47	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.036**	mg/kg	0.019	1	05/11/22 18:16	05/17/22 12:55	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**10.5**	%	0.10	1		05/16/22 15:26		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.372	1	05/17/22 03:06	05/17/22 16:52	92-52-4	
Surrogates								
2-Fluorophenol (S)	56.9	%	12.0-120	1	05/17/22 03:06	05/17/22 16:52	367-12-4	
Phenol-d5 (S)	50.3	%	10.0-120	1	05/17/22 03:06	05/17/22 16:52	4165-62-2	
Nitrobenzene-d5 (S)	49.8	%	10.0-122	1	05/17/22 03:06	05/17/22 16:52	4165-60-0	
2-Fluorobiphenyl (S)	47.1	%	15.0-120	1	05/17/22 03:06	05/17/22 16:52	321-60-8	
2,4,6-Tribromophenol (S)	52.4	%	10.0-127	1	05/17/22 03:06	05/17/22 16:52	118-79-6	
p-Terphenyl-d14 (S)	54.7	%	10.0-120	1	05/17/22 03:06	05/17/22 16:52	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	91-57-6	
Acenaphthene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	83-32-9	
Acenaphthylene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	208-96-8	
Anthracene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	207-08-9	
Chrysene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	53-70-3	
Dibenzofuran	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	132-64-9	
Fluoranthene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	206-44-0	
Fluorene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-3 (8.5-10 FT) **Lab ID: 10607135008** Collected: 05/03/22 10:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	91-20-3	
Phenanthrene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	85-01-8	
Pyrene	ND	ug/kg	11.1	1	05/09/22 16:30	05/10/22 20:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	85	%.	59-125	1	05/09/22 16:30	05/10/22 20:35	321-60-8	
p-Terphenyl-d14 (S)	91	%.	65-125	1	05/09/22 16:30	05/10/22 20:35	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0559	1	05/03/22 10:15	05/13/22 21:42	67-64-1	
Allyl chloride	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	107-05-1	
Benzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	71-43-2	
Bromobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	108-86-1	
Bromochloromethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	75-27-4	
Bromoform	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	75-25-2	
Bromomethane	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	56-23-5	
Chlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	124-48-1	
Chloroethane	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	75-00-3	
Chloroform	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	67-66-3	
Chloromethane	ND	mg/kg	0.00279	1	05/03/22 10:15	05/13/22 21:42	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	96-12-8	
Dibromomethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	563-58-6	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-3 (8.5-10 FT) **Lab ID: 10607135008** Collected: 05/03/22 10:15 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	87-68-3	
n-Hexane	ND	mg/kg	0.0112	1	05/03/22 10:15	05/13/22 21:42	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0112	1	05/03/22 10:15	05/13/22 21:42	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0112	1	05/03/22 10:15	05/13/22 21:42	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	1634-04-4	
Naphthalene	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	103-65-1	
Styrene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	109-99-9	C3
Toluene	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	79-00-5	
Trichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00559	1	05/03/22 10:15	05/13/22 21:42	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00279	1	05/03/22 10:15	05/13/22 21:42	96-18-4	
Vinyl chloride	ND	mg/kg	0.00112	1	05/03/22 10:15	05/13/22 21:42	75-01-4	
Xylene (Total)	ND	mg/kg	0.00335	1	05/03/22 10:15	05/13/22 21:42	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	70.0-130	1	05/03/22 10:15	05/13/22 21:42	17060-07-0	
Toluene-d8 (S)	111	%	75.0-131	1	05/03/22 10:15	05/13/22 21:42	2037-26-5	
4-Bromofluorobenzene (S)	96.5	%	67.0-138	1	05/03/22 10:15	05/13/22 21:42	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**89.5**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**33.3**	mg/kg	1.0	1		05/26/22 15:56		

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-3 (13.5-15 FT) **Lab ID: 10607135009** Collected: 05/03/22 10:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.2**	mg/kg	0.57	1	05/10/22 14:30	05/20/22 04:51	7440-38-2	
Cadmium	**0.093**	mg/kg	0.091	1	05/10/22 14:30	05/20/22 04:51	7440-43-9	
Chromium	**29.1**	mg/kg	2.3	1	05/10/22 14:30	05/20/22 04:51	7440-47-3	
Lead	**2.9**	mg/kg	0.57	1	05/10/22 14:30	05/20/22 04:51	7439-92-1	
Nickel	**29.4**	mg/kg	0.57	1	05/10/22 14:30	05/20/22 04:51	7440-02-0	
Zinc	**42.6**	mg/kg	5.7	1	05/10/22 14:30	05/20/22 04:51	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.043**	mg/kg	0.021	1	05/11/22 18:16	05/17/22 12:57	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**14.0**	%	0.10	1		05/16/22 15:26		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.373	1	05/17/22 03:06	05/17/22 18:39	92-52-4	
Surrogates								
2-Fluorophenol (S)	52.8	%	12.0-120	1	05/17/22 03:06	05/17/22 18:39	367-12-4	
Phenol-d5 (S)	47.8	%	10.0-120	1	05/17/22 03:06	05/17/22 18:39	4165-62-2	
Nitrobenzene-d5 (S)	48.3	%	10.0-122	1	05/17/22 03:06	05/17/22 18:39	4165-60-0	
2-Fluorobiphenyl (S)	44.5	%	15.0-120	1	05/17/22 03:06	05/17/22 18:39	321-60-8	
2,4,6-Tribromophenol (S)	48.6	%	10.0-127	1	05/17/22 03:06	05/17/22 18:39	118-79-6	
p-Terphenyl-d14 (S)	47.3	%	10.0-120	1	05/17/22 03:06	05/17/22 18:39	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	91-57-6	
Acenaphthene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	83-32-9	
Acenaphthylene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	208-96-8	
Anthracene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	207-08-9	
Chrysene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	53-70-3	
Dibenzofuran	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	132-64-9	
Fluoranthene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	206-44-0	
Fluorene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	193-39-5	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-3 (13.5-15 FT) **Lab ID: 10607135009** Collected: 05/03/22 10:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	91-20-3	
Phenanthrene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	85-01-8	
Pyrene	ND	ug/kg	11.5	1	05/09/22 16:30	05/10/22 20:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%.	59-125	1	05/09/22 16:30	05/10/22 20:55	321-60-8	
p-Terphenyl-d14 (S)	92	%.	65-125	1	05/09/22 16:30	05/10/22 20:55	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0561	1	05/03/22 10:30	05/13/22 22:06	67-64-1	
Allyl chloride	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	107-05-1	
Benzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	71-43-2	
Bromobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	108-86-1	
Bromochloromethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	75-27-4	
Bromoform	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	75-25-2	
Bromomethane	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	74-83-9	
n-Butylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	56-23-5	
Chlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	124-48-1	
Chloroethane	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	75-00-3	
Chloroform	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	67-66-3	
Chloromethane	ND	mg/kg	0.00280	1	05/03/22 10:30	05/13/22 22:06	74-87-3	C3
2-Chlorotoluene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	96-12-8	
Dibromomethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	106-46-7	
Dichlorodifluoromethane	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	75-34-3	
1,2-Dichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	563-58-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: MW-OWS-3 (13.5-15 FT) **Lab ID: 10607135009** Collected: 05/03/22 10:30 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	87-68-3	
n-Hexane	ND	mg/kg	0.0112	1	05/03/22 10:30	05/13/22 22:06	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0112	1	05/03/22 10:30	05/13/22 22:06	78-93-3	C3
Methylene Chloride	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0112	1	05/03/22 10:30	05/13/22 22:06	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	1634-04-4	
Naphthalene	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	103-65-1	
Styrene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	109-99-9	C3
Toluene	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	79-00-5	
Trichloroethene	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00561	1	05/03/22 10:30	05/13/22 22:06	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00280	1	05/03/22 10:30	05/13/22 22:06	96-18-4	
Vinyl chloride	ND	mg/kg	0.00112	1	05/03/22 10:30	05/13/22 22:06	75-01-4	
Xylene (Total)	ND	mg/kg	0.00336	1	05/03/22 10:30	05/13/22 22:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	70.0-130	1	05/03/22 10:30	05/13/22 22:06	17060-07-0	
Toluene-d8 (S)	110	%	75.0-131	1	05/03/22 10:30	05/13/22 22:06	2037-26-5	
4-Bromofluorobenzene (S)	98.0	%	67.0-138	1	05/03/22 10:30	05/13/22 22:06	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**89.2**	%		1	05/14/22 11:10	05/14/22 11:30		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**29.1**	mg/kg	1.0	1		05/26/22 15:56		

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Sample: WES-DUP-1 **Lab ID: 10607135010** Collected: 05/02/22 08:00 Received: 05/05/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Benzene	ND	mg/kg	0.00111	1	05/02/22 08:00	05/13/22 17:37	71-43-2	
Ethylbenzene	ND	mg/kg	0.00111	1	05/02/22 08:00	05/13/22 17:37	100-41-4	
Toluene	ND	mg/kg	0.00556	1	05/02/22 08:00	05/13/22 17:37	108-88-3	
Xylene (Total)	ND	mg/kg	0.00333	1	05/02/22 08:00	05/13/22 17:37	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	111	%	70.0-130	1	05/02/22 08:00	05/13/22 17:37	17060-07-0	
Toluene-d8 (S)	111	%	75.0-131	1	05/02/22 08:00	05/13/22 17:37	2037-26-5	
4-Bromofluorobenzene (S)	98.1	%	67.0-138	1	05/02/22 08:00	05/13/22 17:37	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**90.0**	%		1	05/14/22 11:10	05/14/22 11:30		

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 814112 — Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B — Analysis Description: 7471B Mercury Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

METHOD BLANK: 4316284 — Matrix: Solid
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.020	05/17/22 12:31	

LABORATORY CONTROL SAMPLE: 4316285

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.45	0.47	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4316286 4316287

Parameter	Units	10607135001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.025	0.53	0.49	0.53	0.53	97	101	80-120	1	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 814105
QC Batch Method: EPA 3050B
Analysis Method: EPA 6020B
Analysis Description: 6020B Solids UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

METHOD BLANK: 4316254 Matrix: Solid
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.48	05/20/22 03:44	
Cadmium	mg/kg	ND	0.076	05/20/22 03:44	
Chromium	mg/kg	ND	1.9	05/20/22 03:44	
Lead	mg/kg	ND	0.48	05/20/22 03:44	
Nickel	mg/kg	ND	0.48	05/20/22 03:44	
Zinc	mg/kg	ND	4.8	05/20/22 03:44	

LABORATORY CONTROL SAMPLE: 4316255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48.1	43.7	91	80-120	
Cadmium	mg/kg	48.1	41.6	87	80-120	
Chromium	mg/kg	48.1	44.1	92	80-120	
Lead	mg/kg	48.1	44.1	92	80-120	
Nickel	mg/kg	48.1	43.4	90	80-120	
Zinc	mg/kg	48.1	43.0	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4316256 4316257

Parameter	Units	10606637001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	ND	48.1	48.1	48.2	44.1	99	91	75-125	9	20	
Cadmium	mg/kg	0.23	48.1	48.1	46.1	42.1	96	87	75-125	9	20	
Chromium	mg/kg	ND	48.1	48.1	49.3	44.7	101	92	75-125	10	20	
Lead	mg/kg	4.4	48.1	48.1	51.8	47.9	99	90	75-125	8	20	
Nickel	mg/kg	2.0	48.1	48.1	49.1	45.0	98	89	75-125	9	20	
Zinc	mg/kg	68.8	48.1	48.1	126	114	119	93	75-125	10	20	

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 815311
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

SAMPLE DUPLICATE: 4322387

Parameter	Units	70214394001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	77.8	77.9	0	30	N2

SAMPLE DUPLICATE: 4323051

Parameter	Units	10607135006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.8	16.4	10	30	N2

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1862954
QC Batch Method: 3546
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005

METHOD BLANK: R3791672-2 Matrix: Solid
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	mg/kg	ND	0.333	05/13/22 13:07	
2-Fluorophenol (S)	%	67.9	12.0-120	05/13/22 13:07	
Phenol-d5 (S)	%	64.6	10.0-120	05/13/22 13:07	
Nitrobenzene-d5 (S)	%	64.6	10.0-122	05/13/22 13:07	
2-Fluorobiphenyl (S)	%	58.6	15.0-120	05/13/22 13:07	
2,4,6-Tribromophenol (S)	%	68.8	10.0-127	05/13/22 13:07	
p-Terphenyl-d14 (S)	%	65.5	10.0-120	05/13/22 13:07	

LABORATORY CONTROL SAMPLE: R3791672-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	mg/kg	0.666	0.425	63.8	39.0-120	
2-Fluorophenol (S)	%			66.5	12.0-120	
Phenol-d5 (S)	%			65.2	10.0-120	
Nitrobenzene-d5 (S)	%			56.2	10.0-122	
2-Fluorobiphenyl (S)	%			59.8	15.0-120	
2,4,6-Tribromophenol (S)	%			76.0	10.0-127	
p-Terphenyl-d14 (S)	%			66.7	10.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3791672-3 R3791672-4

Parameter	Units	10607135002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	mg/kg	ND	0.765	0.765	0.370	0.402	48.3	52.6	15.0-120	8.33	33	
2-Fluorophenol (S)	%						49.4	61.0	12.0-120			
Phenol-d5 (S)	%						49.1	58.6	10.0-120			
Nitrobenzene-d5 (S)	%						44.4	52.0	10.0-122			
2-Fluorobiphenyl (S)	%						46.5	51.7	15.0-120			
2,4,6-Tribromophenol (S)	%						58.3	66.2	10.0-127			
p-Terphenyl-d14 (S)	%						50.2	53.5	10.0-120			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1864321
QC Batch Method: 3546
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10607135006

METHOD BLANK: R3793600-2 Matrix: Solid
Associated Lab Samples: 10607135006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	mg/kg	ND	0.333	05/18/22 08:49	
2-Fluorophenol (S)	%	60.1	12.0-120	05/18/22 08:49	
Phenol-d5 (S)	%	58.6	10.0-120	05/18/22 08:49	
Nitrobenzene-d5 (S)	%	59.2	10.0-122	05/18/22 08:49	
2-Fluorobiphenyl (S)	%	60.4	15.0-120	05/18/22 08:49	
2,4,6-Tribromophenol (S)	%	66.4	10.0-127	05/18/22 08:49	
p-Terphenyl-d14 (S)	%	59.8	10.0-120	05/18/22 08:49	

LABORATORY CONTROL SAMPLE: R3793600-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	mg/kg	0.666	0.375	56.3	39.0-120	
2-Fluorophenol (S)	%			60.2	12.0-120	
Phenol-d5 (S)	%			58.9	10.0-120	
Nitrobenzene-d5 (S)	%			51.1	10.0-122	
2-Fluorobiphenyl (S)	%			55.6	15.0-120	
2,4,6-Tribromophenol (S)	%			70.0	10.0-127	
p-Terphenyl-d14 (S)	%			55.6	10.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3793600-3 R3793600-4

Parameter	Units	L1491131-37 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	mg/kg	ND	0.791	0.793	0.449	0.442	56.8	55.7	15.0-120	1.69	33	
2-Fluorophenol (S)	%						57.0	58.0	12.0-120			
Phenol-d5 (S)	%						55.2	56.0	10.0-120			
Nitrobenzene-d5 (S)	%						48.1	50.8	10.0-122			
2-Fluorobiphenyl (S)	%						56.6	56.8	15.0-120			
2,4,6-Tribromophenol (S)	%						69.0	74.6	10.0-127			
p-Terphenyl-d14 (S)	%						53.2	59.0	10.0-120			

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1864784
QC Batch Method: 3546
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135007, 10607135008, 10607135009

METHOD BLANK: R3793279-2 Matrix: Solid
Associated Lab Samples: 10607135007, 10607135008, 10607135009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	mg/kg	ND	0.333	05/17/22 15:26	
2-Fluorophenol (S)	%	51.7	12.0-120	05/17/22 15:26	
Phenol-d5 (S)	%	46.5	10.0-120	05/17/22 15:26	
Nitrobenzene-d5 (S)	%	46.5	10.0-122	05/17/22 15:26	
2-Fluorobiphenyl (S)	%	45	15.0-120	05/17/22 15:26	
2,4,6-Tribromophenol (S)	%	46.1	10.0-127	05/17/22 15:26	
p-Terphenyl-d14 (S)	%	52.6	10.0-120	05/17/22 15:26	

LABORATORY CONTROL SAMPLE: R3793279-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	mg/kg	0.666	0.320	48.0	39.0-120	
2-Fluorophenol (S)	%			54.4	12.0-120	
Phenol-d5 (S)	%			50.2	10.0-120	
Nitrobenzene-d5 (S)	%			44.4	10.0-122	
2-Fluorobiphenyl (S)	%			46.8	15.0-120	
2,4,6-Tribromophenol (S)	%			57.1	10.0-127	
p-Terphenyl-d14 (S)	%			51.7	10.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3793279-3 R3793279-4

Parameter	Units	10607135008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	mg/kg	ND	0.729	0.733	0.352	0.352	48.3	48.0	15.0-120	0.00	33	
2-Fluorophenol (S)	%						55.4	55.6	12.0-120			
Phenol-d5 (S)	%						51.1	50.3	10.0-120			
Nitrobenzene-d5 (S)	%						44.2	44.5	10.0-122			
2-Fluorobiphenyl (S)	%						47.2	46.6	15.0-120			
2,4,6-Tribromophenol (S)	%						59.2	60.1	10.0-127			
p-Terphenyl-d14 (S)	%						46.0	54.6	10.0-120			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1863416 Analysis Method: EPA 8260D
QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

METHOD BLANK: R3791809-5 Matrix: Solid
Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	mg/kg	ND	0.0500	05/13/22 13:39	
Allyl chloride	mg/kg	ND	0.00500	05/13/22 13:39	
Benzene	mg/kg	ND	0.00100	05/13/22 13:39	
Bromobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
Bromochloromethane	mg/kg	ND	0.00100	05/13/22 13:39	
Bromodichloromethane	mg/kg	ND	0.00100	05/13/22 13:39	
Bromoform	mg/kg	ND	0.00100	05/13/22 13:39	
Bromomethane	mg/kg	ND	0.00500	05/13/22 13:39	
n-Butylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	
sec-Butylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	
tert-Butylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	
Carbon tetrachloride	mg/kg	ND	0.00100	05/13/22 13:39	
Chlorobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
Dibromochloromethane	mg/kg	ND	0.00100	05/13/22 13:39	
Chloroethane	mg/kg	ND	0.00500	05/13/22 13:39	
Chloroform	mg/kg	ND	0.00500	05/13/22 13:39	
Chloromethane	mg/kg	ND	0.00250	05/13/22 13:39	
2-Chlorotoluene	mg/kg	ND	0.00100	05/13/22 13:39	
4-Chlorotoluene	mg/kg	ND	0.00100	05/13/22 13:39	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	05/13/22 13:39	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	05/13/22 13:39	
Dibromomethane	mg/kg	ND	0.00100	05/13/22 13:39	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
Dichlorodifluoromethane	mg/kg	ND	0.00500	05/13/22 13:39	
Dichlorofluoromethane	mg/kg	ND	0.00500	05/13/22 13:39	
1,1-Dichloroethane	mg/kg	ND	0.00100	05/13/22 13:39	
1,2-Dichloroethane	mg/kg	ND	0.00100	05/13/22 13:39	
1,1-Dichloroethene	mg/kg	ND	0.00100	05/13/22 13:39	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	05/13/22 13:39	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	05/13/22 13:39	
1,2-Dichloropropane	mg/kg	ND	0.00100	05/13/22 13:39	
1,3-Dichloropropane	mg/kg	ND	0.00100	05/13/22 13:39	
2,2-Dichloropropane	mg/kg	ND	0.00100	05/13/22 13:39	
1,1-Dichloropropene	mg/kg	ND	0.00100	05/13/22 13:39	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	05/13/22 13:39	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	05/13/22 13:39	
Ethylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

METHOD BLANK: R3791809-5 Matrix: Solid

Associated Lab Samples: 10607135001, 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	05/13/22 13:39	
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	05/13/22 13:39	
n-Hexane	mg/kg	ND	0.0100	05/13/22 13:39	
Isopropylbenzene (Cumene)	mg/kg	ND	0.00100	05/13/22 13:39	
p-Isopropyltoluene	mg/kg	ND	0.00100	05/13/22 13:39	
2-Butanone (MEK)	mg/kg	ND	0.0100	05/13/22 13:39	
Methylene Chloride	mg/kg	ND	0.00500	05/13/22 13:39	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	05/13/22 13:39	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	05/13/22 13:39	
Naphthalene	mg/kg	ND	0.00500	05/13/22 13:39	
n-Propylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	
Styrene	mg/kg	ND	0.00100	05/13/22 13:39	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	05/13/22 13:39	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	05/13/22 13:39	
Tetrachloroethene	mg/kg	ND	0.00100	05/13/22 13:39	
Tetrahydrofuran	mg/kg	ND	0.00500	05/13/22 13:39	
Toluene	mg/kg	ND	0.00500	05/13/22 13:39	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	05/13/22 13:39	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	05/13/22 13:39	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	05/13/22 13:39	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	05/13/22 13:39	
Trichloroethene	mg/kg	ND	0.00100	05/13/22 13:39	
Trichlorofluoromethane	mg/kg	ND	0.00500	05/13/22 13:39	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	05/13/22 13:39	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	05/13/22 13:39	
Vinyl chloride	mg/kg	ND	0.00100	05/13/22 13:39	
Xylene (Total)	mg/kg	ND	0.00300	05/13/22 13:39	
1,2-Dichloroethane-d4 (S)	%	92.7	70.0-130	05/13/22 13:39	
Toluene-d8 (S)	%	113	75.0-131	05/13/22 13:39	
4-Bromofluorobenzene (S)	%	101	67.0-138	05/13/22 13:39	

LABORATORY CONTROL SAMPLE & LCSD: R3791809-1 R3791809-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Acetone	mg/kg	0.125	0.107	0.0950	85.6	76.0	10.0-160	11.9	31	
Allyl chloride	mg/kg	0.125	0.132	0.129	106	103	70.0-131	2.30	20	
Benzene	mg/kg	0.0250	0.0213	0.0207	85.2	82.8	70.0-123	2.86	20	
Bromobenzene	mg/kg	0.0250	0.0260	0.0243	104	97.2	73.0-121	6.76	20	
Bromochloromethane	mg/kg	0.0250	0.0222	0.0209	88.8	83.6	77.0-128	6.03	20	
Bromodichloromethane	mg/kg	0.0250	0.0263	0.0250	105	100	73.0-121	5.07	20	
Bromoform	mg/kg	0.0250	0.0274	0.0252	110	101	64.0-132	8.37	20	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

LABORATORY CONTROL SAMPLE & LCSD: R3791809-1 R3791809-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Bromomethane	mg/kg	0.0250	0.0189	0.0169	75.6	67.6	56.0-147	11.2	20	
n-Butylbenzene	mg/kg	0.0250	0.0264	0.0255	106	102	68.0-135	3.47	20	
sec-Butylbenzene	mg/kg	0.0250	0.0262	0.0255	105	102	74.0-130	2.71	20	
tert-Butylbenzene	mg/kg	0.0250	0.0253	0.0244	101	97.6	75.0-127	3.62	20	
Carbon tetrachloride	mg/kg	0.0250	0.0212	0.0210	84.8	84.0	66.0-128	0.948	20	
Chlorobenzene	mg/kg	0.0250	0.0246	0.0242	98.4	96.8	76.0-128	1.64	20	
Dibromochloromethane	mg/kg	0.0250	0.0252	0.0242	101	96.8	74.0-127	4.05	20	
Chloroethane	mg/kg	0.0250	0.0212	0.0202	84.8	80.8	61.0-134	4.83	20	
Chloroform	mg/kg	0.0250	0.0212	0.0204	84.8	81.6	72.0-123	3.85	20	
Chloromethane	mg/kg	0.0250	0.0140	0.0133	56.0	53.2	51.0-138	5.13	20	
2-Chlorotoluene	mg/kg	0.0250	0.0266	0.0255	106	102	75.0-124	4.22	20	
4-Chlorotoluene	mg/kg	0.0250	0.0264	0.0252	106	101	75.0-124	4.65	20	
1,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0243	0.0230	97.2	92.0	74.0-128	5.50	20	
1,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0251	0.0218	100	87.2	59.0-130	14.1	20	
Dibromomethane	mg/kg	0.0250	0.0247	0.0230	98.8	92.0	75.0-122	7.13	20	
1,2-Dichlorobenzene	mg/kg	0.0250	0.0247	0.0231	98.8	92.4	76.0-124	6.69	20	
1,3-Dichlorobenzene	mg/kg	0.0250	0.0252	0.0239	101	95.6	76.0-125	5.30	20	
1,4-Dichlorobenzene	mg/kg	0.0250	0.0251	0.0238	100	95.2	77.0-121	5.32	20	
Dichlorodifluoromethane	mg/kg	0.0250	0.0196	0.0195	78.4	78.0	43.0-156	0.512	20	
Dichlorofluoromethane	mg/kg	0.0250	0.0253	0.0245	101	98.0	65.0-137	3.21	20	
1,1-Dichloroethane	mg/kg	0.0250	0.0205	0.0198	82.0	79.2	70.0-127	3.47	20	
1,2-Dichloroethane	mg/kg	0.0250	0.0220	0.0202	88.0	80.8	65.0-131	8.53	20	
1,1-Dichloroethene	mg/kg	0.0250	0.0248	0.0241	99.2	96.4	65.0-131	2.86	20	
cis-1,2-Dichloroethene	mg/kg	0.0250	0.0216	0.0207	86.4	82.8	73.0-125	4.26	20	
trans-1,2-Dichloroethene	mg/kg	0.0250	0.0248	0.0235	99.2	94.0	71.0-125	5.38	20	
1,2-Dichloropropane	mg/kg	0.0250	0.0257	0.0243	103	97.2	74.0-125	5.60	20	
1,3-Dichloropropane	mg/kg	0.0250	0.0248	0.0237	99.2	94.8	80.0-125	4.54	20	
2,2-Dichloropropane	mg/kg	0.0250	0.0228	0.0223	91.2	89.2	59.0-135	2.22	20	
1,1-Dichloropropene	mg/kg	0.0250	0.0191	0.0188	76.4	75.2	73.0-125	1.58	20	
cis-1,3-Dichloropropene	mg/kg	0.0250	0.0272	0.0256	109	102	76.0-127	6.06	20	
trans-1,3-Dichloropropene	mg/kg	0.0250	0.0278	0.0265	111	106	73.0-127	4.79	20	
Ethylbenzene	mg/kg	0.0250	0.0248	0.0247	99.2	98.8	74.0-126	0.404	20	
Diethyl ether (Ethyl ether)	mg/kg	0.0250	0.0250	0.0232	100	92.8	64.0-137	7.47	20	
Hexachloro-1,3-butadiene	mg/kg	0.0250	0.0271	0.0262	108	105	57.0-150	3.38	20	
n-Hexane	mg/kg	0.0250	0.0173	0.0165	69.2	66.0	55.0-137	4.73	20	
Isopropylbenzene (Cumene)	mg/kg	0.0250	0.0255	0.0257	102	103	72.0-127	0.781	20	
p-Isopropyltoluene	mg/kg	0.0250	0.0250	0.0244	100	97.6	72.0-133	2.43	20	
2-Butanone (MEK)	mg/kg	0.125	0.0779	0.0719	62.3	57.5	30.0-160	8.01	24	
Methylene Chloride	mg/kg	0.0250	0.0244	0.0227	97.6	90.8	68.0-123	7.22	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.125	0.116	0.107	92.8	85.6	56.0-143	8.07	20	
Methyl-tert-butyl ether	mg/kg	0.0250	0.0226	0.0206	90.4	82.4	66.0-132	9.26	20	
Naphthalene	mg/kg	0.0250	0.0214	0.0197	85.6	78.8	59.0-130	8.27	20	
n-Propylbenzene	mg/kg	0.0250	0.0261	0.0252	104	101	74.0-126	3.51	20	
Styrene	mg/kg	0.0250	0.0260	0.0254	104	102	72.0-127	2.33	20	
1,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0257	0.0254	103	102	74.0-129	1.17	20	
1,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0244	0.0222	97.6	88.8	68.0-128	9.44	20	
Tetrachloroethene	mg/kg	0.0250	0.0253	0.0252	101	101	70.0-136	0.396	20	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

LABORATORY CONTROL SAMPLE & LCSD: R3791809-1 R3791809-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Tetrahydrofuran	mg/kg	0.0250	0.0161	0.0158	64.4	63.2	37.0-146	1.88	24	
Toluene	mg/kg	0.0250	0.0244	0.0243	97.6	97.2	75.0-121	0.411	20	
1,2,3-Trichlorobenzene	mg/kg	0.0250	0.0230	0.0218	92.0	87.2	59.0-139	5.36	20	
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0250	0.0238	100	95.2	62.0-137	4.92	20	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0263	0.0251	105	100	70.0-126	4.67	20	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0266	0.0255	106	102	73.0-127	4.22	20	
1,1,1-Trichloroethane	mg/kg	0.0250	0.0221	0.0219	88.4	87.6	69.0-126	0.909	20	
1,1,2-Trichloroethane	mg/kg	0.0250	0.0252	0.0242	101	96.8	78.0-123	4.05	20	
Trichloroethene	mg/kg	0.0250	0.0250	0.0240	100	96.0	76.0-126	4.08	20	
Trichlorofluoromethane	mg/kg	0.0250	0.0245	0.0242	98.0	96.8	61.0-142	1.23	20	
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0261	0.0258	104	103	61.0-139	1.16	20	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0239	0.0216	95.6	86.4	67.0-129	10.1	20	
Vinyl chloride	mg/kg	0.0250	0.0239	0.0234	95.6	93.6	63.0-134	2.11	20	
Xylene (Total)	mg/kg	0.0750	0.0740	0.0736	98.7	98.1	72.0-127	0.542	20	
1,2-Dichloroethane-d4 (S)	%				101	96.9	70.0-130			
Toluene-d8 (S)	%				108	109	75.0-131			
4-Bromofluorobenzene (S)	%				102	101	67.0-138			

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1863556
QC Batch Method: 5035A
Analysis Method: EPA 8260D
Analysis Description: VOA (GC/MS) 8260D
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135010

METHOD BLANK: R3791707-2 Matrix: Solid
Associated Lab Samples: 10607135010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	mg/kg	ND	0.00100	05/13/22 11:50	
Ethylbenzene	mg/kg	ND	0.00100	05/13/22 11:50	
Toluene	mg/kg	ND	0.00500	05/13/22 11:50	
Xylene (Total)	mg/kg	ND	0.00300	05/13/22 11:50	
1,2-Dichloroethane-d4 (S)	%	106	70.0-130	05/13/22 11:50	
Toluene-d8 (S)	%	112	75.0-131	05/13/22 11:50	
4-Bromofluorobenzene (S)	%	99.7	67.0-138	05/13/22 11:50	

LABORATORY CONTROL SAMPLE & LCSD: R3791707-1 R3791707-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/kg	0.0250	0.0260	0.0240	104	96.0	70.0-123	8.00	20	
Ethylbenzene	mg/kg	0.0250	0.0247	0.0236	98.8	94.4	74.0-126	4.55	20	
Toluene	mg/kg	0.0250	0.0236	0.0224	94.4	89.6	75.0-121	5.22	20	
Xylene (Total)	mg/kg	0.0750	0.0729	0.0699	97.2	93.2	72.0-127	4.20	20	
1,2-Dichloroethane-d4 (S)	%				104	105	70.0-130			
Toluene-d8 (S)	%				108	110	75.0-131			
4-Bromofluorobenzene (S)	%				100	102	67.0-138			

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1863892
QC Batch Method: 5035A
Analysis Method: EPA 8260D
Analysis Description: VOA (GC/MS) 8260D
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135001, 10607135002, 10607135003

METHOD BLANK: R3792297-3 Matrix: Solid
Associated Lab Samples: 10607135001, 10607135002, 10607135003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	mg/kg	ND	0.00100	05/16/22 11:51	
1,2-Dichloroethane-d4 (S)	%	105	70.0-130	05/16/22 11:51	
Toluene-d8 (S)	%	111	75.0-131	05/16/22 11:51	
4-Bromofluorobenzene (S)	%	102	67.0-138	05/16/22 11:51	

LABORATORY CONTROL SAMPLE & LCSD: R3792297-1 R3792297-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Tetrachloroethene	mg/kg	0.0250	0.0260	0.0273	104	109	70.0-136	4.88	20	
1,2-Dichloroethane-d4 (S)	%				101	100	70.0-130			
Toluene-d8 (S)	%				108	109	75.0-131			
4-Bromofluorobenzene (S)	%				102	103	67.0-138			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 813917
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607135001

METHOD BLANK: 4315379 Matrix: Solid
Associated Lab Samples: 10607135001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/12/22 10:27	
2-Methylnaphthalene	ug/kg	ND	10.0	05/12/22 10:27	
Acenaphthene	ug/kg	ND	10.0	05/12/22 10:27	
Acenaphthylene	ug/kg	ND	10.0	05/12/22 10:27	
Anthracene	ug/kg	ND	10.0	05/12/22 10:27	
Benzo(a)anthracene	ug/kg	ND	10.0	05/12/22 10:27	
Benzo(a)pyrene	ug/kg	ND	10.0	05/12/22 10:27	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/12/22 10:27	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	05/12/22 10:27	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/12/22 10:27	
Chrysene	ug/kg	ND	10.0	05/12/22 10:27	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/12/22 10:27	
Dibenzofuran	ug/kg	ND	10.0	05/12/22 10:27	
Fluoranthene	ug/kg	ND	10.0	05/12/22 10:27	
Fluorene	ug/kg	ND	10.0	05/12/22 10:27	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/12/22 10:27	
Naphthalene	ug/kg	ND	10.0	05/12/22 10:27	
Phenanthrene	ug/kg	ND	10.0	05/12/22 10:27	
Pyrene	ug/kg	ND	10.0	05/12/22 10:27	
2-Fluorobiphenyl (S)	%.	31	59-125	05/12/22 10:27	S0
p-Terphenyl-d14 (S)	%.	75	65-125	05/12/22 10:27	

LABORATORY CONTROL SAMPLE: 4315380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	77.1	77	50-125	
2-Methylnaphthalene	ug/kg	100	59.2	59	55-125	
Acenaphthene	ug/kg	100	67.1	67	60-125	
Acenaphthylene	ug/kg	100	65.7	66	59-125	
Anthracene	ug/kg	100	81.9	82	62-125	
Benzo(a)anthracene	ug/kg	100	76.4	76	64-125	
Benzo(a)pyrene	ug/kg	100	81.0	81	64-125	
Benzo(b)fluoranthene	ug/kg	100	76.7	77	65-125	
Benzo(g,h,i)perylene	ug/kg	100	81.2	81	66-125	
Benzo(k)fluoranthene	ug/kg	100	85.4	85	66-125	
Chrysene	ug/kg	100	87.5	88	66-125	
Dibenz(a,h)anthracene	ug/kg	100	81.7	82	67-125	
Dibenzofuran	ug/kg	100	66.2	66	70-130	L2
Fluoranthene	ug/kg	100	74.5	75	65-125	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

LABORATORY CONTROL SAMPLE: 4315380

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	100	65.0	65	60-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	74.5	74	64-125	
Naphthalene	ug/kg	100	65.4	65	48-125	
Phenanthrene	ug/kg	100	65.2	65	62-125	
Pyrene	ug/kg	100	77.0	77	68-125	
2-Fluorobiphenyl (S)	%.			64	59-125	
p-Terphenyl-d14 (S)	%.			75	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4315381 4315382

Parameter	Units	20242686002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	<0.0023 mg/kg	99.5	99.4	63.2	62.1	64	63	60-125	2	30	
2-Methylnaphthalene	ug/kg	<0.0020 mg/kg	99.5	99.4	68.7	68.3	69	69	59-125	1	30	
Acenaphthene	ug/kg	<0.0020 mg/kg	99.5	99.4	81.2	88.2	82	89	70-125	8	30	
Acenaphthylene	ug/kg	<1.1	99.5	99.4	86.4	82.6	87	83	30-150	4	30	
Anthracene	ug/kg	<0.00091 mg/kg	99.5	99.4	93.8	109	93	109	67-125	15	30	
Benzo(a)anthracene	ug/kg	<0.0017 mg/kg	99.5	99.4	93.6	79.3	93	79	64-125	17	30	
Benzo(a)pyrene	ug/kg	<0.0011 mg/kg	99.5	99.4	94.8	83.0	95	84	40-137	13	30	
Benzo(b)fluoranthene	ug/kg	<0.00099 mg/kg	99.5	99.4	91.4	75.0	92	75	30-150	20	30	
Benzo(g,h,i)perylene	ug/kg	<0.0019 mg/kg	99.5	99.4	86.8	79.6	87	80	69-125	9	30	
Benzo(k)fluoranthene	ug/kg	<0.0010 mg/kg	99.5	99.4	97.8	89.9	98	90	48-133	8	30	
Chrysene	ug/kg	<0.0010 mg/kg	99.5	99.4	103	91.6	103	92	62-125	11	30	
Dibenz(a,h)anthracene	ug/kg	<0.0012 mg/kg	99.5	99.4	82.3	81.8	83	82	57-125	1	30	
Dibenzofuran	ug/kg	<1.8	99.5	99.4	85.4	90.7	86	91	70-130	6	30	
Fluoranthene	ug/kg	0.0021J mg/kg	99.5	99.4	121	113	119	112	60-125	6	30	
Fluorene	ug/kg	<0.0011 mg/kg	99.5	99.4	84.5	91.1	85	92	53-125	8	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<0.00079 mg/kg	99.5	99.4	89.6	76.1	90	77	49-130	16	30	
Naphthalene	ug/kg	<0.0011 mg/kg	99.5	99.4	73.1	77.0	73	77	46-125	5	30	
Phenanthrene	ug/kg	0.0021J mg/kg	99.5	99.4	80.4	126	79	125	61-125	44	30	R1
Pyrene	ug/kg	0.0016J mg/kg	99.5	99.4	112	100	111	99	58-125	11	30	
2-Fluorobiphenyl (S)	%.						69	84	59-125			
p-Terphenyl-d14 (S)	%.						78	74	65-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 813919
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

METHOD BLANK: 4315385 Matrix: Solid
Associated Lab Samples: 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/10/22 10:52	
2-Methylnaphthalene	ug/kg	ND	10.0	05/10/22 10:52	
Acenaphthene	ug/kg	ND	10.0	05/10/22 10:52	
Acenaphthylene	ug/kg	ND	10.0	05/10/22 10:52	
Anthracene	ug/kg	ND	10.0	05/10/22 10:52	
Benzo(a)anthracene	ug/kg	ND	10.0	05/10/22 10:52	
Benzo(a)pyrene	ug/kg	ND	10.0	05/10/22 10:52	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/10/22 10:52	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	05/10/22 10:52	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/10/22 10:52	
Chrysene	ug/kg	ND	10.0	05/10/22 10:52	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/10/22 10:52	
Dibenzofuran	ug/kg	ND	10.0	05/10/22 10:52	
Fluoranthene	ug/kg	ND	10.0	05/10/22 10:52	
Fluorene	ug/kg	ND	10.0	05/10/22 10:52	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/10/22 10:52	
Naphthalene	ug/kg	ND	10.0	05/10/22 10:52	
Phenanthrene	ug/kg	ND	10.0	05/10/22 10:52	
Pyrene	ug/kg	ND	10.0	05/10/22 10:52	
2-Fluorobiphenyl (S)	%.	63	59-125	05/10/22 10:52	
p-Terphenyl-d14 (S)	%.	97	65-125	05/10/22 10:52	

LABORATORY CONTROL SAMPLE: 4315386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	78.8	79	50-125	
2-Methylnaphthalene	ug/kg	100	61.6	62	55-125	
Acenaphthene	ug/kg	100	75.5	76	60-125	
Acenaphthylene	ug/kg	100	72.6	73	59-125	
Anthracene	ug/kg	100	88.3	88	62-125	
Benzo(a)anthracene	ug/kg	100	72.8	73	64-125	
Benzo(a)pyrene	ug/kg	100	88.0	88	64-125	
Benzo(b)fluoranthene	ug/kg	100	74.4	74	65-125	
Benzo(g,h,i)perylene	ug/kg	100	90.0	90	66-125	
Benzo(k)fluoranthene	ug/kg	100	96.7	97	66-125	
Chrysene	ug/kg	100	101	101	66-125	
Dibenz(a,h)anthracene	ug/kg	100	90.4	90	67-125	
Dibenzofuran	ug/kg	100	72.9	73	70-130	
Fluoranthene	ug/kg	100	83.9	84	65-125	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

LABORATORY CONTROL SAMPLE: 4315386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	100	74.9	75	60-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	72.5	73	64-125	
Naphthalene	ug/kg	100	69.9	70	48-125	
Phenanthrene	ug/kg	100	81.7	82	62-125	
Pyrene	ug/kg	100	83.1	83	68-125	
2-Fluorobiphenyl (S)	%.			76	59-125	
p-Terphenyl-d14 (S)	%.			85	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4315387 4315388

Parameter	Units	10607135004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	ND	112	112	92.2	88.8	82	79	60-125	4	30	
2-Methylnaphthalene	ug/kg	ND	112	112	81.9	77.1	73	69	59-125	6	30	
Acenaphthene	ug/kg	ND	112	112	87.5	84.6	78	75	70-125	3	30	
Acenaphthylene	ug/kg	ND	112	112	83.5	80.4	74	72	30-150	4	30	
Anthracene	ug/kg	ND	112	112	104	96.8	92	86	67-125	7	30	
Benzo(a)anthracene	ug/kg	ND	112	112	80.1	77.4	71	69	64-125	3	30	
Benzo(a)pyrene	ug/kg	ND	112	112	98.5	94.9	88	85	40-137	4	30	
Benzo(b)fluoranthene	ug/kg	ND	112	112	77.8	91.9	69	82	30-150	17	30	
Benzo(g,h,i)perylene	ug/kg	ND	112	112	95.3	84.1	85	75	69-125	12	30	
Benzo(k)fluoranthene	ug/kg	ND	112	112	104	106	93	95	48-133	2	30	
Chrysene	ug/kg	ND	112	112	116	117	104	104	62-125	1	30	
Dibenz(a,h)anthracene	ug/kg	ND	112	112	95.7	84.7	85	75	57-125	12	30	
Dibenzofuran	ug/kg	ND	112	112	84.2	80.1	75	71	70-130	5	30	
Fluoranthene	ug/kg	ND	112	112	98.6	85.3	88	76	60-125	14	30	
Fluorene	ug/kg	ND	112	112	86.2	82.0	77	73	53-125	5	30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	112	112	73.8	79.5	66	71	49-130	7	30	
Naphthalene	ug/kg	ND	112	112	92.4	85.6	82	76	46-125	8	30	
Phenanthrene	ug/kg	ND	112	112	88.9	83.6	79	75	61-125	6	30	
Pyrene	ug/kg	ND	112	112	102	91.2	91	81	58-125	11	30	
2-Fluorobiphenyl (S)	%.						74	71	59-125			
p-Terphenyl-d14 (S)	%.						91	84	65-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 815126
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10607135002, 10607135003

METHOD BLANK: 4320996 Matrix: Solid
Associated Lab Samples: 10607135002, 10607135003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/16/22 11:26	
2-Methylnaphthalene	ug/kg	ND	10.0	05/16/22 11:26	
Acenaphthene	ug/kg	ND	10.0	05/16/22 11:26	
Acenaphthylene	ug/kg	ND	10.0	05/16/22 11:26	
Anthracene	ug/kg	ND	10.0	05/16/22 11:26	
Benzo(a)anthracene	ug/kg	ND	10.0	05/16/22 11:26	
Benzo(a)pyrene	ug/kg	ND	10.0	05/16/22 11:26	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/16/22 11:26	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	05/16/22 11:26	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/16/22 11:26	
Chrysene	ug/kg	ND	10.0	05/16/22 11:26	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/16/22 11:26	
Dibenzofuran	ug/kg	ND	10.0	05/16/22 11:26	
Fluoranthene	ug/kg	ND	10.0	05/16/22 11:26	
Fluorene	ug/kg	ND	10.0	05/16/22 11:26	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/16/22 11:26	
Naphthalene	ug/kg	ND	10.0	05/16/22 11:26	
Phenanthrene	ug/kg	ND	10.0	05/16/22 11:26	
Pyrene	ug/kg	ND	10.0	05/16/22 11:26	
2-Fluorobiphenyl (S)	%.	77	59-125	05/16/22 11:26	
p-Terphenyl-d14 (S)	%.	88	65-125	05/16/22 11:26	

LABORATORY CONTROL SAMPLE: 4320997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	80.4	80	50-125	
2-Methylnaphthalene	ug/kg	100	84.0	84	55-125	
Acenaphthene	ug/kg	100	85.5	85	60-125	
Acenaphthylene	ug/kg	100	86.4	86	59-125	
Anthracene	ug/kg	100	106	106	62-125	
Benzo(a)anthracene	ug/kg	100	104	104	64-125	
Benzo(a)pyrene	ug/kg	100	94.2	94	64-125	
Benzo(b)fluoranthene	ug/kg	100	85.2	85	65-125	
Benzo(g,h,i)perylene	ug/kg	100	82.8	83	66-125	
Benzo(k)fluoranthene	ug/kg	100	90.5	91	66-125	
Chrysene	ug/kg	100	89.3	89	66-125	
Dibenz(a,h)anthracene	ug/kg	100	98.6	99	67-125	
Dibenzofuran	ug/kg	100	83.5	83	70-130	
Fluoranthene	ug/kg	100	124	124	65-125	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

LABORATORY CONTROL SAMPLE: 4320997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	100	92.8	93	60-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	101	101	64-125	
Naphthalene	ug/kg	100	82.7	83	48-125	
Phenanthrene	ug/kg	100	149	149	62-125	L1
Pyrene	ug/kg	100	109	109	68-125	
2-Fluorobiphenyl (S)	%.			80	59-125	
p-Terphenyl-d14 (S)	%.			88	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4320998 4320999

Parameter	Units	10608155002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	<10.4	104	104	81.0	82.0	78	79	60-125	1	30	
2-Methylnaphthalene	ug/kg	<10.4	104	104	83.9	84.6	80	81	59-125	1	30	
Acenaphthene	ug/kg	<0.010 mg/kg	104	104	86.9	88.5	82	84	70-125	2	30	
Acenaphthylene	ug/kg	<0.010 mg/kg	104	104	87.6	88.8	84	85	30-150	1	30	
Anthracene	ug/kg	<0.010 mg/kg	104	104	92.4	94.1	89	90	67-125	2	30	
Benzo(a)anthracene	ug/kg	<0.010 mg/kg	104	104	103	105	98	101	64-125	2	30	
Benzo(a)pyrene	ug/kg	<0.010 mg/kg	104	104	96.5	100	92	96	40-137	4	30	
Benzo(b)fluoranthene	ug/kg	<0.010 mg/kg	104	104	88.7	91.2	85	88	30-150	3	30	
Benzo(g,h,i)perylene	ug/kg	<0.010 mg/kg	104	104	87.3	87.7	84	84	69-125	0	30	
Benzo(k)fluoranthene	ug/kg	<0.010 mg/kg	104	104	84.9	90.6	81	87	48-133	6	30	
Chrysene	ug/kg	<0.010 mg/kg	104	104	91.9	93.8	87	89	62-125	2	30	
Dibenz(a,h)anthracene	ug/kg	<0.010 mg/kg	104	104	105	101	100	97	57-125	3	30	
Dibenzofuran	ug/kg	<10.4	104	104	84.1	85.7	80	82	70-130	2	30	
Fluoranthene	ug/kg	<0.010 mg/kg	104	104	95.7	97.5	90	93	60-125	2	30	
Fluorene	ug/kg	<0.010 mg/kg	104	104	91.5	93.5	87	89	53-125	2	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<0.010 mg/kg	104	104	103	104	99	100	49-130	1	30	
Naphthalene	ug/kg	<0.010 mg/kg	104	104	81.1	82.5	75	77	46-125	2	30	
Phenanthrene	ug/kg	<0.010 mg/kg	104	104	92.1	92.7	85	86	61-125	1	30	
Pyrene	ug/kg	<0.010 mg/kg	104	104	93.9	95.2	89	90	58-125	1	30	
2-Fluorobiphenyl (S)	%.						78	78	59-125			
p-Terphenyl-d14 (S)	%.						88	89	65-125			

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

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1862707
QC Batch Method: SM 2540 G
Analysis Method: SM 2540G
Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135001

METHOD BLANK: R3792153-1 Matrix: Solid
Associated Lab Samples: 10607135001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	0.00200		05/14/22 18:12	

LABORATORY CONTROL SAMPLE: R3792153-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3792153-3

Parameter	Units	L1491651-05 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	85.9	85.1	0.870	10	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

QC Batch: 1862708 Analysis Method: SM 2540G
QC Batch Method: SM 2540 G Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009, 10607135010

METHOD BLANK: R3792119-1 Matrix: Solid
Associated Lab Samples: 10607135002, 10607135003, 10607135004, 10607135005, 10607135006, 10607135007, 10607135008, 10607135009, 10607135010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	0.00100		05/14/22 11:30	

LABORATORY CONTROL SAMPLE: R3792119-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3792119-3

Parameter	Units	10607135004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	90.0	89.6	0.469	10	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
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.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607135001	B-1-22 (6-7.5 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135002	B-2-22 (6-7.5 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135003	B-3-22 (6-7.5 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135004	B-4-22 (6-8 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135005	MW-OWS-1 (14-15 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135006	MW-OWS-2 (5.5-7 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135007	MW-OWS-2 (13.5-15 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135008	MW-OWS-3 (8.5-10 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135009	MW-OWS-3 (13.5-15 FT)	EPA 3050B	814105	EPA 6020B	814416
10607135001	B-1-22 (6-7.5 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135002	B-2-22 (6-7.5 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135003	B-3-22 (6-7.5 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135004	B-4-22 (6-8 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135005	MW-OWS-1 (14-15 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135006	MW-OWS-2 (5.5-7 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135007	MW-OWS-2 (13.5-15 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135008	MW-OWS-3 (8.5-10 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135009	MW-OWS-3 (13.5-15 FT)	EPA 7471B	814112	EPA 7471B	814853
10607135001	B-1-22 (6-7.5 FT)	ASTM D2974	815311		
10607135002	B-2-22 (6-7.5 FT)	ASTM D2974	815311		
10607135003	B-3-22 (6-7.5 FT)	ASTM D2974	815311		
10607135004	B-4-22 (6-8 FT)	ASTM D2974	815311		
10607135005	MW-OWS-1 (14-15 FT)	ASTM D2974	815311		
10607135006	MW-OWS-2 (5.5-7 FT)	ASTM D2974	815311		
10607135007	MW-OWS-2 (13.5-15 FT)	ASTM D2974	815311		
10607135008	MW-OWS-3 (8.5-10 FT)	ASTM D2974	815311		
10607135009	MW-OWS-3 (13.5-15 FT)	ASTM D2974	815311		
10607135001	B-1-22 (6-7.5 FT)	3546	1862954	EPA 8270E	1862954
10607135002	B-2-22 (6-7.5 FT)	3546	1862954	EPA 8270E	1862954
10607135003	B-3-22 (6-7.5 FT)	3546	1862954	EPA 8270E	1862954
10607135004	B-4-22 (6-8 FT)	3546	1862954	EPA 8270E	1862954
10607135005	MW-OWS-1 (14-15 FT)	3546	1862954	EPA 8270E	1862954
10607135006	MW-OWS-2 (5.5-7 FT)	3546	1864321	EPA 8270E	1864321
10607135007	MW-OWS-2 (13.5-15 FT)	3546	1864784	EPA 8270E	1864784
10607135008	MW-OWS-3 (8.5-10 FT)	3546	1864784	EPA 8270E	1864784
10607135009	MW-OWS-3 (13.5-15 FT)	3546	1864784	EPA 8270E	1864784
10607135001	B-1-22 (6-7.5 FT)	EPA 3546	813917	EPA 8270E by SIM	814540
10607135002	B-2-22 (6-7.5 FT)	EPA 3546	815126	EPA 8270E by SIM	815428
10607135003	B-3-22 (6-7.5 FT)	EPA 3546	815126	EPA 8270E by SIM	815428
10607135004	B-4-22 (6-8 FT)	EPA 3546	813919	EPA 8270E by SIM	814189
10607135005	MW-OWS-1 (14-15 FT)	EPA 3546	813919	EPA 8270E by SIM	814189
10607135006	MW-OWS-2 (5.5-7 FT)	EPA 3546	813919	EPA 8270E by SIM	814189
10607135007	MW-OWS-2 (13.5-15 FT)	EPA 3546	813919	EPA 8270E by SIM	814189
10607135008	MW-OWS-3 (8.5-10 FT)	EPA 3546	813919	EPA 8270E by SIM	814189
10607135009	MW-OWS-3 (13.5-15 FT)	EPA 3546	813919	EPA 8270E by SIM	814189

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10607135

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10607135001	**B-1-22 (6-7.5 FT)**	5035A	1863416	EPA 8260D	1863416
10607135001	**B-1-22 (6-7.5 FT)**	5035A	1863892	EPA 8260D	1863892
10607135002	**B-2-22 (6-7.5 FT)**	5035A	1863416	EPA 8260D	1863416
10607135002	**B-2-22 (6-7.5 FT)**	5035A	1863892	EPA 8260D	1863892
10607135003	**B-3-22 (6-7.5 FT)**	5035A	1863416	EPA 8260D	1863416
10607135003	**B-3-22 (6-7.5 FT)**	5035A	1863892	EPA 8260D	1863892
10607135004	**B-4-22 (6-8 FT)**	5035A	1863416	EPA 8260D	1863416
10607135005	**MW-OWS-1 (14-15 FT)**	5035A	1863416	EPA 8260D	1863416
10607135006	**MW-OWS-2 (5.5-7 FT)**	5035A	1863416	EPA 8260D	1863416
10607135007	**MW-OWS-2 (13.5-15 FT)**	5035A	1863416	EPA 8260D	1863416
10607135008	**MW-OWS-3 (8.5-10 FT)**	5035A	1863416	EPA 8260D	1863416
10607135009	**MW-OWS-3 (13.5-15 FT)**	5035A	1863416	EPA 8260D	1863416
10607135010	**WES-DUP-1**	5035A	1863556	EPA 8260D	1863556
10607135001	**B-1-22 (6-7.5 FT)**	SM 2540 G	1862707	SM 2540G	1862707
10607135002	**B-2-22 (6-7.5 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135003	**B-3-22 (6-7.5 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135004	**B-4-22 (6-8 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135005	**MW-OWS-1 (14-15 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135006	**MW-OWS-2 (5.5-7 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135007	**MW-OWS-2 (13.5-15 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135008	**MW-OWS-3 (8.5-10 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135009	**MW-OWS-3 (13.5-15 FT)**	SM 2540 G	1862708	SM 2540G	1862708
10607135010	**WES-DUP-1**	SM 2540 G	1862708	SM 2540G	1862708
10607135001	**B-1-22 (6-7.5 FT)**	Trivalent Chromium Calculation	817973		
10607135002	**B-2-22 (6-7.5 FT)**	Trivalent Chromium Calculation	817973		
10607135003	**B-3-22 (6-7.5 FT)**	Trivalent Chromium Calculation	817973		
10607135004	**B-4-22 (6-8 FT)**	Trivalent Chromium Calculation	817973		
10607135005	**MW-OWS-1 (14-15 FT)**	Trivalent Chromium Calculation	817973		
10607135006	**MW-OWS-2 (5.5-7 FT)**	Trivalent Chromium Calculation	817973		
10607135007	**MW-OWS-2 (13.5-15 FT)**	Trivalent Chromium Calculation	817973		
10607135008	**MW-OWS-3 (8.5-10 FT)**	Trivalent Chromium Calculation	817973		
10607135009	**MW-OWS-3 (13.5-15 FT)**	Trivalent Chromium Calculation	817973		

REPORT OF LABORATORY ANALYSIS

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Cooler 1 of 3

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Phillips 66 Ferndale Refinery	Report To:	Joe Sumera	Attention:	Joe Sumera
Address:	PO Box 8	Copy To:	Ashley Yamaura	Company Name:	Phillips 66
	Ferndale, WA 98248		ayamaura@whatcom-es.com / 360-752-9571	Address:	PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No.	PO # 4300035146	Pace Quote Reference:	
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID:	P66: Oily Water Sewer	Pace Project Manager:	
Requested Due Date/TAT:	Standard TAT	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

WO# : 10607135

10607135

Requested Analys

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Y/N	Analyses Test												Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS			DATE	TIME	DATE	TIME		Unpreserved / H2SO4 / HNO3 / HCl / NaOH / Na2S2O3 / Methanol / Other			BTEX - EPA 8260	NWTPH - VPH	NWTPH - EPH	PAHs/cPAHs - 8270 SIM (see attached list)	Naphthalenes 8270 SIM	As, Cd, Cr (III & VI), Pb, Ni, Zn - EPA 6020	Mercury - EPA 7471		Chlorinated VOCs EPA 8260	Hexane			
1	B-1-22 (6-7.5 FT)	SL	G	5/2/22	11:00	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
2	B-2-22 (6-7.5 FT)	SL	G	5/2/22	11:10	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
3	B-3-22 (6-7.5 FT)	SL	G	5/2/22	11:30	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
4	B-4-22 (6-8 FT)	SL	G	5/2/22	11:20	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
5	MW-OWS-1 (14-15 FT)	SL	G	5/2/22	2:00	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
6	MW-OWS-2 (5.5-7 FT)	SL	G	5/3/22	9:15	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
7	MW-OWS-2 (13.5-15 FT)	SL	G	5/3/22	9:30	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
8	MW-OWS-3 (8.5-10 FT)	SL	G	5/3/22	10:15	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
9	MW-OWS-3 (13.5-15 FT)	SL	G	5/3/22	10:30	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS, 3- 8oz. Jars			X	X	X	X	X	X	X		X	X			
10	WES-DUP-1	SL	G	5/2/22	8:00	-	-		TerraCore 5035A kit w/: 2 extra Methanol VOAS			X	X											

Some jars are not filled all the way (3/4th full). If there is any issues with fufilling our analyte list please have Jennifer Gross contact Ashley Yamaura.

001 002 003 004 005 006 007 008 009 010

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please email results to both Phillips 66, and Whatcom Environmental	Whatcom Environmental			Ruth / Pace	5-5-22	8:50	1-4/	Y	Y	Y
See attached page for requested reporting limits.							2-4/			
VPH and EPH analysis will be subbed to Fremont Analytical							1-2			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ashley Yamaura

SIGNATURE of SAMPLER: Ashley Yamaura DATE Signed: 5/4/22

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

	DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)
Pace ANALYTICAL SERVICES	Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Phillips 66

Project #:

WO#: 10607135

PM: JMG **Due Date: 05/19/22**

CLIENT: COP

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

See Exceptions ☑ ENV-FRM-MIN4-0142

Tracking Number:

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(1336) ☑ T3(0459) ☐ T4(0254) ☐ T5(0489) ☐ T6(0235) ☐ T7 (0042) ☐ 01339252/1710 ☐ 122659816 ☐ 140792808

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ 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: 1.4/2.4/1.2 °C

Correction Factor: True

Cooler Temp Corrected w/temp blank: 1.4/2.4/1.2 °C

Average Corrected Temp (no temp blank only): °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other:)

Date/Initials of Person Examining Contents: 5-5-22 RAF

Did samples originate in a quarantine zone within the United States: AL, AR, 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): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other-	☑ Yes	☐ No		11. If no, write ID/ Date/Time on Container Below: See Exception ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☑ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No pH Paper Lot# See Exception ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. See Exception ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Date/Time: Field Data Required? ☐ Yes ☐ No

Comments/Resolution:

Project Manager Review: Jenni Gross Date: 5/6/22

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: RAF (2)

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 04Jun2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.01**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

2 of 3

Tracking Number/Temperature	
2) 5405 1817 2303	2.4
1) " 2299	1.4
3) " 2314	1.2

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Comments:

PHILLIPS 66 / WHATCOM ENVITONMENTAL

4-12-21

REQUESTED LIMITS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS
Benzene	EPA-8021	U	0.030	1	MG/KG
Toluene	EPA-8021	U	0.050	1	MG/KG
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG
Xylenes	EPA-8021	U	0.20	1	MG/KG
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG
Hexane	NWVPH	U	0.20	1	MG/KG
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG
Chrysene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG
Mercury	EPA-7471	0.658	0.020	1	MG/KG

Table 3. Contaminants of Concern and Analytical Methods

	Analytical Method (Soil)	Analytical Method (Groundwater)
Total Petroleum Hydrocarbons		
Gasoline Range TPH	NWVPH*	NWTPH-Gx*
Diesel Range TPH	NWEPH*	NWTPH-Dx*
Volatile Organic Compounds (VOC)		
Benzene	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Toluene	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Ethylbenzene	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Total Xylenes	EPA-8021/EPA-8260*	EPA-8021/EPA-8260*
Polycyclic Aromatic Hydrocarbons (PAH)		
Acenaphthene	EPA-8270 SIM*	EPA-8270 SIM*
Anthracene	EPA-8270 SIM*	EPA-8270 SIM*
Benz[a]anthracene	EPA-8270 SIM*	EPA-8270 SIM*
Benzo(a)pyrene	EPA-8270 SIM*	EPA-8270 SIM*
Benzo(b)fluoranthene	EPA-8270 SIM*	EPA-8270 SIM*
Benzo(k)fluoranthene	EPA-8270 SIM*	EPA-8270 SIM*
Biphenyl	EPA-8270*	EPA-8270*
Chrysene	EPA-8270 SIM*	EPA-8270 SIM*
Dibenzo(a,h)anthracene	EPA-8270 SIM*	EPA-8270 SIM*
Dibenzofuran	EPA-8270 SIM*	EPA-8270 SIM*
Fluoranthene	EPA-8270 SIM*	EPA-8270 SIM*
Fluorene	EPA-8270 SIM*	EPA-8270 SIM*
Indeno(1,2,3-cd)pyrene	EPA-8270 SIM*	EPA-8270 SIM*
2-Methylnaphthalene	EPA-8270 SIM*	EPA-8270 SIM*
1-Methylnaphthalene	EPA-8270 SIM*	EPA-8270 SIM*
Naphthalene	EPA-8270 SIM*	EPA-8270 SIM*
Pyrene	EPA-8270 SIM*	EPA-8270 SIM*
Metals		
Arsenic	EPA-6020*	EPA-200.8*
Cadmium	EPA-6020*	EPA-200.8*
Chromium (III)	EPA-6020*	EPA-200.8*
Lead	EPA-6020*	EPA-200.8*
Mercury	EPA-7471*	EPA-245.1*
Nickel	EPA-6020*	EPA-200.8*

* - or equivalent method

J098

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WA
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 5/5/2022 Results Requested By: 5/26/2022

Workorder: 10607135 **Workorder Name:** P66: Oily Water Sewer

Report To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: VSGM	Unpreserved JGCU	DWC				Requested Analysis: 8260D AP9 LL VOCs (PACE-TN)	8270E Biphenyl (PACE-TN)	Total Solids (PACE-TN)	8260D AP9 LL BTEX only	LAB USE ONLY: LM 5/7/15
1	B-1-22 (6-7.5 FT)	PS	5/2/2022 11:00	10607135001	Solid	2	1					X	X	X		01
2	B-2-22 (6-7.5 FT)	PS	5/2/2022 11:10	10607135002	Solid	2	1					X	X	X		02
3	B-3-22 (6-7.5 FT)	PS	5/2/2022 11:30	10607135003	Solid	2	1					X	X	X		03
4	B-4-22 (6-8 FT)	PS	5/2/2022 11:20	10607135004	Solid	2	1					X	X	X		04
5	MW-OWS-1 (14-15 FT)	PS	5/2/2022 02:00	10607135005	Solid	2	1					X	X	X		05
6	MW-OWS-2 (5.5-7 FT)	PS	5/3/2022 09:15	10607135006	Solid	2	1					X	X	X		06
7	MW-OWS-2 (13.5-15 FT)	PS	5/3/2022 09:30	10607135007	Solid	2	1					X	X	X		07
8	MW-OWS-3 (8.5-10 FT)	PS	5/3/2022 10:15	10607135008	Solid	2	1					X	X	X		08
9	MW-OWS-3 (13.5-15 FT)	PS	5/3/2022 10:30	10607135009	Solid	2	1					X	X	X		09
10	WES-DUP-1	PS	5/2/2022 08:00	10607135010	Solid	2		-40	JMF	5/9/22				X	X	10

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/pace	5/9/22 15:05	Client Courier	5/10/22 0745
2				
3				

Comments
8260D AP9: Use stir bars
8260D: Full list chlorinated VOCs+BTEX+hexane

Cooler Temperature on Receipt ____ °C | **Custody Seal** ~~Y~~ or N | **Received on Ice** ~~Y~~ or N | **Samples Intact** ~~Y~~ or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

JAA 7 4.9+0=4.9

Sample Receipt Checklist
COC Seal Present/Intact: __Y__N
COC Signed/Accurate: __Y__N
Bottles arrive intact: __Y__N
Correct bottles used: __Y__N
Sufficient volume sent: __Y__N
RAD Screen <0.5 mR/hr: __Y__N
If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

Fedex 5466 8884 5501

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota
Jenni Gross
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: PP6: Oily Sewer Water
Work Order Number: 2205201

June 10, 2022

Attention Jenni Gross:

Fremont Analytical, Inc. received 10 sample(s) on 5/10/2022 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Hexavalent Chromium by EPA Method 7196
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,



Brianna Barnes
Project Manager

Date: *06/10/2022*

CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water
Work Order: 2205201

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2205201-001	B-1-22 (6-7.5 FT)	05/02/2022 11:00 AM	05/10/2022 9:40 AM
2205201-002	B-2-22 (6-7.5 FT)	05/02/2022 11:10 AM	05/10/2022 9:40 AM
2205201-003	B-3-22 (6-7.5 FT)	05/02/2022 11:30 AM	05/10/2022 9:40 AM
2205201-004	B-4-22 (6-8 FT)	05/02/2022 11:20 AM	05/10/2022 9:40 AM
2205201-005	MW-OWS-1 (14-15 FT)	05/02/2022 2:00 AM	05/10/2022 9:40 AM
2205201-006	MW-OWS-2 (5.5-7 FT)	05/03/2022 9:15 AM	05/10/2022 9:40 AM
2205201-007	MW-OWS-2 (13.5-15 FT)	05/03/2022 9:30 AM	05/10/2022 9:40 AM
2205201-008	MW-OWS-3 (8.5-10 FT)	05/03/2022 9:30 AM	05/10/2022 9:40 AM
2205201-009	MW-OWS-3 (13.5-15 FT)	05/03/2022 10:30 AM	05/10/2022 9:40 AM
2205201-010	WES-DUP-1	05/02/2022 8:00 AM	05/10/2022 9:40 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2205201**

Date: **6/10/2022**

CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

6/10/2022: Revision 1 includes data for "MW-OWS-2 (13.5-15 FT)".

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/2/2022 11:00:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-001
Matrix: Solid
Client Sample ID: **B-1-22 (6-7.5 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	10.3		mg/Kg-dry	1	5/19/2022 7:15:50 PM
Aliphatic Hydrocarbon (C12-C16)	ND	10.3		mg/Kg-dry	1	5/19/2022 7:15:50 PM
Aliphatic Hydrocarbon (C16-C21)	ND	10.3		mg/Kg-dry	1	5/19/2022 7:15:50 PM
Aliphatic Hydrocarbon (C21-C34)	ND	10.3		mg/Kg-dry	1	5/19/2022 7:15:50 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.3		mg/Kg-dry	1	5/20/2022 12:20:32 AM
Aromatic Hydrocarbon (C12-C16)	ND	10.3		mg/Kg-dry	1	5/20/2022 12:20:32 AM
Aromatic Hydrocarbon (C16-C21)	ND	10.3		mg/Kg-dry	1	5/20/2022 12:20:32 AM
Aromatic Hydrocarbon (C21-C34)	ND	10.3		mg/Kg-dry	1	5/20/2022 12:20:32 AM
Surr: 1-Chlorooctadecane	83.9	60 - 140		%Rec	1	5/19/2022 7:15:50 PM
Surr: o-Terphenyl	89.5	60 - 140		%Rec	1	5/20/2022 12:20:32 AM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.84		mg/Kg-dry	1	5/13/2022 1:22:44 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.10		mg/Kg-dry	1	5/13/2022 1:22:44 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.84		mg/Kg-dry	1	5/13/2022 1:22:44 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.21		mg/Kg-dry	1	5/13/2022 1:22:44 PM
Surr: 1,4-Difluorobenzene	72.3	60 - 140		%Rec	1	5/13/2022 1:22:44 PM
Surr: Bromofluorobenzene	93.0	60 - 140		%Rec	1	5/13/2022 1:22:44 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	13.6	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.567		mg/Kg-dry	1	5/17/2022 2:48:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/2/2022 11:10:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-002
Matrix: Solid
Client Sample ID: **B-2-22 (6-7.5 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	10.4		mg/Kg-dry	1	5/19/2022 7:36:24 PM
Aliphatic Hydrocarbon (C12-C16)	ND	10.4		mg/Kg-dry	1	5/19/2022 7:36:24 PM
Aliphatic Hydrocarbon (C16-C21)	ND	10.4		mg/Kg-dry	1	5/19/2022 7:36:24 PM
Aliphatic Hydrocarbon (C21-C34)	ND	10.4		mg/Kg-dry	1	5/19/2022 7:36:24 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.4		mg/Kg-dry	1	5/20/2022 12:40:54 AM
Aromatic Hydrocarbon (C12-C16)	ND	10.4		mg/Kg-dry	1	5/20/2022 12:40:54 AM
Aromatic Hydrocarbon (C16-C21)	ND	10.4		mg/Kg-dry	1	5/20/2022 12:40:54 AM
Aromatic Hydrocarbon (C21-C34)	ND	10.4		mg/Kg-dry	1	5/20/2022 12:40:54 AM
Surr: 1-Chlorooctadecane	79.6	60 - 140		%Rec	1	5/19/2022 7:36:24 PM
Surr: o-Terphenyl	89.9	60 - 140		%Rec	1	5/20/2022 12:40:54 AM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	2.02		mg/Kg-dry	1	5/13/2022 2:04:22 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.21		mg/Kg-dry	1	5/13/2022 2:04:22 PM
Aliphatic Hydrocarbon (C8-C10)	ND	2.02		mg/Kg-dry	1	5/13/2022 2:04:22 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.42		mg/Kg-dry	1	5/13/2022 2:04:22 PM
Surr: 1,4-Difluorobenzene	73.4	60 - 140		%Rec	1	5/13/2022 2:04:22 PM
Surr: Bromofluorobenzene	98.4	60 - 140		%Rec	1	5/13/2022 2:04:22 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	13.8	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.557		mg/Kg-dry	1	5/17/2022 3:07:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/2/2022 11:30:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-003
Matrix: Solid
Client Sample ID: **B-3-22 (6-7.5 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	9.91		mg/Kg-dry	1	5/19/2022 7:56:45 PM
Aliphatic Hydrocarbon (C12-C16)	ND	9.91		mg/Kg-dry	1	5/19/2022 7:56:45 PM
Aliphatic Hydrocarbon (C16-C21)	ND	9.91		mg/Kg-dry	1	5/19/2022 7:56:45 PM
Aliphatic Hydrocarbon (C21-C34)	ND	9.91		mg/Kg-dry	1	5/19/2022 7:56:45 PM
Aromatic Hydrocarbon (C10-C12)	ND	9.91		mg/Kg-dry	1	5/20/2022 1:01:03 AM
Aromatic Hydrocarbon (C12-C16)	ND	9.91		mg/Kg-dry	1	5/20/2022 1:01:03 AM
Aromatic Hydrocarbon (C16-C21)	ND	9.91		mg/Kg-dry	1	5/20/2022 1:01:03 AM
Aromatic Hydrocarbon (C21-C34)	ND	9.91		mg/Kg-dry	1	5/20/2022 1:01:03 AM
Surr: 1-Chlorooctadecane	89.7	60 - 140		%Rec	1	5/19/2022 7:56:45 PM
Surr: o-Terphenyl	96.6	60 - 140		%Rec	1	5/20/2022 1:01:03 AM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.96		mg/Kg-dry	1	5/13/2022 7:34:49 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.18		mg/Kg-dry	1	5/13/2022 7:34:49 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.96		mg/Kg-dry	1	5/13/2022 7:34:49 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.35		mg/Kg-dry	1	5/13/2022 7:34:49 PM
Surr: 1,4-Difluorobenzene	74.6	60 - 140		%Rec	1	5/13/2022 7:34:49 PM
Surr: Bromofluorobenzene	80.5	60 - 140		%Rec	1	5/13/2022 7:34:49 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	9.83	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	0.752	0.537		mg/Kg-dry	1	5/17/2022 3:11:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/2/2022 11:20:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-004
Matrix: Solid
Client Sample ID: **B-4-22 (6-8 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	9.44		mg/Kg-dry	1	5/23/2022 4:45:19 PM
Aliphatic Hydrocarbon (C12-C16)	ND	9.44		mg/Kg-dry	1	5/23/2022 4:45:19 PM
Aliphatic Hydrocarbon (C16-C21)	ND	9.44		mg/Kg-dry	1	5/23/2022 4:45:19 PM
Aliphatic Hydrocarbon (C21-C34)	ND	9.44		mg/Kg-dry	1	5/23/2022 4:45:19 PM
Aromatic Hydrocarbon (C10-C12)	ND	9.44		mg/Kg-dry	1	5/23/2022 10:14:50 PM
Aromatic Hydrocarbon (C12-C16)	ND	9.44		mg/Kg-dry	1	5/23/2022 10:14:50 PM
Aromatic Hydrocarbon (C16-C21)	ND	9.44		mg/Kg-dry	1	5/23/2022 10:14:50 PM
Aromatic Hydrocarbon (C21-C34)	ND	9.44		mg/Kg-dry	1	5/23/2022 10:14:50 PM
Surr: 1-Chlorooctadecane	76.7	60 - 140		%Rec	1	5/23/2022 4:45:19 PM
Surr: o-Terphenyl	87.3	60 - 140		%Rec	1	5/23/2022 10:14:50 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	2.00		mg/Kg-dry	1	5/13/2022 8:16:09 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.20		mg/Kg-dry	1	5/13/2022 8:16:09 PM
Aliphatic Hydrocarbon (C8-C10)	ND	2.00		mg/Kg-dry	1	5/13/2022 8:16:09 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.40		mg/Kg-dry	1	5/13/2022 8:16:09 PM
Surr: 1,4-Difluorobenzene	72.8	60 - 140		%Rec	1	5/13/2022 8:16:09 PM
Surr: Bromofluorobenzene	82.9	60 - 140		%Rec	1	5/13/2022 8:16:09 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	10.4	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.537		mg/Kg-dry	1	5/17/2022 3:15:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/2/2022 2:00:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-005
Matrix: Solid
Client Sample ID: **MW-OWS-1 (14-15 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	9.80		mg/Kg-dry	1	5/23/2022 5:05:52 PM
Aliphatic Hydrocarbon (C12-C16)	ND	9.80		mg/Kg-dry	1	5/23/2022 5:05:52 PM
Aliphatic Hydrocarbon (C16-C21)	ND	9.80		mg/Kg-dry	1	5/23/2022 5:05:52 PM
Aliphatic Hydrocarbon (C21-C34)	ND	9.80		mg/Kg-dry	1	5/23/2022 5:05:52 PM
Aromatic Hydrocarbon (C10-C12)	ND	9.80		mg/Kg-dry	1	5/23/2022 10:35:19 PM
Aromatic Hydrocarbon (C12-C16)	ND	9.80		mg/Kg-dry	1	5/23/2022 10:35:19 PM
Aromatic Hydrocarbon (C16-C21)	ND	9.80		mg/Kg-dry	1	5/23/2022 10:35:19 PM
Aromatic Hydrocarbon (C21-C34)	ND	9.80		mg/Kg-dry	1	5/23/2022 10:35:19 PM
Surr: 1-Chlorooctadecane	83.9	60 - 140		%Rec	1	5/23/2022 5:05:52 PM
Surr: o-Terphenyl	99.6	60 - 140		%Rec	1	5/23/2022 10:35:19 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.60		mg/Kg-dry	1	5/13/2022 8:57:36 PM
Aliphatic Hydrocarbon (C6-C8)	ND	0.957		mg/Kg-dry	1	5/13/2022 8:57:36 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.60		mg/Kg-dry	1	5/13/2022 8:57:36 PM
Aromatic Hydrocarbon (C8-C10)	ND	1.91		mg/Kg-dry	1	5/13/2022 8:57:36 PM
Surr: 1,4-Difluorobenzene	80.8	60 - 140		%Rec	1	5/13/2022 8:57:36 PM
Surr: Bromofluorobenzene	91.6	60 - 140		%Rec	1	5/13/2022 8:57:36 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	12.2	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.551		mg/Kg-dry	1	5/17/2022 3:51:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/3/2022 9:15:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-006
Matrix: Solid
Client Sample ID: **MW-OWS-2 (5.5-7 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	9.71		mg/Kg-dry	1	5/23/2022 5:26:30 PM
Aliphatic Hydrocarbon (C12-C16)	ND	9.71		mg/Kg-dry	1	5/23/2022 5:26:30 PM
Aliphatic Hydrocarbon (C16-C21)	ND	9.71		mg/Kg-dry	1	5/23/2022 5:26:30 PM
Aliphatic Hydrocarbon (C21-C34)	ND	9.71		mg/Kg-dry	1	5/23/2022 5:26:30 PM
Aromatic Hydrocarbon (C10-C12)	ND	9.71		mg/Kg-dry	1	5/23/2022 10:55:52 PM
Aromatic Hydrocarbon (C12-C16)	ND	9.71		mg/Kg-dry	1	5/23/2022 10:55:52 PM
Aromatic Hydrocarbon (C16-C21)	ND	9.71		mg/Kg-dry	1	5/23/2022 10:55:52 PM
Aromatic Hydrocarbon (C21-C34)	ND	9.71		mg/Kg-dry	1	5/23/2022 10:55:52 PM
Surr: 1-Chlorooctadecane	81.6	60 - 140		%Rec	1	5/23/2022 5:26:30 PM
Surr: o-Terphenyl	90.6	60 - 140		%Rec	1	5/23/2022 10:55:52 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	2.25		mg/Kg-dry	1	5/13/2022 9:39:03 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.35		mg/Kg-dry	1	5/13/2022 9:39:03 PM
Aliphatic Hydrocarbon (C8-C10)	ND	2.25		mg/Kg-dry	1	5/13/2022 9:39:03 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.70		mg/Kg-dry	1	5/13/2022 9:39:03 PM
Surr: 1,4-Difluorobenzene	75.8	60 - 140		%Rec	1	5/13/2022 9:39:03 PM
Surr: Bromofluorobenzene	81.6	60 - 140		%Rec	1	5/13/2022 9:39:03 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	14.0	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.580		mg/Kg-dry	1	5/17/2022 3:55:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/3/2022 9:30:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-007
Matrix: Solid
Client Sample ID: **MW-OWS-2 (13.5-15 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36433		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	10.6		mg/Kg-dry	1	6/6/2022 11:42:09 PM
Aliphatic Hydrocarbon (C12-C16)	ND	10.6		mg/Kg-dry	1	6/6/2022 11:42:09 PM
Aliphatic Hydrocarbon (C16-C21)	ND	10.6		mg/Kg-dry	1	6/6/2022 11:42:09 PM
Aliphatic Hydrocarbon (C21-C34)	ND	10.6		mg/Kg-dry	1	6/6/2022 11:42:09 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.6		mg/Kg-dry	1	6/6/2022 6:10:53 PM
Aromatic Hydrocarbon (C12-C16)	ND	10.6		mg/Kg-dry	1	6/6/2022 6:10:53 PM
Aromatic Hydrocarbon (C16-C21)	ND	10.6		mg/Kg-dry	1	6/6/2022 6:10:53 PM
Aromatic Hydrocarbon (C21-C34)	ND	10.6		mg/Kg-dry	1	6/6/2022 6:10:53 PM
Surr: 1-Chlorooctadecane	73.8	50 - 150		%Rec	1	6/6/2022 11:42:09 PM
Surr: o-Terphenyl	107	50 - 150		%Rec	1	6/6/2022 6:10:53 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	2.10		mg/Kg-dry	1	5/13/2022 10:20:23 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.26		mg/Kg-dry	1	5/13/2022 10:20:23 PM
Aliphatic Hydrocarbon (C8-C10)	ND	2.10		mg/Kg-dry	1	5/13/2022 10:20:23 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.52		mg/Kg-dry	1	5/13/2022 10:20:23 PM
Surr: 1,4-Difluorobenzene	79.6	60 - 140		%Rec	1	5/13/2022 10:20:23 PM
Surr: Bromofluorobenzene	87.3	60 - 140		%Rec	1	5/13/2022 10:20:23 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	11.8	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36567		Analyst: TN
Chromium, Hexavalent	0.614	1.11	JD	mg/Kg-dry	2	5/25/2022 11:18:00 AM

NOTES:
Diluted due to matrix.

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/3/2022 9:30:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-008
Matrix: Solid
Client Sample ID: **MW-OWS-3 (8.5-10 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C10-C12)	ND	9.62		mg/Kg-dry	1	5/23/2022 6:07:52 PM
Aliphatic Hydrocarbon (C12-C16)	ND	9.62		mg/Kg-dry	1	5/23/2022 6:07:52 PM
Aliphatic Hydrocarbon (C16-C21)	ND	9.62		mg/Kg-dry	1	5/23/2022 6:07:52 PM
Aliphatic Hydrocarbon (C21-C34)	ND	9.62		mg/Kg-dry	1	5/23/2022 6:07:52 PM
Aromatic Hydrocarbon (C10-C12)	ND	9.62		mg/Kg-dry	1	5/23/2022 11:36:45 PM
Aromatic Hydrocarbon (C12-C16)	ND	9.62		mg/Kg-dry	1	5/23/2022 11:36:45 PM
Aromatic Hydrocarbon (C16-C21)	ND	9.62		mg/Kg-dry	1	5/23/2022 11:36:45 PM
Aromatic Hydrocarbon (C21-C34)	ND	9.62		mg/Kg-dry	1	5/23/2022 11:36:45 PM
Surr: 1-Chlorooctadecane	76.7	60 - 140		%Rec	1	5/23/2022 6:07:52 PM
Surr: o-Terphenyl	93.3	60 - 140		%Rec	1	5/23/2022 11:36:45 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	2.14		mg/Kg-dry	1	5/13/2022 11:01:54 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.28		mg/Kg-dry	1	5/13/2022 11:01:54 PM
Aliphatic Hydrocarbon (C8-C10)	ND	2.14		mg/Kg-dry	1	5/13/2022 11:01:54 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.56		mg/Kg-dry	1	5/13/2022 11:01:54 PM
Surr: 1,4-Difluorobenzene	75.1	60 - 140		%Rec	1	5/13/2022 11:01:54 PM
Surr: Bromofluorobenzene	93.7	60 - 140		%Rec	1	5/13/2022 11:01:54 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	9.67	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.546		mg/Kg-dry	1	5/17/2022 3:58:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/3/2022 10:30:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-009
Matrix: Solid
Client Sample ID: **MW-OWS-3 (13.5-15 FT)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 36398		Analyst: MM
Aliphatic Hydrocarbon (C8-C10)	ND	19.5		mg/Kg-dry	1	5/23/2022 6:28:27 PM
Aliphatic Hydrocarbon (C10-C12)	ND	9.73		mg/Kg-dry	1	5/23/2022 6:28:27 PM
Aliphatic Hydrocarbon (C12-C16)	ND	9.73		mg/Kg-dry	1	5/23/2022 6:28:27 PM
Aliphatic Hydrocarbon (C16-C21)	ND	9.73		mg/Kg-dry	1	5/23/2022 6:28:27 PM
Aliphatic Hydrocarbon (C21-C34)	ND	9.73		mg/Kg-dry	1	5/23/2022 6:28:27 PM
Aromatic Hydrocarbon (C8-C10)	ND	19.5		mg/Kg-dry	1	5/23/2022 11:57:18 PM
Aromatic Hydrocarbon (C10-C12)	ND	9.73		mg/Kg-dry	1	5/23/2022 11:57:18 PM
Aromatic Hydrocarbon (C12-C16)	ND	9.73		mg/Kg-dry	1	5/23/2022 11:57:18 PM
Aromatic Hydrocarbon (C16-C21)	ND	9.73		mg/Kg-dry	1	5/23/2022 11:57:18 PM
Aromatic Hydrocarbon (C21-C34)	ND	9.73		mg/Kg-dry	1	5/23/2022 11:57:18 PM
Surr: 1-Chlorooctadecane	71.9	60 - 140		%Rec	1	5/23/2022 6:28:27 PM
Surr: o-Terphenyl	88.4	60 - 140		%Rec	1	5/23/2022 11:57:18 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.79		mg/Kg-dry	1	5/13/2022 11:43:17 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.07		mg/Kg-dry	1	5/13/2022 11:43:17 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.79		mg/Kg-dry	1	5/13/2022 11:43:17 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.15		mg/Kg-dry	1	5/13/2022 11:43:17 PM
Surr: 1,4-Difluorobenzene	77.3	60 - 140		%Rec	1	5/13/2022 11:43:17 PM
Surr: Bromofluorobenzene	91.2	60 - 140		%Rec	1	5/13/2022 11:43:17 PM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	12.2	0.500		wt%	1	5/11/2022 10:00:41 AM
Hexavalent Chromium by EPA Method 7196				Batch ID: 36470		Analyst: TN
Chromium, Hexavalent	ND	0.564		mg/Kg-dry	1	5/17/2022 4:02:00 PM

Analytical Report

Work Order: **2205201**
Date Reported: **6/10/2022**

Client: Pace Analytical Minnesota
Collection Date: 5/2/2022 8:00:00 AM
Project: PP6: Oily Sewer Water
Lab ID: 2205201-010
Matrix: Solid
Client Sample ID: **WES-DUP-1**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 36426		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	2.02		mg/Kg-dry	1	5/14/2022 12:24:47 AM
Aliphatic Hydrocarbon (C6-C8)	ND	1.21		mg/Kg-dry	1	5/14/2022 12:24:47 AM
Aliphatic Hydrocarbon (C8-C10)	ND	2.02		mg/Kg-dry	1	5/14/2022 12:24:47 AM
Aromatic Hydrocarbon (C8-C10)	ND	2.43		mg/Kg-dry	1	5/14/2022 12:24:47 AM
Surr: 1,4-Difluorobenzene	75.6	60 - 140		%Rec	1	5/14/2022 12:24:47 AM
Surr: Bromofluorobenzene	94.5	60 - 140		%Rec	1	5/14/2022 12:24:47 AM
Sample Moisture (Percent Moisture)				Batch ID: R75315		Analyst: AK
Percent Moisture	11.5	0.500		wt%	1	5/11/2022 10:00:41 AM

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Hexavalent Chromium by EPA Method 7196

Sample ID: **MB-36470**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **5/17/2022**	RunNo: **75470**
Client ID: **MBLKS**	Batch ID: **36470**		Analysis Date: **5/17/2022**	SeqNo: **1548612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.500									

Sample ID: **LCS-36470**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **5/17/2022**	RunNo: **75470**
Client ID: **LCSS**	Batch ID: **36470**		Analysis Date: **5/17/2022**	SeqNo: **1548613**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.55	0.500	2.500	0	102	80	121				

Sample ID: **2205201-001ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **5/17/2022**	RunNo: **75470**
Client ID: **B-1-22 (6-7.5 FT)**	Batch ID: **36470**		Analysis Date: **5/17/2022**	SeqNo: **1548615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.561						0		30	

Sample ID: **2205201-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **5/17/2022**	RunNo: **75470**
Client ID: **B-1-22 (6-7.5 FT)**	Batch ID: **36470**		Analysis Date: **5/17/2022**	SeqNo: **1548616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.96	0.565	2.823	0.2813	94.9	19.5	157				

Sample ID: **2205201-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **5/17/2022**	RunNo: **75470**
Client ID: **B-1-22 (6-7.5 FT)**	Batch ID: **36470**		Analysis Date: **5/17/2022**	SeqNo: **1548617**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	3.39	0.557	2.786	0.2813	112	19.5	157	2.959	13.5	30	

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Hexavalent Chromium by EPA Method 7196

Sample ID: **MB-36567**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **5/24/2022**			RunNo: **75674**		
Client ID: **MBLKS**	Batch ID: **36567**					Analysis Date: **5/25/2022**			SeqNo: **1552672**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.500									

Sample ID: **LCS-36567**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **5/24/2022**			RunNo: **75674**		
Client ID: **LCSS**	Batch ID: **36567**					Analysis Date: **5/25/2022**			SeqNo: **1552673**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.60	0.500	2.500	0	104	80	121				

Sample ID: **2205364-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **5/24/2022**			RunNo: **75674**		
Client ID: **BATCH**	Batch ID: **36567**					Analysis Date: **5/25/2022**			SeqNo: **1552676**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.609						0		30	

Sample ID: **2205364-001AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **5/24/2022**			RunNo: **75674**		
Client ID: **BATCH**	Batch ID: **36567**					Analysis Date: **5/25/2022**			SeqNo: **1552677**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.63	0.611	3.055	0	86.2	19.5	157				

Sample ID: **2205364-001AMSD**	SampType: **MSD**			Units: **mg/Kg-dry**		Prep Date: **5/24/2022**			RunNo: **75674**		
Client ID: **BATCH**	Batch ID: **36567**					Analysis Date: **5/25/2022**			SeqNo: **1552678**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.43	0.611	3.055	0	79.4	19.5	157	2.634	8.21	30	

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-36398**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **5/11/2022**		RunNo: **75568**			
Client ID: **MBLKS**	Batch ID: **36398**					Analysis Date: **5/19/2022**		SeqNo: **1550938**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	72.6		100.0		72.6	60	140				

Sample ID: **LCS-36398**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **5/11/2022**		RunNo: **75568**			
Client ID: **LCSS**	Batch ID: **36398**					Analysis Date: **5/19/2022**		SeqNo: **1550939**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	115	20.0	250.0	0	46.1	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	87.8	10.0	125.0	0	70.2	70	130				
Aliphatic Hydrocarbon (C12-C16)	96.1	10.0	125.0	0	76.9	70	130				
Aliphatic Hydrocarbon (C16-C21)	97.1	10.0	125.0	0	77.7	70	130				
Aliphatic Hydrocarbon (C21-C34)	112	10.0	125.0	0	89.9	70	130				
Surr: 1-Chlorooctadecane	95.4		100.0		95.4	60	140				

Sample ID: **2205142-002AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **5/11/2022**		RunNo: **75568**			
Client ID: **BATCH**	Batch ID: **36398**					Analysis Date: **5/19/2022**		SeqNo: **1550942**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	121	22.6	283.0	0	42.6	5	130				
Aliphatic Hydrocarbon (C10-C12)	89.6	11.3	141.5	0	63.3	70	130				S
Aliphatic Hydrocarbon (C12-C16)	102	11.3	141.5	0	72.4	70	130				
Aliphatic Hydrocarbon (C16-C21)	103	11.3	141.5	0	72.7	70	130				
Aliphatic Hydrocarbon (C21-C34)	118	11.3	141.5	0	83.1	70	130				
Surr: 1-Chlorooctadecane	95.5		113.2		84.3	60	140				

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2205142-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75568**
Client ID: **BATCH** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550942**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2205142-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75568**
Client ID: **BATCH** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550943**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	123	22.3	278.8	0	44.2	5	130	120.7	2.16	30	
Aliphatic Hydrocarbon (C10-C12)	92.2	11.2	139.4	0	66.1	70	130	89.58	2.85	30	S
Aliphatic Hydrocarbon (C12-C16)	110	11.2	139.4	0	78.8	70	130	102.5	6.93	30	
Aliphatic Hydrocarbon (C16-C21)	101	11.2	139.4	0	72.6	70	130	102.9	1.64	30	
Aliphatic Hydrocarbon (C21-C34)	117	11.2	139.4	0	83.8	70	130	117.5	0.642	30	
Surr: 1-Chlorooctadecane	92.0		111.5		82.5	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **MB-36398** SampType: **MBLK** Units: **mg/Kg** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **MBLKS** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550968**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	88.4		100.0		88.4	60	140				

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-36398** SampType: **LCS** Units: **mg/Kg** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **LCSS** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550969**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	133	20.0	250.0	0	53.0	24	130				
Aromatic Hydrocarbon (C10-C12)	90.7	10.0	125.0	0	72.5	70	130				
Aromatic Hydrocarbon (C12-C16)	95.6	10.0	125.0	0	76.5	70	130				
Aromatic Hydrocarbon (C16-C21)	97.5	10.0	125.0	0	78.0	70	130				
Aromatic Hydrocarbon (C21-C34)	94.0	10.0	125.0	0	75.2	70	130				
Surr: o-Terphenyl	94.7		100.0		94.7	60	140				

Sample ID: **2205142-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **BATCH** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550972**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	158	22.6	283.0	0	56.0	14	130				
Aromatic Hydrocarbon (C10-C12)	110	11.3	141.5	0	77.7	70	130				
Aromatic Hydrocarbon (C12-C16)	112	11.3	141.5	0	78.9	70	130				
Aromatic Hydrocarbon (C16-C21)	110	11.3	141.5	0	77.6	70	130				
Aromatic Hydrocarbon (C21-C34)	ND	11.3	141.5	0	0	70	130				S
Surr: o-Terphenyl	99.6		113.2		88.0	60	140				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2205142-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **BATCH** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550973**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	154	22.3	278.8	0	55.2	14	130	158.4	2.83	30	
Aromatic Hydrocarbon (C10-C12)	105	11.2	139.4	0	75.0	70	130	109.9	4.99	30	
Aromatic Hydrocarbon (C12-C16)	109	11.2	139.4	0	78.2	70	130	111.6	2.32	30	
Aromatic Hydrocarbon (C16-C21)	113	11.2	139.4	0	81.2	70	130	109.8	3.02	30	
Aromatic Hydrocarbon (C21-C34)	ND	11.2	139.4	0	0	70	130	0		30	S
Surr: o-Terphenyl	101		111.5		90.7	60	140		0		

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2205142-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **BATCH** Batch ID: **36398** Analysis Date: **5/19/2022** SeqNo: **1550973**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2205201-006ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75568**
Client ID: **MW-OWS-2 (5.5-7 FT)** Batch ID: **36398** Analysis Date: **5/23/2022** SeqNo: **1551924**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	21.8						0		25	
Aliphatic Hydrocarbon (C10-C12)	ND	10.9						0		25	
Aliphatic Hydrocarbon (C12-C16)	ND	10.9						0		25	
Aliphatic Hydrocarbon (C16-C21)	ND	10.9						0		25	
Aliphatic Hydrocarbon (C21-C34)	ND	10.9						0		25	
Surr: 1-Chlorooctadecane	87.1		108.9		80.0	60	140		0		

Sample ID: **2205201-006ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **5/11/2022** RunNo: **75584**
Client ID: **MW-OWS-2 (5.5-7 FT)** Batch ID: **36398** Analysis Date: **5/23/2022** SeqNo: **1552131**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	21.8						0		25	
Aromatic Hydrocarbon (C10-C12)	ND	10.9						0		25	
Aromatic Hydrocarbon (C12-C16)	ND	10.9						0		25	
Aromatic Hydrocarbon (C16-C21)	ND	10.9						0		25	
Aromatic Hydrocarbon (C21-C34)	ND	10.9						0		25	
Surr: o-Terphenyl	99.5		108.9		91.4	60	140		0		

Sample ID: **MB-36433** SampType: **MBLK** Units: **mg/Kg** Prep Date: **5/13/2022** RunNo: **75906**
Client ID: **MBLKS** Batch ID: **36433** Analysis Date: **6/2/2022** SeqNo: **1556864**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-36433** SampType: **MBLK** Units: **mg/Kg** Prep Date: **5/13/2022** RunNo: **75906**
Client ID: **MBLKS** Batch ID: **36433** Analysis Date: **6/2/2022** SeqNo: **1556864**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	80.0		100.0		80.0	50	150				

Sample ID: **LCS-36433** SampType: **LCS** Units: **mg/Kg** Prep Date: **5/13/2022** RunNo: **75906**
Client ID: **LCSS** Batch ID: **36433** Analysis Date: **6/2/2022** SeqNo: **1556865**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	120	10.0	125.0	0	96.3	70	130				
Aliphatic Hydrocarbon (C12-C16)	134	10.0	125.0	0	107	70	130				
Aliphatic Hydrocarbon (C16-C21)	116	10.0	125.0	0	92.9	70	130				
Aliphatic Hydrocarbon (C21-C34)	100	10.0	125.0	0	80.2	70	130				
Surr: 1-Chlorooctadecane	92.8		100.0		92.8	50	150				

Sample ID: **2205254-020AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **5/13/2022** RunNo: **75906**
Client ID: **BATCH** Batch ID: **36433** Analysis Date: **6/3/2022** SeqNo: **1556916**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	269	12.6	157.3	93.92	111	70	130				
Aliphatic Hydrocarbon (C12-C16)	285	12.6	157.3	63.24	141	70	130				S
Aliphatic Hydrocarbon (C16-C21)	167	12.6	157.3	5.362	103	70	130				
Aliphatic Hydrocarbon (C21-C34)	152	12.6	157.3	27.84	79.0	70	130				
Surr: 1-Chlorooctadecane	107		125.8		85.4	50	150				

NOTES:
S - Outlying spike recovery observed for (C12-C16).

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2205254-020AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **5/13/2022**	RunNo: **75906**
Client ID: **BATCH**	Batch ID: **36433**		Analysis Date: **6/3/2022**	SeqNo: **1556868**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	449	11.3	141.4	93.92	251	70	130	268.7	50.3	30	RS
Aliphatic Hydrocarbon (C12-C16)	611	11.3	141.4	63.24	388	70	130	284.6	72.9	30	RS
Aliphatic Hydrocarbon (C16-C21)	286	11.3	141.4	5.362	198	70	130	167.4	52.2	30	RS
Aliphatic Hydrocarbon (C21-C34)	220	11.3	141.4	27.84	136	70	130	152.1	36.5	30	RS
Surr: 1-Chlorooctadecane	82.0		113.2		72.4	50	150		0		

NOTES:
SR - Outlying spike recovery(ies) and high RPD due to sample inhomogeneity.

Sample ID: **MB-36433**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **5/13/2022**	RunNo: **75907**
Client ID: **MBLKS**	Batch ID: **36433**		Analysis Date: **6/3/2022**	SeqNo: **1556918**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	120		100.0		120	50	150				

Sample ID: **LCS-36433**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **5/13/2022**	RunNo: **75907**
Client ID: **LCSS**	Batch ID: **36433**		Analysis Date: **6/3/2022**	SeqNo: **1556919**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	125	10.0	125.0	0	100	70	130				
Aromatic Hydrocarbon (C12-C16)	148	10.0	125.0	0	118	70	130				
Aromatic Hydrocarbon (C16-C21)	141	10.0	125.0	0	113	70	130				
Aromatic Hydrocarbon (C21-C34)	133	10.0	125.0	0	106	70	130				
Surr: o-Terphenyl	136		100.0		136	50	150				

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2205254-020AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **5/13/2022** RunNo: **75907**
Client ID: **BATCH** Batch ID: **36433** Analysis Date: **6/3/2022** SeqNo: **1556971**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	154	12.6	157.3	9.662	91.8	70	130				
Aromatic Hydrocarbon (C12-C16)	211	12.6	157.3	16.98	123	70	130				
Aromatic Hydrocarbon (C16-C21)	156	12.6	157.3	0	99.2	70	130				
Aromatic Hydrocarbon (C21-C34)	158	12.6	157.3	0	101	70	130				
Surr: o-Terphenyl	155		125.8		123	50	150				

Sample ID: **2205254-020AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **5/13/2022** RunNo: **75907**
Client ID: **BATCH** Batch ID: **36433** Analysis Date: **6/3/2022** SeqNo: **1556972**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	140	11.3	141.4	9.662	92.0	70	130	154.1	9.74	30	
Aromatic Hydrocarbon (C12-C16)	284	11.3	141.4	16.98	189	70	130	211.0	29.4	30	S
Aromatic Hydrocarbon (C16-C21)	109	11.3	141.4	0	77.4	70	130	156.0	35.0	30	R
Aromatic Hydrocarbon (C21-C34)	172	11.3	141.4	0	121	70	130	158.5	7.93	30	
Surr: o-Terphenyl	125		113.2		110	50	150		0		

NOTES:
S & R - Outlying spike recovery(ies) and high RPD due to sample inhomogeneity.

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-36426**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **LCSS**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550951**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	58.6	2.50	30.00	0	195	70	130				S
Aliphatic Hydrocarbon (C6-C8)	8.35	1.50	10.00	0	83.5	70	130				
Aliphatic Hydrocarbon (C8-C10)	11.0	2.50	10.00	0	110	70	130				
Aromatic Hydrocarbon (C8-C10)	42.9	3.00	40.00	0	107	70	130				
Surr: 1,4-Difluorobenzene	2.71		2.500		109	60	140				
Surr: Bromofluorobenzene	2.50		2.500		99.9	60	140				

NOTES:
S - Outlying spike recovery observed for Aliphatic C5-C6 (high bias). Detections will be qualified with a Q.

Sample ID: **MB-36426**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **MBLKS**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	1.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Surr: 1,4-Difluorobenzene	2.00		2.500		80.1	60	140				
Surr: Bromofluorobenzene	2.33		2.500		93.1	60	140				

Sample ID: **2205142-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **BATCH**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.35		0	0			0		25	H
Aliphatic Hydrocarbon (C6-C8)	ND	1.41		0	0			0		25	H
Aliphatic Hydrocarbon (C8-C10)	ND	2.35		0	0			0		25	H
Aromatic Hydrocarbon (C8-C10)	ND	2.82		0	0			0		25	H
Surr: 1,4-Difluorobenzene	1.76		2.351		74.8	60	140		0		H
Surr: Bromofluorobenzene	2.29		2.351		97.4	60	140		0		H

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2205142-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **BATCH**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **2205201-001BMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **B-1-22 (6-7.5 FT)**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550772**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	19.9	1.84	22.10	0	90.2	70	130				
Aliphatic Hydrocarbon (C6-C8)	6.36	1.10	7.366	0.6811	77.1	70	130				
Aliphatic Hydrocarbon (C8-C10)	3.38	1.84	7.366	0	46.0	70	130				S
Aromatic Hydrocarbon (C8-C10)	29.2	2.21	29.46	0	99.1	70	130				
Surr: 1,4-Difluorobenzene	1.76		1.841		95.8	60	140				
Surr: Bromofluorobenzene	1.75		1.841		95.2	60	140				

NOTES:
S - Outlying spike recovery observed for Aliphatic C8-C10. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2205201-001BMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **5/12/2022**	RunNo: **75580**
Client ID: **B-1-22 (6-7.5 FT)**	Batch ID: **36426**		Analysis Date: **5/13/2022**	SeqNo: **1550773**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	18.2	1.84	22.10	0	82.2	70	130	19.93	9.26	30	
Aliphatic Hydrocarbon (C6-C8)	4.91	1.10	7.366	0.6811	57.4	70	130	6.360	25.8	30	RS
Aliphatic Hydrocarbon (C8-C10)	3.90	1.84	7.366	0	52.9	70	130	3.385	14.1	30	S
Aromatic Hydrocarbon (C8-C10)	28.0	2.21	29.46	0	95.1	70	130	29.19	4.08	30	
Surr: 1,4-Difluorobenzene	1.68		1.841		91.1	60	140		0		
Surr: Bromofluorobenzene	1.70		1.841		92.3	60	140		0		

NOTES:
S - Outlying spike recovery observed for Aliphatic C8-C10. A duplicate analysis was performed with similar results indicating a possible matrix effect.
R - High RPD observed.

Work Order: 2205201
CLIENT: Pace Analytical Minnesota
Project: PP6: Oily Sewer Water

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2205202-002BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **5/12/2022** RunNo: **75580**
Client ID: **BATCH** Batch ID: **36426** Analysis Date: **5/14/2022** SeqNo: **1550783**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.78		0	0			0		25	H
Aliphatic Hydrocarbon (C6-C8)	ND	1.67		0	0			0		25	H
Aliphatic Hydrocarbon (C8-C10)	4.10	2.78		0	0			5.041	20.5	25	H
Aromatic Hydrocarbon (C8-C10)	15.5	3.34		0	0			19.11	21.2	25	RH
Surr: 1,4-Difluorobenzene	2.15		2.780		77.2	60	140		0		H
Surr: Bromofluorobenzene	2.89		2.780		104	60	140		0		H

NOTES:
R - High RPD due to high analyte concentration. In this range, high RPD's may be expected.

Sample Log-In Check List

Client Name:	**PACEMI**	Work Order Number:	**2205201**
Logged by:	**Gabrielle Coeuille**	Date Received:	**5/10/2022 9:40:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No	☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☑	No	☐	NA ☐

Person Notified:	Jenni Gross	Date:	5/11/2022
By Whom:	Clare Griggs	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Sample label discrepancy for 10607135-007 / MW-OWS-2 (13.5-15 FT)		
Client Instructions:	Return volume labeled 10607135-007 to client. Pace will ship correct volume.		

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	5.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Sample Log-In Check List

Client Name:	**PACEMI**	Work Order Number:	**2205201**
Logged by:	**Brianna Barnes**	Date Received:	**5/10/2022 9:40:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No	☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

This sample receipt information refers to the replacement volume for sample -007 received on 5/17/22.

Item Information

Item #	Temp ºC
Sample	3.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody

PASI Minnesota Laboratory

Pace Analytical
www.pacelabs.com

2205201

Workorder: 10607135 **Workorder Name:** P66: Oily Water Sewer **Results Requested By:** 5/24/2022

Report / Invoice To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700 Email: jennifer.gross@pacelabs.com	Fremont Analytical 3600 Fremont Ave. N. Seattle, WA 98103 206-352-3790 P.O. 10607135

State of Sample Origin: WA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: VG9M	Unpreserved	DWC				Requested Analysis: VPH (Fremont)	EPH (Fremont)	Dry Weight	7196 Hex Cr (Fremont)									LAB USE ONLY
1	B-1-22 (6-7.5 FT)	5/2/2022 11:00	10607135001	Solid	2	1					X	X	X	X									
2	B-2-22 (6-7.5 FT)	5/2/2022 11:10	10607135002	Solid	2	1					X	X	X	X									
3	B-3-22 (6-7.5 FT)	5/2/2022 11:30	10607135003	Solid	2	1					X	X	X	X									
4	B-4-22 (6-8 FT)	5/2/2022 11:20	10607135004	Solid	2	1					X	X	X	X									
5	MW-OWS-1 (14-15 FT)	5/2/2022 02:00	10607135005	Solid	2	1					X	X	X	X									
6	MW-OWS-2 (5.5-7 FT)	5/3/2022 09:15	10607135006	Solid	2	1					X	X	X	X									
7	MW-OWS-2 (13.5-15 FT)	5/3/2022 09:30	10607135007	Solid	2	1					X	X	X	X									
8	MW-OWS-3 (8.5-10 FT)	5/3/2022 10:15	10607135008	Solid	2	1					X	X	X	X									
9	MW-OWS-3 (13.5-15 FT)	5/3/2022 10:30	10607135009	Solid	2	1					X	X	X	X									
10	WES-DUP-1	5/2/2022 08:00	10607135010	Solid	2		1				X		X										
11																							
12																							
13																							
14																							

C5-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG

Report to MDL.

EIM, WA EDD required

2205251

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	CSM/Pace	5-9-22 16:11	Alex Trejo / FAI	5/10/22 9:40	
2					
3					

Cooler Temperature on Receipt 5.5 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

Chain of Custody

PASI Minnesota Laboratory

2205201 BB 6/10/22

~~2205344~~

Pace Analytical
www.pacelabs.com

Workorder: 10607135 **Workorder Name:** P66: Oily Water Sewer **Results Requested By:** 5/24/2022

Report / Invoice To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700 Email: jennifer.gross@pacelabs.com	Fremont Analytical 3600 Fremont Ave. N. Seattle, WA 98103 206-352-3790 P.O. 10607135

State of Sample Origin: WA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: MeOH	Unpreserved	DWC				Requested Analysis: VPH (Fremont)	EPH (Fremont)	Dry Weight	7196 Hex Cr (Fremont)									LAB USE ONLY
1	MW-OWS-2 (13.5-15 FT)	5/3/2022 09:30	10607135007	Solid		1					X	X	X	X									
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							

C5-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG

Report to MDL.

EIM, WA EDD required

2205344

					Comments
Transfers	Released By	Date/Time	Received By	Date/Time	
1	CSM/Pace	5-16 29:40	Yeyi Chen	05/17/22 16:12	
2					
3					

Cooler Temperature on Receipt _____ °C	Custody Seal (Y) or N	Received on Ice Y or N	Samples Intact Y or N

APPENDIX D

Soil Data Quality Assurance Review

This evaluation provides the results of verification and validation checks of analytical data for 12 soil samples collected during the sampling events which occurred on April 27, 2022, and May 2, 2022, at the Phillips 66 Ferndale Refinery. The samples were collected and analyzed as part of the Oily Water Sewer site investigation. All sample analyses were conducted at Pace Analytical Services, Pace National and Fremont Analytical. This data quality evaluation covers Pace Project No: 10606192 & 10607135.

Laboratory quality control procedures have been verified using the applicable National Functional Guidelines (EPA, 2020a; EPA, 2020b). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Based on the verification and validation check, data qualifiers have been added to the sample results tables provided in the Report as needed. Data qualifier definitions are provided in the table footnotes. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below.

Laboratory Data Package Completeness

The Pace Analytical laboratory data reports (10606192 & 10607135) contained a signed chain-of-custody, a cooler receipt form documenting the condition and temperature of the samples upon receipt at the laboratory, sample analytical results, and quality control results

(method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

Sample Conditions and Analysis

The laboratories received the samples in good condition and all analyses were performed as requested. Preservation of samples, as specified by the analytical method, was verified by the laboratory.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within analytical method and project-specified holding times with the following exceptions:

- Aliphatic and Aromatic Hydrocarbons were analyzed outside of holding time.

Initial and Continuing Calibrations

Appropriate calibration standard methods were followed as required. All initial and continuing calibration results were within acceptable range.

Lab Method Blanks

Several method blanks were analyzed with each batch of samples. No contamination of the selected analytes was detected in any of the method blanks, with the following exceptions:

- Aliphatic Hydrocarbon (C6-C8) was detected in the method blank associated with volatile petroleum hydrocarbons analysis (NWVPH). The detected concentration was below the required reporting limit. Associated data have been qualified as estimated concentrations (J) as indicated in Table 4.

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for low level semi volatile (8270E) and volatile (8260D) organic compound analyses. Surrogate spikes were added to all samples

including Matrix Spikes, Matrix Spike Duplicates, Laboratory Control Samples, and blanks. Recovery values for the surrogate spikes were within the required control limits for all samples with the following exceptions:

- 2-Fluorobiphenyl surrogate recovery results for samples B-3-22 through B-4-22 and MW-OWS-1 through MW-OWS-3 were outside of laboratory control limits.

Laboratory Control Sample Results

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples. Recoveries for each LCS and/or LCSD were within the laboratory-specified control limits with the following exceptions:

- 1,3 Dichloropropene recovery were outside of QC limits.

Sample Duplicate and Matrix Spike/Matrix Spike Duplicate Results and Laboratory Duplicate Results

A sample duplicate and/or Matrix Spike/Matrix Spike Duplicate (MS/MSD) was analyzed with each batch of samples. The recovery values and relative percent difference (RPD) values for associated analyses were within the laboratory-specified control limits for all samples with the following exceptions:

- Nickel MS/MSD recovery was above the laboratory specified recommended limits. All other laboratory quality control data associated with Nickel analysis meets specified requirements. No data qualifier is deemed necessary.
- Chromium MS/MSD recovery was above the laboratory specified recommended limits. All other laboratory quality control data associated with Chromium analysis meets specified requirements. No data qualifier is deemed necessary.
- Zinc MS/MSD recovery was above the laboratory specified recommended limits. All other laboratory quality control data associated with Zinc analysis meets specified requirements. No data qualifier is deemed necessary.
- Alphatic Hydrocarbon (C5-C6) MS/MSD recovery was outside the laboratory specified recommended limits. All other laboratory quality control data associated with Alphatic Hydrocarbon (C5-C6) analysis meets specified requirements. No data qualifier is deemed necessary.

- Alphatic Hydrocarbon (C6-C8) MS/MSD recovery was outside the laboratory specified recommended limits, and high RPD. All other laboratory quality control data associated with Alphatic Hydrocarbon (C6-C8) analysis meets specified requirements. No data qualifier is deemed necessary.
- Alphatic Hydrocarbon (C8-C10) MS/MSD recovery was outside the laboratory specified recommended limits. All other laboratory quality control data associated with Alphatic Hydrocarbon (C8-C10) analysis meets specified requirements. No data qualifier is deemed necessary.
- Alphatic Hydrocarbon (C10-C12) MS/MSD recovery was outside the laboratory specified recommended limits. All other laboratory quality control data associated with Alphatic Hydrocarbon (C10-C12) analysis meets specified requirements. No data qualifier is deemed necessary.
- Alphatic Hydrocarbon (C12-C16) MS/MSD recovery was outside the laboratory specified recommended limits. All other laboratory quality control data associated with Alphatic Hydrocarbon (C12-C16) analysis meets specified requirements. No data qualifier is deemed necessary.
- Aromatic Hydrocarbon (C12-C16) MS/MSD recovery was outside the laboratory specified recommended limits. All other laboratory quality control data associated with Aromatic Hydrocarbon (C12-C16) analysis meets specified requirements. No data qualifier is deemed necessary.
- Aromatic Hydrocarbon (C21-C34) MS/MSD recovery was outside the laboratory specified recommended limits. All other laboratory quality control data associated with Aromatic Hydrocarbon (C21-C34) analysis meets specified requirements. No data qualifier is deemed necessary.
- Several parameters associated with low level semi volatile organic compound analysis (8270E) was outside laboratory control limits for MS/MSD recovery due to a parent sample concentration notably higher than the spike level. All other laboratory quality control data associated with the various parameters meets specified requirements. No data qualifier deemed necessary.

Sample Collection Methods

All sample collection and handling methods were followed as described in the approved Sampling and Analysis Plan (SAP) and laboratory methods.

Overall Assessment of the Data

This data set is 100% complete. Data precision was evaluated through sample duplicates, laboratory surrogate duplicates, and matrix spike duplicates. Data accuracy was evaluated through laboratory method blanks, surrogate spikes, and matrix spikes. Based on this data quality verification and validation, all of the data presented were determined to be acceptable.

APPENDIX E

Groundwater Laboratory Analytical Data Reports

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

June 27, 2022

Lester Keel
Phillips 66
P.O. Box 8
Ferndale, WA 98248

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Dear Lester Keel:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2022. 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 National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Ashley Yamaura, Whatcom Environmental Services

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10612301001	**MW-OWS-1**	Water	06/06/22 02:25	06/09/22 08:50
10612301002	**MW-OWS-2**	Water	06/06/22 12:10	06/09/22 08:50
10612301003	**MW-OWS-3**	Water	06/06/22 10:45	06/09/22 08:50
10612301004	**WES-DUP-1**	Water	06/06/22 08:00	06/09/22 08:50
10612301005	**WES-FEB-2**	Water	06/06/22 09:20	06/09/22 08:50
10612301006	**Trip Blank**	Water	06/06/22 00:00	06/09/22 08:50

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SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10612301001	**MW-OWS-1**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	JFB, NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	ZB	73	PASI-M
10612301002	**MW-OWS-2**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	JFB, NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	ZB	73	PASI-M
10612301003	**MW-OWS-3**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	JFB, NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	ZB	73	PASI-M
10612301004	**WES-DUP-1**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	JFB, NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	ZB	73	PASI-M
10612301005	**WES-FEB-2**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	DWR	2	PAN
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	JFB, NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	ZB	73	PASI-M
10612301006	**Trip Blank**	NWTPH-Gx	DWR	2	PAN
		EPA 8260D	ZB	73	PASI-M

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-1 **Lab ID: 10612301001** Collected: 06/06/22 02:25 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.42	1	06/13/22 17:14	06/15/22 19:59	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	1	06/13/22 17:14	06/15/22 19:59		
Surrogates								
o-Terphenyl (S)	79	%.	50-150	1	06/13/22 17:14	06/15/22 19:59	84-15-1	
n-Triacontane (S)	86	%.	50-150	1	06/13/22 17:14	06/15/22 19:59		
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
TPH (C06-C12)	ND	ug/L	100	1	06/19/22 11:21	06/19/22 11:21		
Surrogates								
a,a,a-Trifluorotoluene (FID)	99.5	%	78.0-120	1	06/19/22 11:21	06/19/22 11:21	98-08-8FID	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**9.3**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:09	7440-38-2	
Cadmium	ND	ug/L	0.080	1	06/20/22 07:30	06/25/22 04:09	7440-43-9	
Chromium	**3.8**	ug/L	2.0	1	06/20/22 07:30	06/25/22 04:09	7440-47-3	
Lead	**1.5**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:09	7439-92-1	
Nickel	**4.1**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:09	7440-02-0	
Zinc	**6.6**	ug/L	5.0	1	06/20/22 07:30	06/25/22 04:09	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**9.6**	ug/L	0.50	1	06/15/22 13:11	06/20/22 21:03	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	06/15/22 13:11	06/20/22 21:03	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	06/15/22 13:11	06/20/22 21:03	7440-47-3	
Lead, Dissolved	**0.56**	ug/L	0.50	1	06/15/22 13:11	06/22/22 14:59	7439-92-1	
Nickel, Dissolved	**1.2**	ug/L	0.50	1	06/15/22 13:11	06/22/22 14:59	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	06/15/22 13:11	06/22/22 14:59	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	06/21/22 16:25	06/22/22 11:20	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	06/15/22 16:47	06/20/22 12:29	7439-97-6	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	90-12-0	
2-Chloronaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	91-58-7	
2-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	208-96-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-1 **Lab ID: 10612301001** Collected: 06/06/22 02:25 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
Anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	207-08-9	
Chrysene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	206-44-0	
Fluorene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	193-39-5	
Naphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	85-01-8	
Pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	113	%.	62-137	1	06/13/22 11:40	06/14/22 16:33	321-60-8	
p-Terphenyl-d14 (S)	122	%.	50-131	1	06/13/22 11:40	06/14/22 16:33	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	ND	ug/L	10.0	1		06/13/22 17:48	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		06/13/22 17:48	107-05-1	
Benzene	ND	ug/L	1.0	1		06/13/22 17:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/13/22 17:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/13/22 17:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/13/22 17:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/13/22 17:48	75-25-2	
Bromomethane	ND	ug/L	2.5	1		06/13/22 17:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		06/13/22 17:48	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		06/13/22 17:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/13/22 17:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/13/22 17:48	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/13/22 17:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/13/22 17:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 17:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 17:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/13/22 17:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/13/22 17:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/13/22 17:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/13/22 17:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 17:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 17:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 17:48	106-46-7	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-1 **Lab ID: 10612301001** Collected: 06/06/22 02:25 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/13/22 17:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/13/22 17:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/13/22 17:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/13/22 17:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 17:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 17:48	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 17:48	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 17:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/13/22 17:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 17:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/13/22 17:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 17:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 17:48	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		06/13/22 17:48	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		06/13/22 17:48	87-68-3	
n-Hexane	ND	ug/L	10.0	1		06/13/22 17:48	110-54-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/13/22 17:48	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/13/22 17:48	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		06/13/22 17:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/13/22 17:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/13/22 17:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		06/13/22 17:48	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	103-65-1	
Styrene	ND	ug/L	1.0	1		06/13/22 17:48	100-42-5	L2
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 17:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 17:48	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		06/13/22 17:48	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		06/13/22 17:48	109-99-9	
Toluene	ND	ug/L	1.0	1		06/13/22 17:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 17:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 17:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/13/22 17:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/13/22 17:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/13/22 17:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 17:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		06/13/22 17:48	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		06/13/22 17:48	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 17:48	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/13/22 17:48	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/13/22 17:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		06/13/22 17:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		06/13/22 17:48	95-47-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	96	%.	75-125	1		06/13/22 17:48	2199-69-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-1 **Lab ID: 10612301001** Collected: 06/06/22 02:25 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Surrogates								
4-Bromofluorobenzene (S)	100	%.	75-125	1		06/13/22 17:48	460-00-4	
Toluene-d8 (S)	107	%.	75-125	1		06/13/22 17:48	2037-26-5	

Sample: MW-OWS-2 **Lab ID: 10612301002** Collected: 06/06/22 12:10 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.43	1	06/13/22 17:14	06/15/22 20:10	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	1	06/13/22 17:14	06/15/22 20:10		
Surrogates								
o-Terphenyl (S)	77	%.	50-150	1	06/13/22 17:14	06/15/22 20:10	84-15-1	
n-Triacontane (S)	91	%.	50-150	1	06/13/22 17:14	06/15/22 20:10		
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
TPH (C06-C12)	ND	ug/L	100	1	06/19/22 11:43	06/19/22 11:43		
Surrogates								
a,a,a-Trifluorotoluene (FID)	98.6	%	78.0-120	1	06/19/22 11:43	06/19/22 11:43	98-08-8FID	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**1.9**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:28	7440-38-2	
Cadmium	ND	ug/L	0.080	1	06/20/22 07:30	06/25/22 04:28	7440-43-9	
Chromium	ND	ug/L	2.0	1	06/20/22 07:30	06/25/22 04:28	7440-47-3	
Lead	ND	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:28	7439-92-1	
Nickel	**0.91**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:28	7440-02-0	
Zinc	ND	ug/L	5.0	1	06/20/22 07:30	06/25/22 04:28	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.8**	ug/L	0.50	1	06/15/22 13:11	06/20/22 21:10	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	06/15/22 13:11	06/20/22 21:10	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	06/15/22 13:11	06/20/22 21:10	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:02	7439-92-1	
Nickel, Dissolved	**0.65**	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:02	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	06/15/22 13:11	06/22/22 15:02	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	06/21/22 16:25	06/22/22 11:24	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-2 **Lab ID: 10612301002** Collected: 06/06/22 12:10 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	06/15/22 16:47	06/20/22 12:34	7439-97-6	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	90-12-0	
2-Chloronaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	91-58-7	
2-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	208-96-8	
Anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	207-08-9	
Chrysene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	206-44-0	
Fluorene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	193-39-5	
Naphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	85-01-8	
Pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 16:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	115	%.	62-137	1	06/13/22 11:40	06/14/22 16:53	321-60-8	
p-Terphenyl-d14 (S)	147	%.	50-131	1	06/13/22 11:40	06/14/22 16:53	1718-51-0	S3
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	ND	ug/L	10.0	1		06/13/22 18:03	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		06/13/22 18:03	107-05-1	
Benzene	ND	ug/L	1.0	1		06/13/22 18:03	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/13/22 18:03	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/13/22 18:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/13/22 18:03	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/13/22 18:03	75-25-2	
Bromomethane	ND	ug/L	2.5	1		06/13/22 18:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		06/13/22 18:03	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		06/13/22 18:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/13/22 18:03	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/13/22 18:03	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/13/22 18:03	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/13/22 18:03	74-87-3	

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1700 Elm Street
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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-2 **Lab ID: 10612301002** Collected: 06/06/22 12:10 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
2-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:03	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/13/22 18:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/13/22 18:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/13/22 18:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/13/22 18:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/13/22 18:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:03	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:03	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:03	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		06/13/22 18:03	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		06/13/22 18:03	87-68-3	
n-Hexane	ND	ug/L	10.0	1		06/13/22 18:03	110-54-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/13/22 18:03	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/13/22 18:03	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		06/13/22 18:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/13/22 18:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/13/22 18:03	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		06/13/22 18:03	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	103-65-1	
Styrene	ND	ug/L	1.0	1		06/13/22 18:03	100-42-5	L2
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		06/13/22 18:03	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		06/13/22 18:03	109-99-9	
Toluene	ND	ug/L	1.0	1		06/13/22 18:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/13/22 18:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		06/13/22 18:03	96-18-4	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-2 **Lab ID: 10612301002** Collected: 06/06/22 12:10 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		06/13/22 18:03	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:03	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/13/22 18:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/13/22 18:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		06/13/22 18:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		06/13/22 18:03	95-47-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1		06/13/22 18:03	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125	1		06/13/22 18:03	460-00-4	
Toluene-d8 (S)	108	%.	75-125	1		06/13/22 18:03	2037-26-5	

Sample: MW-OWS-3 **Lab ID: 10612301003** Collected: 06/06/22 10:45 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.42	1	06/13/22 17:14	06/15/22 19:47	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	1	06/13/22 17:14	06/15/22 19:47		
Surrogates								
o-Terphenyl (S)	66	%.	50-150	1	06/13/22 17:14	06/15/22 19:47	84-15-1	
n-Triacontane (S)	77	%.	50-150	1	06/13/22 17:14	06/15/22 19:47		
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
TPH (C06-C12)	ND	ug/L	100	1	06/19/22 12:04	06/19/22 12:04		
Surrogates								
a,a,a-Trifluorotoluene (FID)	98.3	%	78.0-120	1	06/19/22 12:04	06/19/22 12:04	98-08-8FID	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**2.3**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:31	7440-38-2	
Cadmium	ND	ug/L	0.080	1	06/20/22 07:30	06/25/22 04:31	7440-43-9	
Chromium	ND	ug/L	2.0	1	06/20/22 07:30	06/25/22 04:31	7440-47-3	
Lead	ND	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:31	7439-92-1	
Nickel	**0.73**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:31	7440-02-0	
Zinc	ND	ug/L	5.0	1	06/20/22 07:30	06/25/22 04:31	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.5**	ug/L	0.50	1	06/15/22 13:11	06/20/22 21:24	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	06/15/22 13:11	06/20/22 21:24	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	06/15/22 13:11	06/20/22 21:24	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:05	7439-92-1	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-3 **Lab ID: 10612301003** Collected: 06/06/22 10:45 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Nickel, Dissolved	**0.68**	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:05	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	06/15/22 13:11	06/22/22 15:05	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	06/21/22 16:25	06/22/22 11:35	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	06/15/22 16:47	06/20/22 12:35	7439-97-6	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	90-12-0	
2-Chloronaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	91-58-7	
2-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	208-96-8	
Anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	207-08-9	
Chrysene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	206-44-0	
Fluorene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	193-39-5	
Naphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	85-01-8	
Pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/14/22 17:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	103	%.	62-137	1	06/13/22 11:40	06/14/22 17:13	321-60-8	
p-Terphenyl-d14 (S)	130	%.	50-131	1	06/13/22 11:40	06/14/22 17:13	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	ND	ug/L	10.0	1		06/13/22 18:18	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		06/13/22 18:18	107-05-1	
Benzene	ND	ug/L	1.0	1		06/13/22 18:18	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/13/22 18:18	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/13/22 18:18	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/13/22 18:18	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/13/22 18:18	75-25-2	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-3 **Lab ID: 10612301003** Collected: 06/06/22 10:45 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Bromomethane	ND	ug/L	2.5	1		06/13/22 18:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		06/13/22 18:18	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		06/13/22 18:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/13/22 18:18	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/13/22 18:18	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/13/22 18:18	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/13/22 18:18	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:18	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:18	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/13/22 18:18	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/13/22 18:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/13/22 18:18	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/13/22 18:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:18	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/13/22 18:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:18	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:18	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:18	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		06/13/22 18:18	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		06/13/22 18:18	87-68-3	
n-Hexane	ND	ug/L	10.0	1		06/13/22 18:18	110-54-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/13/22 18:18	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/13/22 18:18	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		06/13/22 18:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/13/22 18:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/13/22 18:18	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		06/13/22 18:18	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	103-65-1	
Styrene	ND	ug/L	1.0	1		06/13/22 18:18	100-42-5	L2
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:18	79-34-5	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: MW-OWS-3 **Lab ID: 10612301003** Collected: 06/06/22 10:45 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Tetrachloroethene	ND	ug/L	1.0	1		06/13/22 18:18	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		06/13/22 18:18	109-99-9	
Toluene	ND	ug/L	1.0	1		06/13/22 18:18	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:18	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:18	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/13/22 18:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		06/13/22 18:18	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		06/13/22 18:18	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:18	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/13/22 18:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/13/22 18:18	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		06/13/22 18:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		06/13/22 18:18	95-47-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	96	%.	75-125	1		06/13/22 18:18	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125	1		06/13/22 18:18	460-00-4	
Toluene-d8 (S)	106	%.	75-125	1		06/13/22 18:18	2037-26-5	

Sample: WES-DUP-1 **Lab ID: 10612301004** Collected: 06/06/22 08:00 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.43	1	06/13/22 17:14	06/15/22 20:22	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	1	06/13/22 17:14	06/15/22 20:22		
Surrogates								
o-Terphenyl (S)	62	%.	50-150	1	06/13/22 17:14	06/15/22 20:22	84-15-1	
n-Triacontane (S)	74	%.	50-150	1	06/13/22 17:14	06/15/22 20:22		
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
TPH (C06-C12)	ND	ug/L	100	1	06/19/22 12:26	06/19/22 12:26		
Surrogates								
a,a,a-Trifluorotoluene (FID)	98.7	%	78.0-120	1	06/19/22 12:26	06/19/22 12:26	98-08-8FID	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**1.9**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:46	7440-38-2	
Cadmium	ND	ug/L	0.080	1	06/20/22 07:30	06/25/22 04:46	7440-43-9	
Chromium	ND	ug/L	2.0	1	06/20/22 07:30	06/25/22 04:46	7440-47-3	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: WES-DUP-1 **Lab ID: 10612301004** Collected: 06/06/22 08:00 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Lead	ND	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:46	7439-92-1	
Nickel	**0.97**	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:46	7440-02-0	
Zinc	ND	ug/L	5.0	1	06/20/22 07:30	06/25/22 04:46	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**1.8**	ug/L	0.50	1	06/15/22 13:11	06/20/22 21:32	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	06/15/22 13:11	06/20/22 21:32	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	06/15/22 13:11	06/20/22 21:32	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:09	7439-92-1	
Nickel, Dissolved	**0.62**	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:09	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	06/15/22 13:11	06/22/22 15:09	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	06/21/22 16:25	06/22/22 11:39	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	06/15/22 16:47	06/20/22 12:37	7439-97-6	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	90-12-0	
2-Chloronaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	91-58-7	
2-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	208-96-8	
Anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	207-08-9	
Chrysene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	206-44-0	
Fluorene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	193-39-5	
Naphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	85-01-8	
Pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:12	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	111	%.	62-137	1	06/13/22 11:40	06/21/22 12:12	321-60-8	
p-Terphenyl-d14 (S)	131	%.	50-131	1	06/13/22 11:40	06/21/22 12:12	1718-51-0	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: WES-DUP-1 **Lab ID: 10612301004** Collected: 06/06/22 08:00 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	ND	ug/L	10.0	1		06/13/22 18:33	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		06/13/22 18:33	107-05-1	
Benzene	ND	ug/L	1.0	1		06/13/22 18:33	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/13/22 18:33	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/13/22 18:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/13/22 18:33	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/13/22 18:33	75-25-2	
Bromomethane	ND	ug/L	2.5	1		06/13/22 18:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		06/13/22 18:33	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		06/13/22 18:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/13/22 18:33	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/13/22 18:33	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/13/22 18:33	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/13/22 18:33	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:33	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/13/22 18:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/13/22 18:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/13/22 18:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/13/22 18:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:33	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/13/22 18:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:33	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:33	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:33	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		06/13/22 18:33	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		06/13/22 18:33	87-68-3	
n-Hexane	ND	ug/L	10.0	1		06/13/22 18:33	110-54-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/13/22 18:33	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/13/22 18:33	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		06/13/22 18:33	75-09-2	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: WES-DUP-1 **Lab ID: 10612301004** Collected: 06/06/22 08:00 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/13/22 18:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/13/22 18:33	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		06/13/22 18:33	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	103-65-1	
Styrene	ND	ug/L	1.0	1		06/13/22 18:33	100-42-5	L2
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		06/13/22 18:33	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		06/13/22 18:33	109-99-9	
Toluene	ND	ug/L	1.0	1		06/13/22 18:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:33	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/13/22 18:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		06/13/22 18:33	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		06/13/22 18:33	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:33	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/13/22 18:33	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/13/22 18:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		06/13/22 18:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		06/13/22 18:33	95-47-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125	1		06/13/22 18:33	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125	1		06/13/22 18:33	460-00-4	
Toluene-d8 (S)	106	%.	75-125	1		06/13/22 18:33	2037-26-5	

Sample: WES-FEB-2 **Lab ID: 10612301005** Collected: 06/06/22 09:20 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.42	1	06/13/22 17:14	06/15/22 20:33	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	1	06/13/22 17:14	06/15/22 20:33		
Surrogates								
o-Terphenyl (S)	78	%.	50-150	1	06/13/22 17:14	06/15/22 20:33	84-15-1	
n-Triacontane (S)	99	%.	50-150	1	06/13/22 17:14	06/15/22 20:33		
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
TPH (C06-C12)	ND	ug/L	100	1	06/19/22 12:47	06/19/22 12:47		

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: WES-FEB-2 **Lab ID: 10612301005** Collected: 06/06/22 09:20 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
Surrogates								
a,a,a-Trifluorotoluene (FID)	98.4	%	78.0-120	1	06/19/22 12:47	06/19/22 12:47	98-08-8FID	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	ND	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:50	7440-38-2	
Cadmium	ND	ug/L	0.080	1	06/20/22 07:30	06/25/22 04:50	7440-43-9	
Chromium	ND	ug/L	2.0	1	06/20/22 07:30	06/25/22 04:50	7440-47-3	
Lead	ND	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:50	7439-92-1	
Nickel	ND	ug/L	0.50	1	06/20/22 07:30	06/25/22 04:50	7440-02-0	
Zinc	ND	ug/L	5.0	1	06/20/22 07:30	06/25/22 04:50	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	ND	ug/L	0.50	1	06/15/22 13:11	06/20/22 21:39	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	06/15/22 13:11	06/20/22 21:39	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	06/15/22 13:11	06/20/22 21:39	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:12	7439-92-1	
Nickel, Dissolved	ND	ug/L	0.50	1	06/15/22 13:11	06/22/22 15:12	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	06/15/22 13:11	06/22/22 15:12	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	06/21/22 16:25	06/22/22 11:50	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	06/15/22 16:47	06/20/22 12:41	7439-97-6	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	90-12-0	
2-Chloronaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	91-58-7	
2-Methylnaphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	208-96-8	
Anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	207-08-9	
Chrysene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	206-44-0	

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: WES-FEB-2 **Lab ID: 10612301005** Collected: 06/06/22 09:20 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
Fluorene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	193-39-5	
Naphthalene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	85-01-8	
Pyrene	ND	ug/L	0.040	1	06/13/22 11:40	06/21/22 12:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	113	%.	62-137	1	06/13/22 11:40	06/21/22 12:32	321-60-8	
p-Terphenyl-d14 (S)	128	%.	50-131	1	06/13/22 11:40	06/21/22 12:32	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	ND	ug/L	10.0	1		06/13/22 18:48	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		06/13/22 18:48	107-05-1	
Benzene	ND	ug/L	1.0	1		06/13/22 18:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/13/22 18:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/13/22 18:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/13/22 18:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/13/22 18:48	75-25-2	
Bromomethane	ND	ug/L	2.5	1		06/13/22 18:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		06/13/22 18:48	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		06/13/22 18:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/13/22 18:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/13/22 18:48	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/13/22 18:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/13/22 18:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 18:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/13/22 18:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/13/22 18:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/13/22 18:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/13/22 18:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/13/22 18:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/13/22 18:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 18:48	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:48	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:48	142-28-9	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: WES-FEB-2 **Lab ID: 10612301005** Collected: 06/06/22 09:20 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
2,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 18:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 18:48	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		06/13/22 18:48	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		06/13/22 18:48	87-68-3	
n-Hexane	ND	ug/L	10.0	1		06/13/22 18:48	110-54-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/13/22 18:48	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/13/22 18:48	99-87-6	
Methylene Chloride	ND	ug/L	1.0	1		06/13/22 18:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/13/22 18:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/13/22 18:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		06/13/22 18:48	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	103-65-1	
Styrene	ND	ug/L	1.0	1		06/13/22 18:48	100-42-5	L2
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 18:48	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		06/13/22 18:48	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		06/13/22 18:48	109-99-9	
Toluene	ND	ug/L	1.0	1		06/13/22 18:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 18:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/13/22 18:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/13/22 18:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 18:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		06/13/22 18:48	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		06/13/22 18:48	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 18:48	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/13/22 18:48	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/13/22 18:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		06/13/22 18:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		06/13/22 18:48	95-47-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	95	%.	75-125	1		06/13/22 18:48	2199-69-1	
4-Bromofluorobenzene (S)	105	%.	75-125	1		06/13/22 18:48	460-00-4	
Toluene-d8 (S)	105	%.	75-125	1		06/13/22 18:48	2037-26-5	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: Trip Blank **Lab ID: 10612301006** Collected: 06/06/22 00:00 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC) NWTPHGX	Analytical Method: NWTPH-Gx Preparation Method: NWTPHGX Pace National - Mt. Juliet							
TPH (C06-C12)	ND	ug/L	100	1	06/19/22 06:41	06/19/22 06:41		
Surrogates								
a,a,a-Trifluorotoluene (FID)	98.4	%	78.0-120	1	06/19/22 06:41	06/19/22 06:41	98-08-8FID	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Acetone	ND	ug/L	10.0	1		06/13/22 15:34	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		06/13/22 15:34	107-05-1	
Benzene	ND	ug/L	1.0	1		06/13/22 15:34	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		06/13/22 15:34	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		06/13/22 15:34	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		06/13/22 15:34	75-27-4	
Bromoform	ND	ug/L	1.0	1		06/13/22 15:34	75-25-2	
Bromomethane	ND	ug/L	2.5	1		06/13/22 15:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		06/13/22 15:34	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		06/13/22 15:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		06/13/22 15:34	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/13/22 15:34	75-00-3	
Chloroform	ND	ug/L	1.0	1		06/13/22 15:34	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/13/22 15:34	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 15:34	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		06/13/22 15:34	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		06/13/22 15:34	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		06/13/22 15:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		06/13/22 15:34	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		06/13/22 15:34	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 15:34	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 15:34	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		06/13/22 15:34	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		06/13/22 15:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		06/13/22 15:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		06/13/22 15:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		06/13/22 15:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 15:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		06/13/22 15:34	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 15:34	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 15:34	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		06/13/22 15:34	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		06/13/22 15:34	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		06/13/22 15:34	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 15:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		06/13/22 15:34	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		06/13/22 15:34	60-29-7	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Sample: Trip Blank **Lab ID: 10612301006** Collected: 06/06/22 00:00 Received: 06/09/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Ethylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		06/13/22 15:34	87-68-3	
n-Hexane	ND	ug/L	10.0	1		06/13/22 15:34	110-54-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		06/13/22 15:34	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		06/13/22 15:34	99-87-6	
Methylene Chloride	**4.2**	ug/L	1.0	1		06/13/22 15:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		06/13/22 15:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		06/13/22 15:34	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		06/13/22 15:34	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	103-65-1	
Styrene	ND	ug/L	1.0	1		06/13/22 15:34	100-42-5	L2
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 15:34	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		06/13/22 15:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		06/13/22 15:34	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		06/13/22 15:34	109-99-9	
Toluene	ND	ug/L	1.0	1		06/13/22 15:34	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 15:34	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		06/13/22 15:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		06/13/22 15:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		06/13/22 15:34	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		06/13/22 15:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/13/22 15:34	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		06/13/22 15:34	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		06/13/22 15:34	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		06/13/22 15:34	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/13/22 15:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		06/13/22 15:34	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		06/13/22 15:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		06/13/22 15:34	95-47-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125	1		06/13/22 15:34	2199-69-1	
4-Bromofluorobenzene (S)	108	%.	75-125	1		06/13/22 15:34	460-00-4	
Toluene-d8 (S)	107	%.	75-125	1		06/13/22 15:34	2037-26-5	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 1881747 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPHGX Analysis Description: VOA (GC) NWTPHGX
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

METHOD BLANK: R3805211-2 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	ND	100	06/19/22 05:39	
a,a,a-Trifluorotoluene (FID)	%	97.5	78.0-120	06/19/22 05:39	

LABORATORY CONTROL SAMPLE: R3805211-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	5240	95.3	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			108	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3805211-3 R3805211-4

Parameter	Units	L1504573-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	56.7	5500	5500	2200	3850	39.0	69.0	10.0-155	54.5	21	R1
a,a,a-Trifluorotoluene (FID)	%						103	105	78.0-120			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 1881747 Analysis Method: NWTPH-Gx
QC Batch Method: 8021B/NWTPHGX Analysis Description: VOA (GC) NWTPHGX
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

METHOD BLANK: R3805211-2 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C06-C12)	ug/L	ND	100	06/19/22 05:39	
a,a,a-Trifluorotoluene (FID)	%	97.5	78.0-120	06/19/22 05:39	

LABORATORY CONTROL SAMPLE: R3805211-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C12)	ug/L	5500	5240	95.3	70.0-124	
a,a,a-Trifluorotoluene (FID)	%			108	78.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3805211-3 R3805211-4

Parameter	Units	L1504573-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12)	ug/L	56.7	5500	5500	2200	3850	39.0	69.0	10.0-155	54.5	21	R1
a,a,a-Trifluorotoluene (FID)	%						103	105	78.0-120			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 823078 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

METHOD BLANK: 4361231 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	06/22/22 11:13	

LABORATORY CONTROL SAMPLE: 4361232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4361233 4361234

Parameter	Units	10612301002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.1	5.2	103	103	80-120	1	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 821813 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

METHOD BLANK: 4355021 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	06/20/22 12:26	

LABORATORY CONTROL SAMPLE: 4355022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4355023 4355024

Parameter	Units	10612301001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.3	5.3	105	105	80-120	0	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 822217
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

METHOD BLANK: 4356978 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	0.50	06/25/22 04:01	
Cadmium	ug/L	ND	0.080	06/25/22 04:01	
Chromium	ug/L	ND	2.0	06/25/22 04:01	
Lead	ug/L	ND	0.50	06/25/22 04:01	
Nickel	ug/L	ND	0.50	06/25/22 04:01	
Zinc	ug/L	ND	5.0	06/25/22 04:01	

LABORATORY CONTROL SAMPLE: 4356979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	97.0	97	80-120	
Cadmium	ug/L	100	97.4	97	80-120	
Chromium	ug/L	100	99.2	99	80-120	
Lead	ug/L	100	102	102	80-120	
Nickel	ug/L	100	99.6	100	80-120	
Zinc	ug/L	100	98.4	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4356980 4356981

Parameter	Units	10612301001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	9.3	100	100	111	109	102	99	75-125	2	20	
Cadmium	ug/L	ND	100	100	99.6	91.9	100	92	75-125	8	20	
Chromium	ug/L	3.8	100	100	105	96.0	101	92	75-125	9	20	
Lead	ug/L	1.5	100	100	104	96.8	103	95	75-125	7	20	
Nickel	ug/L	4.1	100	100	105	96.2	101	92	75-125	8	20	
Zinc	ug/L	6.6	100	100	107	98.5	101	92	75-125	8	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 821784
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water Dissolved UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

METHOD BLANK: 4354935 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	06/20/22 19:13	
Cadmium, Dissolved	ug/L	ND	0.080	06/20/22 19:13	
Chromium, Dissolved	ug/L	ND	2.0	06/20/22 19:13	
Lead, Dissolved	ug/L	ND	0.50	06/20/22 19:13	
Nickel, Dissolved	ug/L	ND	0.50	06/22/22 14:48	
Zinc, Dissolved	ug/L	ND	5.0	06/20/22 19:13	

LABORATORY CONTROL SAMPLE: 4354936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	101	101	80-120	
Cadmium, Dissolved	ug/L	100	98.3	98	80-120	
Chromium, Dissolved	ug/L	100	99.8	100	80-120	
Lead, Dissolved	ug/L	100	102	102	80-120	
Nickel, Dissolved	ug/L	100	102	102	80-120	
Zinc, Dissolved	ug/L	100	96.3	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4354937 4354938

Parameter	Units	10612195001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	2.5	100	100	105	103	103	100	75-125	2	20	
Cadmium, Dissolved	ug/L	ND	100	100	94.2	92.1	94	92	75-125	2	20	
Chromium, Dissolved	ug/L	ND	100	100	101	95.6	100	95	75-125	5	20	
Lead, Dissolved	ug/L	ND	100	100	98.4	94.6	98	95	75-125	4	20	
Nickel, Dissolved	ug/L	3.5	100	100	90.4	89.1	87	86	75-125	2	20	
Zinc, Dissolved	ug/L	ND	100	100	95.1	91.1	93	89	75-125	4	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 821346 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

METHOD BLANK: 4352586 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	06/13/22 15:04	
1,1,1-Trichloroethane	ug/L	ND	1.0	06/13/22 15:04	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	06/13/22 15:04	
1,1,2-Trichloroethane	ug/L	ND	1.0	06/13/22 15:04	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	06/13/22 15:04	
1,1-Dichloroethane	ug/L	ND	1.0	06/13/22 15:04	
1,1-Dichloroethene	ug/L	ND	1.0	06/13/22 15:04	
1,1-Dichloropropene	ug/L	ND	1.0	06/13/22 15:04	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	06/13/22 15:04	
1,2,3-Trichloropropane	ug/L	ND	2.5	06/13/22 15:04	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	06/13/22 15:04	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	06/13/22 15:04	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	06/13/22 15:04	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	06/13/22 15:04	
1,2-Dichlorobenzene	ug/L	ND	1.0	06/13/22 15:04	
1,2-Dichloroethane	ug/L	ND	1.0	06/13/22 15:04	
1,2-Dichloropropane	ug/L	ND	1.0	06/13/22 15:04	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	06/13/22 15:04	
1,3-Dichlorobenzene	ug/L	ND	1.0	06/13/22 15:04	
1,3-Dichloropropane	ug/L	ND	1.0	06/13/22 15:04	
1,4-Dichlorobenzene	ug/L	ND	1.0	06/13/22 15:04	
2,2-Dichloropropane	ug/L	ND	1.0	06/13/22 15:04	
2-Butanone (MEK)	ug/L	ND	10.0	06/13/22 15:04	
2-Chlorotoluene	ug/L	ND	1.0	06/13/22 15:04	
4-Chlorotoluene	ug/L	ND	1.0	06/13/22 15:04	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	06/13/22 15:04	
Acetone	ug/L	ND	10.0	06/13/22 15:04	
Allyl chloride	ug/L	ND	2.5	06/13/22 15:04	
Benzene	ug/L	ND	1.0	06/13/22 15:04	
Bromobenzene	ug/L	ND	1.0	06/13/22 15:04	
Bromochloromethane	ug/L	ND	1.0	06/13/22 15:04	
Bromodichloromethane	ug/L	ND	1.0	06/13/22 15:04	
Bromoform	ug/L	ND	1.0	06/13/22 15:04	
Bromomethane	ug/L	ND	2.5	06/13/22 15:04	
Carbon tetrachloride	ug/L	ND	1.0	06/13/22 15:04	
Chlorobenzene	ug/L	ND	1.0	06/13/22 15:04	
Chloroethane	ug/L	ND	1.0	06/13/22 15:04	
Chloroform	ug/L	ND	1.0	06/13/22 15:04	
Chloromethane	ug/L	ND	1.0	06/13/22 15:04	
cis-1,2-Dichloroethene	ug/L	ND	1.0	06/13/22 15:04	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

METHOD BLANK: 4352586 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005, 10612301006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	1.0	06/13/22 15:04	
Dibromochloromethane	ug/L	ND	1.0	06/13/22 15:04	
Dibromomethane	ug/L	ND	1.0	06/13/22 15:04	
Dichlorodifluoromethane	ug/L	ND	1.0	06/13/22 15:04	
Dichlorofluoromethane	ug/L	ND	1.0	06/13/22 15:04	
Diethyl ether (Ethyl ether)	ug/L	ND	2.5	06/13/22 15:04	
Ethylbenzene	ug/L	ND	1.0	06/13/22 15:04	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	06/13/22 15:04	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	06/13/22 15:04	
m&p-Xylene	ug/L	ND	2.0	06/13/22 15:04	
Methyl-tert-butyl ether	ug/L	ND	1.0	06/13/22 15:04	
Methylene Chloride	ug/L	ND	1.0	06/13/22 15:04	
n-Butylbenzene	ug/L	ND	1.0	06/13/22 15:04	
n-Hexane	ug/L	ND	10.0	06/13/22 15:04	
n-Propylbenzene	ug/L	ND	1.0	06/13/22 15:04	
Naphthalene	ug/L	ND	1.0	06/13/22 15:04	
o-Xylene	ug/L	ND	1.0	06/13/22 15:04	
p-Isopropyltoluene	ug/L	ND	1.0	06/13/22 15:04	
sec-Butylbenzene	ug/L	ND	1.0	06/13/22 15:04	
Styrene	ug/L	ND	1.0	06/13/22 15:04	
tert-Butylbenzene	ug/L	ND	1.0	06/13/22 15:04	
Tetrachloroethene	ug/L	ND	1.0	06/13/22 15:04	
Tetrahydrofuran	ug/L	ND	10.0	06/13/22 15:04	
Toluene	ug/L	ND	1.0	06/13/22 15:04	
trans-1,2-Dichloroethene	ug/L	ND	1.0	06/13/22 15:04	
trans-1,3-Dichloropropene	ug/L	ND	1.0	06/13/22 15:04	
Trichloroethene	ug/L	ND	1.0	06/13/22 15:04	
Trichlorofluoromethane	ug/L	ND	1.0	06/13/22 15:04	
Vinyl chloride	ug/L	ND	1.0	06/13/22 15:04	
Xylene (Total)	ug/L	ND	3.0	06/13/22 15:04	
1,2-Dichlorobenzene-d4 (S)	%.	103	75-125	06/13/22 15:04	
4-Bromofluorobenzene (S)	%.	104	75-125	06/13/22 15:04	
Toluene-d8 (S)	%.	111	75-125	06/13/22 15:04	

LABORATORY CONTROL SAMPLE & LCSD: 4352587 4352588

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	16.5	18.4	82	92	75-125	11	20	
1,1,1-Trichloroethane	ug/L	20	19.3	19.7	97	98	72-125	2	20	
1,1,2,2-Tetrachloroethane	ug/L	20	18.2	18.9	91	94	70-125	3	20	
1,1,2-Trichloroethane	ug/L	20	17.9	18.6	90	93	75-125	4	20	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.4	19.6	97	98	63-125	1	20	
1,1-Dichloroethane	ug/L	20	19.1	19.3	95	97	67-125	1	20	
1,1-Dichloroethene	ug/L	20	18.3	18.4	92	92	67-125	0	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

LABORATORY CONTROL SAMPLE & LCSD: 4352587 4352588

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1-Dichloropropene	ug/L	20	18.5	19.8	93	99	70-125	6	20	
1,2,3-Trichlorobenzene	ug/L	20	18.4	18.5	92	92	68-125	1	20	
1,2,3-Trichloropropane	ug/L	20	21.2	20.5	106	102	74-125	4	20	
1,2,4-Trichlorobenzene	ug/L	20	18.2	19.1	91	96	68-125	5	20	
1,2,4-Trimethylbenzene	ug/L	20	17.6	18.6	88	93	75-125	6	20	
1,2-Dibromo-3-chloropropane	ug/L	20	18.5	18.6	93	93	54-131	1	20	
1,2-Dibromoethane (EDB)	ug/L	20	19.3	20.3	97	102	75-125	5	20	
1,2-Dichlorobenzene	ug/L	20	17.4	17.5	87	87	75-125	0	20	
1,2-Dichloroethane	ug/L	20	18.1	18.0	90	90	75-125	1	20	
1,2-Dichloropropane	ug/L	20	19.3	20.2	96	101	70-128	5	20	
1,3,5-Trimethylbenzene	ug/L	20	17.1	18.8	86	94	75-125	9	20	
1,3-Dichlorobenzene	ug/L	20	18.3	18.6	92	93	75-125	1	20	
1,3-Dichloropropane	ug/L	20	19.8	20.5	99	102	75-125	3	20	
1,4-Dichlorobenzene	ug/L	20	16.8	17.6	84	88	75-125	5	20	
2,2-Dichloropropane	ug/L	20	18.7	19.3	94	96	49-125	3	20	
2-Butanone (MEK)	ug/L	100	108	105	108	105	56-138	2	20	
2-Chlorotoluene	ug/L	20	17.7	18.2	88	91	70-125	3	20	
4-Chlorotoluene	ug/L	20	17.6	19.1	88	95	70-125	8	20	
4-Methyl-2-pentanone (MIBK)	ug/L	100	94.8	101	95	101	64-133	7	20	
Acetone	ug/L	100	95.6	95.8	96	96	42-131	0	20	
Allyl chloride	ug/L	20	18.4	18.9	92	94	51-133	2	20	
Benzene	ug/L	20	17.7	18.0	88	90	73-125	2	20	
Bromobenzene	ug/L	20	17.3	17.7	87	89	75-125	2	20	
Bromochloromethane	ug/L	20	17.4	17.8	87	89	75-125	2	20	
Bromodichloromethane	ug/L	20	18.0	17.9	90	90	74-125	0	20	
Bromoform	ug/L	20	17.2	17.8	86	89	61-125	3	20	
Bromomethane	ug/L	20	11.8	13.4	59	67	30-125	13	20	
Carbon tetrachloride	ug/L	20	18.2	18.9	91	95	58-125	4	20	
Chlorobenzene	ug/L	20	17.4	17.8	87	89	75-125	3	20	
Chloroethane	ug/L	20	22.2	21.0	111	105	58-125	6	20	
Chloroform	ug/L	20	17.4	17.8	87	89	74-125	2	20	
Chloromethane	ug/L	20	17.3	17.9	87	90	38-142	4	20	
cis-1,2-Dichloroethene	ug/L	20	17.3	17.4	86	87	75-125	1	20	
cis-1,3-Dichloropropene	ug/L	20	19.3	19.3	96	96	72-125	0	20	
Dibromochloromethane	ug/L	20	19.5	21.3	97	106	73-125	9	20	
Dibromomethane	ug/L	20	20.0	19.0	100	95	68-125	5	20	
Dichlorodifluoromethane	ug/L	20	18.9	18.3	95	92	46-149	3	20	
Dichlorofluoromethane	ug/L	20	18.7	19.4	94	97	71-126	3	20	
Diethyl ether (Ethyl ether)	ug/L	20	22.0	21.8	110	109	68-127	1	20	
Ethylbenzene	ug/L	20	17.9	18.8	89	94	75-125	5	20	
Hexachloro-1,3-butadiene	ug/L	20	17.0	18.1	85	91	52-131	6	20	
Isopropylbenzene (Cumene)	ug/L	20	17.7	18.5	88	93	74-125	5	20	
m&p-Xylene	ug/L	40	33.5	37.1	84	93	72-125	10	20	
Methyl-tert-butyl ether	ug/L	20	21.5	21.0	108	105	75-125	3	20	
Methylene Chloride	ug/L	20	17.8	17.8	89	89	70-125	0	20	
n-Butylbenzene	ug/L	20	17.0	18.1	85	91	68-125	6	20	
n-Hexane	ug/L	20	18.7	21.1	93	105	50-143	12	20	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

LABORATORY CONTROL SAMPLE & LCSD: 4352587 4352588

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
n-Propylbenzene	ug/L	20	17.2	18.3	86	92	70-125	6	20	
Naphthalene	ug/L	20	18.9	20.0	95	100	66-127	6	20	
o-Xylene	ug/L	20	17.1	19.4	85	97	73-125	13	20	
p-Isopropyltoluene	ug/L	20	17.3	19.0	86	95	72-125	9	20	
sec-Butylbenzene	ug/L	20	17.6	18.9	88	94	72-125	7	20	
Styrene	ug/L	20	14.8	15.3	74	76	75-125	4	20	L2
tert-Butylbenzene	ug/L	20	17.3	18.3	87	91	74-125	5	20	
Tetrachloroethene	ug/L	20	17.4	17.9	87	89	72-125	2	20	
Tetrahydrofuran	ug/L	100	102	97.6	102	98	75-125	4	20	
Toluene	ug/L	20	16.5	16.6	82	83	74-125	1	20	
trans-1,2-Dichloroethene	ug/L	20	17.6	18.4	88	92	73-125	4	20	
trans-1,3-Dichloropropene	ug/L	20	19.8	21.6	99	108	72-125	9	20	
Trichloroethene	ug/L	20	18.0	18.2	90	91	75-125	1	20	
Trichlorofluoromethane	ug/L	20	18.4	18.8	92	94	62-136	3	20	
Vinyl chloride	ug/L	20	18.2	18.8	91	94	55-139	3	20	
Xylene (Total)	ug/L	60	50.6	56.5	84	94	72-125	11	20	
1,2-Dichlorobenzene-d4 (S)	%.				94	101	75-125			
4-Bromofluorobenzene (S)	%.				100	104	75-125			
Toluene-d8 (S)	%.				99	97	75-125			

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1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 821278
QC Batch Method: EPA 3511
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Water PAH by SIM MSSV LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

METHOD BLANK: 4352213 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	06/14/22 15:32	
2-Chloronaphthalene	ug/L	ND	0.040	06/14/22 15:32	
2-Methylnaphthalene	ug/L	ND	0.040	06/14/22 15:32	
Acenaphthene	ug/L	ND	0.040	06/14/22 15:32	
Acenaphthylene	ug/L	ND	0.040	06/14/22 15:32	
Anthracene	ug/L	ND	0.040	06/14/22 15:32	
Benzo(a)anthracene	ug/L	ND	0.040	06/14/22 15:32	
Benzo(a)pyrene	ug/L	ND	0.040	06/14/22 15:32	
Benzo(b)fluoranthene	ug/L	ND	0.040	06/14/22 15:32	
Benzo(g,h,i)perylene	ug/L	ND	0.040	06/14/22 15:32	
Benzo(k)fluoranthene	ug/L	ND	0.040	06/14/22 15:32	
Chrysene	ug/L	ND	0.040	06/14/22 15:32	
Dibenz(a,h)anthracene	ug/L	ND	0.040	06/14/22 15:32	
Fluoranthene	ug/L	ND	0.040	06/14/22 15:32	
Fluorene	ug/L	ND	0.040	06/14/22 15:32	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	06/14/22 15:32	
Naphthalene	ug/L	ND	0.040	06/14/22 15:32	
Phenanthrene	ug/L	ND	0.040	06/14/22 15:32	
Pyrene	ug/L	ND	0.040	06/14/22 15:32	
2-Fluorobiphenyl (S)	%.	110	62-137	06/14/22 15:32	
p-Terphenyl-d14 (S)	%.	131	50-131	06/14/22 15:32	

LABORATORY CONTROL SAMPLE & LCSD: 4352214 4352215

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	2	2.0	2.1	102	106	54-125	4	20	
2-Chloronaphthalene	ug/L	2	2.1	2.2	106	112	70-130	5	20	
2-Methylnaphthalene	ug/L	2	2.1	2.2	105	109	55-125	3	20	
Acenaphthene	ug/L	2	2.0	2.1	102	106	71-125	4	20	
Acenaphthylene	ug/L	2	2.1	2.2	107	111	59-125	4	20	
Anthracene	ug/L	2	2.3	2.3	114	113	61-125	1	20	
Benzo(a)anthracene	ug/L	2	2.1	2.2	106	111	59-125	5	20	
Benzo(a)pyrene	ug/L	2	2.2	2.3	110	116	63-125	5	20	
Benzo(b)fluoranthene	ug/L	2	2.0	2.1	102	103	65-125	1	20	
Benzo(g,h,i)perylene	ug/L	2	2.1	2.1	103	107	61-130	4	20	
Benzo(k)fluoranthene	ug/L	2	2.0	2.2	101	111	61-134	10	20	
Chrysene	ug/L	2	2.1	2.2	105	108	66-125	3	20	
Dibenz(a,h)anthracene	ug/L	2	2.2	2.2	108	110	61-132	2	20	
Fluoranthene	ug/L	2	2.0	2.1	102	106	71-125	3	20	

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

LABORATORY CONTROL SAMPLE & LCSD: 4352214 4352215

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Fluorene	ug/L	2	2.1	2.1	103	107	70-125	4	20	
Indeno(1,2,3-cd)pyrene	ug/L	2	2.1	2.0	105	102	66-125	3	20	
Naphthalene	ug/L	2	2.0	2.1	100	104	68-125	5	20	
Phenanthrene	ug/L	2	2.1	2.2	104	110	70-125	5	20	
Pyrene	ug/L	2	2.2	2.3	110	117	62-125	6	20	
2-Fluorobiphenyl (S)	%.				88	92	62-137			
p-Terphenyl-d14 (S)	%.				104	110	50-131			

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1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

QC Batch: 821279 | Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C | Analysis Description: NWTPH-Dx GCS LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

METHOD BLANK: 4352216 Matrix: Water
Associated Lab Samples: 10612301001, 10612301002, 10612301003, 10612301004, 10612301005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	06/15/22 18:49	
Motor Oil Range	mg/L	ND	0.40	06/15/22 18:49	
n-Triacontane (S)	%.	84	50-150	06/15/22 18:49	
o-Terphenyl (S)	%.	87	50-150	06/15/22 18:49	

LABORATORY CONTROL SAMPLE & LCSD: 4352217 4352218

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.4	1.8	72	88	50-150	21	20	R1
Motor Oil Range	mg/L	2	2.0	2.1	102	105	50-150	3	20	
n-Triacontane (S)	%.				74	73	50-150			
o-Terphenyl (S)	%.				97	109	50-150			

SAMPLE DUPLICATE: 4352219

Parameter	Units	10611857001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	6.2	1.7	112	30	D6,P2
Motor Oil Range	mg/L	66.3	11.7	140	30	D6
n-Triacontane (S)	%.	0	78			
o-Terphenyl (S)	%.	0	80			

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Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 10612301

[1]	The samples were received outside of required temperature range. Analysis was completed upon client approval.

BATCH QUALIFIERS

Batch: 821346

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
[1]	The continuing calibration verification was below the method acceptance limit for bromomethane and styrene. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

Batch: 821707

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

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
P2	Re-extraction or re-analysis could not be performed due to insufficient sample amount.
R1	RPD value was outside control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10612301

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10612301001	**MW-OWS-1**	EPA Mod. 3510C	821279	NWTPH-Dx	822051
10612301002	**MW-OWS-2**	EPA Mod. 3510C	821279	NWTPH-Dx	822051
10612301003	**MW-OWS-3**	EPA Mod. 3510C	821279	NWTPH-Dx	822051
10612301004	**WES-DUP-1**	EPA Mod. 3510C	821279	NWTPH-Dx	822051
10612301005	**WES-FEB-2**	EPA Mod. 3510C	821279	NWTPH-Dx	822051
10612301001	**MW-OWS-1**	NWTPHGX	1881747	NWTPH-Gx	1881747
10612301002	**MW-OWS-2**	NWTPHGX	1881747	NWTPH-Gx	1881747
10612301003	**MW-OWS-3**	NWTPHGX	1881747	NWTPH-Gx	1881747
10612301004	**WES-DUP-1**	NWTPHGX	1881747	NWTPH-Gx	1881747
10612301005	**WES-FEB-2**	NWTPHGX	1881747	NWTPH-Gx	1881747
10612301006	**Trip Blank**	NWTPHGX	1881747	NWTPH-Gx	1881747
10612301001	**MW-OWS-1**	EPA 3020A	822217	EPA 6020B	822985
10612301002	**MW-OWS-2**	EPA 3020A	822217	EPA 6020B	822985
10612301003	**MW-OWS-3**	EPA 3020A	822217	EPA 6020B	822985
10612301004	**WES-DUP-1**	EPA 3020A	822217	EPA 6020B	822985
10612301005	**WES-FEB-2**	EPA 3020A	822217	EPA 6020B	822985
10612301001	**MW-OWS-1**	EPA 3020A	821784	EPA 6020B	822249
10612301002	**MW-OWS-2**	EPA 3020A	821784	EPA 6020B	822249
10612301003	**MW-OWS-3**	EPA 3020A	821784	EPA 6020B	822249
10612301004	**WES-DUP-1**	EPA 3020A	821784	EPA 6020B	822249
10612301005	**WES-FEB-2**	EPA 3020A	821784	EPA 6020B	822249
10612301001	**MW-OWS-1**	EPA 7470A	823078	EPA 7470A	823491
10612301002	**MW-OWS-2**	EPA 7470A	823078	EPA 7470A	823491
10612301003	**MW-OWS-3**	EPA 7470A	823078	EPA 7470A	823491
10612301004	**WES-DUP-1**	EPA 7470A	823078	EPA 7470A	823491
10612301005	**WES-FEB-2**	EPA 7470A	823078	EPA 7470A	823491
10612301001	**MW-OWS-1**	EPA 7470A	821813	EPA 7470A	822435
10612301002	**MW-OWS-2**	EPA 7470A	821813	EPA 7470A	822435
10612301003	**MW-OWS-3**	EPA 7470A	821813	EPA 7470A	822435
10612301004	**WES-DUP-1**	EPA 7470A	821813	EPA 7470A	822435
10612301005	**WES-FEB-2**	EPA 7470A	821813	EPA 7470A	822435
10612301001	**MW-OWS-1**	EPA 3511	821278	EPA 8270E by SIM	821707
10612301002	**MW-OWS-2**	EPA 3511	821278	EPA 8270E by SIM	821707
10612301003	**MW-OWS-3**	EPA 3511	821278	EPA 8270E by SIM	821707
10612301004	**WES-DUP-1**	EPA 3511	821278	EPA 8270E by SIM	821707
10612301005	**WES-FEB-2**	EPA 3511	821278	EPA 8270E by SIM	821707
10612301001	**MW-OWS-1**	EPA 8260D	821346		
10612301002	**MW-OWS-2**	EPA 8260D	821346		
10612301003	**MW-OWS-3**	EPA 8260D	821346		
10612301004	**WES-DUP-1**	EPA 8260D	821346		
10612301005	**WES-FEB-2**	EPA 8260D	821346		
10612301006	**Trip Blank**	EPA 8260D	821346		

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Cooler 1 of 4

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Phillips 66 Ferndale Refinery	Report To:	Joe Sumera	Attention:	Joe Sumera
Address:	PO Box 8	Copy To:	Ashley Yamaura	Company Name:	Phillips 66
	Ferndale, WA 98248		ayamaura@whatcom-es.com / 360-752-9571	Address:	PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No.	PO # 4300035146	Pace Quote Reference:	
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID:	P66: Oily Water Sewer	Pace Project Manager:	
Requested Due Date/TAT:	Standard TAT	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	BTEX - EPA 8260	n-Hexane EPA 8260	NWTPH - Gx	NWTPH - Dx	PAHs/cPAHs - 8270 SIM (see attached list)	Naphthalenes 8270 SIM	As, Cd, Cr (III & VI), Pb, Ni, Zn (total and dissolved)	Mercury (total and dissolved)	Chlorinated VOCs EPA 8260	Residual Chlorine (Y/N)	
1	MW-OWS-1	wt	G	6/6/22	2:25	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X			Requesting that all metals be analyzed for total and dissolved. Two HNO3 poly's have been filled. One is not filtered and the other one is filtered (both are marked).	001
2	MW-OWS-2	wt	G	6/6/22	12:10	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X				002
3	MW-OWS-3	wt	G	6/6/22	10:45	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X				003
4	WES-DUP-1	wt	G	6/6/22	8:00	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X				004
5	WES-FEB-1	wt	G	6/6/22	9:20	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X				005
6						-	-																						006
7						-	-																						
8						-	-																						
9						-	-																						
10						-	-																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Please email results to both Phillips 66, and Whatcom Environmental	/ Whatcom Environmental	6-7-22	10:00	No Pace	6/8/22	8:50

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
11.8	Y	Y	Y
8.5			
13.8			
9.6			

WO# : 10612301

10612301

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ashley Yamaura

SIGNATURE of SAMPLER: Ashley Yamaura

DATE Signed: 6-7-22

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Phillips 66 Ferndale Refinery

Project #:

WO#: 10612301

PM: JMG Due Date: 06/23/22

CLIENT: COP

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: 955099444571

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(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) ☐T6(0235) ☑T7(0042) ☐01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☑Wet ☐Blue ☐None ☐Dry ☐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: 11.8, 8.5, 13.8, 9.6 °C

Average Corrected Temp (no temp blank only): °C ☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

Correction Factor: TNU Cooler Temp Corrected w/temp blank: 11.8, 8.5, 13.8, 9.6 °C

USDA Regulated Soil: (☒ N/A, water sample/Other:)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Date/Initials of Person Examining Contents: NF 6.10.22

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): ☐ Duluth ☒ Minneapolis ☐ Virginia

Chain of Custody Present and Filled Out?	☑Yes	☐No		1.
Chain of Custody Relinquished?	☑Yes	☐No		2.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☑Yes	☐No		4. If Fecal: ☐<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☑No		6.
Sufficient Volume?	☑Yes	☐No		7.
Correct Containers Used? -Pace Containers Used?	☑Yes ☑Yes	☐No ☐No		8.
Containers Intact?	☑Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☑Yes	☐No	☐N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑Water ☐Soil ☐Oil ☐Other-	☑Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ **ENV-FRM-MIN4-0142**
All containers needing acid/base preservation have been checked?	☑Yes	☐No	☐N/A	12. Sample # 1
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☑Yes	☐No	☐N/A	☐ NaOH ☑ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☑N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐ **ENV-FRM-MIN4-0142**
				Res. Chlorine: 0-6 Roll 230370 / 0-6 Strip / 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☑N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☑N/A	13. **See Exception** ☐ **ENV-FRM-MIN4-0140**
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☑N/A	
Trip Blank Present?	☑Yes	☐No	☐N/A	14.
Trip Blank Custody Seals Present?	☑Yes	☐No	☐N/A	Pace Trip Blank Lot # (if purchased): 052622-364R

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Ashley & Eric Date/Time: 6/13/22 **Field Data Required?** ☐Yes ☐No

Comments/Resolution: Client notified of temperature exceedance.

Project Manager Review: Jenni Gross **Date:** 6/10/22

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:

K161

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WA
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 6/9/2022 Results Requested By: 6/23/2022

Workorder: 10612301 **Workorder Name:** P66: Oily Water Sewer

Report To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

L1504590

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: VOA-H	NWTPH-Gx (PACE-TN)	LAB USE ONLY
1	MW-OWS-1	PS	6/6/2022 02:25	10612301001	Water	3	X	-01
2	MW-OWS-2	PS	6/6/2022 12:10	10612301002	Water	3	X	-02
3	MW-OWS-3	PS	6/6/2022 10:45	10612301003	Water	3	X	-03
4	WES-DUP-1	PS	6/6/2022 08:00	10612301004	Water	3	X	-04
5	WES-FEB-2	PS	6/6/2022 09:20	10612301005	Water	3	X	-05
6	Trip Blank	PS	6/6/2022 00:00	10612301006	Water	3	X	-06

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/Pace	6.13.22 13:50	Kara Y	6.14.22 0845
2				
3				

Comments: OK

Cooler Temperature on Receipt ____ °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Temp DRAT 3.4+0=3.4

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

15 vials K4

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

September 16, 2022

Joe Sumera
Phillips 66
3901 Unick Road
Ferndale, WA 98248

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Dear Joe Sumera:

Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2022. 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 National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Eric Libolt, Whatcom Environmental

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10623141001	**MW-OWS-1**	Water	08/24/22 01:15	08/26/22 08:50
10623141002	**MW-OWS-2**	Water	08/24/22 10:40	08/26/22 08:50
10623141003	**MW-OWS-3**	Water	08/24/22 11:35	08/26/22 08:50
10623141004	**WES-DUP-1**	Water	08/24/22 08:00	08/26/22 08:50
10623141005	**WES-FEB-1**	Water	08/24/22 02:10	08/26/22 08:50
10623141006	**Trip Blank**	Water	08/24/22 00:00	08/26/22 08:50

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10623141001	**MW-OWS-1**	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	DSH	7	PAN
		EPA 8270E by SIM	KJ3	18	PASI-M
		EPA 8260D	JEM	73	PASI-M
10623141002	**MW-OWS-2**	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	DSH	7	PAN
		EPA 8270E by SIM	KJ3	18	PASI-M
		EPA 8260D	JEM	73	PASI-M
10623141003	**MW-OWS-3**	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	DSH	7	PAN
		EPA 8270E by SIM	KJ3	18	PASI-M
		EPA 8260D	JEM	73	PASI-M
10623141004	**WES-DUP-1**	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	DSH	7	PAN
		EPA 8270E by SIM	KJ3	18	PASI-M
		EPA 8260D	TKL	73	PASI-M
10623141005	**WES-FEB-1**	NWTPH-Dx	TT2	4	PASI-M

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 6020B	PW1	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	DSH	7	PAN
		EPA 8270E by SIM	KJ3	18	PASI-M
		EPA 8260D	TKL	73	PASI-M
10623141006	**Trip Blank**	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	JEM, PAB, TKL	73	PASI-M

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-1 **Lab ID: 10623141001** Collected: 08/24/22 01:15 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.45	1	08/29/22 16:11	08/31/22 15:24	68334-30-5	
Motor Oil Range	ND	mg/L	0.45	1	08/29/22 16:11	08/31/22 15:24		
Surrogates								
o-Terphenyl (S)	64	%.	50-150	1	08/29/22 16:11	08/31/22 15:24	84-15-1	
n-Triacontane (S)	56	%.	50-150	1	08/29/22 16:11	08/31/22 15:24		
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		08/31/22 17:51		
Surrogates								
a,a,a-Trifluorotoluene (S)	104	%.	50-150	1		08/31/22 17:51	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**8.1**	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:38	7440-38-2	
Cadmium	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 16:38	7440-43-9	
Chromium	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 16:38	7440-47-3	
Lead	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:38	7439-92-1	
Nickel	**0.74**	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:38	7440-02-0	
Zinc	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 16:38	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**8.2**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:08	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 15:08	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 15:08	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:08	7439-92-1	
Nickel, Dissolved	**0.55**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:08	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 15:08	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 11:43	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 12:12	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	08/31/22 17:13	09/01/22 14:33	92-52-4	
Surrogates								
2-Fluorophenol (S)	46.8	%	10.0-120	1	08/31/22 17:13	09/01/22 14:33	367-12-4	
Phenol-d5 (S)	30.4	%	10.0-120	1	08/31/22 17:13	09/01/22 14:33	4165-62-2	
Nitrobenzene-d5 (S)	78.7	%	10.0-127	1	08/31/22 17:13	09/01/22 14:33	4165-60-0	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-1 **Lab ID: 10623141001** Collected: 08/24/22 01:15 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Surrogates								
2-Fluorobiphenyl (S)	83.0	%	10.0-130	1	08/31/22 17:13	09/01/22 14:33	321-60-8	
2,4,6-Tribromophenol (S)	100	%	10.0-155	1	08/31/22 17:13	09/01/22 14:33	118-79-6	
p-Terphenyl-d14 (S)	85.4	%	10.0-128	1	08/31/22 17:13	09/01/22 14:33	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	91-57-6	L1
Acenaphthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	83-32-9	L1
Anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	120-12-7	L1
Benzo(a)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	56-55-3	L1
Benzo(a)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	50-32-8	L1
Benzo(b)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	205-99-2	L1
Benzo(k)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	207-08-9	L1
Chrysene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	218-01-9	L1
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	53-70-3	L1
Dibenzofuran	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	132-64-9	L1
Fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	206-44-0	L1
Fluorene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	86-73-7	L1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	193-39-5	L1
Naphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	91-20-3	L1
Pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:31	129-00-0	L1
Surrogates								
2-Fluorobiphenyl (S)	115	%.	62-137	1	08/30/22 15:31	09/08/22 19:31	321-60-8	C6
p-Terphenyl-d14 (S)	132	%.	50-131	1	08/30/22 15:31	09/08/22 19:31	1718-51-0	S3
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/29/22 17:00	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/29/22 17:00	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/29/22 17:00	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/29/22 17:00	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/29/22 17:00	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/29/22 17:00	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:00	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:00	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:00	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		08/29/22 17:00	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:00	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		08/29/22 17:00	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/29/22 17:00	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:00	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/29/22 17:00	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:00	78-87-5	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-1 **Lab ID: 10623141001** Collected: 08/24/22 01:15 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:00	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:00	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:00	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:00	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		08/29/22 17:00	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/29/22 17:00	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/29/22 17:00	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		08/29/22 17:00	108-10-1	
Acetone	ND	ug/L	10.0	1		08/29/22 17:00	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		08/29/22 17:00	107-05-1	
Benzene	ND	ug/L	1.0	1		08/29/22 17:00	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/29/22 17:00	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/29/22 17:00	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/29/22 17:00	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/29/22 17:00	75-25-2	
Bromomethane	ND	ug/L	2.5	1		08/29/22 17:00	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		08/29/22 17:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/29/22 17:00	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/29/22 17:00	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/29/22 17:00	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/29/22 17:00	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		08/29/22 17:00	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		08/29/22 17:00	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/29/22 17:00	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/29/22 17:00	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		08/29/22 17:00	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		08/29/22 17:00	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/29/22 17:00	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/29/22 17:00	1634-04-4	
Methylene Chloride	ND	ug/L	2.0	1		08/29/22 17:00	75-09-2	
Naphthalene	ND	ug/L	1.0	1		08/29/22 17:00	91-20-3	
Styrene	ND	ug/L	1.0	1		08/29/22 17:00	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/29/22 17:00	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		08/29/22 17:00	109-99-9	
Toluene	ND	ug/L	1.0	1		08/29/22 17:00	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		08/29/22 17:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/29/22 17:00	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		08/29/22 17:00	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/29/22 17:00	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:00	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:00	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		08/29/22 17:00	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	104-51-8	
n-Hexane	ND	ug/L	10.0	1		08/29/22 17:00	110-54-3	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-1 **Lab ID: 10623141001** Collected: 08/24/22 01:15 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
n-Propylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	103-65-1	
o-Xylene	ND	ug/L	1.0	1		08/29/22 17:00	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/29/22 17:00	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:00	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:00	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:00	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125	1		08/29/22 17:00	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125	1		08/29/22 17:00	460-00-4	
Toluene-d8 (S)	101	%.	75-125	1		08/29/22 17:00	2037-26-5	

Sample: MW-OWS-2 **Lab ID: 10623141002** Collected: 08/24/22 10:40 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.48	1	08/29/22 16:11	08/31/22 15:42	68334-30-5	C6
Motor Oil Range	ND	mg/L	0.48	1	08/29/22 16:11	08/31/22 15:42		C6
Surrogates								
o-Terphenyl (S)	58	%.	50-150	1	08/29/22 16:11	08/31/22 15:42	84-15-1	
n-Triacontane (S)	47	%.	50-150	1	08/29/22 16:11	08/31/22 15:42		S0
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		08/31/22 18:21		
Surrogates								
a,a,a-Trifluorotoluene (S)	101	%.	50-150	1		08/31/22 18:21	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**2.7**	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:54	7440-38-2	
Cadmium	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 16:54	7440-43-9	
Chromium	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 16:54	7440-47-3	
Lead	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:54	7439-92-1	
Nickel	**0.79**	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:54	7440-02-0	
Zinc	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 16:54	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.8**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:24	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 15:24	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 15:24	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:24	7439-92-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-2 **Lab ID: 10623141002** Collected: 08/24/22 10:40 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Nickel, Dissolved	**0.70**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:24	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 15:24	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 11:45	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 12:14	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	08/31/22 17:13	09/01/22 15:17	92-52-4	
Surrogates								
2-Fluorophenol (S)	45.1	%	10.0-120	1	08/31/22 17:13	09/01/22 15:17	367-12-4	
Phenol-d5 (S)	28.9	%	10.0-120	1	08/31/22 17:13	09/01/22 15:17	4165-62-2	
Nitrobenzene-d5 (S)	73.3	%	10.0-127	1	08/31/22 17:13	09/01/22 15:17	4165-60-0	
2-Fluorobiphenyl (S)	80.0	%	10.0-130	1	08/31/22 17:13	09/01/22 15:17	321-60-8	
2,4,6-Tribromophenol (S)	93.0	%	10.0-155	1	08/31/22 17:13	09/01/22 15:17	118-79-6	
p-Terphenyl-d14 (S)	82.7	%	10.0-128	1	08/31/22 17:13	09/01/22 15:17	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	91-57-6	L1
Acenaphthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	83-32-9	L1
Anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	120-12-7	L1
Benzo(a)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	56-55-3	L1
Benzo(a)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	50-32-8	L1
Benzo(b)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	205-99-2	L1
Benzo(k)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	207-08-9	L1
Chrysene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	218-01-9	L1
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	53-70-3	L1
Dibenzofuran	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	132-64-9	L1
Fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	206-44-0	L1
Fluorene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	86-73-7	L1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	193-39-5	L1
Naphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	91-20-3	L1
Pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 19:51	129-00-0	L1
Surrogates								
2-Fluorobiphenyl (S)	115	%.	62-137	1	08/30/22 15:31	09/08/22 19:51	321-60-8	C6
p-Terphenyl-d14 (S)	140	%.	50-131	1	08/30/22 15:31	09/08/22 19:51	1718-51-0	S3

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-2 **Lab ID: 10623141002** Collected: 08/24/22 10:40 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/29/22 17:15	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/29/22 17:15	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/29/22 17:15	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/29/22 17:15	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/29/22 17:15	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/29/22 17:15	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:15	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:15	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:15	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		08/29/22 17:15	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:15	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		08/29/22 17:15	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/29/22 17:15	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:15	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/29/22 17:15	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:15	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:15	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:15	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:15	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:15	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		08/29/22 17:15	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/29/22 17:15	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/29/22 17:15	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		08/29/22 17:15	108-10-1	
Acetone	ND	ug/L	10.0	1		08/29/22 17:15	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		08/29/22 17:15	107-05-1	
Benzene	ND	ug/L	1.0	1		08/29/22 17:15	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/29/22 17:15	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/29/22 17:15	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/29/22 17:15	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/29/22 17:15	75-25-2	
Bromomethane	ND	ug/L	2.5	1		08/29/22 17:15	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		08/29/22 17:15	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/29/22 17:15	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/29/22 17:15	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/29/22 17:15	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/29/22 17:15	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		08/29/22 17:15	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		08/29/22 17:15	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/29/22 17:15	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/29/22 17:15	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		08/29/22 17:15	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		08/29/22 17:15	87-68-3	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-2 **Lab ID: 10623141002** Collected: 08/24/22 10:40 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/29/22 17:15	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/29/22 17:15	1634-04-4	
Methylene Chloride	ND	ug/L	2.0	1		08/29/22 17:15	75-09-2	
Naphthalene	ND	ug/L	1.0	1		08/29/22 17:15	91-20-3	
Styrene	ND	ug/L	1.0	1		08/29/22 17:15	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/29/22 17:15	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		08/29/22 17:15	109-99-9	
Toluene	ND	ug/L	1.0	1		08/29/22 17:15	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		08/29/22 17:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/29/22 17:15	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		08/29/22 17:15	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/29/22 17:15	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:15	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:15	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		08/29/22 17:15	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	104-51-8	
n-Hexane	ND	ug/L	10.0	1		08/29/22 17:15	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	103-65-1	
o-Xylene	ND	ug/L	1.0	1		08/29/22 17:15	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/29/22 17:15	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:15	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:15	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:15	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1		08/29/22 17:15	2199-69-1	
4-Bromofluorobenzene (S)	100	%.	75-125	1		08/29/22 17:15	460-00-4	
Toluene-d8 (S)	102	%.	75-125	1		08/29/22 17:15	2037-26-5	

Sample: MW-OWS-3 **Lab ID: 10623141003** Collected: 08/24/22 11:35 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.45	1	08/29/22 16:11	08/31/22 15:52	68334-30-5	C6
Motor Oil Range	ND	mg/L	0.45	1	08/29/22 16:11	08/31/22 15:52		C6
Surrogates								
o-Terphenyl (S)	58	%.	50-150	1	08/29/22 16:11	08/31/22 15:52	84-15-1	
n-Triacontane (S)	46	%.	50-150	1	08/29/22 16:11	08/31/22 15:52		1M
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		08/31/22 19:06		

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-3 **Lab ID: 10623141003** Collected: 08/24/22 11:35 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
Surrogates								
a,a,a-Trifluorotoluene (S)	102	%.	50-150	1		08/31/22 19:06	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**3.2**	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:57	7440-38-2	
Cadmium	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 16:57	7440-43-9	
Chromium	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 16:57	7440-47-3	
Lead	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:57	7439-92-1	
Nickel	**1.3**	ug/L	0.50	1	09/07/22 05:47	09/14/22 16:57	7440-02-0	
Zinc	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 16:57	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**3.1**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:27	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 15:27	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 15:27	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:27	7439-92-1	
Nickel, Dissolved	**0.97**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:27	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 15:27	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 11:49	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 12:18	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	08/31/22 17:13	09/01/22 16:23	92-52-4	
Surrogates								
2-Fluorophenol (S)	41.5	%	10.0-120	1	08/31/22 17:13	09/01/22 16:23	367-12-4	
Phenol-d5 (S)	26.4	%	10.0-120	1	08/31/22 17:13	09/01/22 16:23	4165-62-2	
Nitrobenzene-d5 (S)	68.0	%	10.0-127	1	08/31/22 17:13	09/01/22 16:23	4165-60-0	
2-Fluorobiphenyl (S)	74.1	%	10.0-130	1	08/31/22 17:13	09/01/22 16:23	321-60-8	
2,4,6-Tribromophenol (S)	89.0	%	10.0-155	1	08/31/22 17:13	09/01/22 16:23	118-79-6	
p-Terphenyl-d14 (S)	83.8	%	10.0-128	1	08/31/22 17:13	09/01/22 16:23	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	91-57-6	L1
Acenaphthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	83-32-9	L1

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-3 **Lab ID: 10623141003** Collected: 08/24/22 11:35 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
Anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	120-12-7	L1
Benzo(a)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	56-55-3	L1
Benzo(a)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	50-32-8	L1
Benzo(b)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	205-99-2	L1
Benzo(k)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	207-08-9	L1
Chrysene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	218-01-9	L1
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	53-70-3	L1
Dibenzofuran	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	132-64-9	L1
Fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	206-44-0	L1
Fluorene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	86-73-7	L1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	193-39-5	L1
Naphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	91-20-3	L1
Pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:11	129-00-0	L1
Surrogates								
2-Fluorobiphenyl (S)	115	%.	62-137	1	08/30/22 15:31	09/08/22 20:11	321-60-8	C6
p-Terphenyl-d14 (S)	139	%.	50-131	1	08/30/22 15:31	09/08/22 20:11	1718-51-0	S3
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/29/22 17:31	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/29/22 17:31	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/29/22 17:31	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/29/22 17:31	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/29/22 17:31	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/29/22 17:31	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:31	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:31	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:31	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		08/29/22 17:31	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:31	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		08/29/22 17:31	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/29/22 17:31	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:31	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/29/22 17:31	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:31	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:31	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:31	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/29/22 17:31	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/29/22 17:31	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		08/29/22 17:31	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/29/22 17:31	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/29/22 17:31	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		08/29/22 17:31	108-10-1	
Acetone	ND	ug/L	10.0	1		08/29/22 17:31	67-64-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-3 **Lab ID: 10623141003** Collected: 08/24/22 11:35 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Allyl chloride	ND	ug/L	2.5	1		08/29/22 17:31	107-05-1	
Benzene	ND	ug/L	1.0	1		08/29/22 17:31	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/29/22 17:31	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/29/22 17:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/29/22 17:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/29/22 17:31	75-25-2	
Bromomethane	ND	ug/L	2.5	1		08/29/22 17:31	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		08/29/22 17:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/29/22 17:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/29/22 17:31	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/29/22 17:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/29/22 17:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		08/29/22 17:31	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		08/29/22 17:31	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/29/22 17:31	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/29/22 17:31	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		08/29/22 17:31	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		08/29/22 17:31	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/29/22 17:31	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/29/22 17:31	1634-04-4	
Methylene Chloride	ND	ug/L	2.0	1		08/29/22 17:31	75-09-2	
Naphthalene	ND	ug/L	1.0	1		08/29/22 17:31	91-20-3	
Styrene	ND	ug/L	1.0	1		08/29/22 17:31	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/29/22 17:31	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		08/29/22 17:31	109-99-9	
Toluene	ND	ug/L	1.0	1		08/29/22 17:31	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		08/29/22 17:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/29/22 17:31	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		08/29/22 17:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/29/22 17:31	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:31	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:31	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		08/29/22 17:31	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	104-51-8	
n-Hexane	ND	ug/L	10.0	1		08/29/22 17:31	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	103-65-1	
o-Xylene	ND	ug/L	1.0	1		08/29/22 17:31	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/29/22 17:31	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/29/22 17:31	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/29/22 17:31	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/29/22 17:31	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125	1		08/29/22 17:31	2199-69-1	
4-Bromofluorobenzene (S)	101	%.	75-125	1		08/29/22 17:31	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: MW-OWS-3 **Lab ID: 10623141003** Collected: 08/24/22 11:35 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Surrogates								
Toluene-d8 (S)	101	%.	75-125	1		08/29/22 17:31	2037-26-5	

Sample: WES-DUP-1 **Lab ID: 10623141004** Collected: 08/24/22 08:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.48	1	08/29/22 16:11	08/31/22 16:01	68334-30-5	
Motor Oil Range	ND	mg/L	0.48	1	08/29/22 16:11	08/31/22 16:01		
Surrogates								
o-Terphenyl (S)	62	%.	50-150	1	08/29/22 16:11	08/31/22 16:01	84-15-1	
n-Triacontane (S)	52	%.	50-150	1	08/29/22 16:11	08/31/22 16:01		
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		08/31/22 19:21		
Surrogates								
a,a,a-Trifluorotoluene (S)	101	%.	50-150	1		08/31/22 19:21	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**5.1**	ug/L	0.50	1	09/07/22 05:47	09/14/22 17:00	7440-38-2	
Cadmium	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 17:00	7440-43-9	
Chromium	**14.4**	ug/L	2.0	1	09/07/22 05:47	09/14/22 17:00	7440-47-3	
Lead	**2.7**	ug/L	0.50	1	09/07/22 05:47	09/14/22 17:00	7439-92-1	
Nickel	**16.2**	ug/L	0.50	1	09/07/22 05:47	09/14/22 17:00	7440-02-0	
Zinc	**20.9**	ug/L	5.0	1	09/07/22 05:47	09/14/22 17:00	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.8**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:30	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 15:30	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 15:30	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:30	7439-92-1	
Nickel, Dissolved	**0.75**	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:30	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 15:30	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 11:51	7439-97-6	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: WES-DUP-1 **Lab ID: 10623141004** Collected: 08/24/22 08:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 12:20	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	08/31/22 17:13	09/01/22 15:39	92-52-4	
Surrogates								
2-Fluorophenol (S)	43.8	%	10.0-120	1	08/31/22 17:13	09/01/22 15:39	367-12-4	
Phenol-d5 (S)	28.2	%	10.0-120	1	08/31/22 17:13	09/01/22 15:39	4165-62-2	
Nitrobenzene-d5 (S)	70.0	%	10.0-127	1	08/31/22 17:13	09/01/22 15:39	4165-60-0	
2-Fluorobiphenyl (S)	77.1	%	10.0-130	1	08/31/22 17:13	09/01/22 15:39	321-60-8	
2,4,6-Tribromophenol (S)	91.0	%	10.0-155	1	08/31/22 17:13	09/01/22 15:39	118-79-6	
p-Terphenyl-d14 (S)	84.3	%	10.0-128	1	08/31/22 17:13	09/01/22 15:39	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	91-57-6	L1
Acenaphthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	83-32-9	L1
Anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	120-12-7	L1
Benzo(a)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	56-55-3	L1
Benzo(a)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	50-32-8	L1
Benzo(b)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	205-99-2	L1
Benzo(k)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	207-08-9	L1
Chrysene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	218-01-9	L1
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	53-70-3	L1
Dibenzofuran	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	132-64-9	L1
Fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	206-44-0	L1
Fluorene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	86-73-7	L1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	193-39-5	L1
Naphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	91-20-3	L1
Pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:32	129-00-0	L1
Surrogates								
2-Fluorobiphenyl (S)	120	%.	62-137	1	08/30/22 15:31	09/08/22 20:32	321-60-8	C6
p-Terphenyl-d14 (S)	143	%.	50-131	1	08/30/22 15:31	09/08/22 20:32	1718-51-0	S3
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/02/22 00:32	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/02/22 00:32	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/02/22 00:32	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/02/22 00:32	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		09/02/22 00:32	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/02/22 00:32	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/02/22 00:32	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/02/22 00:32	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:32	87-61-6	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: WES-DUP-1 **Lab ID: 10623141004** Collected: 08/24/22 08:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,2,3-Trichloropropane	ND	ug/L	2.5	1		09/02/22 00:32	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:32	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		09/02/22 00:32	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/02/22 00:32	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:32	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/02/22 00:32	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/02/22 00:32	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:32	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/02/22 00:32	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:32	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/02/22 00:32	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/02/22 00:32	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/02/22 00:32	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/02/22 00:32	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/02/22 00:32	108-10-1	
Acetone	ND	ug/L	10.0	1		09/02/22 00:32	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		09/02/22 00:32	107-05-1	
Benzene	ND	ug/L	1.0	1		09/02/22 00:32	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/02/22 00:32	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/02/22 00:32	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/02/22 00:32	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/02/22 00:32	75-25-2	
Bromomethane	ND	ug/L	2.5	1		09/02/22 00:32	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		09/02/22 00:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/02/22 00:32	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/02/22 00:32	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/02/22 00:32	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/02/22 00:32	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/02/22 00:32	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		09/02/22 00:32	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/02/22 00:32	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		09/02/22 00:32	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		09/02/22 00:32	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/02/22 00:32	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		09/02/22 00:32	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/02/22 00:32	1634-04-4	
Methylene Chloride	ND	ug/L	1.0	1		09/02/22 00:32	75-09-2	
Naphthalene	ND	ug/L	1.0	1		09/02/22 00:32	91-20-3	
Styrene	ND	ug/L	1.0	1		09/02/22 00:32	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/02/22 00:32	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		09/02/22 00:32	109-99-9	
Toluene	ND	ug/L	1.0	1		09/02/22 00:32	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		09/02/22 00:32	79-01-6	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: WES-DUP-1 **Lab ID: 10623141004** Collected: 08/24/22 08:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Trichlorofluoromethane	ND	ug/L	1.0	1		09/02/22 00:32	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		09/02/22 00:32	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/02/22 00:32	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/02/22 00:32	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/02/22 00:32	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		09/02/22 00:32	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	104-51-8	
n-Hexane	ND	ug/L	10.0	1		09/07/22 16:28	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	103-65-1	
o-Xylene	ND	ug/L	1.0	1		09/02/22 00:32	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/02/22 00:32	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		09/02/22 00:32	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/02/22 00:32	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/02/22 00:32	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	103	%.	75-125	1		09/02/22 00:32	2199-69-1	
4-Bromofluorobenzene (S)	93	%.	75-125	1		09/02/22 00:32	460-00-4	
Toluene-d8 (S)	102	%.	75-125	1		09/02/22 00:32	2037-26-5	

Sample: WES-FEB-1 **Lab ID: 10623141005** Collected: 08/24/22 02:10 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.56	1	08/29/22 16:11	08/31/22 16:10	68334-30-5	
Motor Oil Range	ND	mg/L	0.56	1	08/29/22 16:11	08/31/22 16:10		
Surrogates								
o-Terphenyl (S)	55	%.	50-150	1	08/29/22 16:11	08/31/22 16:10	84-15-1	
n-Triacontane (S)	53	%.	50-150	1	08/29/22 16:11	08/31/22 16:10		
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		08/31/22 19:36		
Surrogates								
a,a,a-Trifluorotoluene (S)	100	%.	50-150	1		08/31/22 19:36	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 17:04	7440-38-2	
Cadmium	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 17:04	7440-43-9	
Chromium	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 17:04	7440-47-3	
Lead	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 17:04	7439-92-1	
Nickel	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 17:04	7440-02-0	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: WES-FEB-1 **Lab ID: 10623141005** Collected: 08/24/22 02:10 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Zinc	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 17:04	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:33	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	09/07/22 05:47	09/14/22 15:33	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	09/07/22 05:47	09/14/22 15:33	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:33	7439-92-1	
Nickel, Dissolved	ND	ug/L	0.50	1	09/07/22 05:47	09/14/22 15:33	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	09/07/22 05:47	09/14/22 15:33	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 11:52	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	09/07/22 06:01	09/09/22 12:21	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	08/31/22 17:13	09/01/22 16:01	92-52-4	
Surrogates								
2-Fluorophenol (S)	47.8	%	10.0-120	1	08/31/22 17:13	09/01/22 16:01	367-12-4	
Phenol-d5 (S)	31.0	%	10.0-120	1	08/31/22 17:13	09/01/22 16:01	4165-62-2	
Nitrobenzene-d5 (S)	83.0	%	10.0-127	1	08/31/22 17:13	09/01/22 16:01	4165-60-0	
2-Fluorobiphenyl (S)	85.2	%	10.0-130	1	08/31/22 17:13	09/01/22 16:01	321-60-8	
2,4,6-Tribromophenol (S)	101	%	10.0-155	1	08/31/22 17:13	09/01/22 16:01	118-79-6	
p-Terphenyl-d14 (S)	89.6	%	10.0-128	1	08/31/22 17:13	09/01/22 16:01	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	91-57-6	L1
Acenaphthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	83-32-9	L1
Anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	120-12-7	L1
Benzo(a)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	56-55-3	L1
Benzo(a)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	50-32-8	L1
Benzo(b)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	205-99-2	L1
Benzo(k)fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	207-08-9	L1
Chrysene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	218-01-9	L1
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	53-70-3	L1
Dibenzofuran	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	132-64-9	L1
Fluoranthene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	206-44-0	L1
Fluorene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	86-73-7	L1

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: WES-FEB-1 **Lab ID: 10623141005** Collected: 08/24/22 02:10 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	193-39-5	L1
Naphthalene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	91-20-3	L1
Pyrene	ND	ug/L	0.040	1	08/30/22 15:31	09/08/22 20:52	129-00-0	L1
Surrogates								
2-Fluorobiphenyl (S)	113	%.	62-137	1	08/30/22 15:31	09/08/22 20:52	321-60-8	C6
p-Terphenyl-d14 (S)	136	%.	50-131	1	08/30/22 15:31	09/08/22 20:52	1718-51-0	S3
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/02/22 00:47	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/02/22 00:47	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/02/22 00:47	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/02/22 00:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		09/02/22 00:47	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/02/22 00:47	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/02/22 00:47	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/02/22 00:47	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:47	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		09/02/22 00:47	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:47	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		09/02/22 00:47	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/02/22 00:47	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:47	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/02/22 00:47	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/02/22 00:47	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:47	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/02/22 00:47	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/02/22 00:47	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/02/22 00:47	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/02/22 00:47	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/02/22 00:47	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/02/22 00:47	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/02/22 00:47	108-10-1	
Acetone	ND	ug/L	10.0	1		09/02/22 00:47	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		09/02/22 00:47	107-05-1	
Benzene	ND	ug/L	1.0	1		09/02/22 00:47	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/02/22 00:47	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/02/22 00:47	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/02/22 00:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/02/22 00:47	75-25-2	
Bromomethane	ND	ug/L	2.5	1		09/02/22 00:47	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		09/02/22 00:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/02/22 00:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/02/22 00:47	75-00-3	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: WES-FEB-1 **Lab ID: 10623141005** Collected: 08/24/22 02:10 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Chloroform	ND	ug/L	1.0	1		09/02/22 00:47	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/02/22 00:47	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/02/22 00:47	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		09/02/22 00:47	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/02/22 00:47	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		09/02/22 00:47	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		09/02/22 00:47	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/02/22 00:47	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		09/02/22 00:47	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/02/22 00:47	1634-04-4	
Methylene Chloride	ND	ug/L	1.0	1		09/02/22 00:47	75-09-2	
Naphthalene	ND	ug/L	1.0	1		09/02/22 00:47	91-20-3	
Styrene	ND	ug/L	1.0	1		09/02/22 00:47	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/02/22 00:47	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		09/02/22 00:47	109-99-9	
Toluene	ND	ug/L	1.0	1		09/02/22 00:47	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		09/02/22 00:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/02/22 00:47	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		09/02/22 00:47	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/02/22 00:47	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/02/22 00:47	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/02/22 00:47	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		09/02/22 00:47	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	104-51-8	
n-Hexane	ND	ug/L	10.0	1		09/07/22 17:00	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	103-65-1	
o-Xylene	ND	ug/L	1.0	1		09/02/22 00:47	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/02/22 00:47	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		09/02/22 00:47	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/02/22 00:47	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/02/22 00:47	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	104	%.	75-125	1		09/02/22 00:47	2199-69-1	
4-Bromofluorobenzene (S)	92	%.	75-125	1		09/02/22 00:47	460-00-4	
Toluene-d8 (S)	100	%.	75-125	1		09/02/22 00:47	2037-26-5	

Sample: Trip Blank **Lab ID: 10623141006** Collected: 08/24/22 00:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		08/31/22 19:51		

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: Trip Blank **Lab ID: 10623141006** Collected: 08/24/22 00:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
Surrogates								
a,a,a-Trifluorotoluene (S)	100	%.	50-150	1		08/31/22 19:51	98-08-8	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/01/22 20:29	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/01/22 20:29	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/01/22 20:29	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/01/22 20:29	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		09/01/22 20:29	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/01/22 20:29	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/01/22 20:29	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/01/22 20:29	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/01/22 20:29	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		09/01/22 20:29	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/01/22 20:29	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		09/01/22 20:29	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/01/22 20:29	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/01/22 20:29	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/01/22 20:29	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/01/22 20:29	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/01/22 20:29	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/01/22 20:29	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/01/22 20:29	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/01/22 20:29	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		09/01/22 20:29	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/01/22 20:29	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/01/22 20:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		09/01/22 20:29	108-10-1	
Acetone	ND	ug/L	10.0	1		09/01/22 20:29	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		09/01/22 20:29	107-05-1	
Benzene	ND	ug/L	1.0	1		09/01/22 20:29	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/01/22 20:29	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/01/22 20:29	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/01/22 20:29	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/01/22 20:29	75-25-2	
Bromomethane	ND	ug/L	2.5	1		09/01/22 20:29	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		09/01/22 20:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/01/22 20:29	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/01/22 20:29	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/01/22 20:29	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/01/22 20:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		09/01/22 20:29	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		09/01/22 20:29	74-95-3	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Sample: Trip Blank **Lab ID: 10623141006** Collected: 08/24/22 00:00 Received: 08/26/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/01/22 20:29	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		09/01/22 20:29	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		09/01/22 20:29	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/01/22 20:29	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		09/01/22 20:29	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/01/22 20:29	1634-04-4	
Methylene Chloride	**1.1**	ug/L	1.0	1		09/06/22 14:35	75-09-2	B,Z3
Naphthalene	ND	ug/L	1.0	1		09/01/22 20:29	91-20-3	
Styrene	ND	ug/L	1.0	1		09/01/22 20:29	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/01/22 20:29	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		09/01/22 20:29	109-99-9	
Toluene	ND	ug/L	1.0	1		09/01/22 20:29	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		09/01/22 20:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/01/22 20:29	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		09/01/22 20:29	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		09/01/22 20:29	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/01/22 20:29	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/01/22 20:29	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		09/01/22 20:29	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	104-51-8	
n-Hexane	ND	ug/L	10.0	1		09/08/22 21:58	110-54-3	H5
n-Propylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	103-65-1	
o-Xylene	ND	ug/L	1.0	1		09/01/22 20:29	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/01/22 20:29	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		09/01/22 20:29	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/01/22 20:29	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/01/22 20:29	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	103	%.	75-125	1		09/01/22 20:29	2199-69-1	
4-Bromofluorobenzene (S)	94	%.	75-125	1		09/01/22 20:29	460-00-4	
Toluene-d8 (S)	101	%.	75-125	1		09/01/22 20:29	2037-26-5	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 837966 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005, 10623141006

METHOD BLANK: 4436464 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005, 10623141006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	08/31/22 14:36	
a,a,a-Trifluorotoluene (S)	%.	108	50-150	08/31/22 14:36	

METHOD BLANK: 4436465 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005, 10623141006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	08/31/22 17:06	
a,a,a-Trifluorotoluene (S)	%.	105	50-150	08/31/22 17:06	

LABORATORY CONTROL SAMPLE & LCSD: 4436466 4436467

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	981	878	98	88	75-125	11	20	
a,a,a-Trifluorotoluene (S)	%.				109	104	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4436469 4436470

Parameter	Units	10624145001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	203	1000	1000	996	983	79	78	65-126	1	30	
a,a,a-Trifluorotoluene (S)	%.						102	102	50-150			

SAMPLE DUPLICATE: 4436468

Parameter	Units	10623141001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	32.3J		30	
a,a,a-Trifluorotoluene (S)	%.	104	102			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

SAMPLE DUPLICATE: 4436471

Parameter	Units	10624145002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	383	382	0	30	BC,HS
a,a,a-Trifluorotoluene (S)	%.	99	100			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 838679 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: 4440113 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	09/09/22 11:28	

LABORATORY CONTROL SAMPLE: 4440114

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4440115 4440116

Parameter	Units	10623141002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.3	5.2	106	103	80-120	3	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 838678
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470A Mercury Water Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: 4440109 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	09/09/22 11:58	

LABORATORY CONTROL SAMPLE: 4440110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.3	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4440111 4440112

Parameter	Units	10623141002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.2	5.3	105	106	80-120	2	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 838677
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: 4440105 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	0.50	09/14/22 15:43	
Cadmium	ug/L	ND	0.080	09/14/22 15:43	
Chromium	ug/L	ND	2.0	09/14/22 15:43	
Lead	ug/L	ND	0.50	09/14/22 15:43	
Nickel	ug/L	ND	0.50	09/14/22 15:43	
Zinc	ug/L	ND	5.0	09/14/22 15:43	

LABORATORY CONTROL SAMPLE: 4440106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	99.2	99	80-120	
Cadmium	ug/L	100	101	101	80-120	
Chromium	ug/L	100	110	110	80-120	
Lead	ug/L	100	107	107	80-120	
Nickel	ug/L	100	106	106	80-120	
Zinc	ug/L	100	111	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4440107 4440108

Parameter	Units	10623141001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	8.1	100	100	99.8	104	92	95	75-125	4	20	
Cadmium	ug/L	ND	100	100	92.2	95.0	92	95	75-125	3	20	
Chromium	ug/L	ND	100	100	101	104	100	103	75-125	3	20	
Lead	ug/L	ND	100	100	97.3	100	97	100	75-125	3	20	
Nickel	ug/L	0.74	100	100	96.8	99.5	96	99	75-125	3	20	
Zinc	ug/L	ND	100	100	96.6	99.1	96	98	75-125	3	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 838676
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water Dissolved UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: 4440101 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	09/14/22 14:32	
Cadmium, Dissolved	ug/L	ND	0.080	09/14/22 14:32	
Chromium, Dissolved	ug/L	ND	2.0	09/14/22 14:32	
Lead, Dissolved	ug/L	ND	0.50	09/14/22 14:32	
Nickel, Dissolved	ug/L	ND	0.50	09/14/22 14:32	
Zinc, Dissolved	ug/L	ND	5.0	09/14/22 14:32	

LABORATORY CONTROL SAMPLE: 4440102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	96.4	96	80-120	
Cadmium, Dissolved	ug/L	100	96.2	96	80-120	
Chromium, Dissolved	ug/L	100	106	106	80-120	
Lead, Dissolved	ug/L	100	104	104	80-120	
Nickel, Dissolved	ug/L	100	102	102	80-120	
Zinc, Dissolved	ug/L	100	102	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4440103 4440104

Parameter	Units	10623141001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	8.2	100	100	105	101	97	93	75-125	4	20	
Cadmium, Dissolved	ug/L	ND	100	100	96.9	94.4	97	94	75-125	3	20	
Chromium, Dissolved	ug/L	ND	100	100	106	103	105	102	75-125	3	20	
Lead, Dissolved	ug/L	ND	100	100	103	98.3	103	98	75-125	5	20	
Nickel, Dissolved	ug/L	0.55	100	100	101	98.0	101	97	75-125	3	20	
Zinc, Dissolved	ug/L	ND	100	100	100	98.5	100	98	75-125	2	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 1919481
QC Batch Method: 3510C
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: R3832963-2 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	10.0	09/01/22 09:49	
2-Fluorophenol (S)	%	46.3	10.0-120	09/01/22 09:49	
Phenol-d5 (S)	%	28.4	10.0-120	09/01/22 09:49	
Nitrobenzene-d5 (S)	%	76.8	10.0-127	09/01/22 09:49	
2-Fluorobiphenyl (S)	%	84.2	10.0-130	09/01/22 09:49	
2,4,6-Tribromophenol (S)	%	91	10.0-155	09/01/22 09:49	
p-Terphenyl-d14 (S)	%	83.6	10.0-128	09/01/22 09:49	

LABORATORY CONTROL SAMPLE: R3832963-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	ug/L	50.0	42.7	85.4	38.0-120	
2-Fluorophenol (S)	%			46.4	10.0-120	
Phenol-d5 (S)	%			30.2	10.0-120	
Nitrobenzene-d5 (S)	%			70.2	10.0-127	
2-Fluorobiphenyl (S)	%			86.8	10.0-130	
2,4,6-Tribromophenol (S)	%			103	10.0-155	
p-Terphenyl-d14 (S)	%			82.3	10.0-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3832963-3 R3832963-4

Parameter	Units	L1530701-41 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	ug/L	ND	50.0	50.0	41.4	41.6	82.8	83.2	29.0-120	0.482	33	
2-Fluorophenol (S)	%						47.1	45.0	10.0-120			
Phenol-d5 (S)	%						32.6	31.4	10.0-120			
Nitrobenzene-d5 (S)	%						69.8	70.5	10.0-127			
2-Fluorobiphenyl (S)	%						83.8	84.2	10.0-130			
2,4,6-Tribromophenol (S)	%						107	107	10.0-155			
p-Terphenyl-d14 (S)	%						94.2	89.1	10.0-128			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 837400 | Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D | Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003

METHOD BLANK: 4434185 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	08/29/22 11:58	
1,1,1-Trichloroethane	ug/L	ND	1.0	08/29/22 11:58	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/29/22 11:58	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/29/22 11:58	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	08/29/22 11:58	
1,1-Dichloroethane	ug/L	ND	1.0	08/29/22 11:58	
1,1-Dichloroethene	ug/L	ND	1.0	08/29/22 11:58	
1,1-Dichloropropene	ug/L	ND	1.0	08/29/22 11:58	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	08/29/22 11:58	
1,2,3-Trichloropropane	ug/L	ND	2.5	08/29/22 11:58	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	08/29/22 11:58	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	08/29/22 11:58	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	08/29/22 11:58	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	08/29/22 11:58	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/29/22 11:58	
1,2-Dichloroethane	ug/L	ND	1.0	08/29/22 11:58	
1,2-Dichloropropane	ug/L	ND	1.0	08/29/22 11:58	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	08/29/22 11:58	
1,3-Dichlorobenzene	ug/L	ND	1.0	08/29/22 11:58	
1,3-Dichloropropane	ug/L	ND	1.0	08/29/22 11:58	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/29/22 11:58	
2,2-Dichloropropane	ug/L	ND	1.0	08/29/22 11:58	
2-Butanone (MEK)	ug/L	ND	10.0	08/29/22 11:58	
2-Chlorotoluene	ug/L	ND	1.0	08/29/22 11:58	
4-Chlorotoluene	ug/L	ND	1.0	08/29/22 11:58	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	08/29/22 11:58	
Acetone	ug/L	ND	10.0	08/29/22 11:58	
Allyl chloride	ug/L	ND	2.5	08/29/22 11:58	
Benzene	ug/L	ND	1.0	08/29/22 11:58	
Bromobenzene	ug/L	ND	1.0	08/29/22 11:58	
Bromochloromethane	ug/L	ND	1.0	08/29/22 11:58	
Bromodichloromethane	ug/L	ND	1.0	08/29/22 11:58	
Bromoform	ug/L	ND	1.0	08/29/22 11:58	
Bromomethane	ug/L	ND	2.5	08/29/22 11:58	
Carbon tetrachloride	ug/L	ND	1.0	08/29/22 11:58	
Chlorobenzene	ug/L	ND	1.0	08/29/22 11:58	
Chloroethane	ug/L	ND	1.0	08/29/22 11:58	
Chloroform	ug/L	ND	1.0	08/29/22 11:58	
Chloromethane	ug/L	ND	1.0	08/29/22 11:58	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/29/22 11:58	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

METHOD BLANK: 4434185 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/29/22 11:58	
Dibromochloromethane	ug/L	ND	1.0	08/29/22 11:58	
Dibromomethane	ug/L	ND	1.0	08/29/22 11:58	
Dichlorodifluoromethane	ug/L	ND	1.0	08/29/22 11:58	
Dichlorofluoromethane	ug/L	ND	1.0	08/29/22 11:58	
Diethyl ether (Ethyl ether)	ug/L	ND	2.5	08/29/22 11:58	
Ethylbenzene	ug/L	ND	1.0	08/29/22 11:58	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	08/29/22 11:58	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	08/29/22 11:58	
m&p-Xylene	ug/L	ND	2.0	08/29/22 11:58	
Methyl-tert-butyl ether	ug/L	ND	1.0	08/29/22 11:58	
Methylene Chloride	ug/L	ND	2.0	08/29/22 11:58	MN
n-Butylbenzene	ug/L	ND	1.0	08/29/22 11:58	
n-Hexane	ug/L	ND	10.0	08/29/22 11:58	
n-Propylbenzene	ug/L	ND	1.0	08/29/22 11:58	
Naphthalene	ug/L	ND	1.0	08/29/22 11:58	
o-Xylene	ug/L	ND	1.0	08/29/22 11:58	
p-Isopropyltoluene	ug/L	ND	1.0	08/29/22 11:58	
sec-Butylbenzene	ug/L	ND	1.0	08/29/22 11:58	
Styrene	ug/L	ND	1.0	08/29/22 11:58	
tert-Butylbenzene	ug/L	ND	1.0	08/29/22 11:58	
Tetrachloroethene	ug/L	ND	1.0	08/29/22 11:58	
Tetrahydrofuran	ug/L	ND	10.0	08/29/22 11:58	
Toluene	ug/L	ND	1.0	08/29/22 11:58	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/29/22 11:58	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/29/22 11:58	
Trichloroethene	ug/L	ND	1.0	08/29/22 11:58	
Trichlorofluoromethane	ug/L	ND	1.0	08/29/22 11:58	
Vinyl chloride	ug/L	ND	1.0	08/29/22 11:58	
Xylene (Total)	ug/L	ND	3.0	08/29/22 11:58	
1,2-Dichlorobenzene-d4 (S)	%.	101	75-125	08/29/22 11:58	
4-Bromofluorobenzene (S)	%.	98	75-125	08/29/22 11:58	
Toluene-d8 (S)	%.	109	75-125	08/29/22 11:58	

LABORATORY CONTROL SAMPLE & LCSD: 4434186 4434187

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.0	19.6	95	98	75-125	3	20	
1,1,1-Trichloroethane	ug/L	20	18.4	17.8	92	89	72-125	3	20	
1,1,2,2-Tetrachloroethane	ug/L	20	18.3	18.5	91	92	70-125	1	20	
1,1,2-Trichloroethane	ug/L	20	19.1	18.6	96	93	75-125	3	20	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.3	18.8	102	94	63-125	8	20	
1,1-Dichloroethane	ug/L	20	18.5	17.6	92	88	67-125	5	20	
1,1-Dichloroethene	ug/L	20	19.5	17.6	98	88	67-125	10	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

LABORATORY CONTROL SAMPLE & LCSD: 4434186 4434187

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1-Dichloropropene	ug/L	20	18.6	17.7	93	88	70-125	5	20	
1,2,3-Trichlorobenzene	ug/L	20	20.3	21.0	101	105	68-125	3	20	
1,2,3-Trichloropropane	ug/L	20	18.6	19.0	93	95	74-125	2	20	
1,2,4-Trichlorobenzene	ug/L	20	20.7	21.6	103	108	68-125	5	20	
1,2,4-Trimethylbenzene	ug/L	20	20.3	20.2	101	101	75-125	0	20	
1,2-Dibromo-3-chloropropane	ug/L	20	20.3	20.2	101	101	54-131	0	20	
1,2-Dibromoethane (EDB)	ug/L	20	18.7	18.9	93	94	75-125	1	20	
1,2-Dichlorobenzene	ug/L	20	17.7	18.2	88	91	75-125	3	20	
1,2-Dichloroethane	ug/L	20	16.9	16.9	84	85	75-125	0	20	
1,2-Dichloropropane	ug/L	20	18.1	17.5	91	87	70-128	3	20	
1,3,5-Trimethylbenzene	ug/L	20	20.0	20.0	100	100	75-125	0	20	
1,3-Dichlorobenzene	ug/L	20	18.9	18.5	95	92	75-125	2	20	
1,3-Dichloropropane	ug/L	20	18.8	18.2	94	91	75-125	3	20	
1,4-Dichlorobenzene	ug/L	20	18.8	18.6	94	93	75-125	1	20	
2,2-Dichloropropane	ug/L	20	21.6	20.6	108	103	49-125	5	20	
2-Butanone (MEK)	ug/L	100	103	103	103	103	56-138	0	20	
2-Chlorotoluene	ug/L	20	19.6	18.9	98	94	70-125	4	20	
4-Chlorotoluene	ug/L	20	19.6	19.2	98	96	70-125	2	20	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	101	101	64-133	0	20	
Acetone	ug/L	100	102	94.1	102	94	42-131	8	20	
Allyl chloride	ug/L	20	19.6	18.4	98	92	51-133	6	20	
Benzene	ug/L	20	18.3	17.7	92	88	73-125	4	20	
Bromobenzene	ug/L	20	19.5	18.5	97	92	75-125	5	20	
Bromochloromethane	ug/L	20	19.6	18.6	98	93	75-125	5	20	
Bromodichloromethane	ug/L	20	17.7	17.7	89	88	74-125	0	20	
Bromoform	ug/L	20	20.5	20.3	103	102	61-125	1	20	
Bromomethane	ug/L	20	12.2	12.1	61	61	30-125	0	20	
Carbon tetrachloride	ug/L	20	19.0	17.9	95	90	58-125	6	20	
Chlorobenzene	ug/L	20	18.5	18.1	92	90	75-125	2	20	
Chloroethane	ug/L	20	16.9	15.1	84	75	58-125	11	20	
Chloroform	ug/L	20	18.4	17.7	92	89	74-125	4	20	
Chloromethane	ug/L	20	15.8	14.3	79	72	38-142	10	20	
cis-1,2-Dichloroethene	ug/L	20	18.4	17.3	92	86	75-125	6	20	
cis-1,3-Dichloropropene	ug/L	20	19.2	19.4	96	97	72-125	1	20	
Dibromochloromethane	ug/L	20	19.6	19.0	98	95	73-125	3	20	
Dibromomethane	ug/L	20	18.8	18.4	94	92	68-125	2	20	
Dichlorodifluoromethane	ug/L	20	17.2	15.4	86	77	46-149	11	20	
Dichlorofluoromethane	ug/L	20	18.6	16.9	93	84	71-126	10	20	
Diethyl ether (Ethyl ether)	ug/L	20	19.1	18.3	96	91	68-127	5	20	
Ethylbenzene	ug/L	20	19.5	18.6	98	93	75-125	5	20	
Hexachloro-1,3-butadiene	ug/L	20	22.6	21.3	113	107	52-131	6	20	
Isopropylbenzene (Cumene)	ug/L	20	20.8	19.6	104	98	74-125	6	20	
m&p-Xylene	ug/L	40	38.9	36.9	97	92	72-125	5	20	
Methyl-tert-butyl ether	ug/L	20	20.7	20.0	103	100	75-125	3	20	
Methylene Chloride	ug/L	20	19.6	18.9	98	94	70-125	4	20	
n-Butylbenzene	ug/L	20	19.9	20.1	99	100	68-125	1	20	
n-Hexane	ug/L	20	18.3	17.9	91	90	50-143	2	20	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

LABORATORY CONTROL SAMPLE & LCSD: 4434186 4434187

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
n-Propylbenzene	ug/L	20	20.3	19.7	102	98	70-125	3	20	
Naphthalene	ug/L	20	19.9	22.4	99	112	66-127	12	20	
o-Xylene	ug/L	20	19.6	18.8	98	94	73-125	4	20	
p-Isopropyltoluene	ug/L	20	21.2	20.8	106	104	72-125	2	20	
sec-Butylbenzene	ug/L	20	20.8	20.1	104	100	72-125	4	20	
Styrene	ug/L	20	19.9	18.9	99	94	75-125	5	20	
tert-Butylbenzene	ug/L	20	20.4	19.7	102	98	74-125	4	20	
Tetrachloroethene	ug/L	20	19.8	19.0	99	95	72-125	4	20	
Tetrahydrofuran	ug/L	100	110	109	110	109	75-125	1	20	
Toluene	ug/L	20	16.6	16.8	83	84	74-125	1	20	
trans-1,2-Dichloroethene	ug/L	20	18.7	17.5	94	88	73-125	7	20	
trans-1,3-Dichloropropene	ug/L	20	20.8	20.1	104	100	72-125	3	20	
Trichloroethene	ug/L	20	17.6	17.3	88	87	75-125	2	20	
Trichlorofluoromethane	ug/L	20	17.9	16.1	90	81	62-136	11	20	
Vinyl chloride	ug/L	20	16.8	14.8	84	74	55-139	13	20	
Xylene (Total)	ug/L	60	58.6	55.6	98	93	72-125	5	20	
1,2-Dichlorobenzene-d4 (S)	%.				100	100	75-125			
4-Bromofluorobenzene (S)	%.				102	99	75-125			
Toluene-d8 (S)	%.				92	96	75-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 838352 | Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D | Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141004, 10623141005, 10623141006

METHOD BLANK: 4438048 Matrix: Water
Associated Lab Samples: 10623141004, 10623141005, 10623141006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	09/01/22 20:14	
1,1,1-Trichloroethane	ug/L	ND	1.0	09/01/22 20:14	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/01/22 20:14	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/01/22 20:14	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	09/01/22 20:14	
1,1-Dichloroethane	ug/L	ND	1.0	09/01/22 20:14	
1,1-Dichloroethene	ug/L	ND	1.0	09/01/22 20:14	
1,1-Dichloropropene	ug/L	ND	1.0	09/01/22 20:14	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	09/01/22 20:14	
1,2,3-Trichloropropane	ug/L	ND	2.5	09/01/22 20:14	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/01/22 20:14	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	09/01/22 20:14	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	09/01/22 20:14	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	09/01/22 20:14	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/01/22 20:14	
1,2-Dichloroethane	ug/L	ND	1.0	09/01/22 20:14	
1,2-Dichloropropane	ug/L	ND	1.0	09/01/22 20:14	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	09/01/22 20:14	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/01/22 20:14	
1,3-Dichloropropane	ug/L	ND	1.0	09/01/22 20:14	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/01/22 20:14	
2,2-Dichloropropane	ug/L	ND	1.0	09/01/22 20:14	
2-Butanone (MEK)	ug/L	ND	10.0	09/01/22 20:14	
2-Chlorotoluene	ug/L	ND	1.0	09/01/22 20:14	
4-Chlorotoluene	ug/L	ND	1.0	09/01/22 20:14	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	09/01/22 20:14	
Acetone	ug/L	ND	10.0	09/01/22 20:14	
Allyl chloride	ug/L	ND	2.5	09/01/22 20:14	
Benzene	ug/L	ND	1.0	09/01/22 20:14	
Bromobenzene	ug/L	ND	1.0	09/01/22 20:14	
Bromochloromethane	ug/L	ND	1.0	09/01/22 20:14	
Bromodichloromethane	ug/L	ND	1.0	09/01/22 20:14	
Bromoform	ug/L	ND	1.0	09/01/22 20:14	
Bromomethane	ug/L	ND	2.5	09/01/22 20:14	
Carbon tetrachloride	ug/L	ND	1.0	09/01/22 20:14	
Chlorobenzene	ug/L	ND	1.0	09/01/22 20:14	
Chloroethane	ug/L	ND	1.0	09/01/22 20:14	
Chloroform	ug/L	ND	1.0	09/01/22 20:14	
Chloromethane	ug/L	ND	1.0	09/01/22 20:14	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/01/22 20:14	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

METHOD BLANK: 4438048 Matrix: Water
Associated Lab Samples: 10623141004, 10623141005, 10623141006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/01/22 20:14	
Dibromochloromethane	ug/L	ND	1.0	09/01/22 20:14	
Dibromomethane	ug/L	ND	1.0	09/01/22 20:14	
Dichlorodifluoromethane	ug/L	ND	1.0	09/01/22 20:14	
Dichlorofluoromethane	ug/L	ND	1.0	09/01/22 20:14	
Diethyl ether (Ethyl ether)	ug/L	ND	2.5	09/01/22 20:14	
Ethylbenzene	ug/L	ND	1.0	09/01/22 20:14	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	09/01/22 20:14	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	09/01/22 20:14	
m&p-Xylene	ug/L	ND	2.0	09/01/22 20:14	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/01/22 20:14	
Methylene Chloride	ug/L	1.3	1.0	09/01/22 20:14	Z3
n-Butylbenzene	ug/L	ND	1.0	09/01/22 20:14	
n-Propylbenzene	ug/L	ND	1.0	09/01/22 20:14	
Naphthalene	ug/L	ND	1.0	09/01/22 20:14	
o-Xylene	ug/L	ND	1.0	09/01/22 20:14	
p-Isopropyltoluene	ug/L	ND	1.0	09/01/22 20:14	
sec-Butylbenzene	ug/L	ND	1.0	09/01/22 20:14	
Styrene	ug/L	ND	1.0	09/01/22 20:14	
tert-Butylbenzene	ug/L	ND	1.0	09/01/22 20:14	
Tetrachloroethene	ug/L	ND	1.0	09/01/22 20:14	
Tetrahydrofuran	ug/L	ND	10.0	09/01/22 20:14	
Toluene	ug/L	ND	1.0	09/01/22 20:14	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/01/22 20:14	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/01/22 20:14	
Trichloroethene	ug/L	ND	1.0	09/01/22 20:14	
Trichlorofluoromethane	ug/L	ND	1.0	09/01/22 20:14	
Vinyl chloride	ug/L	ND	1.0	09/01/22 20:14	
Xylene (Total)	ug/L	ND	3.0	09/01/22 20:14	
1,2-Dichlorobenzene-d4 (S)	%.	100	75-125	09/01/22 20:14	
4-Bromofluorobenzene (S)	%.	94	75-125	09/01/22 20:14	
Toluene-d8 (S)	%.	101	75-125	09/01/22 20:14	

LABORATORY CONTROL SAMPLE & LCSD: 4438049 4438050

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.9	19.9	104	99	75-125	5	20	
1,1,1-Trichloroethane	ug/L	20	19.3	17.7	96	88	72-125	9	20	
1,1,2,2-Tetrachloroethane	ug/L	20	18.8	17.4	94	87	70-125	8	20	
1,1,2-Trichloroethane	ug/L	20	19.0	17.7	95	88	75-125	7	20	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.6	19.2	103	96	63-125	7	20	
1,1-Dichloroethane	ug/L	20	20.2	18.2	101	91	67-125	10	20	
1,1-Dichloroethene	ug/L	20	19.7	19.3	99	96	67-125	2	20	
1,1-Dichloropropene	ug/L	20	18.3	17.0	92	85	70-125	8	20	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

LABORATORY CONTROL SAMPLE & LCSD: 4438049 4438050

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,3-Trichlorobenzene	ug/L	20	20.2	21.4	101	107	68-125	6	20	
1,2,3-Trichloropropane	ug/L	20	20.2	17.8	101	89	74-125	12	20	
1,2,4-Trichlorobenzene	ug/L	20	21.5	20.8	107	104	68-125	3	20	
1,2,4-Trimethylbenzene	ug/L	20	20.1	18.2	100	91	75-125	10	20	
1,2-Dibromo-3-chloropropane	ug/L	20	20.0	19.7	100	99	54-131	1	20	
1,2-Dibromoethane (EDB)	ug/L	20	20.5	19.0	102	95	75-125	7	20	
1,2-Dichlorobenzene	ug/L	20	19.3	17.8	97	89	75-125	8	20	
1,2-Dichloroethane	ug/L	20	20.6	19.1	103	95	75-125	8	20	
1,2-Dichloropropane	ug/L	20	20.1	18.9	101	94	70-128	6	20	
1,3,5-Trimethylbenzene	ug/L	20	18.9	17.7	95	88	75-125	7	20	
1,3-Dichlorobenzene	ug/L	20	19.9	18.2	99	91	75-125	9	20	
1,3-Dichloropropane	ug/L	20	19.7	18.2	98	91	75-125	8	20	
1,4-Dichlorobenzene	ug/L	20	19.2	17.7	96	89	75-125	8	20	
2,2-Dichloropropane	ug/L	20	18.1	16.8	90	84	49-125	7	20	
2-Butanone (MEK)	ug/L	100	99.2	91.6	99	92	56-138	8	20	
2-Chlorotoluene	ug/L	20	19.1	17.7	95	89	70-125	7	20	
4-Chlorotoluene	ug/L	20	18.7	17.2	93	86	70-125	8	20	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.9	89.6	94	90	64-133	5	20	
Acetone	ug/L	100	95.2	90.9	95	91	42-131	5	20	
Allyl chloride	ug/L	20	21.4	20.0	107	100	51-133	7	20	
Benzene	ug/L	20	19.2	17.3	96	87	73-125	10	20	
Bromobenzene	ug/L	20	21.6	18.9	108	95	75-125	13	20	
Bromochloromethane	ug/L	20	20.9	19.0	104	95	75-125	10	20	
Bromodichloromethane	ug/L	20	20.2	19.0	101	95	74-125	6	20	
Bromoform	ug/L	20	25.0	23.1	125	115	61-125	8	20	
Bromomethane	ug/L	20	24.5	22.2	123	111	30-125	10	20	
Carbon tetrachloride	ug/L	20	21.3	20.4	107	102	58-125	4	20	
Chlorobenzene	ug/L	20	19.4	18.2	97	91	75-125	6	20	
Chloroethane	ug/L	20	18.6	18.1	93	90	58-125	3	20	
Chloroform	ug/L	20	20.0	18.4	100	92	74-125	9	20	
Chloromethane	ug/L	20	21.4	19.3	107	97	38-142	10	20	
cis-1,2-Dichloroethene	ug/L	20	19.7	18.4	98	92	75-125	7	20	
cis-1,3-Dichloropropene	ug/L	20	20.1	18.5	100	93	72-125	8	20	
Dibromochloromethane	ug/L	20	22.9	21.1	114	106	73-125	8	20	
Dibromomethane	ug/L	20	23.0	21.3	115	107	68-125	8	20	
Dichlorodifluoromethane	ug/L	20	20.4	18.6	102	93	46-149	9	20	
Dichlorofluoromethane	ug/L	20	18.3	17.1	92	85	71-126	7	20	
Diethyl ether (Ethyl ether)	ug/L	20	20.4	18.8	102	94	68-127	8	20	
Ethylbenzene	ug/L	20	19.7	18.5	98	92	75-125	6	20	
Hexachloro-1,3-butadiene	ug/L	20	21.9	21.0	110	105	52-131	4	20	
Isopropylbenzene (Cumene)	ug/L	20	19.5	18.5	97	92	74-125	5	20	
m&p-Xylene	ug/L	40	38.1	35.7	95	89	72-125	6	20	
Methyl-tert-butyl ether	ug/L	20	20.4	19.1	102	96	75-125	6	20	
Methylene Chloride	ug/L	20	19.0	17.8	95	89	70-125	6	20	
n-Butylbenzene	ug/L	20	19.4	17.7	97	88	68-125	9	20	
n-Propylbenzene	ug/L	20	18.6	17.4	93	87	70-125	7	20	
Naphthalene	ug/L	20	21.3	21.2	106	106	66-127	1	20	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

LABORATORY CONTROL SAMPLE & LCSD: 4438049 4438050

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
o-Xylene	ug/L	20	18.6	17.7	93	89	73-125	5	20	
p-Isopropyltoluene	ug/L	20	19.6	18.3	98	92	72-125	7	20	
sec-Butylbenzene	ug/L	20	19.0	17.6	95	88	72-125	8	20	
Styrene	ug/L	20	19.7	18.2	98	91	75-125	8	20	
tert-Butylbenzene	ug/L	20	19.6	18.0	98	90	74-125	8	20	
Tetrachloroethene	ug/L	20	19.5	18.0	97	90	72-125	8	20	
Tetrahydrofuran	ug/L	100	101	93.4	101	93	75-125	8	20	
Toluene	ug/L	20	19.9	18.1	99	90	74-125	10	20	
trans-1,2-Dichloroethene	ug/L	20	19.5	18.2	97	91	73-125	7	20	
trans-1,3-Dichloropropene	ug/L	20	19.3	17.9	96	89	72-125	7	20	
Trichloroethene	ug/L	20	20.2	17.3	101	86	75-125	16	20	
Trichlorofluoromethane	ug/L	20	19.3	17.9	97	89	62-136	8	20	
Vinyl chloride	ug/L	20	21.1	19.9	106	99	55-139	6	20	
Xylene (Total)	ug/L	60	56.7	53.5	95	89	72-125	6	20	
1,2-Dichlorobenzene-d4 (S)	%.				102	103	75-125			
4-Bromofluorobenzene (S)	%.				96	98	75-125			
Toluene-d8 (S)	%.				101	100	75-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 838857
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10623141006

METHOD BLANK: 4440533 Matrix: Water
Associated Lab Samples: 10623141006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methylene Chloride	ug/L	ND	1.0	09/06/22 14:19	
1,2-Dichlorobenzene-d4 (S)	%.	101	75-125	09/06/22 14:19	
4-Bromofluorobenzene (S)	%.	93	75-125	09/06/22 14:19	
Toluene-d8 (S)	%.	102	75-125	09/06/22 14:19	

LABORATORY CONTROL SAMPLE & LCSD: 4440535 4440534

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methylene Chloride	ug/L	20	18.2	18.1	91	91	70-125	0	20	
1,2-Dichlorobenzene-d4 (S)	%.				101	102	75-125			
4-Bromofluorobenzene (S)	%.				96	96	75-125			
Toluene-d8 (S)	%.				102	102	75-125			

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REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 839143
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141004, 10623141005

METHOD BLANK: 4441416 Matrix: Water
Associated Lab Samples: 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
n-Hexane	ug/L	ND	10.0	09/07/22 12:34	
1,2-Dichlorobenzene-d4 (S)	%.	100	75-125	09/07/22 12:34	
4-Bromofluorobenzene (S)	%.	103	75-125	09/07/22 12:34	
Toluene-d8 (S)	%.	103	75-125	09/07/22 12:34	

LABORATORY CONTROL SAMPLE: 4441417

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Hexane	ug/L	20	26.2	131	50-143	
1,2-Dichlorobenzene-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4441418 4441419

Parameter	Units	10624046007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
n-Hexane	ug/L	ND	20	20	22.9	21.5	115	108	70-130	6	30	
1,2-Dichlorobenzene-d4 (S)	%.						102	101	75-125			
4-Bromofluorobenzene (S)	%.						101	101	75-125			
Toluene-d8 (S)	%.						98	98	75-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 839508
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141006

METHOD BLANK: 4443191 Matrix: Water
Associated Lab Samples: 10623141006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
n-Hexane	ug/L	ND	10.0	09/08/22 21:42	
1,2-Dichlorobenzene-d4 (S)	%.	102	75-125	09/08/22 21:42	
4-Bromofluorobenzene (S)	%.	102	75-125	09/08/22 21:42	
Toluene-d8 (S)	%.	101	75-125	09/08/22 21:42	

LABORATORY CONTROL SAMPLE & LCSD: 4443192 4443193

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
n-Hexane	ug/L	20	16.5	16.4	82	82	50-143	0	20	
1,2-Dichlorobenzene-d4 (S)	%.				100	98	75-125			
4-Bromofluorobenzene (S)	%.				101	101	75-125			
Toluene-d8 (S)	%.				96	96	75-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 837673
QC Batch Method: EPA 3511
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Water PAH by SIM MSSV LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: 4435259 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	09/08/22 13:47	
2-Methylnaphthalene	ug/L	ND	0.040	09/08/22 13:47	
Acenaphthene	ug/L	ND	0.040	09/08/22 13:47	
Anthracene	ug/L	ND	0.040	09/08/22 13:47	
Benzo(a)anthracene	ug/L	ND	0.040	09/08/22 13:47	
Benzo(a)pyrene	ug/L	ND	0.040	09/08/22 13:47	
Benzo(b)fluoranthene	ug/L	ND	0.040	09/08/22 13:47	
Benzo(k)fluoranthene	ug/L	ND	0.040	09/08/22 13:47	
Chrysene	ug/L	ND	0.040	09/08/22 13:47	
Dibenz(a,h)anthracene	ug/L	ND	0.040	09/08/22 13:47	
Dibenzofuran	ug/L	ND	0.040	09/08/22 13:47	
Fluoranthene	ug/L	ND	0.040	09/08/22 13:47	
Fluorene	ug/L	ND	0.040	09/08/22 13:47	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	09/08/22 13:47	
Naphthalene	ug/L	ND	0.040	09/08/22 13:47	
Pyrene	ug/L	ND	0.040	09/08/22 13:47	
2-Fluorobiphenyl (S)	%.	99	62-137	09/08/22 13:47	
p-Terphenyl-d14 (S)	%.	126	50-131	09/08/22 13:47	

LABORATORY CONTROL SAMPLE & LCSD: 4435260 4435261

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	2	2.5	2.5	125	123	54-125	2	20	
2-Methylnaphthalene	ug/L	2	2.5	2.5	126	125	55-125	1	20	L1
Acenaphthene	ug/L	2	2.5	2.5	126	125	71-125	0	20	L1
Anthracene	ug/L	2	2.6	2.6	129	129	61-125	0	20	L1
Benzo(a)anthracene	ug/L	2	2.6	2.6	132	131	59-125	0	20	L1
Benzo(a)pyrene	ug/L	2	2.6	2.6	132	129	63-125	2	20	L1
Benzo(b)fluoranthene	ug/L	2	2.7	2.6	135	131	65-125	3	20	L1
Benzo(k)fluoranthene	ug/L	2	2.7	2.7	134	136	61-134	1	20	L1
Chrysene	ug/L	2	2.7	2.7	136	135	66-125	1	20	L1
Dibenz(a,h)anthracene	ug/L	2	2.8	2.8	142	139	61-132	2	20	L1
Dibenzofuran	ug/L	2	2.7	2.7	134	137	70-130	2	20	L1
Fluoranthene	ug/L	2	2.6	2.7	132	133	71-125	0	20	L1
Fluorene	ug/L	2	2.7	2.7	134	136	70-125	2	20	L1
Indeno(1,2,3-cd)pyrene	ug/L	2	2.7	2.6	136	132	66-125	3	20	L1
Naphthalene	ug/L	2	2.6	2.6	131	130	68-125	1	20	L1
Pyrene	ug/L	2	2.7	2.7	135	134	62-125	1	20	L1
2-Fluorobiphenyl (S)	%.				111	104	62-137			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

LABORATORY CONTROL SAMPLE & LCSD: 4435260 4435261

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
p-Terphenyl-d14 (S)	%.				135	127	50-131			S0

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

QC Batch: 837352
QC Batch Method: EPA 3510C
Analysis Method: NWTPH-Dx
Analysis Description: NWTPH-Dx GCS LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

METHOD BLANK: 4434049 Matrix: Water
Associated Lab Samples: 10623141001, 10623141002, 10623141003, 10623141004, 10623141005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	08/31/22 14:56	
Motor Oil Range	mg/L	ND	0.40	08/31/22 14:56	
n-Triacontane (S)	%.	68	50-150	08/31/22 14:56	
o-Terphenyl (S)	%.	68	50-150	08/31/22 14:56	

LABORATORY CONTROL SAMPLE & LCSD: 4434050 4434051

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.2	1.5	58	73	50-150	22	20	R1
Motor Oil Range	mg/L	2	1.4	1.7	69	83	50-150	18	20	
n-Triacontane (S)	%.				53	76	50-150			
o-Terphenyl (S)	%.				64	74	50-150			

SAMPLE DUPLICATE: 4434052

Parameter	Units	10623141001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	ND		30	
Motor Oil Range	mg/L	ND	ND		30	
n-Triacontane (S)	%.	56	59			
o-Terphenyl (S)	%.	64	58			

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QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 837400

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
[1]	The continuing calibration verification was below the method acceptance limit for chloromethane and bromomethane. The analytes were not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

Batch: 838352

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
[1]	The continuing calibration verification was above the method acceptance limit for bromoform. Any detection for the analyte in the associated samples may have a high bias.

Batch: 838857

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
[1]	The continuing calibration verification was below the method acceptance limit for 1,1-dichloropropene. Any detection for the analyte in the associated samples may have a low bias.
[2]	The continuing calibration verification was above the method acceptance limit for bromoform. Any detection for the analyte in the associated samples may have a high bias.

Batch: 839143

[1]	The continuing calibration verification was above the method acceptance limit for n-hexane. Any detection for the analyte in the associated samples may have a high bias.

Batch: 839390

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

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QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

BATCH QUALIFIERS

Batch: 839508

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
[1]	The continuing calibration verification was below the method acceptance limit for dichlorodifluoromethane, chloromethane, vinyl chloride, and 1,1-dichloroethene. The analytes were not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

ANALYTE QUALIFIERS

1M	Surrogate recovery outside laboratory control limits (confirmed by similar results from sample re-analysis).
B	Analyte was detected in the associated method blank.
BC	The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.
C6	Result confirmed by reanalysis conducted outside of the method specified holding time.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
Z3	Methylene chloride is a common laboratory contaminant. Results for this analyte should be considered estimated unless the amount found in the sample is 3 to 5 times higher than that found in the method blank.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10623141001	**MW-OWS-1**	EPA 3510C	837352	NWTPH-Dx	838099
10623141002	**MW-OWS-2**	EPA 3510C	837352	NWTPH-Dx	838099
10623141003	**MW-OWS-3**	EPA 3510C	837352	NWTPH-Dx	838099
10623141004	**WES-DUP-1**	EPA 3510C	837352	NWTPH-Dx	838099
10623141005	**WES-FEB-1**	EPA 3510C	837352	NWTPH-Dx	838099
10623141001	**MW-OWS-1**	NWTPH-Gx	837966		
10623141002	**MW-OWS-2**	NWTPH-Gx	837966		
10623141003	**MW-OWS-3**	NWTPH-Gx	837966		
10623141004	**WES-DUP-1**	NWTPH-Gx	837966		
10623141005	**WES-FEB-1**	NWTPH-Gx	837966		
10623141006	**Trip Blank**	NWTPH-Gx	837966		
10623141001	**MW-OWS-1**	EPA 3020A	838677	EPA 6020B	839187
10623141002	**MW-OWS-2**	EPA 3020A	838677	EPA 6020B	839187
10623141003	**MW-OWS-3**	EPA 3020A	838677	EPA 6020B	839187
10623141004	**WES-DUP-1**	EPA 3020A	838677	EPA 6020B	839187
10623141005	**WES-FEB-1**	EPA 3020A	838677	EPA 6020B	839187
10623141001	**MW-OWS-1**	EPA 3020A	838676	EPA 6020B	839185
10623141002	**MW-OWS-2**	EPA 3020A	838676	EPA 6020B	839185
10623141003	**MW-OWS-3**	EPA 3020A	838676	EPA 6020B	839185
10623141004	**WES-DUP-1**	EPA 3020A	838676	EPA 6020B	839185
10623141005	**WES-FEB-1**	EPA 3020A	838676	EPA 6020B	839185
10623141001	**MW-OWS-1**	EPA 7470A	838679	EPA 7470A	839261
10623141002	**MW-OWS-2**	EPA 7470A	838679	EPA 7470A	839261
10623141003	**MW-OWS-3**	EPA 7470A	838679	EPA 7470A	839261
10623141004	**WES-DUP-1**	EPA 7470A	838679	EPA 7470A	839261
10623141005	**WES-FEB-1**	EPA 7470A	838679	EPA 7470A	839261
10623141001	**MW-OWS-1**	EPA 7470A	838678	EPA 7470A	839262
10623141002	**MW-OWS-2**	EPA 7470A	838678	EPA 7470A	839262
10623141003	**MW-OWS-3**	EPA 7470A	838678	EPA 7470A	839262
10623141004	**WES-DUP-1**	EPA 7470A	838678	EPA 7470A	839262
10623141005	**WES-FEB-1**	EPA 7470A	838678	EPA 7470A	839262
10623141001	**MW-OWS-1**	3510C	1919481	EPA 8270E	1919481
10623141002	**MW-OWS-2**	3510C	1919481	EPA 8270E	1919481
10623141003	**MW-OWS-3**	3510C	1919481	EPA 8270E	1919481
10623141004	**WES-DUP-1**	3510C	1919481	EPA 8270E	1919481
10623141005	**WES-FEB-1**	3510C	1919481	EPA 8270E	1919481
10623141001	**MW-OWS-1**	EPA 3511	837673	EPA 8270E by SIM	839390
10623141002	**MW-OWS-2**	EPA 3511	837673	EPA 8270E by SIM	839390
10623141003	**MW-OWS-3**	EPA 3511	837673	EPA 8270E by SIM	839390
10623141004	**WES-DUP-1**	EPA 3511	837673	EPA 8270E by SIM	839390
10623141005	**WES-FEB-1**	EPA 3511	837673	EPA 8270E by SIM	839390
10623141001	**MW-OWS-1**	EPA 8260D	837400		
10623141002	**MW-OWS-2**	EPA 8260D	837400		
10623141003	**MW-OWS-3**	EPA 8260D	837400		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10623141

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10623141004	**WES-DUP-1**	EPA 8260D	838352		
10623141004	**WES-DUP-1**	EPA 8260D	839143		
10623141005	**WES-FEB-1**	EPA 8260D	838352		
10623141005	**WES-FEB-1**	EPA 8260D	839143		
10623141006	**Trip Blank**	EPA 8260D	838352		
10623141006	**Trip Blank**	EPA 8260D	838857		
10623141006	**Trip Blank**	EPA 8260D	839508		

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WO# : 10623141

10623141

Page: 1 of 1

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Phillips 66 Ferndale Refinery	Report To:	Joe Sumera	Attention:	Joe Sumera
Address:	PO Box 8	Copy To:	Eric Libolt	Company Name:	Phillips 66
	Ferndale, WA 98248		elibolt@whatcom-es.com / 360-752-9571	Address:	PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No.	PO # 4300035146	Pace Quote Reference:	
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID:	P66: Oily Water Sewer	Pace Project Manager:	
Requested Due Date/TAT:	Standard TAT	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	BTEX - EPA 8260	n-Hexane EPA 8260	NWTPH - Gx	NWTPH - Dx	PAHs/cPAHs - 8270 SIM (see attached list)	Naphthalenes 8270 SIM	As, Cd, Cr, Pb, Ni, Zn (total and dissolved)	Mercury (total and dissolved)	Chlorinated VOCs EPA 8260				Residual Chlorine (Y/N)	
1	MW-OWS-1	wt	G	8/24/22	1:15	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X				
2	MW-OWS-2	wt	G	8/24/22	10:40	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X				
3	MW-OWS-3	wt	G	8/24/22	11:35	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X				
4	WES-DUP-1	wt	G	8/24/22	8:00	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X				
5	WES-FEB-1	wt	G	8/24/22	2:10	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X				
6						-	-																								
7						-	-																								
8						-	-																								
9						-	-																								
10						-	-																								

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

Requesting that all metals be analyzed for total and dissolved. Two HNO3 poly's have been filled. One is not filtered and the other one is filtered (both are marked).

W1 W2 W3 W4 W5 W6

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please email results to both Phillips 66, and Whatcom Environmental	Whatcom Environmental	8/25/22	10:00	PACE	8/26/22	8:50	Exc	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ashley Yamawa

SIGNATURE of SAMPLER: [signature] DATE Signed: 8/25/22

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

DC#_Title: ENV-FRM-MIN4-0150 v07_Sample Condition Upon Receipt (SCUR)
Effective Date:

Sample Condition Upon Receipt

Client Name: Phillips 66 Ferndale Refinery

Project #: WO#: 10623141
PM: JMG Due Date: 09/12/22
CLIENT: COP

Courier: ☐ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: Exc. ☑ 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 (1336) ☐ T3 (0459) ☑ T4 (0254) ☐ T5 (0178) ☐ 01339252/1710 **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:** Exc. °C

Correction Factor: True **Cooler Temp Corrected w/temp blank:** Exc °C

Average Corrected Temp (no temp blank only): ____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

JSDA Regulated Soil: (☑ N/A, water sample/other: ____) **Date/Initials of Person Examining Contents:** KN 08/26/22

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): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other ____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Sample Volume?	☐ Yes	☑ No		7.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☐ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	12. Sample # 001-005 2/2 ☐ NaOH ☑ HNO3 ☐ H2SO4 ☐ Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☑ Yes	☐ No	☐ N/A	
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.) KN 08/26/22	☑ Yes	☐ No	☑ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ 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?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☑ Yes	☐ No	☐ N/A	
3 Trip Blanks Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased): 78U299

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

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

Project Manager Review: Jenni Gross **Date:** 8/28/22

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).

KN (2)

Pace ANALYTICAL SERVICES	**DC#_Title: ENV-FRM-MIN4-0142 v01_Sample Condition Upon Receipt (SCUR) Exception Form**
	Effective Date: 02/25/2022

SCUR Exceptions: **Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	
5405 1822 2882	3.5
5405 1822 2908	9.1
5405 1822 2893	9.1

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Comments:

Qualtrax ID: 52763

E041

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WA
Cert. Needed: [X] Yes ☐ No

Workorder: 10623141 **Workorder Name:** P66: Oily Water Sewer

Owner Received Date: 8/26/2022 **Results Requested By:** 9/12/2022

Report To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: AG1U	Requested Analysis: 8270E Biphenyl	LAB USE ONLY: U530914
1	MW-OWS-1	PS	8/24/2022 01:15	10623141001	Water	2	X	-01
2	MW-OWS-2	PS	8/24/2022 10:40	10623141002	Water	2	X	-02
3	MW-OWS-3	PS	8/24/2022 11:35	10623141003	Water	2	X	-03
4	WES-DUP-1	PS	8/24/2022 08:00	10623141004	Water	2	X	-04
5	WES-FEB-1	PS	8/24/2022 02:10	10623141005	Water	2	X	-05

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/Pace	8-30-22 15:30	Matt Lyon	8-31-22 0845
2				
3				

Comments

Cooler Temperature on Receipt ____ °C | **Custody Seal** Y or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

5466 8886 1026

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N	NSA7	
Sufficient volume sent:	Y N	5.1 to = 5.1	
RAD Screen <0.5 mR/hr:	Y N		

SHORT HOLD!

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

December 05, 2022

Joe Sumera
Phillips 66
3901 Unick Road
Ferndale, WA 98248

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Dear Joe Sumera:

Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2022. 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 National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Eric Libolt, Whatcom Environmental Services

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Pace Analytical Services National

Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Mold Certification #: LAB0152
Texas Certification #: T 104704245-17-14
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10634268001	**MW-OWS-1**	Water	11/16/22 11:15	11/17/22 08:50
10634268002	**MW-OWS-2**	Water	11/14/22 15:45	11/17/22 08:50
10634268003	**MW-OWS-3**	Water	11/16/22 13:40	11/17/22 08:50
10634268004	**WES-DUP-1**	Water	11/16/22 09:00	11/17/22 08:50
10634268005	**WES-FEB-1**	Water	11/14/22 14:20	11/17/22 08:50
10634268006	**Trip Blank**	Water	11/14/22 00:00	11/17/22 08:50

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10634268001	**MW-OWS-1**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	AMG	7	PAN
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	NMB	73	PASI-M
10634268002	**MW-OWS-2**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	AMG	7	PAN
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	JEM	73	PASI-M
10634268003	**MW-OWS-3**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	AMG	7	PAN
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	NMB	73	PASI-M
10634268004	**WES-DUP-1**	NWTPH-Dx	EB3	4	PASI-M
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	AMG	7	PAN
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	NMB	73	PASI-M
10634268005	**WES-FEB-1**	NWTPH-Dx	EB3	4	PASI-M

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	TM2	2	PASI-M
		EPA 6020B	RJS	6	PASI-M
		EPA 6020B	NN2	6	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8270E	AMG	7	PAN
		EPA 8270E by SIM	KJ3	21	PASI-M
		EPA 8260D	JEM	73	PASI-M
10634268006	**Trip Blank**	NWTPH-Gx	TM2	2	PASI-M
		EPA 8260D	JEM	73	PASI-M

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-1 **Lab ID: 10634268001** Collected: 11/16/22 11:15 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.40	1	11/22/22 13:29	11/28/22 20:05	68334-30-5	CO
Motor Oil Range	ND	mg/L	0.40	1	11/22/22 13:29	11/28/22 20:05		
Surrogates								
o-Terphenyl (S)	68	%.	50-150	1	11/22/22 13:29	11/28/22 20:05	84-15-1	P2
n-Triacontane (S)	50	%.	50-150	1	11/22/22 13:29	11/28/22 20:05		
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		11/18/22 15:10		
Surrogates								
a,a,a-Trifluorotoluene (S)	105	%.	50-150	1		11/18/22 15:10	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**5.4**	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:20	7440-38-2	
Cadmium	ND	ug/L	0.080	1	11/21/22 09:23	12/01/22 18:20	7440-43-9	
Chromium	ND	ug/L	2.0	1	11/21/22 09:23	12/01/22 18:20	7440-47-3	
Lead	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:20	7439-92-1	
Nickel	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:20	7440-02-0	
Zinc	ND	ug/L	5.0	1	11/21/22 09:23	12/01/22 18:20	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**5.5**	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:09	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	11/22/22 05:35	12/02/22 12:46	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	11/22/22 05:35	12/01/22 18:09	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:09	7439-92-1	
Nickel, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/02/22 12:46	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	11/22/22 05:35	12/01/22 18:09	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	11/21/22 09:35	12/02/22 13:12	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	11/22/22 06:20	12/02/22 14:31	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	11/23/22 03:33	11/25/22 00:20	92-52-4	
Surrogates								
2-Fluorophenol (S)	19.4	%	10.0-120	1	11/23/22 03:33	11/25/22 00:20	367-12-4	
Phenol-d5 (S)	13.7	%	10.0-120	1	11/23/22 03:33	11/25/22 00:20	4165-62-2	
Nitrobenzene-d5 (S)	39.4	%	10.0-127	1	11/23/22 03:33	11/25/22 00:20	4165-60-0	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-1 **Lab ID: 10634268001** Collected: 11/16/22 11:15 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Surrogates								
2-Fluorobiphenyl (S)	41.0	%	10.0-130	1	11/23/22 03:33	11/25/22 00:20	321-60-8	
2,4,6-Tribromophenol (S)	47.0	%	10.0-155	1	11/23/22 03:33	11/25/22 00:20	118-79-6	
p-Terphenyl-d14 (S)	61.3	%	10.0-128	1	11/23/22 03:33	11/25/22 00:20	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	208-96-8	
Anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	207-08-9	
Chrysene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	53-70-3	
Dibenzofuran	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	132-64-9	
Fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	206-44-0	L2
Fluorene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	193-39-5	
Naphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	85-01-8	
Pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:27	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	96	%.	62-137	1	11/18/22 12:19	11/22/22 17:27	321-60-8	
p-Terphenyl-d14 (S)	73	%.	50-131	1	11/18/22 12:19	11/22/22 17:27	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/23/22 22:46	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/23/22 22:46	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/23/22 22:46	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/23/22 22:46	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		11/23/22 22:46	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/23/22 22:46	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/23/22 22:46	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/23/22 22:46	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/23/22 22:46	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		11/23/22 22:46	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/23/22 22:46	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		11/23/22 22:46	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/23/22 22:46	106-93-4	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-1 **Lab ID: 10634268001** Collected: 11/16/22 11:15 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 22:46	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/23/22 22:46	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/23/22 22:46	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 22:46	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/23/22 22:46	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 22:46	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/23/22 22:46	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		11/23/22 22:46	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/23/22 22:46	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/23/22 22:46	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		11/23/22 22:46	108-10-1	
Acetone	ND	ug/L	10.0	1		11/23/22 22:46	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		11/23/22 22:46	107-05-1	
Benzene	ND	ug/L	1.0	1		11/23/22 22:46	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/23/22 22:46	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/23/22 22:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/23/22 22:46	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/23/22 22:46	75-25-2	
Bromomethane	ND	ug/L	2.5	1		11/23/22 22:46	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		11/23/22 22:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/23/22 22:46	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/23/22 22:46	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/23/22 22:46	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/23/22 22:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		11/23/22 22:46	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		11/23/22 22:46	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/23/22 22:46	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		11/23/22 22:46	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		11/23/22 22:46	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/23/22 22:46	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/23/22 22:46	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/23/22 22:46	1634-04-4	
Methylene Chloride	ND	ug/L	2.0	1		11/23/22 22:46	75-09-2	
Naphthalene	ND	ug/L	1.0	1		11/23/22 22:46	91-20-3	
Styrene	ND	ug/L	1.0	1		11/23/22 22:46	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/23/22 22:46	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		11/23/22 22:46	109-99-9	
Toluene	ND	ug/L	1.0	1		11/23/22 22:46	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		11/23/22 22:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/23/22 22:46	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		11/23/22 22:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		11/23/22 22:46	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/23/22 22:46	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/23/22 22:46	10061-01-5	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-1 **Lab ID: 10634268001** Collected: 11/16/22 11:15 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
m&p-Xylene	ND	ug/L	2.0	1		11/23/22 22:46	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	104-51-8	
n-Hexane	ND	ug/L	10.0	1		11/23/22 22:46	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	103-65-1	
o-Xylene	ND	ug/L	1.0	1		11/23/22 22:46	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/23/22 22:46	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		11/23/22 22:46	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/23/22 22:46	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/23/22 22:46	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125	1		11/23/22 22:46	2199-69-1	
4-Bromofluorobenzene (S)	97	%.	75-125	1		11/23/22 22:46	460-00-4	
Toluene-d8 (S)	99	%.	75-125	1		11/23/22 22:46	2037-26-5	

Sample: MW-OWS-2 **Lab ID: 10634268002** Collected: 11/14/22 15:45 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	**0.87**	mg/L	0.45	1	11/18/22 12:13	11/21/22 13:28	68334-30-5	L2
Motor Oil Range	**0.70**	mg/L	0.45	1	11/18/22 12:13	11/21/22 13:28		
Surrogates								
o-Terphenyl (S)	59	%.	50-150	1	11/18/22 12:13	11/21/22 13:28	84-15-1	P2
n-Triacontane (S)	33	%.	50-150	1	11/18/22 12:13	11/21/22 13:28		S5
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		11/18/22 13:40		
Surrogates								
a,a,a-Trifluorotoluene (S)	106	%.	50-150	1		11/18/22 13:40	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**2.1**	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:39	7440-38-2	
Cadmium	ND	ug/L	0.080	1	11/21/22 09:23	12/01/22 18:39	7440-43-9	
Chromium	ND	ug/L	2.0	1	11/21/22 09:23	12/01/22 18:39	7440-47-3	
Lead	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:39	7439-92-1	
Nickel	**0.60**	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:39	7440-02-0	
Zinc	ND	ug/L	5.0	1	11/21/22 09:23	12/01/22 18:39	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.2**	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:26	7440-38-2	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-2 **Lab ID: 10634268002** Collected: 11/14/22 15:45 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Cadmium, Dissolved	ND	ug/L	0.080	1	11/22/22 05:35	12/02/22 13:03	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	11/22/22 05:35	12/01/22 18:26	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:26	7439-92-1	
Nickel, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/02/22 13:03	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	11/22/22 05:35	12/01/22 18:26	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	11/21/22 09:35	12/02/22 13:13	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	11/22/22 06:20	12/02/22 14:32	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	11/21/22 06:31	11/22/22 16:42	92-52-4	
Surrogates								
2-Fluorophenol (S)	30.2	%	10.0-120	1	11/21/22 06:31	11/22/22 16:42	367-12-4	
Phenol-d5 (S)	20.3	%	10.0-120	1	11/21/22 06:31	11/22/22 16:42	4165-62-2	
Nitrobenzene-d5 (S)	57.9	%	10.0-127	1	11/21/22 06:31	11/22/22 16:42	4165-60-0	
2-Fluorobiphenyl (S)	57.1	%	10.0-130	1	11/21/22 06:31	11/22/22 16:42	321-60-8	
2,4,6-Tribromophenol (S)	62.5	%	10.0-155	1	11/21/22 06:31	11/22/22 16:42	118-79-6	
p-Terphenyl-d14 (S)	75.6	%	10.0-128	1	11/21/22 06:31	11/22/22 16:42	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	208-96-8	
Anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	207-08-9	
Chrysene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	53-70-3	
Dibenzofuran	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	132-64-9	
Fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	206-44-0	L2
Fluorene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	193-39-5	
Naphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	85-01-8	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-2 **Lab ID: 10634268002** Collected: 11/14/22 15:45 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
Pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 16:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	88	%.	62-137	1	11/18/22 12:19	11/22/22 16:35	321-60-8	
p-Terphenyl-d14 (S)	65	%.	50-131	1	11/18/22 12:19	11/22/22 16:35	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/22/22 21:09	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/22/22 21:09	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/22/22 21:09	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/22/22 21:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		11/22/22 21:09	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/22/22 21:09	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/22/22 21:09	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/22/22 21:09	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:09	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		11/22/22 21:09	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:09	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		11/22/22 21:09	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/22/22 21:09	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:09	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/22/22 21:09	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/22/22 21:09	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:09	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/22/22 21:09	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:09	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/22/22 21:09	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		11/22/22 21:09	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/22/22 21:09	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/22/22 21:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		11/22/22 21:09	108-10-1	
Acetone	ND	ug/L	10.0	1		11/22/22 21:09	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		11/22/22 21:09	107-05-1	
Benzene	ND	ug/L	1.0	1		11/22/22 21:09	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/22/22 21:09	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/22/22 21:09	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/22/22 21:09	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/22/22 21:09	75-25-2	
Bromomethane	ND	ug/L	2.5	1		11/22/22 21:09	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		11/22/22 21:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/22/22 21:09	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/22/22 21:09	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/22/22 21:09	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/22/22 21:09	74-87-3	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-2 **Lab ID: 10634268002** Collected: 11/14/22 15:45 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Dibromochloromethane	ND	ug/L	1.0	1		11/22/22 21:09	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		11/22/22 21:09	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/22/22 21:09	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		11/22/22 21:09	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		11/22/22 21:09	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/22/22 21:09	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/22/22 21:09	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/22/22 21:09	1634-04-4	
Methylene Chloride	ND	ug/L	1.0	1		11/22/22 21:09	75-09-2	
Naphthalene	ND	ug/L	1.0	1		11/22/22 21:09	91-20-3	
Styrene	ND	ug/L	1.0	1		11/22/22 21:09	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/22/22 21:09	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		11/22/22 21:09	109-99-9	
Toluene	ND	ug/L	1.0	1		11/22/22 21:09	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		11/22/22 21:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/22/22 21:09	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		11/22/22 21:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		11/22/22 21:09	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/22/22 21:09	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/22/22 21:09	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		11/22/22 21:09	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	104-51-8	
n-Hexane	ND	ug/L	10.0	1		11/22/22 21:09	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	103-65-1	
o-Xylene	ND	ug/L	1.0	1		11/22/22 21:09	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/22/22 21:09	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		11/22/22 21:09	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/22/22 21:09	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/22/22 21:09	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	97	%.	75-125	1		11/22/22 21:09	2199-69-1	
4-Bromofluorobenzene (S)	103	%.	75-125	1		11/22/22 21:09	460-00-4	
Toluene-d8 (S)	102	%.	75-125	1		11/22/22 21:09	2037-26-5	

Sample: MW-OWS-3 **Lab ID: 10634268003** Collected: 11/16/22 13:40 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.40	1	11/22/22 13:29	11/28/22 20:16	68334-30-5	CO
Motor Oil Range	ND	mg/L	0.40	1	11/22/22 13:29	11/28/22 20:16		

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-3 **Lab ID: 10634268003** Collected: 11/16/22 13:40 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Surrogates								
o-Terphenyl (S)	71	%.	50-150	1	11/22/22 13:29	11/28/22 20:16	84-15-1	P2
n-Triacontane (S)	49	%.	50-150	1	11/22/22 13:29	11/28/22 20:16		S0
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		11/18/22 15:24		
Surrogates								
a,a,a-Trifluorotoluene (S)	104	%.	50-150	1		11/18/22 15:24	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**2.1**	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:42	7440-38-2	
Cadmium	ND	ug/L	0.080	1	11/21/22 09:23	12/01/22 18:42	7440-43-9	
Chromium	ND	ug/L	2.0	1	11/21/22 09:23	12/01/22 18:42	7440-47-3	
Lead	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:42	7439-92-1	
Nickel	**1.0**	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:42	7440-02-0	
Zinc	ND	ug/L	5.0	1	11/21/22 09:23	12/01/22 18:42	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**2.3**	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:36	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	11/22/22 05:35	12/02/22 13:13	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	11/22/22 05:35	12/01/22 18:36	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:36	7439-92-1	
Nickel, Dissolved	**0.74**	ug/L	0.50	1	11/22/22 05:35	12/02/22 13:13	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	11/22/22 05:35	12/01/22 18:36	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	11/21/22 09:35	12/02/22 13:18	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	11/22/22 06:20	12/02/22 14:34	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	11/23/22 03:33	11/25/22 00:40	92-52-4	
Surrogates								
2-Fluorophenol (S)	16.1	%	10.0-120	1	11/23/22 03:33	11/25/22 00:40	367-12-4	
Phenol-d5 (S)	11.2	%	10.0-120	1	11/23/22 03:33	11/25/22 00:40	4165-62-2	
Nitrobenzene-d5 (S)	33.2	%	10.0-127	1	11/23/22 03:33	11/25/22 00:40	4165-60-0	
2-Fluorobiphenyl (S)	35.4	%	10.0-130	1	11/23/22 03:33	11/25/22 00:40	321-60-8	
2,4,6-Tribromophenol (S)	44.8	%	10.0-155	1	11/23/22 03:33	11/25/22 00:40	118-79-6	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-3 **Lab ID: 10634268003** Collected: 11/16/22 13:40 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Surrogates								
p-Terphenyl-d14 (S)	57.3	%	10.0-128	1	11/23/22 03:33	11/25/22 00:40	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	208-96-8	
Anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	207-08-9	
Chrysene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	53-70-3	
Dibenzofuran	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	132-64-9	
Fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	206-44-0	L2
Fluorene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	193-39-5	
Naphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	85-01-8	
Pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:52	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%.	62-137	1	11/18/22 12:19	11/22/22 17:52	321-60-8	
p-Terphenyl-d14 (S)	71	%.	50-131	1	11/18/22 12:19	11/22/22 17:52	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/23/22 20:58	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/23/22 20:58	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/23/22 20:58	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/23/22 20:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		11/23/22 20:58	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/23/22 20:58	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/23/22 20:58	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/23/22 20:58	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/23/22 20:58	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		11/23/22 20:58	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/23/22 20:58	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		11/23/22 20:58	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/23/22 20:58	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 20:58	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/23/22 20:58	107-06-2	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-3 **Lab ID: 10634268003** Collected: 11/16/22 13:40 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,2-Dichloropropane	ND	ug/L	1.0	1		11/23/22 20:58	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 20:58	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/23/22 20:58	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 20:58	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/23/22 20:58	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		11/23/22 20:58	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/23/22 20:58	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/23/22 20:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		11/23/22 20:58	108-10-1	
Acetone	ND	ug/L	10.0	1		11/23/22 20:58	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		11/23/22 20:58	107-05-1	
Benzene	ND	ug/L	1.0	1		11/23/22 20:58	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/23/22 20:58	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/23/22 20:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/23/22 20:58	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/23/22 20:58	75-25-2	
Bromomethane	ND	ug/L	2.5	1		11/23/22 20:58	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		11/23/22 20:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/23/22 20:58	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/23/22 20:58	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/23/22 20:58	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/23/22 20:58	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		11/23/22 20:58	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		11/23/22 20:58	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/23/22 20:58	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		11/23/22 20:58	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		11/23/22 20:58	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/23/22 20:58	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/23/22 20:58	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/23/22 20:58	1634-04-4	
Methylene Chloride	ND	ug/L	2.0	1		11/23/22 20:58	75-09-2	
Naphthalene	ND	ug/L	1.0	1		11/23/22 20:58	91-20-3	
Styrene	ND	ug/L	1.0	1		11/23/22 20:58	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/23/22 20:58	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		11/23/22 20:58	109-99-9	
Toluene	ND	ug/L	1.0	1		11/23/22 20:58	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		11/23/22 20:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/23/22 20:58	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		11/23/22 20:58	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		11/23/22 20:58	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/23/22 20:58	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/23/22 20:58	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		11/23/22 20:58	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	104-51-8	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: MW-OWS-3 **Lab ID: 10634268003** Collected: 11/16/22 13:40 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
n-Hexane	ND	ug/L	10.0	1		11/23/22 20:58	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	103-65-1	
o-Xylene	ND	ug/L	1.0	1		11/23/22 20:58	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/23/22 20:58	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		11/23/22 20:58	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/23/22 20:58	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/23/22 20:58	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125	1		11/23/22 20:58	2199-69-1	
4-Bromofluorobenzene (S)	98	%.	75-125	1		11/23/22 20:58	460-00-4	
Toluene-d8 (S)	99	%.	75-125	1		11/23/22 20:58	2037-26-5	

Sample: WES-DUP-1 **Lab ID: 10634268004** Collected: 11/16/22 09:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.42	1	11/18/22 12:13	11/21/22 14:03	68334-30-5	
Motor Oil Range	**0.60**	mg/L	0.42	1	11/18/22 12:13	11/21/22 14:03		
Surrogates								
o-Terphenyl (S)	48	%.	50-150	1	11/18/22 12:13	11/21/22 14:03	84-15-1	1M,S0
n-Triacontane (S)	42	%.	50-150	1	11/18/22 12:13	11/21/22 14:03		S0
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		11/18/22 15:39		
Surrogates								
a,a,a-Trifluorotoluene (S)	104	%.	50-150	1		11/18/22 15:39	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	**5.4**	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:57	7440-38-2	
Cadmium	ND	ug/L	0.080	1	11/21/22 09:23	12/01/22 18:57	7440-43-9	
Chromium	ND	ug/L	2.0	1	11/21/22 09:23	12/01/22 18:57	7440-47-3	
Lead	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:57	7439-92-1	
Nickel	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 18:57	7440-02-0	
Zinc	ND	ug/L	5.0	1	11/21/22 09:23	12/01/22 18:57	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	**5.6**	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:40	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	11/22/22 05:35	12/02/22 13:17	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	11/22/22 05:35	12/01/22 18:40	7440-47-3	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-DUP-1 **Lab ID: 10634268004** Collected: 11/16/22 09:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Lead, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:40	7439-92-1	
Nickel, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/02/22 13:17	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	11/22/22 05:35	12/01/22 18:40	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	11/21/22 09:35	12/02/22 13:19	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	11/22/22 06:20	12/02/22 14:35	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	11/23/22 03:33	11/24/22 21:33	92-52-4	
Surrogates								
2-Fluorophenol (S)	19.2	%	10.0-120	1	11/23/22 03:33	11/24/22 21:33	367-12-4	
Phenol-d5 (S)	12.8	%	10.0-120	1	11/23/22 03:33	11/24/22 21:33	4165-62-2	
Nitrobenzene-d5 (S)	36.3	%	10.0-127	1	11/23/22 03:33	11/24/22 21:33	4165-60-0	
2-Fluorobiphenyl (S)	36.3	%	10.0-130	1	11/23/22 03:33	11/24/22 21:33	321-60-8	
2,4,6-Tribromophenol (S)	36.1	%	10.0-155	1	11/23/22 03:33	11/24/22 21:33	118-79-6	
p-Terphenyl-d14 (S)	45.5	%	10.0-128	1	11/23/22 03:33	11/24/22 21:33	1718-51-0	
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	208-96-8	
Anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	207-08-9	
Chrysene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	53-70-3	
Dibenzofuran	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	132-64-9	
Fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	206-44-0	L2
Fluorene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	193-39-5	
Naphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	85-01-8	
Pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 18:18	129-00-0	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-DUP-1 **Lab ID: 10634268004** Collected: 11/16/22 09:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
Surrogates								
2-Fluorobiphenyl (S)	90	%.	62-137	1	11/18/22 12:19	11/22/22 18:18	321-60-8	
p-Terphenyl-d14 (S)	83	%.	50-131	1	11/18/22 12:19	11/22/22 18:18	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/23/22 21:13	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/23/22 21:13	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/23/22 21:13	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/23/22 21:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		11/23/22 21:13	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/23/22 21:13	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/23/22 21:13	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/23/22 21:13	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/23/22 21:13	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		11/23/22 21:13	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/23/22 21:13	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		11/23/22 21:13	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/23/22 21:13	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 21:13	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/23/22 21:13	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/23/22 21:13	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 21:13	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/23/22 21:13	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/23/22 21:13	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/23/22 21:13	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		11/23/22 21:13	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/23/22 21:13	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/23/22 21:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		11/23/22 21:13	108-10-1	
Acetone	ND	ug/L	10.0	1		11/23/22 21:13	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		11/23/22 21:13	107-05-1	
Benzene	ND	ug/L	1.0	1		11/23/22 21:13	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/23/22 21:13	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/23/22 21:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/23/22 21:13	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/23/22 21:13	75-25-2	
Bromomethane	ND	ug/L	2.5	1		11/23/22 21:13	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		11/23/22 21:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/23/22 21:13	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/23/22 21:13	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/23/22 21:13	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/23/22 21:13	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		11/23/22 21:13	124-48-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-DUP-1 **Lab ID: 10634268004** Collected: 11/16/22 09:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Dibromomethane	ND	ug/L	1.0	1		11/23/22 21:13	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/23/22 21:13	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		11/23/22 21:13	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		11/23/22 21:13	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/23/22 21:13	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/23/22 21:13	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/23/22 21:13	1634-04-4	
Methylene Chloride	ND	ug/L	2.0	1		11/23/22 21:13	75-09-2	
Naphthalene	ND	ug/L	1.0	1		11/23/22 21:13	91-20-3	
Styrene	ND	ug/L	1.0	1		11/23/22 21:13	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/23/22 21:13	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		11/23/22 21:13	109-99-9	
Toluene	ND	ug/L	1.0	1		11/23/22 21:13	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		11/23/22 21:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/23/22 21:13	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		11/23/22 21:13	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		11/23/22 21:13	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/23/22 21:13	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/23/22 21:13	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		11/23/22 21:13	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	104-51-8	
n-Hexane	ND	ug/L	10.0	1		11/23/22 21:13	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	103-65-1	
o-Xylene	ND	ug/L	1.0	1		11/23/22 21:13	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/23/22 21:13	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		11/23/22 21:13	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/23/22 21:13	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/23/22 21:13	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125	1		11/23/22 21:13	2199-69-1	
4-Bromofluorobenzene (S)	99	%.	75-125	1		11/23/22 21:13	460-00-4	
Toluene-d8 (S)	99	%.	75-125	1		11/23/22 21:13	2037-26-5	

Sample: WES-FEB-1 **Lab ID: 10634268005** Collected: 11/14/22 14:20 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.40	1	11/18/22 12:13	11/21/22 14:14	68334-30-5	L2
Motor Oil Range	ND	mg/L	0.40	1	11/18/22 12:13	11/21/22 14:14		
Surrogates								
o-Terphenyl (S)	69	%.	50-150	1	11/18/22 12:13	11/21/22 14:14	84-15-1	C6

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-FEB-1 **Lab ID: 10634268005** Collected: 11/14/22 14:20 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Surrogates								
n-Triacontane (S)	61	%.	50-150	1	11/18/22 12:13	11/21/22 14:14		
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		11/18/22 14:10		
Surrogates								
a,a,a-Trifluorotoluene (S)	106	%.	50-150	1		11/18/22 14:10	98-08-8	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 19:01	7440-38-2	
Cadmium	ND	ug/L	0.080	1	11/21/22 09:23	12/01/22 19:01	7440-43-9	
Chromium	ND	ug/L	2.0	1	11/21/22 09:23	12/01/22 19:01	7440-47-3	
Lead	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 19:01	7439-92-1	
Nickel	ND	ug/L	0.50	1	11/21/22 09:23	12/01/22 19:01	7440-02-0	
Zinc	ND	ug/L	5.0	1	11/21/22 09:23	12/01/22 19:01	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Arsenic, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:43	7440-38-2	
Cadmium, Dissolved	ND	ug/L	0.080	1	11/22/22 05:35	12/02/22 13:20	7440-43-9	
Chromium, Dissolved	ND	ug/L	2.0	1	11/22/22 05:35	12/01/22 18:43	7440-47-3	
Lead, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/01/22 18:43	7439-92-1	
Nickel, Dissolved	ND	ug/L	0.50	1	11/22/22 05:35	12/02/22 13:20	7440-02-0	
Zinc, Dissolved	ND	ug/L	5.0	1	11/22/22 05:35	12/01/22 18:43	7440-66-6	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	11/21/22 09:35	12/02/22 13:21	7439-97-6	
7470A Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury, Dissolved	ND	ug/L	0.20	1	11/22/22 06:20	12/02/22 14:37	7439-97-6	
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3510C Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	ug/L	10.0	1	11/21/22 06:31	11/22/22 17:03	92-52-4	
Surrogates								
2-Fluorophenol (S)	26.3	%	10.0-120	1	11/21/22 06:31	11/22/22 17:03	367-12-4	
Phenol-d5 (S)	17.9	%	10.0-120	1	11/21/22 06:31	11/22/22 17:03	4165-62-2	
Nitrobenzene-d5 (S)	42.9	%	10.0-127	1	11/21/22 06:31	11/22/22 17:03	4165-60-0	
2-Fluorobiphenyl (S)	44.1	%	10.0-130	1	11/21/22 06:31	11/22/22 17:03	321-60-8	
2,4,6-Tribromophenol (S)	49.8	%	10.0-155	1	11/21/22 06:31	11/22/22 17:03	118-79-6	
p-Terphenyl-d14 (S)	75.1	%	10.0-128	1	11/21/22 06:31	11/22/22 17:03	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-FEB-1 **Lab ID: 10634268005** Collected: 11/14/22 14:20 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM LV	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3511 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	91-57-6	
Acenaphthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	208-96-8	
Anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	207-08-9	
Chrysene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	53-70-3	
Dibenzofuran	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	132-64-9	
Fluoranthene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	206-44-0	L2
Fluorene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	193-39-5	
Naphthalene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	85-01-8	
Pyrene	ND	ug/L	0.040	1	11/18/22 12:19	11/22/22 17:01	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	94	%.	62-137	1	11/18/22 12:19	11/22/22 17:01	321-60-8	
p-Terphenyl-d14 (S)	93	%.	50-131	1	11/18/22 12:19	11/22/22 17:01	1718-51-0	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/22/22 21:25	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/22/22 21:25	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/22/22 21:25	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/22/22 21:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		11/22/22 21:25	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/22/22 21:25	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/22/22 21:25	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/22/22 21:25	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:25	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		11/22/22 21:25	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:25	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		11/22/22 21:25	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/22/22 21:25	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:25	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/22/22 21:25	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/22/22 21:25	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:25	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/22/22 21:25	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 21:25	106-46-7	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-FEB-1 **Lab ID: 10634268005** Collected: 11/14/22 14:20 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
2,2-Dichloropropane	ND	ug/L	1.0	1		11/22/22 21:25	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		11/22/22 21:25	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/22/22 21:25	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/22/22 21:25	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		11/22/22 21:25	108-10-1	
Acetone	ND	ug/L	10.0	1		11/22/22 21:25	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		11/22/22 21:25	107-05-1	
Benzene	ND	ug/L	1.0	1		11/22/22 21:25	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/22/22 21:25	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/22/22 21:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/22/22 21:25	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/22/22 21:25	75-25-2	
Bromomethane	ND	ug/L	2.5	1		11/22/22 21:25	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		11/22/22 21:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/22/22 21:25	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/22/22 21:25	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/22/22 21:25	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/22/22 21:25	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		11/22/22 21:25	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		11/22/22 21:25	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/22/22 21:25	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		11/22/22 21:25	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		11/22/22 21:25	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/22/22 21:25	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/22/22 21:25	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/22/22 21:25	1634-04-4	
Methylene Chloride	ND	ug/L	1.0	1		11/22/22 21:25	75-09-2	
Naphthalene	ND	ug/L	1.0	1		11/22/22 21:25	91-20-3	
Styrene	ND	ug/L	1.0	1		11/22/22 21:25	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/22/22 21:25	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		11/22/22 21:25	109-99-9	
Toluene	ND	ug/L	1.0	1		11/22/22 21:25	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		11/22/22 21:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/22/22 21:25	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		11/22/22 21:25	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		11/22/22 21:25	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/22/22 21:25	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/22/22 21:25	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		11/22/22 21:25	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	104-51-8	
n-Hexane	ND	ug/L	10.0	1		11/22/22 21:25	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	103-65-1	
o-Xylene	ND	ug/L	1.0	1		11/22/22 21:25	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/22/22 21:25	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	135-98-8	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: WES-FEB-1 **Lab ID: 10634268005** Collected: 11/14/22 14:20 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
tert-Butylbenzene	ND	ug/L	1.0	1		11/22/22 21:25	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/22/22 21:25	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/22/22 21:25	10061-02-6	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	102	%.	75-125	1		11/22/22 21:25	2199-69-1	
4-Bromofluorobenzene (S)	105	%.	75-125	1		11/22/22 21:25	460-00-4	
Toluene-d8 (S)	103	%.	75-125	1		11/22/22 21:25	2037-26-5	

Sample: Trip Blank **Lab ID: 10634268006** Collected: 11/14/22 00:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis							
TPH as Gas	ND	ug/L	100	1		11/18/22 14:25		
Surrogates								
a,a,a-Trifluorotoluene (S)	107	%.	50-150	1		11/18/22 14:25	98-08-8	
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/22/22 19:36	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/22/22 19:36	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/22/22 19:36	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/22/22 19:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		11/22/22 19:36	76-13-1	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/22/22 19:36	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/22/22 19:36	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/22/22 19:36	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/22/22 19:36	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	2.5	1		11/22/22 19:36	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/22/22 19:36	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.5	1		11/22/22 19:36	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/22/22 19:36	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 19:36	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/22/22 19:36	107-06-2	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/22/22 19:36	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 19:36	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/22/22 19:36	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/22/22 19:36	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/22/22 19:36	594-20-7	
2-Butanone (MEK)	ND	ug/L	10.0	1		11/22/22 19:36	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/22/22 19:36	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/22/22 19:36	106-43-4	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: Trip Blank **Lab ID: 10634268006** Collected: 11/14/22 00:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		11/22/22 19:36	108-10-1	
Acetone	ND	ug/L	10.0	1		11/22/22 19:36	67-64-1	
Allyl chloride	ND	ug/L	2.5	1		11/22/22 19:36	107-05-1	
Benzene	ND	ug/L	1.0	1		11/22/22 19:36	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/22/22 19:36	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/22/22 19:36	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/22/22 19:36	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/22/22 19:36	75-25-2	
Bromomethane	ND	ug/L	2.5	1		11/22/22 19:36	74-83-9	
Carbon tetrachloride	ND	ug/L	1.0	1		11/22/22 19:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/22/22 19:36	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/22/22 19:36	75-00-3	
Chloroform	ND	ug/L	1.0	1		11/22/22 19:36	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/22/22 19:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		11/22/22 19:36	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		11/22/22 19:36	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/22/22 19:36	75-71-8	
Dichlorofluoromethane	ND	ug/L	1.0	1		11/22/22 19:36	75-43-4	
Diethyl ether (Ethyl ether)	ND	ug/L	2.5	1		11/22/22 19:36	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/22/22 19:36	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		11/22/22 19:36	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/22/22 19:36	1634-04-4	
Methylene Chloride	ND	ug/L	1.0	1		11/22/22 19:36	75-09-2	
Naphthalene	ND	ug/L	1.0	1		11/22/22 19:36	91-20-3	
Styrene	ND	ug/L	1.0	1		11/22/22 19:36	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		11/22/22 19:36	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		11/22/22 19:36	109-99-9	
Toluene	ND	ug/L	1.0	1		11/22/22 19:36	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		11/22/22 19:36	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/22/22 19:36	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		11/22/22 19:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		11/22/22 19:36	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/22/22 19:36	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/22/22 19:36	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		11/22/22 19:36	179601-23-1	
n-Butylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	104-51-8	
n-Hexane	ND	ug/L	10.0	1		11/22/22 19:36	110-54-3	
n-Propylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	103-65-1	
o-Xylene	ND	ug/L	1.0	1		11/22/22 19:36	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/22/22 19:36	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		11/22/22 19:36	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/22/22 19:36	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/22/22 19:36	10061-02-6	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Sample: Trip Blank **Lab ID: 10634268006** Collected: 11/14/22 00:00 Received: 11/17/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV	Analytical Method: EPA 8260D Pace Analytical Services - Minneapolis							
Surrogates								
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125	1		11/22/22 19:36	2199-69-1	
4-Bromofluorobenzene (S)	102	%.	75-125	1		11/22/22 19:36	460-00-4	
Toluene-d8 (S)	105	%.	75-125	1		11/22/22 19:36	2037-26-5	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854349 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005, 10634268006

METHOD BLANK: 4517107 Matrix: Water
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005, 10634268006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	11/18/22 13:25	
a,a,a-Trifluorotoluene (S)	%.	107	50-150	11/18/22 13:25	

LABORATORY CONTROL SAMPLE & LCSD: 4517109 4517110

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1000	922	100	92	75-125	8	20	
a,a,a-Trifluorotoluene (S)	%.				110	105	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4517112 4517113

Parameter	Units	10634268004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	ND	1000	1000	937	919	93	91	65-126	2	30	
a,a,a-Trifluorotoluene (S)	%.						106	105	50-150			

SAMPLE DUPLICATE: 4517111

Parameter	Units	10634268002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	106	106			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854524 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

METHOD BLANK: 4518399 Matrix: Water
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/02/22 13:09	

LABORATORY CONTROL SAMPLE: 4518400

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4518401 4518402

Parameter	Units	10634268002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.7	5.7	113	114	80-120	0	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854521 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water Dissolved
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

METHOD BLANK: 4518387 Matrix: Water
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/02/22 14:07	

LABORATORY CONTROL SAMPLE: 4518388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4518389 4518390

Parameter	Units	10634109023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	5.4	5.5	107	110	80-120	3	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854516
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

METHOD BLANK: 4518367 Matrix: Water
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	0.50	12/01/22 18:13	
Cadmium	ug/L	ND	0.080	12/01/22 18:13	
Chromium	ug/L	ND	2.0	12/01/22 18:13	
Lead	ug/L	ND	0.50	12/01/22 18:13	
Nickel	ug/L	ND	0.50	12/01/22 18:13	
Zinc	ug/L	ND	5.0	12/01/22 18:13	

LABORATORY CONTROL SAMPLE: 4518368

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	100	96.4	96	80-120	
Cadmium	ug/L	100	98.4	98	80-120	
Chromium	ug/L	100	103	103	80-120	
Lead	ug/L	100	100	100	80-120	
Nickel	ug/L	100	103	103	80-120	
Zinc	ug/L	100	99.8	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4518369 4518370

Parameter	Units	10634268001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	5.4	100	100	102	103	96	97	75-125	1	20	
Cadmium	ug/L	ND	100	100	98.6	98.8	99	99	75-125	0	20	
Chromium	ug/L	ND	100	100	103	103	101	102	75-125	1	20	
Lead	ug/L	ND	100	100	98.1	99.6	98	100	75-125	2	20	
Nickel	ug/L	ND	100	100	99.9	101	99	101	75-125	1	20	
Zinc	ug/L	ND	100	100	98.4	99.6	98	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854512
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water Dissolved UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

METHOD BLANK: 4518351 Matrix: Water
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/01/22 18:02	
Cadmium, Dissolved	ug/L	ND	0.080	12/02/22 12:39	
Chromium, Dissolved	ug/L	ND	2.0	12/01/22 18:02	
Lead, Dissolved	ug/L	ND	0.50	12/01/22 18:02	
Nickel, Dissolved	ug/L	ND	0.50	12/02/22 12:39	
Zinc, Dissolved	ug/L	ND	5.0	12/01/22 18:02	

LABORATORY CONTROL SAMPLE: 4518352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	102	102	80-120	
Cadmium, Dissolved	ug/L	100	96.3	96	80-120	
Chromium, Dissolved	ug/L	100	103	103	80-120	
Lead, Dissolved	ug/L	100	106	106	80-120	
Nickel, Dissolved	ug/L	100	98.0	98	80-120	
Zinc, Dissolved	ug/L	100	103	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4518353 4518354

Parameter	Units	10634268001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	5.5	100	100	108	108	102	102	75-125	0	20	
Cadmium, Dissolved	ug/L	ND	100	100	97.3	94.4	97	94	75-125	3	20	
Chromium, Dissolved	ug/L	ND	100	100	101	102	100	101	75-125	1	20	
Lead, Dissolved	ug/L	ND	100	100	102	101	102	101	75-125	1	20	
Nickel, Dissolved	ug/L	ND	100	100	95.9	91.9	96	92	75-125	4	20	
Zinc, Dissolved	ug/L	ND	100	100	100	99.4	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 1962632
QC Batch Method: 3510C
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10634268002, 10634268005

METHOD BLANK: R3864107-2 Matrix: Water
Associated Lab Samples: 10634268002, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	10.0	11/22/22 12:34	
2-Fluorophenol (S)	%	17	10.0-120	11/22/22 12:34	
Phenol-d5 (S)	%	12	10.0-120	11/22/22 12:34	
Nitrobenzene-d5 (S)	%	32.8	10.0-127	11/22/22 12:34	
2-Fluorobiphenyl (S)	%	34.5	10.0-130	11/22/22 12:34	
2,4,6-Tribromophenol (S)	%	36.6	10.0-155	11/22/22 12:34	
p-Terphenyl-d14 (S)	%	59.2	10.0-128	11/22/22 12:34	

LABORATORY CONTROL SAMPLE: R3864107-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	ug/L	50.0	30.8	61.6	38.0-120	
2-Fluorophenol (S)	%			28.6	10.0-120	
Phenol-d5 (S)	%			18.1	10.0-120	
Nitrobenzene-d5 (S)	%			43.7	10.0-127	
2-Fluorobiphenyl (S)	%			63.3	10.0-130	
2,4,6-Tribromophenol (S)	%			83.0	10.0-155	
p-Terphenyl-d14 (S)	%			90.0	10.0-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3864782-1 R3864782-2

Parameter	Units	L1559589-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	ug/L	ND	50.0	50.0	21.2	24.8	42.4	49.6	29.0-120	15.7	33	
2-Fluorophenol (S)	%						17.5	21.5	10.0-120			
Phenol-d5 (S)	%						13.0	15.1	10.0-120			
Nitrobenzene-d5 (S)	%						29.2	34.3	10.0-127			
2-Fluorobiphenyl (S)	%						43.7	50.6	10.0-130			
2,4,6-Tribromophenol (S)	%						60.0	70.5	10.0-155			
p-Terphenyl-d14 (S)	%						63.3	73.2	10.0-128			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 1962829
QC Batch Method: 3510C
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10634268001, 10634268003, 10634268004

METHOD BLANK: R3864983-2 Matrix: Water
Associated Lab Samples: 10634268001, 10634268003, 10634268004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	10.0	11/24/22 20:51	
2-Fluorophenol (S)	%	19.4	10.0-120	11/24/22 20:51	
Phenol-d5 (S)	%	13.2	10.0-120	11/24/22 20:51	
Nitrobenzene-d5 (S)	%	44.8	10.0-127	11/24/22 20:51	
2-Fluorobiphenyl (S)	%	44.8	10.0-130	11/24/22 20:51	
2,4,6-Tribromophenol (S)	%	42.6	10.0-155	11/24/22 20:51	
p-Terphenyl-d14 (S)	%	56.2	10.0-128	11/24/22 20:51	

LABORATORY CONTROL SAMPLE: R3864983-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	ug/L	50.0	25.3	50.6	38.0-120	
2-Fluorophenol (S)	%			23.0	10.0-120	
Phenol-d5 (S)	%			16.8	10.0-120	
Nitrobenzene-d5 (S)	%			44.7	10.0-127	
2-Fluorobiphenyl (S)	%			52.3	10.0-130	
2,4,6-Tribromophenol (S)	%			58.0	10.0-155	
p-Terphenyl-d14 (S)	%			61.9	10.0-128	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3864983-3 R3864983-4

Parameter	Units	L1559576-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	ug/L	ND	50.0	50.0	18.7	21.7	37.4	43.4	29.0-120	14.9	33	
2-Fluorophenol (S)	%						17.1	19.0	10.0-120			
Phenol-d5 (S)	%						13.5	15.1	10.0-120			
Nitrobenzene-d5 (S)	%						30.2	31.8	10.0-127			
2-Fluorobiphenyl (S)	%						36.8	41.6	10.0-130			
2,4,6-Tribromophenol (S)	%						50.5	56.0	10.0-155			
p-Terphenyl-d14 (S)	%						53.8	60.6	10.0-128			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854929
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268002, 10634268005, 10634268006

METHOD BLANK: 4519590 Matrix: Water
Associated Lab Samples: 10634268002, 10634268005, 10634268006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/22/22 19:20	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/22/22 19:20	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/22/22 19:20	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/22/22 19:20	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	11/22/22 19:20	
1,1-Dichloroethane	ug/L	ND	1.0	11/22/22 19:20	
1,1-Dichloroethene	ug/L	ND	1.0	11/22/22 19:20	
1,1-Dichloropropene	ug/L	ND	1.0	11/22/22 19:20	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/22/22 19:20	
1,2,3-Trichloropropane	ug/L	ND	2.5	11/22/22 19:20	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/22/22 19:20	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	11/22/22 19:20	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	11/22/22 19:20	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/22/22 19:20	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/22/22 19:20	
1,2-Dichloroethane	ug/L	ND	1.0	11/22/22 19:20	
1,2-Dichloropropane	ug/L	ND	1.0	11/22/22 19:20	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	11/22/22 19:20	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/22/22 19:20	
1,3-Dichloropropane	ug/L	ND	1.0	11/22/22 19:20	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/22/22 19:20	
2,2-Dichloropropane	ug/L	ND	1.0	11/22/22 19:20	
2-Butanone (MEK)	ug/L	ND	10.0	11/22/22 19:20	
2-Chlorotoluene	ug/L	ND	1.0	11/22/22 19:20	
4-Chlorotoluene	ug/L	ND	1.0	11/22/22 19:20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/22/22 19:20	
Acetone	ug/L	ND	10.0	11/22/22 19:20	
Allyl chloride	ug/L	ND	2.5	11/22/22 19:20	
Benzene	ug/L	ND	1.0	11/22/22 19:20	
Bromobenzene	ug/L	ND	1.0	11/22/22 19:20	
Bromochloromethane	ug/L	ND	1.0	11/22/22 19:20	
Bromodichloromethane	ug/L	ND	1.0	11/22/22 19:20	
Bromoform	ug/L	ND	1.0	11/22/22 19:20	
Bromomethane	ug/L	ND	2.5	11/22/22 19:20	
Carbon tetrachloride	ug/L	ND	1.0	11/22/22 19:20	
Chlorobenzene	ug/L	ND	1.0	11/22/22 19:20	
Chloroethane	ug/L	ND	1.0	11/22/22 19:20	
Chloroform	ug/L	ND	1.0	11/22/22 19:20	
Chloromethane	ug/L	ND	1.0	11/22/22 19:20	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/22/22 19:20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

METHOD BLANK: 4519590 Matrix: Water
Associated Lab Samples: 10634268002, 10634268005, 10634268006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/22/22 19:20	
Dibromochloromethane	ug/L	ND	1.0	11/22/22 19:20	
Dibromomethane	ug/L	ND	1.0	11/22/22 19:20	
Dichlorodifluoromethane	ug/L	ND	1.0	11/22/22 19:20	
Dichlorofluoromethane	ug/L	ND	1.0	11/22/22 19:20	
Diethyl ether (Ethyl ether)	ug/L	ND	2.5	11/22/22 19:20	
Ethylbenzene	ug/L	ND	1.0	11/22/22 19:20	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/22/22 19:20	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	11/22/22 19:20	
m&p-Xylene	ug/L	ND	2.0	11/22/22 19:20	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/22/22 19:20	
Methylene Chloride	ug/L	ND	1.0	11/22/22 19:20	
n-Butylbenzene	ug/L	ND	1.0	11/22/22 19:20	
n-Hexane	ug/L	ND	10.0	11/22/22 19:20	
n-Propylbenzene	ug/L	ND	1.0	11/22/22 19:20	
Naphthalene	ug/L	ND	1.0	11/22/22 19:20	
o-Xylene	ug/L	ND	1.0	11/22/22 19:20	
p-Isopropyltoluene	ug/L	ND	1.0	11/22/22 19:20	
sec-Butylbenzene	ug/L	ND	1.0	11/22/22 19:20	
Styrene	ug/L	ND	1.0	11/22/22 19:20	
tert-Butylbenzene	ug/L	ND	1.0	11/22/22 19:20	
Tetrachloroethene	ug/L	ND	1.0	11/22/22 19:20	
Tetrahydrofuran	ug/L	ND	10.0	11/22/22 19:20	
Toluene	ug/L	ND	1.0	11/22/22 19:20	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/22/22 19:20	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/22/22 19:20	
Trichloroethene	ug/L	ND	1.0	11/22/22 19:20	
Trichlorofluoromethane	ug/L	ND	1.0	11/22/22 19:20	
Vinyl chloride	ug/L	ND	1.0	11/22/22 19:20	
Xylene (Total)	ug/L	ND	3.0	11/22/22 19:20	
1,2-Dichlorobenzene-d4 (S)	%.	103	75-125	11/22/22 19:20	
4-Bromofluorobenzene (S)	%.	103	75-125	11/22/22 19:20	
Toluene-d8 (S)	%.	103	75-125	11/22/22 19:20	

LABORATORY CONTROL SAMPLE & LCSD: 4519591 4519596

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.3	19.6	96	98	75-125	1	20	
1,1,1-Trichloroethane	ug/L	20	18.1	18.3	90	91	72-125	1	20	
1,1,2,2-Tetrachloroethane	ug/L	20	16.3	17.3	82	87	70-125	6	20	
1,1,2-Trichloroethane	ug/L	20	19.2	19.3	96	96	75-125	0	20	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.5	18.0	87	90	63-125	3	20	
1,1-Dichloroethane	ug/L	20	15.9	16.0	79	80	67-125	1	20	
1,1-Dichloroethene	ug/L	20	15.4	15.3	77	77	67-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

LABORATORY CONTROL SAMPLE & LCSD: 4519591 4519596

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1-Dichloropropene	ug/L	20	19.0	19.4	95	97	70-125	2	20	
1,2,3-Trichlorobenzene	ug/L	20	17.3	18.4	87	92	68-125	6	20	
1,2,3-Trichloropropane	ug/L	20	17.7	18.0	89	90	74-125	1	20	
1,2,4-Trichlorobenzene	ug/L	20	17.6	17.9	88	89	68-125	1	20	
1,2,4-Trimethylbenzene	ug/L	20	19.2	19.7	96	99	75-125	3	20	
1,2-Dibromo-3-chloropropane	ug/L	20	18.6	19.4	93	97	54-131	4	20	
1,2-Dibromoethane (EDB)	ug/L	20	17.9	18.6	90	93	75-125	4	20	
1,2-Dichlorobenzene	ug/L	20	17.1	17.3	85	87	75-125	1	20	
1,2-Dichloroethane	ug/L	20	19.8	20.5	99	103	75-125	3	20	
1,2-Dichloropropane	ug/L	20	18.2	18.5	91	92	70-128	1	20	
1,3,5-Trimethylbenzene	ug/L	20	19.2	19.5	96	98	75-125	2	20	
1,3-Dichlorobenzene	ug/L	20	18.0	18.5	90	92	75-125	3	20	
1,3-Dichloropropane	ug/L	20	18.4	19.2	92	96	75-125	4	20	
1,4-Dichlorobenzene	ug/L	20	17.3	17.4	87	87	75-125	1	20	
2,2-Dichloropropane	ug/L	20	15.6	15.7	78	78	49-125	0	20	
2-Butanone (MEK)	ug/L	100	109	107	109	107	56-138	2	20	
2-Chlorotoluene	ug/L	20	17.7	18.4	89	92	70-125	3	20	
4-Chlorotoluene	ug/L	20	18.5	18.9	92	95	70-125	2	20	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	99.7	102	100	64-133	3	20	
Acetone	ug/L	100	93.8	91.1	94	91	42-131	3	20	
Allyl chloride	ug/L	20	14.6	14.8	73	74	51-133	2	20	
Benzene	ug/L	20	17.8	18.2	89	91	73-125	2	20	
Bromobenzene	ug/L	20	17.5	17.5	88	88	75-125	0	20	
Bromochloromethane	ug/L	20	17.6	18.4	88	92	75-125	4	20	
Bromodichloromethane	ug/L	20	18.8	19.2	94	96	74-125	2	20	
Bromoform	ug/L	20	19.1	19.8	95	99	61-125	4	20	
Bromomethane	ug/L	20	15.8	19.6	79	98	30-125	22	20	R1
Carbon tetrachloride	ug/L	20	18.8	19.2	94	96	58-125	2	20	
Chlorobenzene	ug/L	20	17.8	17.8	89	89	75-125	0	20	
Chloroethane	ug/L	20	17.3	17.3	87	86	58-125	0	20	
Chloroform	ug/L	20	17.1	17.1	85	85	74-125	0	20	
Chloromethane	ug/L	20	17.9	19.0	90	95	38-142	6	20	
cis-1,2-Dichloroethene	ug/L	20	16.6	16.8	83	84	75-125	2	20	
cis-1,3-Dichloropropene	ug/L	20	18.2	18.8	91	94	72-125	3	20	
Dibromochloromethane	ug/L	20	19.0	19.6	95	98	73-125	3	20	
Dibromomethane	ug/L	20	17.1	17.8	85	89	68-125	4	20	
Dichlorodifluoromethane	ug/L	20	18.7	20.6	93	103	46-149	10	20	
Dichlorofluoromethane	ug/L	20	19.4	18.9	97	95	71-126	2	20	
Diethyl ether (Ethyl ether)	ug/L	20	18.4	18.8	92	94	68-127	2	20	
Ethylbenzene	ug/L	20	18.5	18.9	92	94	75-125	2	20	
Hexachloro-1,3-butadiene	ug/L	20	17.9	18.9	90	94	52-131	5	20	
Isopropylbenzene (Cumene)	ug/L	20	19.5	19.8	97	99	74-125	2	20	
m&p-Xylene	ug/L	40	37.0	36.5	93	91	72-125	1	20	
Methyl-tert-butyl ether	ug/L	20	20.3	20.7	101	103	75-125	2	20	
Methylene Chloride	ug/L	20	17.0	17.3	85	86	70-125	1	20	
n-Butylbenzene	ug/L	20	17.8	18.2	89	91	68-125	2	20	
n-Hexane	ug/L	20	16.6	17.8	83	89	50-143	7	20	

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1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

LABORATORY CONTROL SAMPLE & LCSD: 4519591 4519596

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
n-Propylbenzene	ug/L	20	18.4	18.9	92	94	70-125	3	20	
Naphthalene	ug/L	20	17.2	18.3	86	92	66-127	7	20	
o-Xylene	ug/L	20	18.7	18.8	94	94	73-125	0	20	
p-Isopropyltoluene	ug/L	20	19.2	19.8	96	99	72-125	3	20	
sec-Butylbenzene	ug/L	20	19.2	19.5	96	98	72-125	1	20	
Styrene	ug/L	20	19.8	20.0	99	100	75-125	1	20	
tert-Butylbenzene	ug/L	20	18.7	18.8	94	94	74-125	0	20	
Tetrachloroethene	ug/L	20	18.6	18.1	93	91	72-125	2	20	
Tetrahydrofuran	ug/L	100	105	101	105	101	75-125	4	20	
Toluene	ug/L	20	17.2	17.3	86	87	74-125	1	20	
trans-1,2-Dichloroethene	ug/L	20	16.9	17.3	85	87	73-125	2	20	
trans-1,3-Dichloropropene	ug/L	20	19.2	19.5	96	97	72-125	1	20	
Trichloroethene	ug/L	20	18.0	18.2	90	91	75-125	1	20	
Trichlorofluoromethane	ug/L	20	17.2	16.8	86	84	62-136	2	20	
Vinyl chloride	ug/L	20	18.7	19.5	94	98	55-139	4	20	
Xylene (Total)	ug/L	60	55.7	55.3	93	92	72-125	1	20	
1,2-Dichlorobenzene-d4 (S)	%.				100	99	75-125			
4-Bromofluorobenzene (S)	%.				106	103	75-125			
Toluene-d8 (S)	%.				99	99	75-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 855198
QC Batch Method: EPA 8260D
Analysis Method: EPA 8260D
Analysis Description: 8260D MSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268003, 10634268004

METHOD BLANK: 4520995 Matrix: Water
Associated Lab Samples: 10634268001, 10634268003, 10634268004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/23/22 20:27	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/23/22 20:27	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/23/22 20:27	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/23/22 20:27	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	11/23/22 20:27	
1,1-Dichloroethane	ug/L	ND	1.0	11/23/22 20:27	
1,1-Dichloroethene	ug/L	ND	1.0	11/23/22 20:27	
1,1-Dichloropropene	ug/L	ND	1.0	11/23/22 20:27	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/23/22 20:27	
1,2,3-Trichloropropane	ug/L	ND	2.5	11/23/22 20:27	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/23/22 20:27	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	11/23/22 20:27	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	11/23/22 20:27	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/23/22 20:27	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/23/22 20:27	
1,2-Dichloroethane	ug/L	ND	1.0	11/23/22 20:27	
1,2-Dichloropropane	ug/L	ND	1.0	11/23/22 20:27	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	11/23/22 20:27	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/23/22 20:27	
1,3-Dichloropropane	ug/L	ND	1.0	11/23/22 20:27	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/23/22 20:27	
2,2-Dichloropropane	ug/L	ND	1.0	11/23/22 20:27	
2-Butanone (MEK)	ug/L	ND	10.0	11/23/22 20:27	
2-Chlorotoluene	ug/L	ND	1.0	11/23/22 20:27	
4-Chlorotoluene	ug/L	ND	1.0	11/23/22 20:27	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/23/22 20:27	
Acetone	ug/L	ND	10.0	11/23/22 20:27	
Allyl chloride	ug/L	ND	2.5	11/23/22 20:27	
Benzene	ug/L	ND	1.0	11/23/22 20:27	
Bromobenzene	ug/L	ND	1.0	11/23/22 20:27	
Bromochloromethane	ug/L	ND	1.0	11/23/22 20:27	
Bromodichloromethane	ug/L	ND	1.0	11/23/22 20:27	
Bromoform	ug/L	ND	1.0	11/23/22 20:27	
Bromomethane	ug/L	ND	2.5	11/23/22 20:27	
Carbon tetrachloride	ug/L	ND	1.0	11/23/22 20:27	
Chlorobenzene	ug/L	ND	1.0	11/23/22 20:27	
Chloroethane	ug/L	ND	1.0	11/23/22 20:27	
Chloroform	ug/L	ND	1.0	11/23/22 20:27	
Chloromethane	ug/L	ND	1.0	11/23/22 20:27	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/23/22 20:27	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

METHOD BLANK: 4520995 Matrix: Water
Associated Lab Samples: 10634268001, 10634268003, 10634268004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/23/22 20:27	
Dibromochloromethane	ug/L	ND	1.0	11/23/22 20:27	
Dibromomethane	ug/L	ND	1.0	11/23/22 20:27	
Dichlorodifluoromethane	ug/L	ND	1.0	11/23/22 20:27	
Dichlorofluoromethane	ug/L	ND	1.0	11/23/22 20:27	
Diethyl ether (Ethyl ether)	ug/L	ND	2.5	11/23/22 20:27	
Ethylbenzene	ug/L	ND	1.0	11/23/22 20:27	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/23/22 20:27	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	11/23/22 20:27	
m&p-Xylene	ug/L	ND	2.0	11/23/22 20:27	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/23/22 20:27	
Methylene Chloride	ug/L	ND	2.0	11/23/22 20:27	MN
n-Butylbenzene	ug/L	ND	1.0	11/23/22 20:27	
n-Hexane	ug/L	ND	10.0	11/23/22 20:27	
n-Propylbenzene	ug/L	ND	1.0	11/23/22 20:27	
Naphthalene	ug/L	ND	1.0	11/23/22 20:27	
o-Xylene	ug/L	ND	1.0	11/23/22 20:27	
p-Isopropyltoluene	ug/L	ND	1.0	11/23/22 20:27	
sec-Butylbenzene	ug/L	ND	1.0	11/23/22 20:27	
Styrene	ug/L	ND	1.0	11/23/22 20:27	
tert-Butylbenzene	ug/L	ND	1.0	11/23/22 20:27	
Tetrachloroethene	ug/L	ND	1.0	11/23/22 20:27	
Tetrahydrofuran	ug/L	ND	10.0	11/23/22 20:27	
Toluene	ug/L	ND	1.0	11/23/22 20:27	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/23/22 20:27	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/23/22 20:27	
Trichloroethene	ug/L	ND	1.0	11/23/22 20:27	
Trichlorofluoromethane	ug/L	ND	1.0	11/23/22 20:27	
Vinyl chloride	ug/L	ND	1.0	11/23/22 20:27	
Xylene (Total)	ug/L	ND	3.0	11/23/22 20:27	
1,2-Dichlorobenzene-d4 (S)	%.	100	75-125	11/23/22 20:27	
4-Bromofluorobenzene (S)	%.	98	75-125	11/23/22 20:27	
Toluene-d8 (S)	%.	99	75-125	11/23/22 20:27	

LABORATORY CONTROL SAMPLE: 4520996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.9	94	75-125	
1,1,1-Trichloroethane	ug/L	20	17.8	89	72-125	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	93	70-125	
1,1,2-Trichloroethane	ug/L	20	18.9	94	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.0	90	63-125	
1,1-Dichloroethane	ug/L	20	17.6	88	67-125	
1,1-Dichloroethene	ug/L	20	17.5	88	67-125	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

LABORATORY CONTROL SAMPLE: 4520996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloropropene	ug/L	20	18.0	90	70-125	
1,2,3-Trichlorobenzene	ug/L	20	18.2	91	68-125	
1,2,3-Trichloropropane	ug/L	20	20.0	100	74-125	
1,2,4-Trichlorobenzene	ug/L	20	17.4	87	68-125	
1,2,4-Trimethylbenzene	ug/L	20	19.8	99	75-125	
1,2-Dibromo-3-chloropropane	ug/L	20	17.7	88	54-131	
1,2-Dibromoethane (EDB)	ug/L	20	20.0	100	75-125	
1,2-Dichlorobenzene	ug/L	20	17.2	86	75-125	
1,2-Dichloroethane	ug/L	20	18.1	90	75-125	
1,2-Dichloropropane	ug/L	20	18.2	91	70-128	
1,3,5-Trimethylbenzene	ug/L	20	19.3	97	75-125	
1,3-Dichlorobenzene	ug/L	20	17.8	89	75-125	
1,3-Dichloropropane	ug/L	20	18.7	94	75-125	
1,4-Dichlorobenzene	ug/L	20	18.6	93	75-125	
2,2-Dichloropropane	ug/L	20	15.0	75	49-125	
2-Butanone (MEK)	ug/L	100	95.4	95	56-138	
2-Chlorotoluene	ug/L	20	18.1	90	70-125	
4-Chlorotoluene	ug/L	20	18.3	92	70-125	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	64-133	
Acetone	ug/L	100	98.7	99	42-131	
Allyl chloride	ug/L	20	17.5	87	51-133	
Benzene	ug/L	20	17.3	87	73-125	
Bromobenzene	ug/L	20	17.5	87	75-125	
Bromochloromethane	ug/L	20	18.8	94	75-125	
Bromodichloromethane	ug/L	20	18.1	91	74-125	
Bromoform	ug/L	20	19.6	98	61-125	
Bromomethane	ug/L	20	16.5	82	30-125	
Carbon tetrachloride	ug/L	20	17.7	89	58-125	
Chlorobenzene	ug/L	20	17.7	89	75-125	
Chloroethane	ug/L	20	16.3	82	58-125	
Chloroform	ug/L	20	17.8	89	74-125	
Chloromethane	ug/L	20	15.5	78	38-142	
cis-1,2-Dichloroethene	ug/L	20	17.3	86	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.1	91	72-125	
Dibromochloromethane	ug/L	20	18.4	92	73-125	
Dibromomethane	ug/L	20	18.3	92	68-125	
Dichlorodifluoromethane	ug/L	20	16.9	84	46-149	
Dichlorofluoromethane	ug/L	20	17.7	88	71-126	
Diethyl ether (Ethyl ether)	ug/L	20	19.7	98	68-127	
Ethylbenzene	ug/L	20	18.2	91	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.4	92	52-131	
Isopropylbenzene (Cumene)	ug/L	20	19.2	96	74-125	
m&p-Xylene	ug/L	40	36.6	92	72-125	
Methyl-tert-butyl ether	ug/L	20	19.4	97	75-125	
Methylene Chloride	ug/L	20	19.0	95	70-125	
n-Butylbenzene	ug/L	20	17.8	89	68-125	
n-Hexane	ug/L	20	19.9	100	50-143	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

LABORATORY CONTROL SAMPLE: 4520996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Propylbenzene	ug/L	20	18.1	91	70-125	
Naphthalene	ug/L	20	18.8	94	66-127	
o-Xylene	ug/L	20	19.1	96	73-125	
p-Isopropyltoluene	ug/L	20	19.8	99	72-125	
sec-Butylbenzene	ug/L	20	19.2	96	72-125	
Styrene	ug/L	20	19.8	99	75-125	
tert-Butylbenzene	ug/L	20	18.7	93	74-125	
Tetrachloroethene	ug/L	20	17.5	87	72-125	
Tetrahydrofuran	ug/L	100	109	109	75-125	
Toluene	ug/L	20	17.1	86	74-125	
trans-1,2-Dichloroethene	ug/L	20	18.0	90	73-125	
trans-1,3-Dichloropropene	ug/L	20	18.3	92	72-125	
Trichloroethene	ug/L	20	17.4	87	75-125	
Trichlorofluoromethane	ug/L	20	17.9	89	62-136	
Vinyl chloride	ug/L	20	16.5	83	55-139	
Xylene (Total)	ug/L	60	55.7	93	72-125	
1,2-Dichlorobenzene-d4 (S)	%.			101	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4520997 4520998

Parameter	Units	10634284015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	17.5	17.7	88	88	75-130	1	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	16.4	16.2	82	81	64-143	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.4	17.8	87	89	48-139	3	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	17.8	17.5	89	88	68-135	1	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	14.5	14.3	72	71	52-150	2	30	
1,1-Dichloroethane	ug/L	ND	20	20	17.0	16.9	85	85	62-146	1	30	
1,1-Dichloroethene	ug/L	ND	20	20	16.3	16.1	82	81	44-150	1	30	
1,1-Dichloropropene	ug/L	ND	20	20	16.5	16.5	83	82	55-150	0	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	14.7	18.4	73	92	44-150	23	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	17.7	18.1	88	90	64-126	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	15.5	16.9	78	84	42-147	8	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	18.6	18.5	93	93	62-138	0	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	15.1	18.4	75	92	53-132	20	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.1	18.6	95	93	69-129	3	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	16.3	16.2	81	81	70-125	0	30	
1,2-Dichloroethane	ug/L	ND	20	20	17.3	17.0	87	85	70-133	2	30	
1,2-Dichloropropane	ug/L	ND	20	20	17.1	17.0	86	85	61-142	1	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	17.7	17.8	89	89	64-135	1	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	16.7	16.8	84	84	69-131	0	30	
1,3-Dichloropropane	ug/L	ND	20	20	17.7	17.2	89	86	70-129	3	30	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4520997 4520998

Parameter	Units	10634284015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dichlorobenzene	ug/L	ND	20	20	17.3	17.3	86	87	67-127	0	30	
2,2-Dichloropropane	ug/L	ND	20	20	14.1	14.2	70	71	38-148	1	30	
2-Butanone (MEK)	ug/L	ND	100	100	85.8	86.9	86	87	46-138	1	30	
2-Chlorotoluene	ug/L	ND	20	20	17.0	17.0	85	85	52-142	0	30	
4-Chlorotoluene	ug/L	ND	20	20	17.4	17.4	87	87	59-132	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	90.5	89.2	90	89	42-145	1	30	
Acetone	ug/L	ND	100	100	89.5	85.6	89	86	42-132	4	30	
Allyl chloride	ug/L	ND	20	20	16.5	16.1	82	81	31-150	2	30	
Benzene	ug/L	ND	20	20	16.7	16.4	83	82	65-140	2	30	
Bromobenzene	ug/L	ND	20	20	16.3	16.2	82	81	65-129	0	30	
Bromochloromethane	ug/L	ND	20	20	17.4	17.3	87	86	67-147	1	30	
Bromodichloromethane	ug/L	ND	20	20	17.2	17.1	86	86	66-136	0	30	
Bromoform	ug/L	ND	20	20	18.3	18.1	92	90	59-137	1	30	
Bromomethane	ug/L	ND	20	20	13.9	15.0	70	75	30-150	7	30	
Carbon tetrachloride	ug/L	ND	20	20	15.8	15.8	79	79	58-149	0	30	
Chlorobenzene	ug/L	ND	20	20	16.9	16.5	85	82	74-125	3	30	
Chloroethane	ug/L	ND	20	20	16.6	16.3	83	81	34-150	2	30	
Chloroform	ug/L	ND	20	20	17.0	17.1	85	86	54-148	1	30	
Chloromethane	ug/L	ND	20	20	15.5	15.3	78	76	38-150	2	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	16.3	16.3	82	82	54-149	0	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.4	16.3	82	81	64-130	0	30	
Dibromochloromethane	ug/L	ND	20	20	17.4	17.1	87	85	71-135	2	30	
Dibromomethane	ug/L	ND	20	20	17.7	17.4	88	87	65-141	1	30	
Dichlorodifluoromethane	ug/L	ND	20	20	12.1	11.5	61	58	32-150	5	30	
Dichlorofluoromethane	ug/L	ND	20	20	16.8	16.5	84	82	58-150	2	30	
Diethyl ether (Ethyl ether)	ug/L	ND	20	20	18.4	18.3	92	91	51-148	1	30	
Ethylbenzene	ug/L	ND	20	20	17.3	17.1	87	85	66-126	2	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	16.2	17.6	81	88	31-150	8	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	18.1	17.8	90	89	72-133	2	30	
m&p-Xylene	ug/L	ND	40	40	35.7	34.5	89	86	69-134	3	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.1	18.4	90	92	65-137	2	30	
Methylene Chloride	ug/L	ND	20	20	17.8	17.2	89	86	59-137	3	30	
n-Butylbenzene	ug/L	ND	20	20	16.5	16.6	82	83	52-141	1	30	
n-Hexane	ug/L	ND	20	20	15.4	15.1	77	76	70-130	2	30	
n-Propylbenzene	ug/L	ND	20	20	17.0	16.9	85	84	53-138	1	30	
Naphthalene	ug/L	ND	20	20	15.5	18.5	77	92	56-141	17	30	
o-Xylene	ug/L	ND	20	20	17.6	17.6	88	88	73-133	0	30	
p-Isopropyltoluene	ug/L	ND	20	20	18.5	18.5	92	92	59-139	0	30	
sec-Butylbenzene	ug/L	ND	20	20	18.0	17.9	89	89	60-138	0	30	
Styrene	ug/L	ND	20	20	18.6	18.4	93	92	67-138	1	30	
tert-Butylbenzene	ug/L	ND	20	20	17.4	17.4	87	87	58-141	0	30	
Tetrachloroethene	ug/L	ND	20	20	16.3	15.9	82	80	66-141	2	30	
Tetrahydrofuran	ug/L	ND	100	100	94.1	92.8	94	93	57-133	1	30	
Toluene	ug/L	ND	20	20	16.1	15.8	81	79	69-131	2	30	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4520997 4520998

Parameter	Units	10634284015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
trans-1,2-Dichloroethene	ug/L	ND	20	20	17.6	17.1	88	86	47-150	2	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.9	16.9	84	85	68-129	0	30	
Trichloroethene	ug/L	ND	20	20	16.5	16.4	83	82	68-139	1	30	
Trichlorofluoromethane	ug/L	ND	20	20	13.9	13.7	70	68	49-150	2	30	
Vinyl chloride	ug/L	ND	20	20	15.0	14.7	75	73	55-150	2	30	
Xylene (Total)	ug/L	ND	60	60	53.3	52.2	89	87	68-136	2	30	
1,2-Dichlorobenzene-d4 (S)	%.						99	99	75-125			
4-Bromofluorobenzene (S)	%.						102	101	75-125			
Toluene-d8 (S)	%.						100	98	75-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854352
QC Batch Method: EPA 3511
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Water PAH by SIM MSSV LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

METHOD BLANK: 4517135 Matrix: Water
Associated Lab Samples: 10634268001, 10634268002, 10634268003, 10634268004, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	11/22/22 16:10	
2-Methylnaphthalene	ug/L	ND	0.040	11/22/22 16:10	
Acenaphthene	ug/L	ND	0.040	11/22/22 16:10	
Acenaphthylene	ug/L	ND	0.040	11/22/22 16:10	
Anthracene	ug/L	ND	0.040	11/22/22 16:10	
Benzo(a)anthracene	ug/L	ND	0.040	11/22/22 16:10	
Benzo(a)pyrene	ug/L	ND	0.040	11/22/22 16:10	
Benzo(b)fluoranthene	ug/L	ND	0.040	11/22/22 16:10	
Benzo(g,h,i)perylene	ug/L	ND	0.040	11/22/22 16:10	
Benzo(k)fluoranthene	ug/L	ND	0.040	11/22/22 16:10	
Chrysene	ug/L	ND	0.040	11/22/22 16:10	
Dibenz(a,h)anthracene	ug/L	ND	0.040	11/22/22 16:10	
Dibenzofuran	ug/L	ND	0.040	11/22/22 16:10	
Fluoranthene	ug/L	ND	0.040	11/22/22 16:10	
Fluorene	ug/L	ND	0.040	11/22/22 16:10	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	11/22/22 16:10	
Naphthalene	ug/L	ND	0.040	11/22/22 16:10	
Phenanthrene	ug/L	ND	0.040	11/22/22 16:10	
Pyrene	ug/L	ND	0.040	11/22/22 16:10	
2-Fluorobiphenyl (S)	%.	84	62-137	11/22/22 16:10	
p-Terphenyl-d14 (S)	%.	81	50-131	11/22/22 16:10	

LABORATORY CONTROL SAMPLE & LCSD: 4517136 4517137

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	2	1.5	1.5	73	75	54-125	3	20	
2-Methylnaphthalene	ug/L	2	1.5	1.5	73	75	55-125	3	20	
Acenaphthene	ug/L	2	1.5	1.6	76	79	71-125	4	20	
Acenaphthylene	ug/L	2	1.5	1.5	74	76	59-125	2	20	
Anthracene	ug/L	2	1.6	1.6	79	80	61-125	1	20	
Benzo(a)anthracene	ug/L	2	1.4	1.5	72	76	59-125	6	20	
Benzo(a)pyrene	ug/L	2	1.4	1.4	68	72	63-125	5	20	
Benzo(b)fluoranthene	ug/L	2	1.4	1.5	70	75	65-125	6	20	
Benzo(g,h,i)perylene	ug/L	2	1.5	1.6	77	78	61-130	1	20	
Benzo(k)fluoranthene	ug/L	2	1.5	1.6	75	81	61-134	6	20	
Chrysene	ug/L	2	1.4	1.5	70	74	66-125	5	20	
Dibenz(a,h)anthracene	ug/L	2	1.5	1.6	76	78	61-132	3	20	
Dibenzofuran	ug/L	2	1.5	1.6	75	78	70-130	4	20	
Fluoranthene	ug/L	2	1.4	1.4	69	72	71-125	4	20	L2

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

LABORATORY CONTROL SAMPLE & LCSD: 4517136 4517137

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Fluorene	ug/L	2	1.5	1.6	76	78	70-125	2	20	
Indeno(1,2,3-cd)pyrene	ug/L	2	1.5	1.5	73	75	66-125	2	20	
Naphthalene	ug/L	2	1.5	1.5	74	77	68-125	4	20	
Phenanthrene	ug/L	2	1.5	1.6	76	79	70-125	4	20	
Pyrene	ug/L	2	1.5	1.5	74	77	62-125	4	20	
2-Fluorobiphenyl (S)	%.				74	75	62-137			
p-Terphenyl-d14 (S)	%.				76	80	50-131			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854325
QC Batch Method: EPA 3510C
Analysis Method: NWTPH-Dx
Analysis Description: NWTPH-Dx GCS LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268002, 10634268004, 10634268005

METHOD BLANK: 4517025 Matrix: Water
Associated Lab Samples: 10634268002, 10634268004, 10634268005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	11/21/22 12:41	
Motor Oil Range	mg/L	ND	0.40	11/21/22 12:41	
n-Triacontane (S)	%.	67	50-150	11/21/22 12:41	
o-Terphenyl (S)	%.	74	50-150	11/21/22 12:41	

LABORATORY CONTROL SAMPLE & LCSD: 4517026 4517027

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	0.93	1.6	46	80	50-150	53	20	L2,R1
Motor Oil Range	mg/L	2	1.0	1.6	50	81	50-150	47	20	R1
n-Triacontane (S)	%.				47	73	50-150			S0
o-Terphenyl (S)	%.				54	84	50-150			

SAMPLE DUPLICATE: 4517028

Parameter	Units	10634268002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	0.87	ND		30	
Motor Oil Range	mg/L	0.70	ND		30	
n-Triacontane (S)	%.	33	44			S5
o-Terphenyl (S)	%.	59	53			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

QC Batch: 854938
QC Batch Method: EPA 3510C
Analysis Method: NWTPH-Dx
Analysis Description: NWTPH-Dx GCS LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10634268001, 10634268003

METHOD BLANK: 4519657 Matrix: Water
Associated Lab Samples: 10634268001, 10634268003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	11/28/22 19:31	
Motor Oil Range	mg/L	ND	0.40	11/28/22 19:31	
n-Triacontane (S)	%.	63	50-150	11/28/22 19:31	
o-Terphenyl (S)	%.	76	50-150	11/28/22 19:31	

LABORATORY CONTROL SAMPLE & LCSD: 4519658 4519659

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.1	1.7	55	87	50-150	45	20	R1
Motor Oil Range	mg/L	2	1.1	1.7	53	86	50-150	47	20	R1
n-Triacontane (S)	%.				46	72	50-150			S0
o-Terphenyl (S)	%.				53	85	50-150			

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QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 854929

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
[1]	The continuing calibration verification was above the method acceptance limit for bromomethane. Any detection for the analyte in the associated samples may have a high bias.

Batch: 854978

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

Batch: 855198

[1]	The continuing calibration verification was above the method acceptance limit for n-hexane. Any detection for the analyte in the associated samples may have a high bias.

ANALYTE QUALIFIERS

1M	Reanalysis conducted in excess of EPA method holding time. Results for the motor oil range does not confirm original analysis performed in hold time.
C6	Result confirmed by reanalysis conducted outside of the method specified holding time.
CO	Result is reported per client request but cannot be used for compliance purposes.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
MN	The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.
P2	Re-extraction or re-analysis could not be performed due to insufficient sample amount.

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QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

ANALYTE QUALIFIERS

R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10634268001	**MW-OWS-1**	EPA 3510C	854938	NWTPH-Dx	855658
10634268002	**MW-OWS-2**	EPA 3510C	854325	NWTPH-Dx	854735
10634268003	**MW-OWS-3**	EPA 3510C	854938	NWTPH-Dx	855658
10634268004	**WES-DUP-1**	EPA 3510C	854325	NWTPH-Dx	854735
10634268005	**WES-FEB-1**	EPA 3510C	854325	NWTPH-Dx	854735
10634268001	**MW-OWS-1**	NWTPH-Gx	854349		
10634268002	**MW-OWS-2**	NWTPH-Gx	854349		
10634268003	**MW-OWS-3**	NWTPH-Gx	854349		
10634268004	**WES-DUP-1**	NWTPH-Gx	854349		
10634268005	**WES-FEB-1**	NWTPH-Gx	854349		
10634268006	**Trip Blank**	NWTPH-Gx	854349		
10634268001	**MW-OWS-1**	EPA 3020A	854516	EPA 6020B	854792
10634268002	**MW-OWS-2**	EPA 3020A	854516	EPA 6020B	854792
10634268003	**MW-OWS-3**	EPA 3020A	854516	EPA 6020B	854792
10634268004	**WES-DUP-1**	EPA 3020A	854516	EPA 6020B	854792
10634268005	**WES-FEB-1**	EPA 3020A	854516	EPA 6020B	854792
10634268001	**MW-OWS-1**	EPA 3020A	854512	EPA 6020B	854975
10634268002	**MW-OWS-2**	EPA 3020A	854512	EPA 6020B	854975
10634268003	**MW-OWS-3**	EPA 3020A	854512	EPA 6020B	854975
10634268004	**WES-DUP-1**	EPA 3020A	854512	EPA 6020B	854975
10634268005	**WES-FEB-1**	EPA 3020A	854512	EPA 6020B	854975
10634268001	**MW-OWS-1**	EPA 7470A	854524	EPA 7470A	854725
10634268002	**MW-OWS-2**	EPA 7470A	854524	EPA 7470A	854725
10634268003	**MW-OWS-3**	EPA 7470A	854524	EPA 7470A	854725
10634268004	**WES-DUP-1**	EPA 7470A	854524	EPA 7470A	854725
10634268005	**WES-FEB-1**	EPA 7470A	854524	EPA 7470A	854725
10634268001	**MW-OWS-1**	EPA 7470A	854521	EPA 7470A	854948
10634268002	**MW-OWS-2**	EPA 7470A	854521	EPA 7470A	854948
10634268003	**MW-OWS-3**	EPA 7470A	854521	EPA 7470A	854948
10634268004	**WES-DUP-1**	EPA 7470A	854521	EPA 7470A	854948
10634268005	**WES-FEB-1**	EPA 7470A	854521	EPA 7470A	854948
10634268001	**MW-OWS-1**	3510C	1962829	EPA 8270E	1962829
10634268002	**MW-OWS-2**	3510C	1962632	EPA 8270E	1962632
10634268003	**MW-OWS-3**	3510C	1962829	EPA 8270E	1962829
10634268004	**WES-DUP-1**	3510C	1962829	EPA 8270E	1962829
10634268005	**WES-FEB-1**	3510C	1962632	EPA 8270E	1962632
10634268001	**MW-OWS-1**	EPA 3511	854352	EPA 8270E by SIM	854978
10634268002	**MW-OWS-2**	EPA 3511	854352	EPA 8270E by SIM	854978
10634268003	**MW-OWS-3**	EPA 3511	854352	EPA 8270E by SIM	854978
10634268004	**WES-DUP-1**	EPA 3511	854352	EPA 8270E by SIM	854978
10634268005	**WES-FEB-1**	EPA 3511	854352	EPA 8270E by SIM	854978
10634268001	**MW-OWS-1**	EPA 8260D	855198		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10634268

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10634268002	**MW-OWS-2**	EPA 8260D	854929		
10634268003	**MW-OWS-3**	EPA 8260D	855198		
10634268004	**WES-DUP-1**	EPA 8260D	855198		
10634268005	**WES-FEB-1**	EPA 8260D	854929		
10634268006	**Trip Blank**	EPA 8260D	854929		

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Pace Analytical
www.paceLabs.com

CHAIN-OF-CUSTODY / Analytical Request Docu

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be co

WO# : 10634268

10634268

Section A Required Client Information:		Section B Required Project Information:	Section C Invoice Information:
Company:	Phillips 66 Ferndale Refinery	Report To: Joe Sumera	Attention: Joe Sumera
Address:	PO Box 8	Copy To: Eric Libolt	Company Name: Phillips 66
	Ferndale, WA 98248	elibolt@whatcom-es.com / 360-752-9571	Address: PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No. PO # 4300035146	Pace Quote Reference:
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID: P66: Oily Water Sewer	Pace Project Manager:
Requested Due Date/TAT:	Standard TAT	Container Order Number:	Pace Profile #:

Regulatory Agency
State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	BTEX - EPA 8260	n-Hexane EPA 8260	NWTPH - Gx	NWTPH - Dx	PAHs/cPAHs - 8270 SIM (see attached list)	Naphthalenes 8270 SIM	As, Cd, Cr, Pb, Ni, Zn (total and dissolved)	Mercury (total and dissolved)	Chlorinated VOCs EPA 8260	Residual Chlorine (Y/N)
1	MW-OWS-1	wt	G	11/16/22	1115	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X	
2	MW-OWS-2	wt	G	11/14/22	345pm	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X	
3	MW-OWS-3	wt	G	11/16/22	1410pm	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X	
4	WES-DUP-1	wt	G	11/16/22	900	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X	
5	WES-FEB-1	wt	G	11/1-1/22	220pm	-	-		16	6		2	8						X	X	X	X	X	X	X	X	X	
6						-	-																					
7						-	-																					
8						-	-																					
9						-	-																					
10						-	-																					

Requesting that all metals be analyzed for total and dissolved. Two HNO3 poly's have been filled. One is not filtered and the other one is filtered (both are marked).

001
002
003
004
005
006

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Please email results to both Phillips 66, and Whatcom Environmental	/ Whatcom Environmental				11/16/22	1850

SAMPLE CONDITIONS			
4.9, 5.5	Y	N	Y
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Megan Everson

SIGNATURE of SAMPLER:

DATE Signed: 11/16/22

DC#_Title: ENV-FRM-MIN4-0150 v11_Sample Condition Upon Receipt (SCUR)
Effective Date: 11/16/2022

Sample Condition Upon Receipt

Client Name: Phillips 66 Ferndale Refinery

Project #: **WO#: 10634268**

PM: JMG **Due Date: 12/05/22**
CLIENT: COP

Courier: [x] FedEx [ ] UPS [ ] USPS [ ] Client [ ] Pace [ ] SpeeDee [ ] Commercial

[ ] See Exceptions ENV-FRM-MIN4-0142

Tracking Number: 7704 19 064054 3893

Custody Seal on Cooler/Box Present? [ ] Yes [x] No **Seals Intact?** [ ] Yes [x] No

Biological Tissue Frozen? [ ] Yes [ ] No [x] N/A

Packing Material: [x] Bubble Wrap [x] Bubble Bags [ ] None [ ] Other

Temp Blank? [x] Yes [ ] No

Thermometer: [ ] T1 (0461) [x] T2 (1336) [ ] T3 (0459) [ ] T4 (0254) [ ] T5 (0178) [ ] T6 (0235) [ ] T7 (0042) [ ] T8 (0775) [ ] T9(0727) [ ] 01339252/1710

Type of Ice: [x] Wet [ ] Blue [ ] Dry [ ] None [ ] Melted

Did Samples Originate in West Virginia? [ ] Yes [x] No

Were All Container Temps Taken? [ ] Yes [ ] No [x] N/A

Temp should be above freezing to 6 °C

Cooler temp Read w/Temp Blank: _____ °C

Average Corrected Temp (no temp blank only): 4.9, 5.2

Correction Factor: +0.1

Cooler Temp Corrected w/temp blank: _____ °C

[ ] See Exceptions ENV-FRM-MIN4-0142 [ ] 1 Container

USDA Regulated Soil: [x] N/A, water sample/other: _____)

Date/Initials of Person Examining Contents: MMZ 11-17-22

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): [ ] Duluth [x] Minneapolis [ ] Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	[x] Yes	[ ] No		1.
Chain of Custody Relinquished?	[x] Yes	[ ] No		2.
Sampler Name and/or Signature on COC?	[x] Yes	[ ] No	[ ] N/A	3.
Samples Arrived within Hold Time?	[x] Yes	[ ] No		4. If fecal: [ ] <8 hrs [ ] >8 hr, <24 [ ] No
Short Hold Time Analysis (<72 hr)?	[ ] Yes	[x] No		5. [ ] Fecal Coliform [ ] HPC [ ] Total Coliform/E.coli [ ] BOD/cBOD [ ] Hex Chrom [ ] Turbidity [ ] Nitrate [ ] Nitrite [ ] Orthophos [ ] Other _____
Rush Turn Around Time Requested?	[ ] Yes	[x] No		6.
Sufficient Sample Volume?	[x] Yes	[ ] No		7.
Correct Containers Used?	[x] Yes	[ ] No	[ ] N/A	8.
-Pace Containers Used?	[x] Yes	[ ] No		
Containers Intact?	[x] Yes	[ ] No		9.
Field Filtered Volume Received for Dissolved Tests?	[x] Yes	[ ] No	[ ] N/A	10. Is sediment visible in the dissolved container? [ ] Yes [ ] No
Is sufficient information available to reconcile the samples to the COC?	[x] Yes	[ ] No		11. **If no, write ID/Date/Time of container below:** MW-CWS-3 not present. Cooler 3 of 3 not present. [ ] See Exceptions ENV-FRM-MIN4-0142
Matrix: [x] Water [ ] Soil [ ] Oil [ ] Other				
All containers needing acid/base preservation have been checked?	[x] Yes	[ ] No	[ ] N/A	12. Sample # [ ] NaOH [ ] HNO3 [ ] H2SO4 [ ] Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	[x] Yes	[ ] No	[ ] N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS	[x] Yes	[ ] No	[ ] N/A	Positive for Residual Chlorine? [ ] Yes [ ] No [ ] See Exceptions ENV-FRM-MIN4-0142
(*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 | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	[ ] Yes	[ ] No	[x] N/A	13.
Extra labels present on soil VOA or WIDRO containers?	[ ] Yes	[ ] No	[x] N/A	14. [ ] See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	[x] Yes	[ ] No	[ ] N/A	
3 Trip Blanks Present?	[x] Yes	[ ] No	[ ] N/A	15. 4 HCl Pace Trip Blank Lot # (if purchased): 393448
Trip Blank Custody Seals Present?	[x] Yes	[ ] No	[ ] N/A	

Field Data Required? [ ] Yes [ ] No

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross **Date:** 11/17/22

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: NP **Line:** 2

MU 17 3-2

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
Trip Blanks	1	0	~~4~~3	4	N

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form
	Effective Date: 09/22/2022

Workorder #: _____

4054 | 3893 No Temp Blank					
Read Temp		Corrected Temp		Average temp	
3.2	5.3	3.3	5.4		
5.6	5.4	5.7	5.5	4.9	5.5
5.5	5.9	5.6	6.0		
4.8	5.0	4.9	5.1		

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

_____

Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you MUST document containers in this section HERE

Tracking Number	Temperature
770459064054	4.9
v. 3893	5.5

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments: Cooler 3 of 3 not present. MW-OVS-3 not present.

- No way to tell DP3Ns of WMS-FEB-1 apart; neither marked field filtered.

Qualtrax ID: 52763

Pace Analytical
www.pacelabs.com

COPY

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Phillips 66 Ferndale Refinery	Report To:	Joe Sumera	Attention:	Joe Sumera
Address:	PO Box 8	Copy To:	Eric Libolt	Company Name:	Phillips 66
	Ferndale, WA 98248		elibolt@whatcom-es.com / 360-752-9571	Address:	PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No.	PO # 4300035146	Pace Quote Reference:	
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID:	P66: Oily Water Sewer	Pace Project Manager:	
Requested Due Date/TAT:	Standard TAT	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	BTEX - EPA 8260	n-Hexane EPA 8260	NWTPH - Gx	NWTPH - Dx	PAHs/cPAHs - 8270 SIM (see attached list)	Naphthalenes 8270 SIM	As, Cd, Cr, Pb, Ni, Zn (total and dissolved)	Mercury (total and dissolved)	Chlorinated VOCs EPA 8260	Residual Chlorine (Y/N)	
1	MW-OWS-1	wt	G	11/16/22	1115	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X			Requesting that all metals be analyzed for total and dissolved. Two HNO3 poly's have been filled. One is not filtered and the other one is filtered (both are marked). 001
2	MW-OWS-2	wt	G	11/14/22	345pm	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X			002
3	MW-OWS-3	wt	G	11/16/22	1410pm	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X			003
4	WES-DUP-1	wt	G	11/16/22	900	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X			004
5	WES-FEB-1	wt	G	11/1-1/22	220pm	-	-		16	6		2	8					X	X	X	X	X	X	X	X	X			005
6																													006
7																													
8																													
9																													
10																													

WO# : 10634268

10634268

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please email results to both Phillips 66, and Whatcom Environmental	/ Whatcom Environmental			PACE	11/18/22	850	4.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Megan Everson

SIGNATURE of SAMPLER: [signature] DATE Signed: 11/16/22

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Sample Condition Upon Receipt

Client Name: Phillips 66 Ferndale Refinery **Project #:**

WO#: 10634268

PM: JMG **Due Date: 12/05/22**

CLIENT: COP

Courier: ☒ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 770459063790 ☐ 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 (1336) ☐ T3 (0459) ☒ T4 (0254) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9(0727) ☐ 01339252/1710 **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:** _____ °C

Correction Factor: +0.2 **Cooler Temp Corrected w/temp blank:** _____ °C

Average Corrected Temp (no temp blank only): 4.4 °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☒ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** PMM 11/18/22

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): ☐ Duluth ☒ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Sample Volume?	☒ Yes	☐ No		7. Only cooler 3. Received separately.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	8. Only MW-OWS-3
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☐ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☒ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other	☒ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	12. Sample # 003
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☒ Yes	☐ No	☐ N/A	☐ NaOH ☒ HNO3 2/2 ☐ H2SO4 ☐ 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.)	☒ Yes	☐ No	☐ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot # Residual Chlorine: 0-6 Roll 108422 / 0-6 Strip / 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☒ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☒ No	☐ N/A	
3 Trip Blanks Present?	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☒ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased): 393448 (2)

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

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross **Date:** 11/18/22

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: PMM **Line:** 2

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form
	Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp
4.7	4.9	4.4
3.9	4.1	
3.8	4.0	
4.2	4.4	

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No
If yes, indicate who was contacted, date and time. If no, indicate reason why. _____
Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you MUST document containers in this section HERE

Tracking Number	Temperature

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples										
Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments:

_____

_____

_____

Qualtrax ID: 52763

Internal Transfer Chain of Custody

G072

www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WA

Cert. Needed: [X] Yes ☐ No

Workorder: 10634268 **Workorder Name:** P66: Oily Water Sewer

Owner Received Date: 11/17/2022 **Results Requested By:** 12/5/2022

Report To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved (A65)	8270E Biphenyl (PACE-TN)	LAB USE ONLY
1	MW-OWS-1	PS	11/16/2022 11:15	10634268001	Water	2	X	-01
2	MW-OWS-2	PS	11/14/2022 15:45	10634268002	Water	2	X	-02
3	MW-OWS-3	PS	11/16/2022 13:40	10634268003	Water	2	X	-03
4	WES-DUP-1	PS	11/16/2022 09:00	10634268004	Water	2	X	-04
5	WES-FEB-1	PS	11/14/2022 14:20	10634268005	Water	2	X	-05

L1559530

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/Pace	11-18-22 14:50		11/19/22 09:00
2				
3				

Comments: SHORT HOLD

Cooler Temperature on Receipt 5.7 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

IR#10 5.7 +0 = 5.7

5466 8887 3372

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

December 22, 2022

Joe Sumera
Phillips 66
3901 Unick Road
Ferndale, WA 98248

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Dear Joe Sumera:

Enclosed are the analytical results for sample(s) received by the laboratory on December 16, 2022. 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

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Eric Libolt, Whatcom Environmental Services

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10637341001	**MW-OWS-1**	Water	12/15/22 11:50	12/16/22 11:30
10637341002	**MW-OWS-2**	Water	12/15/22 13:15	12/16/22 11:30
10637341003	**MW-OWS-3**	Water	12/15/22 14:25	12/16/22 11:30
10637341004	**WES-DUP-1**	Water	12/15/22 09:00	12/16/22 11:30
10637341005	**WES-FEB-1**	Water	12/15/22 10:35	12/16/22 11:30

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(612)607-1700

SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10637341001	**MW-OWS-1**	NWTPH-Dx	EB3	4	PASI-M
10637341002	**MW-OWS-2**	NWTPH-Dx	EB3	4	PASI-M
10637341003	**MW-OWS-3**	NWTPH-Dx	EB3	4	PASI-M
10637341004	**WES-DUP-1**	NWTPH-Dx	EB3	4	PASI-M
10637341005	**WES-FEB-1**	NWTPH-Dx	EB3	4	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Sample: MW-OWS-1 **Lab ID: 10637341001** Collected: 12/15/22 11:50 Received: 12/16/22 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.41	1	12/19/22 13:29	12/20/22 20:38	68334-30-5	
Motor Oil Range	ND	mg/L	0.41	1	12/19/22 13:29	12/20/22 20:38		
Surrogates								
o-Terphenyl (S)	72	%.	50-150	1	12/19/22 13:29	12/20/22 20:38	84-15-1	
n-Triacontane (S)	74	%.	50-150	1	12/19/22 13:29	12/20/22 20:38		

Sample: MW-OWS-2 **Lab ID: 10637341002** Collected: 12/15/22 13:15 Received: 12/16/22 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.40	1	12/19/22 13:29	12/20/22 20:49	68334-30-5	
Motor Oil Range	ND	mg/L	0.40	1	12/19/22 13:29	12/20/22 20:49		
Surrogates								
o-Terphenyl (S)	64	%.	50-150	1	12/19/22 13:29	12/20/22 20:49	84-15-1	
n-Triacontane (S)	68	%.	50-150	1	12/19/22 13:29	12/20/22 20:49		

Sample: MW-OWS-3 **Lab ID: 10637341003** Collected: 12/15/22 14:25 Received: 12/16/22 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.42	1	12/19/22 13:29	12/20/22 21:12	68334-30-5	
Motor Oil Range	ND	mg/L	0.42	1	12/19/22 13:29	12/20/22 21:12		
Surrogates								
o-Terphenyl (S)	54	%.	50-150	1	12/19/22 13:29	12/20/22 21:12	84-15-1	
n-Triacontane (S)	56	%.	50-150	1	12/19/22 13:29	12/20/22 21:12		

Sample: WES-DUP-1 **Lab ID: 10637341004** Collected: 12/15/22 09:00 Received: 12/16/22 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.41	1	12/19/22 13:29	12/20/22 21:23	68334-30-5	
Motor Oil Range	ND	mg/L	0.41	1	12/19/22 13:29	12/20/22 21:23		
Surrogates								
o-Terphenyl (S)	63	%.	50-150	1	12/19/22 13:29	12/20/22 21:23	84-15-1	
n-Triacontane (S)	60	%.	50-150	1	12/19/22 13:29	12/20/22 21:23		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Sample: WES-FEB-1 **Lab ID: 10637341005** Collected: 12/15/22 10:35 Received: 12/16/22 11:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C Pace Analytical Services - Minneapolis							
Diesel Fuel Range	ND	mg/L	0.39	1	12/19/22 13:29	12/20/22 21:35	68334-30-5	
Motor Oil Range	ND	mg/L	0.39	1	12/19/22 13:29	12/20/22 21:35		
Surrogates								
o-Terphenyl (S)	60	%.	50-150	1	12/19/22 13:29	12/20/22 21:35	84-15-1	
n-Triacontane (S)	63	%.	50-150	1	12/19/22 13:29	12/20/22 21:35		

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

QC Batch: 859188
QC Batch Method: EPA 3510C
Analysis Method: NWTPH-Dx
Analysis Description: NWTPH-Dx GCS LV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10637341001, 10637341002, 10637341003, 10637341004, 10637341005

METHOD BLANK: 4540677 Matrix: Water
Associated Lab Samples: 10637341001, 10637341002, 10637341003, 10637341004, 10637341005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	12/20/22 20:04	
Motor Oil Range	mg/L	ND	0.40	12/20/22 20:04	
n-Triacontane (S)	%.	86	50-150	12/20/22 20:04	
o-Terphenyl (S)	%.	83	50-150	12/20/22 20:04	

LABORATORY CONTROL SAMPLE & LCSD: 4540678 4540679

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.6	1.7	81	84	50-150	4	20	
Motor Oil Range	mg/L	2	1.7	1.7	83	87	50-150	6	20	
n-Triacontane (S)	%.				78	82	50-150			
o-Terphenyl (S)	%.				76	79	50-150			

SAMPLE DUPLICATE: 4540839

Parameter	Units	10637341002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	ND		30	
Motor Oil Range	mg/L	ND	ND		30	
n-Triacontane (S)	%.	68	67			
o-Terphenyl (S)	%.	64	67			

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

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10637341

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10637341001	**MW-OWS-1**	EPA 3510C	859188	NWTPH-Dx	859577
10637341002	**MW-OWS-2**	EPA 3510C	859188	NWTPH-Dx	859577
10637341003	**MW-OWS-3**	EPA 3510C	859188	NWTPH-Dx	859577
10637341004	**WES-DUP-1**	EPA 3510C	859188	NWTPH-Dx	859577
10637341005	**WES-FEB-1**	EPA 3510C	859188	NWTPH-Dx	859577

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Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Phillips 66 Ferndale Refinery	Report To:	Joe Sumera	Attention:	Joe Sumera
Address:	PO Box 8	Copy To:	Eric Libolt	Company Name:	Phillips 66
	Ferndale, WA 98248		elibolt@whatcom-es.com / 360-752-9571	Address:	PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No.	PO # 4300035146	Pace Quote Reference:	
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID:	P66: Oily Water Sewer	Pace Project Manager:	
Requested Due Date/TAT:	Standard TAT	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N): Y/N	Analyses Test: NWTPH-DX	Residual Chlorine (Y/N)	
1	MW-OWS-1	wt	G	12/15/22	1150	-	-		2				2						X		001
2	MW-OWS-2	wt	G	12/15/22	1315	-	-		2				2						X		002
3	MW-OWS-3	wt	G	"	1425	-	-		2				2						X		003
4	WES-DUP-1	wt	G	"	0900	-	-		2				2						X		004
5	WES-FEB-1	wt	G	"	1035	-	-		2				2						X		005
6						-	-														
7						-	-														
8						-	-														
9						-	-														
10						-	-														

WO# : 10637341

10637341

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please email results to both Phillips 66, and Whatcom Environmental	Megan Everson / Whatcom Environmental	12/15/22	1530	Pace	12/16/22	11:20	8.9	Y	Y	N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Megan Everson WES

SIGNATURE of SAMPLER: [signature] DATE Signed: 12/15/22

Sample Condition Upon Receipt

Client Name: Phillips 66 Ferndal Refinery

Project #: WO#: 10637341
PM: JMG Due Date: 01/03/23
CLIENT: COP

Courier: ☑ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 923719731164 ☐ 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 (1336) ☐ T3 (0459) ☑ T4 (0254) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9(0727) ☐ 01339252/1710 **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:** 5.7 °C

Correction Factor: add 0.2 **Cooler Temp Corrected w/temp blank:** 5.9 °C

Average Corrected Temp (no temp blank only): ____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☑ N/A, water sample/other: ____)

Date/Initials of Person Examining Contents: 12/16/22 ADC2

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): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other ____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Sample Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	8. 1-AGIH Broken MW-OWS-1
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☐ Yes	☑ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ 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)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ 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.)	☑ Yes	☐ No	☐ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ 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?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): ____

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

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

Project Manager Review: Jenni Gross **Date:** 12/16/22

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: ADC2 **Line:** 10

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form
	Effective Date: 09/22/2022

Workorder #: _____

No Temp Blank		
Read Temp	Corrected Temp	Average temp

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

_____

Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you MUST document containers in this section HERE

Tracking Number	Temperature

Broken on receipt

~~Out of Temp Sample ID~~	Container Type	# of Containers
MW-OW1-1	AG3H	1

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments:

_____

_____

_____

Qualtrax ID: 52763

APPENDIX F

Groundwater Data Quality Assurance Review

This evaluation provides the results of verification and validation checks of analytical data for three groundwater samples collected during the sampling events which occurred on June 6, 2022, July 22, 2022, August 24, 2022, November 16, 2022, December 15, 2022, at the Phillips 66 Ferndale Refinery. The samples were collected and analyzed as part of the Oily Water Sewer site investigation. All sample analyses were conducted at ALS Environmental, Pace Analytical Services, Pace National, and Fremont Analytical. This data quality evaluation covers Pace Project No: 10612301, 10623141, 10634268 & 10637341, and ALS Project No: EV22070104.

Laboratory quality control procedures have been verified using the applicable National Functional Guidelines (EPA, 2020a; EPA, 2020b). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Based on the verification and validation check, data qualifiers have been added to the sample results tables provided in the Report as needed. Data qualifier definitions are provided in the table footnotes. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below.

Laboratory Data Package Completeness

All laboratory data reports contained a signed chain-of-custody, a cooler receipt form documenting the condition and temperature of the samples upon receipt at the laboratory, sample analytical results, and quality control results (method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

Sample Conditions and Analysis

The laboratories received the samples outside of required temperature range. All analyses were performed as requested upon client approval. Preservation of samples, as specified by the analytical method, was verified by the laboratory.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within analytical method and project-specified holding times with the following exception:

- n-Hexane reanalysis was conducted outside of specified hold time.

Initial and Continuing Calibrations

Appropriate calibration standard methods were followed as required. All initial and continuing calibration results were within acceptable range with the following exceptions:

- Chloromethane and Bromomethane continuing calibration verification was below the method acceptance limit. The analytes were not detected in the samples associated with low level volatile organic compounds analysis (8260D) and the sensitivity of the instrument was verified with a reporting limit check standard. Any detections in samples associated with low level volatile organic compounds analysis (8260D) may have a high bias.
- Styrene and Bromomethane continuing calibration verification was below the method acceptance limit. The analytes were not detected in the samples with low level volatile organic compounds analysis (8260D) and the sensitivity of the instrument was verified with a reporting limit check standard.

- Bromoform continuing calibration was above the method acceptance limit. Any detection for analyte in samples associated with low level volatile organic compounds analysis (8260D) may have a high bias.
- 1,1-Dichloropropene continuing calibration verification was below the method acceptance limit. Any detection for analyte in samples associated with low level volatile organic compounds analysis (8260D) may have a low bias.
- n-Hexane continuing calibration was above method acceptance limit. Any detections in the samples associated with low level volatile organic compounds analysis (8260D) may have a high bias.

Lab Method Blanks

Several method blanks were analyzed with each batch of samples. No contamination of the selected analytes was detected in any of the method blanks, with the following exceptions:

- Methylene Chloride was detected in the method blank associated with low level volatile organic compounds analysis (8260D). The detection concentration was above the required reporting limit.
- TPH as gas was detected in the method blank associated with (NWTPH-Gx). volatile petroleum hydrocarbons analysis (NWVPH).

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for low level semi volatile (8270E) and volatile (8260D) organic compound analyses. Surrogate spikes were added to all samples including Matrix Spikes, Matrix Spike Duplicates, Laboratory Control Samples, and blanks. Recovery values for the surrogate spikes were within the required control limits for all samples with the following exceptions:

- P-Terphenol surrogate recovery results for low level volatile organic compounds analysis (8260D) were above laboratory control limits. Results may be biased high.
- N-Triacontane surrogate recovery results for method (8270E) was below laboratory control limits. Results may have a low bias.

Laboratory Control Sample Results

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples. Recoveries for each LCS and/or LCSD were within the laboratory-specified control limits with the following exceptions:

- Styrene results associated with the laboratory control sample were below the laboratory reported QC. Associated data may have a low bias.
- Flouranthene results associated with the laboratory control sample were below the laboratory reported QC. Associated data may have a low bias.
- Diesel results associated with the laboratory control sample were below the laboratory reported QC. Sample was rejected and re-sampled.
- Oil results associated with the laboratory control sample outside of the laboratory specified recommended RPD limits.
- TPH results associated with the laboratory control sample outside of the laboratory specified recommended RPD limits.
- Bromomethane associated with the laboratory control sample was outside of the laboratory specified recommended RPD limits. Batch accepted based on laboratory control sample (LCS) recovery. No data qualifier is deemed necessary.
- Several parameters associated with the laboratory control sample had analyte recovery above QC limits. Results in associated samples may have a high bias.

Sample Duplicate and Matrix Spike/Matrix Spike Duplicate Results and Laboratory Duplicate Results

A sample duplicate and/or Matrix Spike/Matrix Spike Duplicate (MS/MSD) was analyzed with each batch of samples. The recovery values and relative percent difference (RPD) values for associated analyses were within the laboratory-specified control limits for all samples with the following exceptions:

- Diesel result precision between sample and sample duplicate exceeded laboratory control limits.
- Oil result precision between sample and sample duplicate exceeded laboratory control limits.
- Diesel re-extraction or re-analysis could not be performed due to insufficient sample amount.

Sample Collection Methods

All sample collection and handling methods were followed as described in the approved Sampling and Analysis Plan (SAP) and laboratory methods.

Overall Assessment of the Data

This data set is 100% complete. Data precision was evaluated through sample duplicates, laboratory surrogate duplicates, and matrix spike duplicates. Data accuracy was evaluated through laboratory method blanks, surrogate spikes, and matrix spikes. Based on this data quality verification and validation, all of the data presented were determined to be acceptable except for the NWTPH-Dx analysis for samples collected on November 14 and 16, 2022. This data was flagged for numerous issues related to surrogate recovery (flags S0 and S5) and laboratory control sample failures (flags R1 and L2). Due to these failures, the NWTPH-Dx results for all samples collected on November 14 and 16, 2022 were rejected. The wells were resampled on December 15, 2022.

APPENDIX G

Confirmation Soil Sample Laboratory Analytical Data Reports

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

August 10, 2022

Ashley Yamaura
Whatcom Environmental Services
228 E. Champion St
#101
Bellingham, WA 98225

RE: Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Dear Ashley Yamaura:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2022. 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.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

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

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Joe Sumera, Phillips 66

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01*
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
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
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
Ohio VAP Certification (1800) #: CL110*
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
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Pace Analytical Services National

Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10618041001	**SS-1-22 (3.75 FT)**	Solid	07/20/22 12:30	07/22/22 08:50
10618041002	**SS-2-22 (3.75 FT)**	Solid	07/20/22 13:00	07/22/22 08:50
10618041003	**SS-3-22 (4 FT)**	Solid	07/20/22 13:30	07/22/22 08:50
10618041004	**SS-4-22 (8 FT)**	Solid	07/20/22 14:00	07/22/22 08:50
10618041005	**SS-5-22 (4 FT)**	Solid	07/20/22 14:30	07/22/22 08:50
10618041006	**SS-6-22 (6 FT)**	Solid	07/20/22 16:00	07/22/22 08:50
10618041007	**SS-7-22 (4 FT)**	Solid	07/20/22 16:15	07/22/22 08:50
10618041008	**SS-8-22 (4 FT)**	Solid	07/20/22 16:30	07/22/22 08:50

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SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10618041001	**SS-1-22 (3.75 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041002	**SS-2-22 (3.75 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041003	**SS-3-22 (4 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041004	**SS-4-22 (8 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041005	**SS-5-22 (4 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M

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SAMPLE ANALYTE COUNT

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041006	**SS-6-22 (6 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041007	**SS-7-22 (4 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M
10618041008	**SS-8-22 (4 FT)**	EPA 6020B	RJS	6	PASI-M
		EPA 7471B	DJM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E	JNJ	7	PAN
		EPA 8270E by SIM	JLR	21	PASI-M
		EPA 8260D	ADM, JHH	71	PAN
		SM 2540G	CMK	1	PAN
		Trivalent Chromium Calculation	KEO	1	PASI-M

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-1-22 (3.75 FT) **Lab ID: 10618041001** Collected: 07/20/22 12:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.0**	mg/kg	0.55	1	07/28/22 12:00	08/08/22 22:03	7440-38-2	
Cadmium	ND	mg/kg	0.088	1	07/28/22 12:00	08/08/22 22:03	7440-43-9	
Chromium	**23.4**	mg/kg	2.2	1	07/28/22 12:00	08/08/22 22:03	7440-47-3	
Lead	**2.7**	mg/kg	0.55	1	07/28/22 12:00	08/08/22 22:03	7439-92-1	
Nickel	**23.0**	mg/kg	0.55	1	07/28/22 12:00	08/08/22 22:03	7440-02-0	
Zinc	**31.2**	mg/kg	5.5	1	07/28/22 12:00	08/08/22 22:03	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.035**	mg/kg	0.020	1	07/28/22 16:48	08/01/22 14:04	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**14.0**	%	0.10	1		08/05/22 12:03		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.384	1	08/01/22 11:00	08/02/22 18:52	92-52-4	
Surrogates								
2-Fluorophenol (S)	46.9	%	12.0-120	1	08/01/22 11:00	08/02/22 18:52	367-12-4	
Phenol-d5 (S)	45.4	%	10.0-120	1	08/01/22 11:00	08/02/22 18:52	4165-62-2	
Nitrobenzene-d5 (S)	47.1	%	10.0-122	1	08/01/22 11:00	08/02/22 18:52	4165-60-0	
2-Fluorobiphenyl (S)	43.0	%	15.0-120	1	08/01/22 11:00	08/02/22 18:52	321-60-8	
2,4,6-Tribromophenol (S)	51.5	%	10.0-127	1	08/01/22 11:00	08/02/22 18:52	118-79-6	
p-Terphenyl-d14 (S)	50.5	%	10.0-120	1	08/01/22 11:00	08/02/22 18:52	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	91-57-6	
Acenaphthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	83-32-9	
Acenaphthylene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	208-96-8	
Anthracene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	207-08-9	
Chrysene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	53-70-3	
Dibenzofuran	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	132-64-9	
Fluoranthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	206-44-0	
Fluorene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	193-39-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-1-22 (3.75 FT) **Lab ID: 10618041001** Collected: 07/20/22 12:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	91-20-3	
Phenanthrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	85-01-8	
Pyrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 17:30	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	59-125	1	07/26/22 12:34	08/01/22 17:30	321-60-8	
p-Terphenyl-d14 (S)	90	%.	65-125	1	07/26/22 12:34	08/01/22 17:30	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0577	1	07/28/22 10:04	07/28/22 20:08	67-64-1	
Allyl chloride	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	107-05-1	L0
Benzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	71-43-2	
Bromobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	108-86-1	
Bromochloromethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00115	1	07/20/22 12:30	07/29/22 17:56	75-27-4	
Bromoform	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	75-25-2	
Bromomethane	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	56-23-5	
Chlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	124-48-1	
Chloroethane	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	75-00-3	
Chloroform	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	67-66-3	
Chloromethane	ND	mg/kg	0.00288	1	07/28/22 10:04	07/28/22 20:08	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	96-12-8	
Dibromomethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00115	1	07/20/22 12:30	07/29/22 17:56	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	563-58-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-1-22 (3.75 FT) **Lab ID: 10618041001** Collected: 07/20/22 12:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00115	1	07/20/22 12:30	07/29/22 17:56	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	87-68-3	
n-Hexane	ND	mg/kg	0.0115	1	07/28/22 10:04	07/28/22 20:08	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0115	1	07/28/22 10:04	07/28/22 20:08	78-93-3	
Methylene Chloride	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0115	1	07/28/22 10:04	07/28/22 20:08	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	1634-04-4	
Naphthalene	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	103-65-1	
Styrene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	109-99-9	
Toluene	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	79-00-5	
Trichloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00577	1	07/28/22 10:04	07/28/22 20:08	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00288	1	07/28/22 10:04	07/28/22 20:08	96-18-4	
Vinyl chloride	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 20:08	75-01-4	
Xylene (Total)	**0.00631**	mg/kg	0.00346	1	07/28/22 10:04	07/28/22 20:08	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99.9	%	70.0-130	1	07/28/22 10:04	07/28/22 20:08	17060-07-0	
1,2-Dichloroethane-d4 (S)	98.0	%	70.0-130	1	07/20/22 12:30	07/29/22 17:56	17060-07-0	
Toluene-d8 (S)	108	%	75.0-131	1	07/28/22 10:04	07/28/22 20:08	2037-26-5	
Toluene-d8 (S)	101	%	75.0-131	1	07/20/22 12:30	07/29/22 17:56	2037-26-5	
4-Bromofluorobenzene (S)	102	%	67.0-138	1	07/28/22 10:04	07/28/22 20:08	460-00-4	
4-Bromofluorobenzene (S)	101	%	67.0-138	1	07/20/22 12:30	07/29/22 17:56	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**86.7**	%		1	07/28/22 10:16	07/28/22 10:34		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-1-22 (3.75 FT) **Lab ID: 10618041001** Collected: 07/20/22 12:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**23.3**	mg/kg	1.0	1		08/10/22 12:47		

Sample: SS-2-22 (3.75 FT) **Lab ID: 10618041002** Collected: 07/20/22 13:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.5**	mg/kg	0.60	1	07/28/22 12:00	08/08/22 22:22	7440-38-2	
Cadmium	ND	mg/kg	0.096	1	07/28/22 12:00	08/08/22 22:22	7440-43-9	
Chromium	**31.4**	mg/kg	2.4	1	07/28/22 12:00	08/08/22 22:22	7440-47-3	
Lead	**2.5**	mg/kg	0.60	1	07/28/22 12:00	08/08/22 22:22	7439-92-1	
Nickel	**27.7**	mg/kg	0.60	1	07/28/22 12:00	08/08/22 22:22	7440-02-0	
Zinc	**26.5**	mg/kg	6.0	1	07/28/22 12:00	08/08/22 22:22	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.035**	mg/kg	0.022	1	07/28/22 16:48	08/01/22 14:09	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**17.1**	%	0.10	1		08/05/22 12:03		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.425	1	08/01/22 11:00	08/02/22 12:59	92-52-4	
Surrogates								
2-Fluorophenol (S)	43.3	%	12.0-120	1	08/01/22 11:00	08/02/22 12:59	367-12-4	
Phenol-d5 (S)	40.2	%	10.0-120	1	08/01/22 11:00	08/02/22 12:59	4165-62-2	
Nitrobenzene-d5 (S)	41.3	%	10.0-122	1	08/01/22 11:00	08/02/22 12:59	4165-60-0	
2-Fluorobiphenyl (S)	37.3	%	15.0-120	1	08/01/22 11:00	08/02/22 12:59	321-60-8	
2,4,6-Tribromophenol (S)	36.2	%	10.0-127	1	08/01/22 11:00	08/02/22 12:59	118-79-6	
p-Terphenyl-d14 (S)	44.3	%	10.0-120	1	08/01/22 11:00	08/02/22 12:59	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	91-57-6	
Acenaphthene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	83-32-9	
Acenaphthylene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	208-96-8	
Anthracene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	56-55-3	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-2-22 (3.75 FT) **Lab ID: 10618041002** Collected: 07/20/22 13:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Benzo(a)pyrene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	207-08-9	
Chrysene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	53-70-3	
Dibenzofuran	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	132-64-9	
Fluoranthene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	206-44-0	
Fluorene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	193-39-5	
Naphthalene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	91-20-3	
Phenanthrene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	85-01-8	
Pyrene	ND	ug/kg	12.1	1	07/26/22 12:34	08/01/22 17:49	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%.	59-125	1	07/26/22 12:34	08/01/22 17:49	321-60-8	
p-Terphenyl-d14 (S)	88	%.	65-125	1	07/26/22 12:34	08/01/22 17:49	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0638	1	07/28/22 10:04	07/28/22 20:33	67-64-1	
Allyl chloride	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	107-05-1	L0
Benzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	71-43-2	
Bromobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	108-86-1	
Bromochloromethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00128	1	07/20/22 13:00	07/29/22 18:17	75-27-4	
Bromoform	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	75-25-2	
Bromomethane	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	56-23-5	
Chlorobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	124-48-1	
Chloroethane	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	75-00-3	
Chloroform	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	67-66-3	
Chloromethane	ND	mg/kg	0.00319	1	07/28/22 10:04	07/28/22 20:33	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	96-12-8	
Dibromomethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	75-71-8	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-2-22 (3.75 FT) **Lab ID: 10618041002** Collected: 07/20/22 13:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Dichlorofluoromethane	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00128	1	07/20/22 13:00	07/29/22 18:17	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00128	1	07/20/22 13:00	07/29/22 18:17	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	87-68-3	
n-Hexane	ND	mg/kg	0.0128	1	07/28/22 10:04	07/28/22 20:33	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0128	1	07/28/22 10:04	07/28/22 20:33	78-93-3	
Methylene Chloride	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0128	1	07/28/22 10:04	07/28/22 20:33	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	1634-04-4	
Naphthalene	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	103-65-1	
Styrene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	109-99-9	
Toluene	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	79-00-5	
Trichloroethene	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00638	1	07/28/22 10:04	07/28/22 20:33	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00319	1	07/28/22 10:04	07/28/22 20:33	96-18-4	
Vinyl chloride	ND	mg/kg	0.00128	1	07/28/22 10:04	07/28/22 20:33	75-01-4	
Xylene (Total)	**0.00514**	mg/kg	0.00383	1	07/28/22 10:04	07/28/22 20:33	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	07/28/22 10:04	07/28/22 20:33	17060-07-0	
1,2-Dichloroethane-d4 (S)	98.6	%	70.0-130	1	07/20/22 13:00	07/29/22 18:17	17060-07-0	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-2-22 (3.75 FT) **Lab ID: 10618041002** Collected: 07/20/22 13:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Surrogates								
Toluene-d8 (S)	108	%	75.0-131	1	07/28/22 10:04	07/28/22 20:33	2037-26-5	
Toluene-d8 (S)	103	%	75.0-131	1	07/20/22 13:00	07/29/22 18:17	2037-26-5	
4-Bromofluorobenzene (S)	99.1	%	67.0-138	1	07/28/22 10:04	07/28/22 20:33	460-00-4	
4-Bromofluorobenzene (S)	98.6	%	67.0-138	1	07/20/22 13:00	07/29/22 18:17	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**78.4**	%		1	07/28/22 10:16	07/28/22 10:34		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**31.3**	mg/kg	1.0	1		08/10/22 12:47		

Sample: SS-3-22 (4 FT) **Lab ID: 10618041003** Collected: 07/20/22 13:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.6**	mg/kg	0.55	1	07/28/22 12:00	08/08/22 22:26	7440-38-2	
Cadmium	**0.10**	mg/kg	0.088	1	07/28/22 12:00	08/08/22 22:26	7440-43-9	
Chromium	**18.3**	mg/kg	2.2	1	07/28/22 12:00	08/08/22 22:26	7440-47-3	
Lead	**1.8**	mg/kg	0.55	1	07/28/22 12:00	08/08/22 22:26	7439-92-1	
Nickel	**23.1**	mg/kg	0.55	1	07/28/22 12:00	08/08/22 22:26	7440-02-0	
Zinc	**30.5**	mg/kg	5.5	1	07/28/22 12:00	08/08/22 22:26	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.032**	mg/kg	0.022	1	07/28/22 16:48	08/01/22 14:14	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**11.0**	%	0.10	1		08/05/22 12:03		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.372	1	08/01/22 11:00	08/02/22 13:20	92-52-4	
Surrogates								
2-Fluorophenol (S)	64.5	%	12.0-120	1	08/01/22 11:00	08/02/22 13:20	367-12-4	
Phenol-d5 (S)	56.4	%	10.0-120	1	08/01/22 11:00	08/02/22 13:20	4165-62-2	
Nitrobenzene-d5 (S)	54.4	%	10.0-122	1	08/01/22 11:00	08/02/22 13:20	4165-60-0	

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-3-22 (4 FT) **Lab ID: 10618041003** Collected: 07/20/22 13:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Surrogates								
2-Fluorobiphenyl (S)	51.3	%	15.0-120	1	08/01/22 11:00	08/02/22 13:20	321-60-8	
2,4,6-Tribromophenol (S)	57.4	%	10.0-127	1	08/01/22 11:00	08/02/22 13:20	118-79-6	
p-Terphenyl-d14 (S)	59.7	%	10.0-120	1	08/01/22 11:00	08/02/22 13:20	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	91-57-6	
Acenaphthene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	83-32-9	
Acenaphthylene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	208-96-8	
Anthracene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	207-08-9	
Chrysene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	53-70-3	
Dibenzofuran	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	132-64-9	
Fluoranthene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	206-44-0	
Fluorene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	193-39-5	
Naphthalene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	91-20-3	
Phenanthrene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	85-01-8	
Pyrene	ND	ug/kg	11.2	1	07/26/22 12:34	08/01/22 18:08	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	59-125	1	07/26/22 12:34	08/01/22 18:08	321-60-8	
p-Terphenyl-d14 (S)	90	%.	65-125	1	07/26/22 12:34	08/01/22 18:08	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0559	1	07/28/22 10:04	07/28/22 20:57	67-64-1	
Allyl chloride	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	107-05-1	L0
Benzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	71-43-2	
Bromobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	108-86-1	
Bromochloromethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00112	1	07/20/22 13:30	07/29/22 18:39	75-27-4	
Bromoform	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	75-25-2	
Bromomethane	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	56-23-5	
Chlorobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	108-90-7	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-3-22 (4 FT) **Lab ID: 10618041003** Collected: 07/20/22 13:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Dibromochloromethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	124-48-1	
Chloroethane	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	75-00-3	
Chloroform	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	67-66-3	
Chloromethane	ND	mg/kg	0.00279	1	07/28/22 10:04	07/28/22 20:57	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	96-12-8	
Dibromomethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00112	1	07/20/22 13:30	07/29/22 18:39	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00112	1	07/20/22 13:30	07/29/22 18:39	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	87-68-3	
n-Hexane	ND	mg/kg	0.0112	1	07/28/22 10:04	07/28/22 20:57	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0112	1	07/28/22 10:04	07/28/22 20:57	78-93-3	
Methylene Chloride	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0112	1	07/28/22 10:04	07/28/22 20:57	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	1634-04-4	
Naphthalene	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	103-65-1	
Styrene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	109-99-9	
Toluene	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	120-82-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-3-22 (4 FT) **Lab ID: 10618041003** Collected: 07/20/22 13:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260							
	Pace National - Mt. Juliet							
1,2,4-Trimethylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	79-00-5	
Trichloroethene	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00559	1	07/28/22 10:04	07/28/22 20:57	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00279	1	07/28/22 10:04	07/28/22 20:57	96-18-4	
Vinyl chloride	ND	mg/kg	0.00112	1	07/28/22 10:04	07/28/22 20:57	75-01-4	
Xylene (Total)	**0.00415**	mg/kg	0.00335	1	07/28/22 10:04	07/28/22 20:57	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	07/28/22 10:04	07/28/22 20:57	17060-07-0	
1,2-Dichloroethane-d4 (S)	97.8	%	70.0-130	1	07/20/22 13:30	07/29/22 18:39	17060-07-0	
Toluene-d8 (S)	110	%	75.0-131	1	07/28/22 10:04	07/28/22 20:57	2037-26-5	
Toluene-d8 (S)	102	%	75.0-131	1	07/20/22 13:30	07/29/22 18:39	2037-26-5	
4-Bromofluorobenzene (S)	98.1	%	67.0-138	1	07/28/22 10:04	07/28/22 20:57	460-00-4	
4-Bromofluorobenzene (S)	99.5	%	67.0-138	1	07/20/22 13:30	07/29/22 18:39	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G							
	Pace National - Mt. Juliet							
Total Solids	**89.5**	%		1	07/28/22 10:16	07/28/22 10:34		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation							
	Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**18.0**	mg/kg	1.0	1		08/10/22 12:47		

Sample: SS-4-22 (8 FT) **Lab ID: 10618041004** Collected: 07/20/22 14:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B							
	Pace Analytical Services - Minneapolis							
Arsenic	**3.2**	mg/kg	0.57	1	07/28/22 12:00	08/08/22 22:30	7440-38-2	
Cadmium	ND	mg/kg	0.090	1	07/28/22 12:00	08/08/22 22:30	7440-43-9	
Chromium	**21.1**	mg/kg	2.3	1	07/28/22 12:00	08/08/22 22:30	7440-47-3	
Lead	**1.5**	mg/kg	0.57	1	07/28/22 12:00	08/08/22 22:30	7439-92-1	
Nickel	**24.3**	mg/kg	0.57	1	07/28/22 12:00	08/08/22 22:30	7440-02-0	
Zinc	**26.0**	mg/kg	5.7	1	07/28/22 12:00	08/08/22 22:30	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B							
	Pace Analytical Services - Minneapolis							
Mercury	**0.027**	mg/kg	0.022	1	07/28/22 16:48	08/01/22 14:16	7439-97-6	

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-4-22 (8 FT) **Lab ID: 10618041004** Collected: 07/20/22 14:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**13.3**	%	0.10	1		08/05/22 12:04		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.377	1	08/01/22 11:00	08/02/22 14:01	92-52-4	
Surrogates								
2-Fluorophenol (S)	57.6	%	12.0-120	1	08/01/22 11:00	08/02/22 14:01	367-12-4	
Phenol-d5 (S)	52.6	%	10.0-120	1	08/01/22 11:00	08/02/22 14:01	4165-62-2	
Nitrobenzene-d5 (S)	51.4	%	10.0-122	1	08/01/22 11:00	08/02/22 14:01	4165-60-0	
2-Fluorobiphenyl (S)	46.8	%	15.0-120	1	08/01/22 11:00	08/02/22 14:01	321-60-8	
2,4,6-Tribromophenol (S)	49.7	%	10.0-127	1	08/01/22 11:00	08/02/22 14:01	118-79-6	
p-Terphenyl-d14 (S)	52.0	%	10.0-120	1	08/01/22 11:00	08/02/22 14:01	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	91-57-6	
Acenaphthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	83-32-9	
Acenaphthylene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	208-96-8	
Anthracene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	207-08-9	
Chrysene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	53-70-3	
Dibenzofuran	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	132-64-9	
Fluoranthene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	206-44-0	
Fluorene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	193-39-5	
Naphthalene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	91-20-3	
Phenanthrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	85-01-8	
Pyrene	ND	ug/kg	11.5	1	07/26/22 12:34	08/01/22 18:28	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	59-125	1	07/26/22 12:34	08/01/22 18:28	321-60-8	
p-Terphenyl-d14 (S)	88	%.	65-125	1	07/26/22 12:34	08/01/22 18:28	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0566	1	07/28/22 10:04	07/28/22 21:21	67-64-1	
Allyl chloride	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	107-05-1	L0
Benzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	71-43-2	
Bromobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	108-86-1	
Bromochloromethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	74-97-5	

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-4-22 (8 FT) **Lab ID: 10618041004** Collected: 07/20/22 14:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
Bromodichloromethane	ND	mg/kg	0.00113	1	07/20/22 14:00	07/29/22 19:00	75-27-4	
Bromoform	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	75-25-2	
Bromomethane	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	56-23-5	
Chlorobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	124-48-1	
Chloroethane	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	75-00-3	
Chloroform	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	67-66-3	
Chloromethane	ND	mg/kg	0.00283	1	07/28/22 10:04	07/28/22 21:21	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	96-12-8	
Dibromomethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00113	1	07/20/22 14:00	07/29/22 19:00	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00113	1	07/20/22 14:00	07/29/22 19:00	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	87-68-3	
n-Hexane	ND	mg/kg	0.0113	1	07/28/22 10:04	07/28/22 21:21	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0113	1	07/28/22 10:04	07/28/22 21:21	78-93-3	
Methylene Chloride	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0113	1	07/28/22 10:04	07/28/22 21:21	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	1634-04-4	
Naphthalene	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	103-65-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-4-22 (8 FT) **Lab ID: 10618041004** Collected: 07/20/22 14:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260							
	Pace National - Mt. Juliet							
Styrene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	109-99-9	
Toluene	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	79-00-5	
Trichloroethene	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00566	1	07/28/22 10:04	07/28/22 21:21	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00283	1	07/28/22 10:04	07/28/22 21:21	96-18-4	
Vinyl chloride	ND	mg/kg	0.00113	1	07/28/22 10:04	07/28/22 21:21	75-01-4	
Xylene (Total)	**0.00561**	mg/kg	0.00340	1	07/28/22 10:04	07/28/22 21:21	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99.1	%	70.0-130	1	07/28/22 10:04	07/28/22 21:21	17060-07-0	
1,2-Dichloroethane-d4 (S)	99.9	%	70.0-130	1	07/20/22 14:00	07/29/22 19:00	17060-07-0	
Toluene-d8 (S)	112	%	75.0-131	1	07/28/22 10:04	07/28/22 21:21	2037-26-5	
Toluene-d8 (S)	102	%	75.0-131	1	07/20/22 14:00	07/29/22 19:00	2037-26-5	
4-Bromofluorobenzene (S)	98.1	%	67.0-138	1	07/28/22 10:04	07/28/22 21:21	460-00-4	
4-Bromofluorobenzene (S)	102	%	67.0-138	1	07/20/22 14:00	07/29/22 19:00	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G							
	Pace National - Mt. Juliet							
Total Solids	**88.3**	%		1	07/28/22 10:16	07/28/22 10:34		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation							
	Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**20.9**	mg/kg	1.0	1		08/10/22 12:47		

Sample: SS-5-22 (4 FT) **Lab ID: 10618041005** Collected: 07/20/22 14:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B							
	Pace Analytical Services - Minneapolis							
Arsenic	**2.9**	mg/kg	0.56	1	07/28/22 12:00	08/08/22 22:41	7440-38-2	
Cadmium	ND	mg/kg	0.089	1	07/28/22 12:00	08/08/22 22:41	7440-43-9	
Chromium	**21.1**	mg/kg	2.2	1	07/28/22 12:00	08/08/22 22:41	7440-47-3	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-5-22 (4 FT) **Lab ID: 10618041005** Collected: 07/20/22 14:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Lead	**1.8**	mg/kg	0.56	1	07/28/22 12:00	08/08/22 22:41	7439-92-1	
Nickel	**24.8**	mg/kg	0.56	1	07/28/22 12:00	08/08/22 22:41	7440-02-0	
Zinc	**27.6**	mg/kg	5.6	1	07/28/22 12:00	08/08/22 22:41	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.028**	mg/kg	0.022	1	07/28/22 16:48	08/01/22 14:17	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**15.1**	%	0.10	1		08/05/22 12:04		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.392	1	08/01/22 11:00	08/02/22 16:26	92-52-4	
Surrogates								
2-Fluorophenol (S)	54.3	%	12.0-120	1	08/01/22 11:00	08/02/22 16:26	367-12-4	
Phenol-d5 (S)	53.0	%	10.0-120	1	08/01/22 11:00	08/02/22 16:26	4165-62-2	
Nitrobenzene-d5 (S)	45.0	%	10.0-122	1	08/01/22 11:00	08/02/22 16:26	4165-60-0	
2-Fluorobiphenyl (S)	49.1	%	15.0-120	1	08/01/22 11:00	08/02/22 16:26	321-60-8	
2,4,6-Tribromophenol (S)	62.3	%	10.0-127	1	08/01/22 11:00	08/02/22 16:26	118-79-6	
p-Terphenyl-d14 (S)	62.1	%	10.0-120	1	08/01/22 11:00	08/02/22 16:26	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	91-57-6	
Acenaphthene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	83-32-9	
Acenaphthylene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	208-96-8	
Anthracene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	207-08-9	
Chrysene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	53-70-3	
Dibenzofuran	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	132-64-9	
Fluoranthene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	206-44-0	
Fluorene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	193-39-5	
Naphthalene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	91-20-3	
Phenanthrene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	85-01-8	
Pyrene	ND	ug/kg	11.7	1	07/26/22 12:34	08/01/22 18:47	129-00-0	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-5-22 (4 FT) **Lab ID: 10618041005** Collected: 07/20/22 14:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Surrogates								
2-Fluorobiphenyl (S)	75	%.	59-125	1	07/26/22 12:34	08/01/22 18:47	321-60-8	
p-Terphenyl-d14 (S)	86	%.	65-125	1	07/26/22 12:34	08/01/22 18:47	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0588	1	07/28/22 10:04	07/28/22 21:46	67-64-1	
Allyl chloride	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	107-05-1	L0
Benzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	71-43-2	
Bromobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	108-86-1	
Bromochloromethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00118	1	07/20/22 14:30	07/29/22 19:22	75-27-4	
Bromoform	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	75-25-2	
Bromomethane	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	56-23-5	
Chlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	124-48-1	
Chloroethane	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	75-00-3	
Chloroform	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	67-66-3	
Chloromethane	ND	mg/kg	0.00294	1	07/28/22 10:04	07/28/22 21:46	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	96-12-8	
Dibromomethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00118	1	07/20/22 14:30	07/29/22 19:22	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00118	1	07/20/22 14:30	07/29/22 19:22	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	100-41-4	

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-5-22 (4 FT) **Lab ID: 10618041005** Collected: 07/20/22 14:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	87-68-3	
n-Hexane	ND	mg/kg	0.0118	1	07/28/22 10:04	07/28/22 21:46	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0118	1	07/28/22 10:04	07/28/22 21:46	78-93-3	
Methylene Chloride	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0118	1	07/28/22 10:04	07/28/22 21:46	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	1634-04-4	
Naphthalene	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	103-65-1	
Styrene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	109-99-9	
Toluene	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	79-00-5	
Trichloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00588	1	07/28/22 10:04	07/28/22 21:46	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00294	1	07/28/22 10:04	07/28/22 21:46	96-18-4	
Vinyl chloride	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 21:46	75-01-4	
Xylene (Total)	**0.00499**	mg/kg	0.00353	1	07/28/22 10:04	07/28/22 21:46	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70.0-130	1	07/28/22 10:04	07/28/22 21:46	17060-07-0	
1,2-Dichloroethane-d4 (S)	99.8	%	70.0-130	1	07/20/22 14:30	07/29/22 19:22	17060-07-0	
Toluene-d8 (S)	108	%	75.0-131	1	07/28/22 10:04	07/28/22 21:46	2037-26-5	
Toluene-d8 (S)	102	%	75.0-131	1	07/20/22 14:30	07/29/22 19:22	2037-26-5	
4-Bromofluorobenzene (S)	97.9	%	67.0-138	1	07/28/22 10:04	07/28/22 21:46	460-00-4	
4-Bromofluorobenzene (S)	96.2	%	67.0-138	1	07/20/22 14:30	07/29/22 19:22	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**85.0**	%		1	07/28/22 17:48	07/28/22 17:55		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**20.9**	mg/kg	1.0	1		08/10/22 12:47		

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-6-22 (6 FT) **Lab ID: 10618041006** Collected: 07/20/22 16:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.3**	mg/kg	0.62	1	07/28/22 12:00	08/08/22 22:45	7440-38-2	
Cadmium	ND	mg/kg	0.10	1	07/28/22 12:00	08/08/22 22:45	7440-43-9	
Chromium	**26.2**	mg/kg	2.5	1	07/28/22 12:00	08/08/22 22:45	7440-47-3	
Lead	**2.8**	mg/kg	0.62	1	07/28/22 12:00	08/08/22 22:45	7439-92-1	
Nickel	**25.6**	mg/kg	0.62	1	07/28/22 12:00	08/08/22 22:45	7440-02-0	
Zinc	**32.9**	mg/kg	6.2	1	07/28/22 12:00	08/08/22 22:45	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.037**	mg/kg	0.024	1	07/28/22 16:48	08/01/22 14:19	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**20.3**	%	0.10	1		08/05/22 12:04		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.394	1	08/01/22 11:00	08/02/22 15:24	92-52-4	
Surrogates								
2-Fluorophenol (S)	46.8	%	12.0-120	1	08/01/22 11:00	08/02/22 15:24	367-12-4	
Phenol-d5 (S)	43.8	%	10.0-120	1	08/01/22 11:00	08/02/22 15:24	4165-62-2	
Nitrobenzene-d5 (S)	38.9	%	10.0-122	1	08/01/22 11:00	08/02/22 15:24	4165-60-0	
2-Fluorobiphenyl (S)	38.9	%	15.0-120	1	08/01/22 11:00	08/02/22 15:24	321-60-8	
2,4,6-Tribromophenol (S)	50.8	%	10.0-127	1	08/01/22 11:00	08/02/22 15:24	118-79-6	
p-Terphenyl-d14 (S)	52.5	%	10.0-120	1	08/01/22 11:00	08/02/22 15:24	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	91-57-6	
Acenaphthene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	83-32-9	
Acenaphthylene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	208-96-8	
Anthracene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	207-08-9	
Chrysene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	53-70-3	
Dibenzofuran	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	132-64-9	
Fluoranthene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	206-44-0	
Fluorene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	193-39-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-6-22 (6 FT) **Lab ID: 10618041006** Collected: 07/20/22 16:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Naphthalene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	91-20-3	
Phenanthrene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	85-01-8	
Pyrene	ND	ug/kg	12.4	1	07/26/22 12:34	08/01/22 19:06	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	59-125	1	07/26/22 12:34	08/01/22 19:06	321-60-8	
p-Terphenyl-d14 (S)	86	%.	65-125	1	07/26/22 12:34	08/01/22 19:06	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0592	1	07/28/22 10:04	07/28/22 22:10	67-64-1	
Allyl chloride	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	107-05-1	L0
Benzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	71-43-2	
Bromobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	108-86-1	
Bromochloromethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00118	1	07/20/22 16:00	07/29/22 19:43	75-27-4	
Bromoform	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	75-25-2	
Bromomethane	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	56-23-5	
Chlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	124-48-1	
Chloroethane	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	75-00-3	
Chloroform	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	67-66-3	
Chloromethane	ND	mg/kg	0.00296	1	07/28/22 10:04	07/28/22 22:10	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	96-12-8	
Dibromomethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00118	1	07/20/22 16:00	07/29/22 19:43	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	563-58-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-6-22 (6 FT) **Lab ID: 10618041006** Collected: 07/20/22 16:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 5035A Pace National - Mt. Juliet							
cis-1,3-Dichloropropene	ND	mg/kg	0.00118	1	07/20/22 16:00	07/29/22 19:43	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	87-68-3	
n-Hexane	ND	mg/kg	0.0118	1	07/28/22 10:04	07/28/22 22:10	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0118	1	07/28/22 10:04	07/28/22 22:10	78-93-3	
Methylene Chloride	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0118	1	07/28/22 10:04	07/28/22 22:10	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	1634-04-4	
Naphthalene	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	103-65-1	
Styrene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	109-99-9	
Toluene	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	79-00-5	
Trichloroethene	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00592	1	07/28/22 10:04	07/28/22 22:10	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00296	1	07/28/22 10:04	07/28/22 22:10	96-18-4	
Vinyl chloride	ND	mg/kg	0.00118	1	07/28/22 10:04	07/28/22 22:10	75-01-4	
Xylene (Total)	**0.00476**	mg/kg	0.00355	1	07/28/22 10:04	07/28/22 22:10	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	70.0-130	1	07/28/22 10:04	07/28/22 22:10	17060-07-0	
1,2-Dichloroethane-d4 (S)	101	%	70.0-130	1	07/20/22 16:00	07/29/22 19:43	17060-07-0	
Toluene-d8 (S)	108	%	75.0-131	1	07/28/22 10:04	07/28/22 22:10	2037-26-5	
Toluene-d8 (S)	100	%	75.0-131	1	07/20/22 16:00	07/29/22 19:43	2037-26-5	
4-Bromofluorobenzene (S)	99.2	%	67.0-138	1	07/28/22 10:04	07/28/22 22:10	460-00-4	
4-Bromofluorobenzene (S)	98.1	%	67.0-138	1	07/20/22 16:00	07/29/22 19:43	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**84.4**	%		1	07/28/22 17:48	07/28/22 17:55		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-6-22 (6 FT) **Lab ID: 10618041006** Collected: 07/20/22 16:00 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**26.2**	mg/kg	1.0	1		08/10/22 12:47		

Sample: SS-7-22 (4 FT) **Lab ID: 10618041007** Collected: 07/20/22 16:15 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.2**	mg/kg	0.59	1	07/28/22 12:00	08/08/22 22:49	7440-38-2	
Cadmium	ND	mg/kg	0.095	1	07/28/22 12:00	08/08/22 22:49	7440-43-9	
Chromium	**22.0**	mg/kg	2.4	1	07/28/22 12:00	08/08/22 22:49	7440-47-3	
Lead	**2.0**	mg/kg	0.59	1	07/28/22 12:00	08/08/22 22:49	7439-92-1	
Nickel	**21.6**	mg/kg	0.59	1	07/28/22 12:00	08/08/22 22:49	7440-02-0	
Zinc	**26.8**	mg/kg	5.9	1	07/28/22 12:00	08/08/22 22:49	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.037**	mg/kg	0.025	1	07/28/22 16:48	08/01/22 14:21	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**22.1**	%	0.10	1		08/05/22 12:04		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.419	1	08/01/22 11:00	08/02/22 17:49	92-52-4	
Surrogates								
2-Fluorophenol (S)	52.6	%	12.0-120	1	08/01/22 11:00	08/02/22 17:49	367-12-4	
Phenol-d5 (S)	50.2	%	10.0-120	1	08/01/22 11:00	08/02/22 17:49	4165-62-2	
Nitrobenzene-d5 (S)	46.1	%	10.0-122	1	08/01/22 11:00	08/02/22 17:49	4165-60-0	
2-Fluorobiphenyl (S)	46.4	%	15.0-120	1	08/01/22 11:00	08/02/22 17:49	321-60-8	
2,4,6-Tribromophenol (S)	60.2	%	10.0-127	1	08/01/22 11:00	08/02/22 17:49	118-79-6	
p-Terphenyl-d14 (S)	58.8	%	10.0-120	1	08/01/22 11:00	08/02/22 17:49	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	90-12-0	
2-Methylnaphthalene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	91-57-6	
Acenaphthene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	83-32-9	
Acenaphthylene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	208-96-8	
Anthracene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	56-55-3	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-7-22 (4 FT) **Lab ID: 10618041007** Collected: 07/20/22 16:15 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Benzo(a)pyrene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	207-08-9	
Chrysene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	53-70-3	
Dibenzofuran	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	132-64-9	
Fluoranthene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	206-44-0	
Fluorene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	193-39-5	
Naphthalene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	91-20-3	
Phenanthrene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	85-01-8	
Pyrene	ND	ug/kg	12.7	1	07/26/22 12:34	08/01/22 19:26	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	72	%.	59-125	1	07/26/22 12:34	08/01/22 19:26	321-60-8	
p-Terphenyl-d14 (S)	87	%.	65-125	1	07/26/22 12:34	08/01/22 19:26	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0629	1	07/28/22 10:04	07/28/22 22:34	67-64-1	
Allyl chloride	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	107-05-1	L0
Benzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	71-43-2	
Bromobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	108-86-1	
Bromochloromethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00126	1	07/20/22 16:15	07/29/22 20:05	75-27-4	
Bromoform	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	75-25-2	
Bromomethane	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	56-23-5	
Chlorobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	108-90-7	
Dibromochloromethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	124-48-1	
Chloroethane	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	75-00-3	
Chloroform	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	67-66-3	
Chloromethane	ND	mg/kg	0.00315	1	07/28/22 10:04	07/28/22 22:34	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	96-12-8	
Dibromomethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	75-71-8	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-7-22 (4 FT) **Lab ID: 10618041007** Collected: 07/20/22 16:15 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Dichlorofluoromethane	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00126	1	07/20/22 16:15	07/29/22 20:05	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00126	1	07/20/22 16:15	07/29/22 20:05	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	87-68-3	
n-Hexane	ND	mg/kg	0.0126	1	07/28/22 10:04	07/28/22 22:34	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0126	1	07/28/22 10:04	07/28/22 22:34	78-93-3	
Methylene Chloride	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0126	1	07/28/22 10:04	07/28/22 22:34	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	1634-04-4	
Naphthalene	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	103-65-1	
Styrene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	109-99-9	
Toluene	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	120-82-1	
1,2,4-Trimethylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	79-00-5	
Trichloroethene	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00629	1	07/28/22 10:04	07/28/22 22:34	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00315	1	07/28/22 10:04	07/28/22 22:34	96-18-4	
Vinyl chloride	ND	mg/kg	0.00126	1	07/28/22 10:04	07/28/22 22:34	75-01-4	
Xylene (Total)	**0.00431**	mg/kg	0.00378	1	07/28/22 10:04	07/28/22 22:34	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	70.0-130	1	07/28/22 10:04	07/28/22 22:34	17060-07-0	
1,2-Dichloroethane-d4 (S)	97.9	%	70.0-130	1	07/20/22 16:15	07/29/22 20:05	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-7-22 (4 FT) **Lab ID: 10618041007** Collected: 07/20/22 16:15 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Surrogates								
Toluene-d8 (S)	111	%	75.0-131	1	07/28/22 10:04	07/28/22 22:34	2037-26-5	
Toluene-d8 (S)	103	%	75.0-131	1	07/20/22 16:15	07/29/22 20:05	2037-26-5	
4-Bromofluorobenzene (S)	98.1	%	67.0-138	1	07/28/22 10:04	07/28/22 22:34	460-00-4	
4-Bromofluorobenzene (S)	98.4	%	67.0-138	1	07/20/22 16:15	07/29/22 20:05	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**79.4**	%		1	07/28/22 17:48	07/28/22 17:55		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**21.8**	mg/kg	1.0	1		08/10/22 12:47		

Sample: SS-8-22 (4 FT) **Lab ID: 10618041008** Collected: 07/20/22 16:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.9**	mg/kg	0.57	1	07/28/22 12:00	08/08/22 22:53	7440-38-2	
Cadmium	ND	mg/kg	0.091	1	07/28/22 12:00	08/08/22 22:53	7440-43-9	
Chromium	**24.7**	mg/kg	2.3	1	07/28/22 12:00	08/08/22 22:53	7440-47-3	
Lead	**2.3**	mg/kg	0.57	1	07/28/22 12:00	08/08/22 22:53	7439-92-1	
Nickel	**25.9**	mg/kg	0.57	1	07/28/22 12:00	08/08/22 22:53	7440-02-0	
Zinc	**32.2**	mg/kg	5.7	1	07/28/22 12:00	08/08/22 22:53	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B Pace Analytical Services - Minneapolis							
Mercury	**0.033**	mg/kg	0.023	1	07/28/22 16:48	08/01/22 14:22	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**16.5**	%	0.10	1		08/05/22 12:05		N2
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Biphenyl (Diphenyl)	ND	mg/kg	0.383	1	08/01/22 11:00	08/02/22 14:22	92-52-4	
Surrogates								
2-Fluorophenol (S)	54.1	%	12.0-120	1	08/01/22 11:00	08/02/22 14:22	367-12-4	
Phenol-d5 (S)	50.8	%	10.0-120	1	08/01/22 11:00	08/02/22 14:22	4165-62-2	
Nitrobenzene-d5 (S)	45.7	%	10.0-122	1	08/01/22 11:00	08/02/22 14:22	4165-60-0	

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-8-22 (4 FT) **Lab ID: 10618041008** Collected: 07/20/22 16:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270E	Analytical Method: EPA 8270E Preparation Method: 3546 Pace National - Mt. Juliet							
Surrogates								
2-Fluorobiphenyl (S)	46.0	%	15.0-120	1	08/01/22 11:00	08/02/22 14:22	321-60-8	
2,4,6-Tribromophenol (S)	58.3	%	10.0-127	1	08/01/22 11:00	08/02/22 14:22	118-79-6	
p-Terphenyl-d14 (S)	58.7	%	10.0-120	1	08/01/22 11:00	08/02/22 14:22	1718-51-0	
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
1-Methylnaphthalene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	90-12-0	
2-Methylnaphthalene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	91-57-6	
Acenaphthene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	83-32-9	
Acenaphthylene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	208-96-8	
Anthracene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	120-12-7	
Benzo(a)anthracene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	56-55-3	
Benzo(a)pyrene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	207-08-9	
Chrysene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	53-70-3	
Dibenzofuran	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	132-64-9	
Fluoranthene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	206-44-0	
Fluorene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	193-39-5	
Naphthalene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	91-20-3	
Phenanthrene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	85-01-8	
Pyrene	ND	ug/kg	11.9	1	07/26/22 12:34	08/01/22 19:45	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	64	%.	59-125	1	07/26/22 12:34	08/01/22 19:45	321-60-8	
p-Terphenyl-d14 (S)	82	%.	65-125	1	07/26/22 12:34	08/01/22 19:45	1718-51-0	
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Acetone	ND	mg/kg	0.0575	1	07/28/22 10:04	07/28/22 23:02	67-64-1	
Allyl chloride	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	107-05-1	L0
Benzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	71-43-2	
Bromobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	108-86-1	
Bromochloromethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	74-97-5	
Bromodichloromethane	ND	mg/kg	0.00115	1	07/20/22 16:30	07/29/22 20:27	75-27-4	
Bromoform	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	75-25-2	
Bromomethane	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	74-83-9	L0
n-Butylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	104-51-8	
sec-Butylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	135-98-8	
tert-Butylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	98-06-6	
Carbon tetrachloride	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	56-23-5	
Chlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	108-90-7	

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(612)607-1700

ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-8-22 (4 FT) **Lab ID: 10618041008** Collected: 07/20/22 16:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260 Pace National - Mt. Juliet							
Dibromochloromethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	124-48-1	
Chloroethane	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	75-00-3	
Chloroform	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	67-66-3	
Chloromethane	ND	mg/kg	0.00287	1	07/28/22 10:04	07/28/22 23:02	74-87-3	
2-Chlorotoluene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	95-49-8	
4-Chlorotoluene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	106-43-4	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	106-93-4	
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	96-12-8	
Dibromomethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	74-95-3	
1,2-Dichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	95-50-1	
1,3-Dichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	541-73-1	
1,4-Dichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	106-46-7	L0
Dichlorodifluoromethane	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	75-71-8	
Dichlorofluoromethane	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	75-43-4	
1,1-Dichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	75-34-3	L0
1,2-Dichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	107-06-2	
1,1-Dichloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.00115	1	07/20/22 16:30	07/29/22 20:27	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	156-60-5	
1,2-Dichloropropane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	78-87-5	
1,3-Dichloropropane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	142-28-9	
2,2-Dichloropropane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	594-20-7	
1,1-Dichloropropene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	563-58-6	
cis-1,3-Dichloropropene	ND	mg/kg	0.00115	1	07/20/22 16:30	07/29/22 20:27	10061-01-5	
trans-1,3-Dichloropropene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	10061-02-6	
Ethylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	100-41-4	
Diethyl ether (Ethyl ether)	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	60-29-7	
Hexachloro-1,3-butadiene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	87-68-3	
n-Hexane	ND	mg/kg	0.0115	1	07/28/22 10:04	07/28/22 23:02	110-54-3	
Isopropylbenzene (Cumene)	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	98-82-8	
p-Isopropyltoluene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	99-87-6	
2-Butanone (MEK)	ND	mg/kg	0.0115	1	07/28/22 10:04	07/28/22 23:02	78-93-3	
Methylene Chloride	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	mg/kg	0.0115	1	07/28/22 10:04	07/28/22 23:02	108-10-1	
Methyl-tert-butyl ether	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	1634-04-4	
Naphthalene	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	91-20-3	
n-Propylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	103-65-1	
Styrene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	79-34-5	
Tetrachloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	127-18-4	
Tetrahydrofuran	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	109-99-9	
Toluene	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	108-88-3	
1,2,3-Trichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	87-61-6	
1,2,4-Trichlorobenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	120-82-1	

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ANALYTICAL RESULTS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Sample: SS-8-22 (4 FT) **Lab ID: 10618041008** Collected: 07/20/22 16:30 Received: 07/22/22 08:50 Matrix: Solid

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

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
VOA (GC/MS) 8260D	Analytical Method: EPA 8260D Preparation Method: 8260							
	Pace National - Mt. Juliet							
1,2,4-Trimethylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	95-63-6	
1,3,5-Trimethylbenzene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	108-67-8	
1,1,1-Trichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	71-55-6	
1,1,2-Trichloroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	79-00-5	
Trichloroethene	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	79-01-6	
Trichlorofluoromethane	ND	mg/kg	0.00575	1	07/28/22 10:04	07/28/22 23:02	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	76-13-1	
1,2,3-Trichloropropane	ND	mg/kg	0.00287	1	07/28/22 10:04	07/28/22 23:02	96-18-4	
Vinyl chloride	ND	mg/kg	0.00115	1	07/28/22 10:04	07/28/22 23:02	75-01-4	
Xylene (Total)	**0.00360**	mg/kg	0.00345	1	07/28/22 10:04	07/28/22 23:02	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	70.0-130	1	07/28/22 10:04	07/28/22 23:02	17060-07-0	
1,2-Dichloroethane-d4 (S)	98.1	%	70.0-130	1	07/20/22 16:30	07/29/22 20:27	17060-07-0	
Toluene-d8 (S)	111	%	75.0-131	1	07/28/22 10:04	07/28/22 23:02	2037-26-5	
Toluene-d8 (S)	103	%	75.0-131	1	07/20/22 16:30	07/29/22 20:27	2037-26-5	
4-Bromofluorobenzene (S)	98.4	%	67.0-138	1	07/28/22 10:04	07/28/22 23:02	460-00-4	
4-Bromofluorobenzene (S)	101	%	67.0-138	1	07/20/22 16:30	07/29/22 20:27	460-00-4	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G							
	Pace National - Mt. Juliet							
Total Solids	**87.0**	%		1	07/28/22 17:48	07/28/22 17:55		
Trivalent Chromium Calculation	Analytical Method: Trivalent Chromium Calculation							
	Pace Analytical Services - Minneapolis							
Chromium, Trivalent	**24.5**	mg/kg	1.0	1		08/10/22 12:47		

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 830449 Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B Analysis Description: 7471B Mercury Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: 4399894 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.017	08/01/22 14:01	

LABORATORY CONTROL SAMPLE: 4399895

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.48	0.52	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4399896 4399897

Parameter	Units	10618041001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.035	0.5	0.51	0.53	0.53	98	97	80-120	0	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 830425
QC Batch Method: EPA 3050B
Analysis Method: EPA 6020B
Analysis Description: 6020B Solids UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: 4399829 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.47	08/08/22 21:56	
Cadmium	mg/kg	ND	0.075	08/08/22 21:56	
Chromium	mg/kg	ND	1.9	08/08/22 21:56	
Lead	mg/kg	ND	0.47	08/08/22 21:56	
Nickel	mg/kg	ND	0.47	08/08/22 21:56	
Zinc	mg/kg	ND	4.7	08/09/22 08:56	

LABORATORY CONTROL SAMPLE: 4399830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48.1	42.3	88	80-120	
Cadmium	mg/kg	48.1	41.9	87	80-120	
Chromium	mg/kg	48.1	44.0	91	80-120	
Lead	mg/kg	48.1	43.0	90	80-120	
Nickel	mg/kg	48.1	44.7	93	80-120	
Zinc	mg/kg	48.1	43.4	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4399831 4399832

Parameter	Units	10618041001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	4.0	53.2	54.9	49.5	51.8	86	87	75-125	5	20	
Cadmium	mg/kg	ND	53.2	54.9	45.2	47.6	85	87	75-125	5	20	
Chromium	mg/kg	23.4	53.2	54.9	74.2	83.3	96	109	75-125	12	20	
Lead	mg/kg	2.7	53.2	54.9	48.9	50.9	87	88	75-125	4	20	
Nickel	mg/kg	23.0	53.2	54.9	75.1	82.2	98	108	75-125	9	20	
Zinc	mg/kg	31.2	53.2	54.9	83.9	86.9	99	101	75-125	4	20	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 832309
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

SAMPLE DUPLICATE: 4408968

Parameter	Units	10616212021 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	32.1	31.1	3	30	N2

SAMPLE DUPLICATE: 4408969

Parameter	Units	10616212031 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.8	4.3	13	30	N2

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 1903439
QC Batch Method: 3546
Analysis Method: EPA 8270E
Analysis Description: SVOA (GC/MS) 8270E
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: R3822595-2 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	mg/kg	ND	0.333	08/03/22 10:37	
2-Fluorophenol (S)	%	66.5	12.0-120	08/03/22 10:37	
Phenol-d5 (S)	%	62	10.0-120	08/03/22 10:37	
Nitrobenzene-d5 (S)	%	60.1	10.0-122	08/03/22 10:37	
2-Fluorobiphenyl (S)	%	56.8	15.0-120	08/03/22 10:37	
2,4,6-Tribromophenol (S)	%	54.2	10.0-127	08/03/22 10:37	
p-Terphenyl-d14 (S)	%	67	10.0-120	08/03/22 10:37	

LABORATORY CONTROL SAMPLE: R3822595-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Biphenyl (Diphenyl)	mg/kg	0.666	0.375	56.3	39.0-120	
2-Fluorophenol (S)	%			65.3	12.0-120	
Phenol-d5 (S)	%			59.5	10.0-120	
Nitrobenzene-d5 (S)	%			52.3	10.0-122	
2-Fluorobiphenyl (S)	%			56.5	15.0-120	
2,4,6-Tribromophenol (S)	%			66.8	10.0-127	
p-Terphenyl-d14 (S)	%			63.7	10.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3822643-2 R3822643-3

Parameter	Units	L1520297-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Biphenyl (Diphenyl)	mg/kg	ND	0.724	0.724	0.354	0.326	48.9	45.0	15.0-120	8.31	33	
2-Fluorophenol (S)	%						57.8	55.9	12.0-120			
Phenol-d5 (S)	%						52.4	49.8	10.0-120			
Nitrobenzene-d5 (S)	%						44.4	43.2	10.0-122			
2-Fluorobiphenyl (S)	%						49.5	46.2	15.0-120			
2,4,6-Tribromophenol (S)	%						59.6	53.0	10.0-127			
p-Terphenyl-d14 (S)	%						57.7	50.8	10.0-120			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 1902151 Analysis Method: EPA 8260D
QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: R3820524-3 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	mg/kg	ND	0.0500	07/28/22 14:45	
Allyl chloride	mg/kg	ND	0.00500	07/28/22 14:45	
Benzene	mg/kg	ND	0.00100	07/28/22 14:45	
Bromobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
Bromochloromethane	mg/kg	ND	0.00100	07/28/22 14:45	
Bromoform	mg/kg	ND	0.00100	07/28/22 14:45	
Bromomethane	mg/kg	ND	0.00500	07/28/22 14:45	
n-Butylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
sec-Butylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
tert-Butylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
Carbon tetrachloride	mg/kg	ND	0.00100	07/28/22 14:45	
Chlorobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
Dibromochloromethane	mg/kg	ND	0.00100	07/28/22 14:45	
Chloroethane	mg/kg	ND	0.00500	07/28/22 14:45	
Chloroform	mg/kg	ND	0.00500	07/28/22 14:45	
Chloromethane	mg/kg	ND	0.00250	07/28/22 14:45	
2-Chlorotoluene	mg/kg	ND	0.00100	07/28/22 14:45	
4-Chlorotoluene	mg/kg	ND	0.00100	07/28/22 14:45	
1,2-Dibromoethane (EDB)	mg/kg	ND	0.00100	07/28/22 14:45	
1,2-Dibromo-3-chloropropane	mg/kg	ND	0.00500	07/28/22 14:45	
Dibromomethane	mg/kg	ND	0.00100	07/28/22 14:45	
1,2-Dichlorobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
1,3-Dichlorobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
1,4-Dichlorobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
Dichlorodifluoromethane	mg/kg	ND	0.00500	07/28/22 14:45	
Dichlorofluoromethane	mg/kg	ND	0.00500	07/28/22 14:45	
1,1-Dichloroethane	mg/kg	ND	0.00100	07/28/22 14:45	
1,2-Dichloroethane	mg/kg	ND	0.00100	07/28/22 14:45	
1,1-Dichloroethene	mg/kg	ND	0.00100	07/28/22 14:45	
trans-1,2-Dichloroethene	mg/kg	ND	0.00100	07/28/22 14:45	
1,2-Dichloropropane	mg/kg	ND	0.00100	07/28/22 14:45	
1,3-Dichloropropane	mg/kg	ND	0.00100	07/28/22 14:45	
2,2-Dichloropropane	mg/kg	ND	0.00100	07/28/22 14:45	
1,1-Dichloropropene	mg/kg	ND	0.00100	07/28/22 14:45	
trans-1,3-Dichloropropene	mg/kg	ND	0.00100	07/28/22 14:45	
Ethylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
Diethyl ether (Ethyl ether)	mg/kg	ND	0.00100	07/28/22 14:45	
Hexachloro-1,3-butadiene	mg/kg	ND	0.00100	07/28/22 14:45	
n-Hexane	mg/kg	ND	0.0100	07/28/22 14:45	

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(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

METHOD BLANK: R3820524-3 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	mg/kg	ND	0.00100	07/28/22 14:45	
p-Isopropyltoluene	mg/kg	ND	0.00100	07/28/22 14:45	
2-Butanone (MEK)	mg/kg	ND	0.0100	07/28/22 14:45	
Methylene Chloride	mg/kg	ND	0.00500	07/28/22 14:45	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.0100	07/28/22 14:45	
Methyl-tert-butyl ether	mg/kg	ND	0.00100	07/28/22 14:45	
Naphthalene	mg/kg	ND	0.00500	07/28/22 14:45	
n-Propylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
Styrene	mg/kg	ND	0.00100	07/28/22 14:45	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.00100	07/28/22 14:45	
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.00100	07/28/22 14:45	
Tetrachloroethene	mg/kg	ND	0.00100	07/28/22 14:45	
Tetrahydrofuran	mg/kg	ND	0.00500	07/28/22 14:45	
Toluene	mg/kg	ND	0.00500	07/28/22 14:45	
1,2,3-Trichlorobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
1,2,4-Trichlorobenzene	mg/kg	ND	0.00100	07/28/22 14:45	
1,2,4-Trimethylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
1,3,5-Trimethylbenzene	mg/kg	ND	0.00100	07/28/22 14:45	
1,1,1-Trichloroethane	mg/kg	ND	0.00100	07/28/22 14:45	
1,1,2-Trichloroethane	mg/kg	ND	0.00100	07/28/22 14:45	
Trichloroethene	mg/kg	ND	0.00100	07/28/22 14:45	
Trichlorofluoromethane	mg/kg	ND	0.00500	07/28/22 14:45	
1,1,2-Trichlorotrifluoroethane	mg/kg	ND	0.00100	07/28/22 14:45	
1,2,3-Trichloropropane	mg/kg	ND	0.00250	07/28/22 14:45	
Vinyl chloride	mg/kg	ND	0.00100	07/28/22 14:45	
Xylene (Total)	mg/kg	ND	0.00300	07/28/22 14:45	
1,2-Dichloroethane-d4 (S)	%	90.4	70.0-130	07/28/22 14:45	
Toluene-d8 (S)	%	113	75.0-131	07/28/22 14:45	
4-Bromofluorobenzene (S)	%	95.8	67.0-138	07/28/22 14:45	

LABORATORY CONTROL SAMPLE: R3820524-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	mg/kg	0.125	0.158	126	10.0-160	
Allyl chloride	mg/kg	0.125	0.166	133	70.0-131	L0
Benzene	mg/kg	0.0250	0.0279	112	70.0-123	
Bromobenzene	mg/kg	0.0250	0.0277	111	73.0-121	
Bromochloromethane	mg/kg	0.0250	0.0320	128	77.0-128	
Bromoform	mg/kg	0.0250	0.0305	122	64.0-132	
Bromomethane	mg/kg	0.0250	0.0608	243	56.0-147	L0
n-Butylbenzene	mg/kg	0.0250	0.0289	116	68.0-135	
sec-Butylbenzene	mg/kg	0.0250	0.0294	118	74.0-130	
tert-Butylbenzene	mg/kg	0.0250	0.0293	117	75.0-127	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

LABORATORY CONTROL SAMPLE: R3820524-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	mg/kg	0.0250	0.0296	118	66.0-128	
Chlorobenzene	mg/kg	0.0250	0.0308	123	76.0-128	
Dibromochloromethane	mg/kg	0.0250	0.0312	125	74.0-127	
Chloroethane	mg/kg	0.0250	0.0302	121	61.0-134	
Chloroform	mg/kg	0.0250	0.0289	116	72.0-123	
Chloromethane	mg/kg	0.0250	0.0256	102	51.0-138	
2-Chlorotoluene	mg/kg	0.0250	0.0272	109	75.0-124	
4-Chlorotoluene	mg/kg	0.0250	0.0289	116	75.0-124	
1,2-Dibromoethane (EDB)	mg/kg	0.0250	0.0297	119	74.0-128	
1,2-Dibromo-3-chloropropane	mg/kg	0.0250	0.0283	113	59.0-130	
Dibromomethane	mg/kg	0.0250	0.0295	118	75.0-122	
1,2-Dichlorobenzene	mg/kg	0.0250	0.0302	121	76.0-124	
1,3-Dichlorobenzene	mg/kg	0.0250	0.0289	116	76.0-125	
1,4-Dichlorobenzene	mg/kg	0.0250	0.0311	124	77.0-121	L0
Dichlorodifluoromethane	mg/kg	0.0250	0.0299	120	43.0-156	
Dichlorofluoromethane	mg/kg	0.0250	0.0317	127	65.0-137	
1,1-Dichloroethane	mg/kg	0.0250	0.0354	142	70.0-127	L0
1,2-Dichloroethane	mg/kg	0.0250	0.0273	109	65.0-131	
1,1-Dichloroethene	mg/kg	0.0250	0.0303	121	65.0-131	
trans-1,2-Dichloroethene	mg/kg	0.0250	0.0306	122	71.0-125	
1,2-Dichloropropane	mg/kg	0.0250	0.0300	120	74.0-125	
1,3-Dichloropropane	mg/kg	0.0250	0.0293	117	80.0-125	
2,2-Dichloropropane	mg/kg	0.0250	0.0276	110	59.0-135	
1,1-Dichloropropene	mg/kg	0.0250	0.0276	110	73.0-125	
trans-1,3-Dichloropropene	mg/kg	0.0250	0.0290	116	73.0-127	
Ethylbenzene	mg/kg	0.0250	0.0302	121	74.0-126	
Diethyl ether (Ethyl ether)	mg/kg	0.0250	0.0276	110	64.0-137	
Hexachloro-1,3-butadiene	mg/kg	0.0250	0.0278	111	57.0-150	
n-Hexane	mg/kg	0.0250	0.0279	112	55.0-137	
Isopropylbenzene (Cumene)	mg/kg	0.0250	0.0304	122	72.0-127	
p-Isopropyltoluene	mg/kg	0.0250	0.0296	118	72.0-133	
2-Butanone (MEK)	mg/kg	0.125	0.130	104	30.0-160	
Methylene Chloride	mg/kg	0.0250	0.0287	115	68.0-123	
4-Methyl-2-pentanone (MIBK)	mg/kg	0.125	0.141	113	56.0-143	
Methyl-tert-butyl ether	mg/kg	0.0250	0.0298	119	66.0-132	
Naphthalene	mg/kg	0.0250	0.0282	113	59.0-130	
n-Propylbenzene	mg/kg	0.0250	0.0290	116	74.0-126	
Styrene	mg/kg	0.0250	0.0306	122	72.0-127	
1,1,1,2-Tetrachloroethane	mg/kg	0.0250	0.0316	126	74.0-129	
1,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0279	112	68.0-128	
Tetrachloroethene	mg/kg	0.0250	0.0316	126	70.0-136	
Tetrahydrofuran	mg/kg	0.0250	0.0255	102	37.0-146	
Toluene	mg/kg	0.0250	0.0283	113	75.0-121	
1,2,3-Trichlorobenzene	mg/kg	0.0250	0.0287	115	59.0-139	
1,2,4-Trichlorobenzene	mg/kg	0.0250	0.0305	122	62.0-137	
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0286	114	70.0-126	
1,3,5-Trimethylbenzene	mg/kg	0.0250	0.0290	116	73.0-127	

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REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

LABORATORY CONTROL SAMPLE: R3820524-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	0.0250	0.0300	120	69.0-126	
1,1,2-Trichloroethane	mg/kg	0.0250	0.0299	120	78.0-123	
Trichloroethene	mg/kg	0.0250	0.0308	123	76.0-126	
Trichlorofluoromethane	mg/kg	0.0250	0.0319	128	61.0-142	
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0339	136	61.0-139	
1,2,3-Trichloropropane	mg/kg	0.0250	0.0295	118	67.0-129	
Vinyl chloride	mg/kg	0.0250	0.0312	125	63.0-134	
Xylene (Total)	mg/kg	0.0750	0.0892	119	72.0-127	
1,2-Dichloroethane-d4 (S)	%			101	70.0-130	
Toluene-d8 (S)	%			110	75.0-131	
4-Bromofluorobenzene (S)	%			101	67.0-138	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 1902834 Analysis Method: EPA 8260D
QC Batch Method: 5035A Analysis Description: VOA (GC/MS) 8260D
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: R3821207-4 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromodichloromethane	mg/kg	ND	0.00100	07/29/22 15:54	
cis-1,2-Dichloroethene	mg/kg	ND	0.00100	07/29/22 15:54	
cis-1,3-Dichloropropene	mg/kg	ND	0.00100	07/29/22 15:54	
1,2-Dichloroethane-d4 (S)	%	96.7	70.0-130	07/29/22 15:54	
Toluene-d8 (S)	%	101	75.0-131	07/29/22 15:54	
4-Bromofluorobenzene (S)	%	100	67.0-138	07/29/22 15:54	

LABORATORY CONTROL SAMPLE: R3821207-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromodichloromethane	mg/kg	0.0250	0.0241	96.4	73.0-121	
cis-1,2-Dichloroethene	mg/kg	0.0250	0.0231	92.4	73.0-125	
cis-1,3-Dichloropropene	mg/kg	0.0250	0.0249	99.6	76.0-127	
1,2-Dichloroethane-d4 (S)	%			98.0	70.0-130	
Toluene-d8 (S)	%			103	75.0-131	
4-Bromofluorobenzene (S)	%			99.2	67.0-138	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 830339
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: 4399403 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004, 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	07/29/22 19:15	
2-Methylnaphthalene	ug/kg	ND	10.0	07/29/22 19:15	
Acenaphthene	ug/kg	ND	10.0	07/29/22 19:15	
Acenaphthylene	ug/kg	ND	10.0	07/29/22 19:15	
Anthracene	ug/kg	ND	10.0	07/29/22 19:15	
Benzo(a)anthracene	ug/kg	ND	10.0	07/29/22 19:15	
Benzo(a)pyrene	ug/kg	ND	10.0	07/29/22 19:15	
Benzo(b)fluoranthene	ug/kg	ND	10.0	07/29/22 19:15	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	07/29/22 19:15	
Benzo(k)fluoranthene	ug/kg	ND	10.0	07/29/22 19:15	
Chrysene	ug/kg	ND	10.0	07/29/22 19:15	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	07/29/22 19:15	
Dibenzofuran	ug/kg	ND	10.0	07/29/22 19:15	
Fluoranthene	ug/kg	ND	10.0	07/29/22 19:15	
Fluorene	ug/kg	ND	10.0	07/29/22 19:15	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	07/29/22 19:15	
Naphthalene	ug/kg	ND	10.0	07/29/22 19:15	
Phenanthrene	ug/kg	ND	10.0	07/29/22 19:15	
Pyrene	ug/kg	ND	10.0	07/29/22 19:15	
2-Fluorobiphenyl (S)	%.	73	59-125	07/29/22 19:15	
p-Terphenyl-d14 (S)	%.	80	65-125	07/29/22 19:15	

LABORATORY CONTROL SAMPLE: 4399404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	67.5	68	50-125	
2-Methylnaphthalene	ug/kg	100	70.0	70	55-125	
Acenaphthene	ug/kg	100	77.2	77	60-125	
Acenaphthylene	ug/kg	100	76.3	76	59-125	
Anthracene	ug/kg	100	88.3	88	62-125	
Benzo(a)anthracene	ug/kg	100	77.6	78	64-125	
Benzo(a)pyrene	ug/kg	100	83.1	83	64-125	
Benzo(b)fluoranthene	ug/kg	100	77.7	78	65-125	
Benzo(g,h,i)perylene	ug/kg	100	72.2	72	66-125	
Benzo(k)fluoranthene	ug/kg	100	88.1	88	66-125	
Chrysene	ug/kg	100	85.4	85	66-125	
Dibenz(a,h)anthracene	ug/kg	100	82.3	82	67-125	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

LABORATORY CONTROL SAMPLE: 4399404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibenzofuran	ug/kg	100	78.1	78	70-130	
Fluoranthene	ug/kg	100	87.7	88	65-125	
Fluorene	ug/kg	100	80.9	81	60-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	71.9	72	64-125	
Naphthalene	ug/kg	100	73.6	74	48-125	
Phenanthrene	ug/kg	100	76.6	77	62-125	
Pyrene	ug/kg	100	77.1	77	68-125	
2-Fluorobiphenyl (S)	%.			75	59-125	
p-Terphenyl-d14 (S)	%.			80	65-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4399406 4399407

Parameter	Units	10618325001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	ND	120	120	73.0	83.4	61	69	60-125	13	30	
2-Methylnaphthalene	ug/kg	ND	120	120	70.9	81.2	59	67	59-125	14	30	
Acenaphthene	ug/kg	ND	120	120	82.0	92.8	68	77	70-125	12	30	M1
Acenaphthylene	ug/kg	ND	120	120	83.3	94.4	69	78	30-150	12	30	
Anthracene	ug/kg	ND	120	120	96.4	116	80	96	67-125	19	30	
Benzo(a)anthracene	ug/kg	ND	120	120	93.3	91.3	77	76	64-125	2	30	
Benzo(a)pyrene	ug/kg	ND	120	120	97.6	100	81	83	40-137	3	30	
Benzo(b)fluoranthene	ug/kg	ND	120	120	95.2	99.2	79	82	30-150	4	30	
Benzo(g,h,i)perylene	ug/kg	ND	120	120	93.8	96.2	78	80	69-125	3	30	
Benzo(k)fluoranthene	ug/kg	ND	120	120	106	106	88	88	48-133	0	30	
Chrysene	ug/kg	ND	120	120	107	107	89	89	62-125	1	30	
Dibenz(a,h)anthracene	ug/kg	ND	120	120	99.2	97.0	82	80	57-125	2	30	
Dibenzofuran	ug/kg	ND	120	120	86.4	95.8	72	79	70-130	10	30	
Fluoranthene	ug/kg	ND	120	120	102	101	85	84	60-125	1	30	
Fluorene	ug/kg	ND	120	120	87.0	93.8	72	78	53-125	8	30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	120	120	93.6	96.5	78	80	49-130	3	30	
Naphthalene	ug/kg	ND	120	120	72.3	86.1	60	71	46-125	17	30	
Phenanthrene	ug/kg	ND	120	120	93.2	98.0	77	81	61-125	5	30	
Pyrene	ug/kg	ND	120	120	102	99.2	84	82	58-125	2	30	
2-Fluorobiphenyl (S)	%.						65	75	59-125			
p-Terphenyl-d14 (S)	%.						78	83	65-125			

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 1902061 | Analysis Method: SM 2540G
QC Batch Method: SM 2540 G | Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004

METHOD BLANK: R3820591-1 Matrix: Solid
Associated Lab Samples: 10618041001, 10618041002, 10618041003, 10618041004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	0.00100		07/28/22 10:34	

LABORATORY CONTROL SAMPLE: R3820591-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3820591-3

Parameter	Units	10618041004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	88.3	87.5	0.937	10	

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QUALITY CONTROL DATA

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

QC Batch: 1902062 | Analysis Method: SM 2540G
QC Batch Method: SM 2540 G | Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10618041005, 10618041006, 10618041007, 10618041008

METHOD BLANK: R3820789-1 Matrix: Solid
Associated Lab Samples: 10618041005, 10618041006, 10618041007, 10618041008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	0.00300		07/28/22 17:55	

LABORATORY CONTROL SAMPLE: R3820789-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3820789-3

Parameter	Units	L1519031-03 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	87.8	88.0	0.121	10	

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QUALIFIERS

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 10618041

[1]	The samples were received outside of required temperature range. Analysis was completed upon client approval.

ANALYTE QUALIFIERS

L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10618041001	**SS-1-22 (3.75 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041002	**SS-2-22 (3.75 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041003	**SS-3-22 (4 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041004	**SS-4-22 (8 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041005	**SS-5-22 (4 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041006	**SS-6-22 (6 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041007	**SS-7-22 (4 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041008	**SS-8-22 (4 FT)**	EPA 3050B	830425	EPA 6020B	831271
10618041001	**SS-1-22 (3.75 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041002	**SS-2-22 (3.75 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041003	**SS-3-22 (4 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041004	**SS-4-22 (8 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041005	**SS-5-22 (4 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041006	**SS-6-22 (6 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041007	**SS-7-22 (4 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041008	**SS-8-22 (4 FT)**	EPA 7471B	830449	EPA 7471B	831334
10618041001	**SS-1-22 (3.75 FT)**	ASTM D2974	832309		
10618041002	**SS-2-22 (3.75 FT)**	ASTM D2974	832309		
10618041003	**SS-3-22 (4 FT)**	ASTM D2974	832309		
10618041004	**SS-4-22 (8 FT)**	ASTM D2974	832309		
10618041005	**SS-5-22 (4 FT)**	ASTM D2974	832309		
10618041006	**SS-6-22 (6 FT)**	ASTM D2974	832309		
10618041007	**SS-7-22 (4 FT)**	ASTM D2974	832309		
10618041008	**SS-8-22 (4 FT)**	ASTM D2974	832309		
10618041001	**SS-1-22 (3.75 FT)**	3546	1903439	EPA 8270E	1903439
10618041002	**SS-2-22 (3.75 FT)**	3546	1903439	EPA 8270E	1903439
10618041003	**SS-3-22 (4 FT)**	3546	1903439	EPA 8270E	1903439
10618041004	**SS-4-22 (8 FT)**	3546	1903439	EPA 8270E	1903439
10618041005	**SS-5-22 (4 FT)**	3546	1903439	EPA 8270E	1903439
10618041006	**SS-6-22 (6 FT)**	3546	1903439	EPA 8270E	1903439
10618041007	**SS-7-22 (4 FT)**	3546	1903439	EPA 8270E	1903439
10618041008	**SS-8-22 (4 FT)**	3546	1903439	EPA 8270E	1903439
10618041001	**SS-1-22 (3.75 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041002	**SS-2-22 (3.75 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041003	**SS-3-22 (4 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041004	**SS-4-22 (8 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041005	**SS-5-22 (4 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041006	**SS-6-22 (6 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041007	**SS-7-22 (4 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041008	**SS-8-22 (4 FT)**	EPA 3546	830339	EPA 8270E by SIM	831039
10618041001	**SS-1-22 (3.75 FT)**	8260	1902151	EPA 8260D	1902151
10618041001	**SS-1-22 (3.75 FT)**	5035A	1902834	EPA 8260D	1902834
10618041002	**SS-2-22 (3.75 FT)**	8260	1902151	EPA 8260D	1902151
10618041002	**SS-2-22 (3.75 FT)**	5035A	1902834	EPA 8260D	1902834

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P66: Oily Water Sewer
Pace Project No.: 10618041

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10618041003	**SS-3-22 (4 FT)**	8260	1902151	EPA 8260D	1902151
10618041003	**SS-3-22 (4 FT)**	5035A	1902834	EPA 8260D	1902834
10618041004	**SS-4-22 (8 FT)**	8260	1902151	EPA 8260D	1902151
10618041004	**SS-4-22 (8 FT)**	5035A	1902834	EPA 8260D	1902834
10618041005	**SS-5-22 (4 FT)**	8260	1902151	EPA 8260D	1902151
10618041005	**SS-5-22 (4 FT)**	5035A	1902834	EPA 8260D	1902834
10618041006	**SS-6-22 (6 FT)**	8260	1902151	EPA 8260D	1902151
10618041006	**SS-6-22 (6 FT)**	5035A	1902834	EPA 8260D	1902834
10618041007	**SS-7-22 (4 FT)**	8260	1902151	EPA 8260D	1902151
10618041007	**SS-7-22 (4 FT)**	5035A	1902834	EPA 8260D	1902834
10618041008	**SS-8-22 (4 FT)**	8260	1902151	EPA 8260D	1902151
10618041008	**SS-8-22 (4 FT)**	5035A	1902834	EPA 8260D	1902834
10618041001	**SS-1-22 (3.75 FT)**	SM 2540 G	1902061	SM 2540G	1902061
10618041002	**SS-2-22 (3.75 FT)**	SM 2540 G	1902061	SM 2540G	1902061
10618041003	**SS-3-22 (4 FT)**	SM 2540 G	1902061	SM 2540G	1902061
10618041004	**SS-4-22 (8 FT)**	SM 2540 G	1902061	SM 2540G	1902061
10618041005	**SS-5-22 (4 FT)**	SM 2540 G	1902062	SM 2540G	1902062
10618041006	**SS-6-22 (6 FT)**	SM 2540 G	1902062	SM 2540G	1902062
10618041007	**SS-7-22 (4 FT)**	SM 2540 G	1902062	SM 2540G	1902062
10618041008	**SS-8-22 (4 FT)**	SM 2540 G	1902062	SM 2540G	1902062
10618041001	**SS-1-22 (3.75 FT)**	Trivalent Chromium Calculation	833439		
10618041002	**SS-2-22 (3.75 FT)**	Trivalent Chromium Calculation	833439		
10618041003	**SS-3-22 (4 FT)**	Trivalent Chromium Calculation	833439		
10618041004	**SS-4-22 (8 FT)**	Trivalent Chromium Calculation	833439		
10618041005	**SS-5-22 (4 FT)**	Trivalent Chromium Calculation	833439		
10618041006	**SS-6-22 (6 FT)**	Trivalent Chromium Calculation	833439		
10618041007	**SS-7-22 (4 FT)**	Trivalent Chromium Calculation	833439		
10618041008	**SS-8-22 (4 FT)**	Trivalent Chromium Calculation	833439		

REPORT OF LABORATORY ANALYSIS

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

Cooler 1 of 2

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Phillips 66 Ferndale Refinery	Report To:	Joe Sumera	Attention:	Joe Sumera
Address:	PO Box 8	Copy To:	Ashley Yamaura	Company Name:	Phillips 66
	Ferndale, WA 98248		ayamaura@whatcom-es.com / 360-752-9571	Address:	PO Box 8, Ferndale, WA 98248
Email To:	Joe.E.Sumera@p66.com	Purchase Order No.	PO # 4300035146	Pace Quote Reference:	
Phone:	(360) 384-8377 Fax (360) 384-8422	Client Project ID:	P66: Oily Water Sewer	Pace Project Manager:	
Requested Due Date/TAT:	Standard TAT	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test Y/N	BTEX - EPA 8260	Chlorinated VOCs EPA 8260	Hexane	PAHs/cPAHs - 8270 SIM (see attached list)	Naphthalenes 8270 SIM	As, Cd, Cr (III & VI), Pb, Ni, Zn - EPA 6020	Mercury - EPA 7471	Residual Chlorine (Y/N)	
1	SS-1-22 (3.75 FT)	SL	G	7/20/22	12:30	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		001
2	SS-2-22 (3.75 FT)	SL	G	7/20/22	1:00	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		002
3	SS-3-22 (4 FT)	SL	G	7/20/22	1:30	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		003
4	SS-4-22 (8 FT)	SL	G	7/20/22	2:00	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		004
5	SS-5-22 (4 FT)	SL	G	7/20/22	2:30	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		005
6	SS-6-22 (6 FT)	SL	G	7/20/22	4:00	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		006
7	SS-7-22 (4 FT)	SL	G	7/20/22	4:15	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		007
8	SS-8-22 (4 FT)	SL	G	7/20/22	4:30	-	-		TerraCore 5035A kit w/: 3- 8oz. Jars			X	X	X	X	X	X	X		008
9																				
10																				

Preservatives: Unpreserved, H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Please email results to both Phillips 66, and Whatcom Environmental	/ Whatcom Environmental	7/21/22	1:00	/	07/21/22	8:50
See attached page for requested reporting limits.						

SAMPLE CONDITIONS				
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
2.9	Y	Y	Y	
4.9				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ashley Yamaura

SIGNATURE of SAMPLER: DATE Signed: 7/21/22

WO# : 10618041

10618041

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: Phillips 66 Ferndale Refinery

Project #:

WO#: 10618041

PM: JMG **Due Date: 08/05/22**

CLIENT: COP

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: 7774 5490 5781 5170

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: Ziplock **Temp Blank?** ☑Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☑T4(0254) ☐T5(0489) ☐T6(0235) ☐T7 (0042) ☐01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☑Wet ☐Blue ☐None ☐Dry ☑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:** 7.9, 4.9 °C

Correction Factor: True **Cooler Temp Corrected w/temp blank:** 7.9, 4.9 °C

Average Corrected Temp (no temp blank only): ____ °C ☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other: ____)

Date/Initials of Person Examining Contents: 07/22 ML KH

Did samples originate in a quarantine zone within the United States: AL, AR, 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): ☐ Duluth ☑ Minneapolis ☐ Virginia

Chain of Custody Present and Filled Out?	☑Yes	☐No		1.
Chain of Custody Relinquished?	☑Yes	☐No		2.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☑Yes	☐No		4. If Fecal: ☐<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☑No		6.
Sufficient Volume?	☐Yes	☑No		7.
Correct Containers Used?	☑Yes	☐No		8.
-Pace Containers Used?	☑Yes	☐No		
Containers Intact?	☑Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☑N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☑Yes	☐No		11. If no, write ID/ Date/Time on Container Below: ☐See Exception ENV-FRM-MIN4-0142
Matrix: ☐Water ☑Soil ☐Oil ☐Other-				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐Yes	☐No	☑N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☑N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** ☐See Exception ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☑N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☑No	☐N/A	13. ☐See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☑N/A	
Trip Blank Present?	☐Yes	☑No	☐N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☑No	☐N/A	Pace Trip Blank Lot # (if purchased): ____

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

Person Contacted: Joe Sumera Date/Time: 7/26/22 0947

Comments/Resolution: Email sent regarding sample temperature upon receipt. TP flag applied. lkc 7/26/22

Project Manager Review: Lyle Cable **Date:** ____

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: ____

D089

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WA
Cert. Needed: [X] Yes ☐ No

Workorder: 10618041 **Workorder Name:** P66: Oil Water Sewer

Owner Received Date: 7/22/2022 **Results Requested By:** 8/5/2022

Report To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

VG9Bx2, JGCU

L1519030

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers						8260D AP9 LL VOCs (Pace - TN)	8270E Biphenyl (Pace - TN)	Total Solids (Pace - TN)	LAB USE ONLY
1	SS-1-22 (3.75 FT)	PS	7/20/2022 12:30	10618041001	Solid	2	1					X	X	X	-01
2	SS-2-22 (3.75 FT)	PS	7/20/2022 13:00	10618041002	Solid	2	1					X	X	X	-02
3	SS-3-22 (4 FT)	PS	7/20/2022 13:30	10618041003	Solid	2	1					X	X	X	-03
4	SS-4-22 (8 FT)	PS	7/20/2022 14:00	10618041004	Solid	2	1					X	X	X	-04
5	SS-5-22 (4 FT)	PS	7/20/2022 14:30	10618041005	Solid	2	1					X	X	X	-05
6	SS-6-22 (6 FT)	PS	7/20/2022 16:00	10618041006	Solid	2	1					X	X	X	-06
7	SS-7-22 (4 FT)	PS	7/20/2022 16:15	10618041007	Solid	2	1					X	X	X	-07
8	SS-8-22 (4 FT)	PS	7/20/2022 16:30	10618041008	Solid	2	1					X	X	X	-08

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/pace	7.26.22 13:50	[illegible]	7.27.22 0900
2				
3				

Comments

8260D AP9: use stir bars
8260D: Full list chlorinated VOCs+BTEX+hexane ok

Cooler Temperature on Receipt ____ °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

5466 8885 5579

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

RPAV 2-1 to 2-1

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Pace Analytical Minnesota
Jenni Gross
1700 Elm Street, Ste. 200
Minneapolis, MN 55414

RE: P66: Oil Water Sewer
Work Order Number: 2207390

August 02, 2022

Attention Jenni Gross:

Fremont Analytical, Inc. received 8 sample(s) on 7/27/2022 for the analyses presented in the following report.

Hexavalent Chromium by EPA Method 7196
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,



Brianna Barnes
Project Manager

Date: *08/02/2022*

CLIENT: Pace Analytical Minnesota
Project: P66: Oil Water Sewer
Work Order: 2207390

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2207390-001	SS-1-22 (3.75 FT)	07/20/2022 12:30 PM	07/27/2022 1:53 PM
2207390-002	SS-2-22 (3.75 FT)	07/20/2022 1:00 PM	07/27/2022 1:53 PM
2207390-003	SS-3-22 (4 FT)	07/20/2022 1:30 AM	07/27/2022 1:53 PM
2207390-004	SS-4-22 (8 FT)	07/20/2022 2:00 PM	07/27/2022 1:53 PM
2207390-005	SS-5-22 (4 FT)	07/20/2022 2:30 AM	07/27/2022 1:53 PM
2207390-006	SS-6-22 (6 FT)	07/20/2022 4:00 PM	07/27/2022 1:53 PM
2207390-007	SS-7-22 (4 FT)	07/20/2022 4:15 PM	07/27/2022 1:53 PM
2207390-008	SS-8-22 (4 FT)	07/20/2022 4:30 AM	07/27/2022 1:53 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2207390**
Date: **8/2/2022**

CLIENT: Pace Analytical Minnesota
Project: P66: Oil Water Sewer

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Associated LCS is outside of control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Method Detection Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2207390**
Date Reported: **8/2/2022**

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 12:30:00 PM
Project: P66: Oil Water Sewer
Lab ID: 2207390-001
Matrix: Solid
Client Sample ID: SS-1-22 (3.75 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	14.9	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.131	0.581	0.113	J	mg/Kg-dry	1	08/01/22 16:35:00

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 1:00:00 PM
Project: P66: Oil Water Sewer
Lab ID: 2207390-002
Matrix: Solid
Client Sample ID: SS-2-22 (3.75 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	20.0	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.139	0.613	0.119	J	mg/Kg-dry	1	08/01/22 16:39:00

Analytical Report

Work Order: **2207390**
Date Reported: **8/2/2022**

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 1:30:00 AM
Project: P66: Oil Water Sewer
Lab ID: 2207390-003
Matrix: Solid
Client Sample ID: SS-3-22 (4 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	11.4	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.307	0.562	0.109	J	mg/Kg-dry	1	08/01/22 16:51:00

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 2:00:00 PM
Project: P66: Oil Water Sewer
Lab ID: 2207390-004
Matrix: Solid
Client Sample ID: SS-4-22 (8 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	13.8	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.183	0.574	0.112	J	mg/Kg-dry	1	08/01/22 16:55:00

Analytical Report

Work Order: **2207390**
Date Reported: **8/2/2022**

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 2:30:00 AM
Project: P66: Oil Water Sewer
Lab ID: 2207390-005
Matrix: Solid
Client Sample ID: SS-5-22 (4 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	18.9	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.240	0.616	0.120	J	mg/Kg-dry	1	08/01/22 16:59:00

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 4:00:00 PM
Project: P66: Oil Water Sewer
Lab ID: 2207390-006
Matrix: Solid
Client Sample ID: SS-6-22 (6 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	17.2	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	ND	0.595	0.116		mg/Kg-dry	1	08/01/22 17:02:00

Analytical Report

Work Order: **2207390**
Date Reported: **8/2/2022**

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 4:15:00 PM
Project: P66: Oil Water Sewer
Lab ID: 2207390-007
Matrix: Solid
Client Sample ID: SS-7-22 (4 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	18.6	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.233	0.605	0.118	J	mg/Kg-dry	1	08/01/22 17:06:00

Client: Pace Analytical Minnesota
Collection Date: 7/20/2022 4:30:00 AM
Project: P66: Oil Water Sewer
Lab ID: 2207390-008
Matrix: Solid
Client Sample ID: SS-8-22 (4 FT)

Analyses	Result	RL	MDL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R77224			Analyst: me
Percent Moisture	13.5	0.500	0.100		wt%	1	08/01/22 15:02:39
Hexavalent Chromium by EPA Method 7196				Batch ID: 37294			Analyst: CB
Chromium, Hexavalent	0.226	0.571	0.111	J	mg/Kg-dry	1	08/01/22 17:09:00

Work Order: 2207390
CLIENT: Pace Analytical Minnesota
Project: P66: Oil Water Sewer

QC SUMMARY REPORT

Hexavalent Chromium by EPA Method 7196

Sample ID: **MB-37294**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **8/1/2022**		RunNo: **77231**			
Client ID: **MBLKS**	Batch ID: **37294**					Analysis Date: **8/1/2022**		SeqNo: **1586869**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	0.500									

Sample ID: **LCS-37294**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **8/1/2022**		RunNo: **77231**			
Client ID: **LCSS**	Batch ID: **37294**					Analysis Date: **8/1/2022**		SeqNo: **1586870**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.43	0.500	2.500	0	97.0	80	121				

Sample ID: **2207158-005ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **8/1/2022**		RunNo: **77231**			
Client ID: **BATCH**	Batch ID: **37294**					Analysis Date: **8/1/2022**		SeqNo: **1586873**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	0.131	0.580						0	200	30	J

Sample ID: **2207158-005AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **8/1/2022**		RunNo: **77231**			
Client ID: **BATCH**	Batch ID: **37294**					Analysis Date: **8/1/2022**		SeqNo: **1586874**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	2.97	0.581	2.907	0	102	19.5	157				

Sample ID: **2207158-005AMSD**	SampType: **MSD**			Units: **mg/Kg-dry**		Prep Date: **8/1/2022**		RunNo: **77231**			
Client ID: **BATCH**	Batch ID: **37294**					Analysis Date: **8/1/2022**		SeqNo: **1586875**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	3.00	0.580	2.901	0	103	19.5	157	2.972	0.967	30	

Sample Log-In Check List

Client Name:	PACEMI	Work Order Number:	2207390
Logged by:	Elisabeth Samoray	Date Received:	7/27/2022 1:53:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No	☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	2.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody

PASI Minnesota Laboratory

Pace Analytical®
www.pacelabs.com

2207390

Workorder: 10618041 **Workorder Name:** P66: Oil Water Sewer **Results Requested By:** 8/5/2022

Report / Invoice To	Subcontract To
Jennifer Gross Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700 Email: jennifer.gross@pacelabs.com	Fremont Analytical 3600 Fremont Ave. N Seattle, WA 98103 206-352-3790 P.O. 10618041

State of Sample Origin: WA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: JGCU						Requested Analysis: 7196 Hex Chrome to Fremont	Requested Analysis: Percent Moisture										LAB USE ONLY
1	SS-1-22 (3.75 FT)	7/20/2022 12:30	10618041001	Solid	1						X	x										
2	SS-2-22 (3.75 FT)	7/20/2022 13:00	10618041002	Solid	1						X	x										
3	SS-3-22 (4 FT)	7/20/2022 13:30	10618041003	Solid	1						X	x										
4	SS-4-22 (8 FT)	7/20/2022 14:00	10618041004	Solid	1						X	x										
5	SS-5-22 (4 FT)	7/20/2022 14:30	10618041005	Solid	1						X	x										
6	SS-6-22 (6 FT)	7/20/2022 16:00	10618041006	Solid	1						X	x										
7	SS-7-22 (4 FT)	7/20/2022 16:15	10618041007	Solid	1						X	x										
8	SS-8-22 (4 FT)	7/20/2022 16:30	10618041008	Solid	1						X	x										
9																						
10																						
11																						
12																						

Transfers	Released By	Date/Time	Received By	Date/Time
1	CSM/Pace	7-26-22 12:10	[signature]	7/27/22 1315
2				
3				

Comments

Report to MDL
EIM, WAEDD required

Cooler Temperature on Receipt ____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

July 29, 2022

Ms. Ashley Yamaura
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Ms. Yamaura,

On July 22nd, 8 samples were received by our laboratory and assigned our laboratory project number EV22070104. The project was identified as your Phillips 66 - Oily Sewer. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Glen Perry
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/29/2022
		ALS JOB#:	EV22070104
		ALS SAMPLE#:	EV22070104-01
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 12:30:00 PM
CLIENT SAMPLE ID	SS-1-22 (3.75 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	**11**	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	**25**	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	**74**	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	**14**	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	**59**	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**81.5**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**77.8**	07/25/2022	KLS
TFT - Hexane	NWVPH	**82.1**	07/25/2022	KLS
C25	NWEPH	**89.3**	07/27/2022	JNF
p-Terphenyl	NWEPH	**91.1**	07/27/2022	JNF

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-02
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 1:00:00 PM
CLIENT SAMPLE ID	SS-2-22 (3.75 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**80.6**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**76.6**	07/25/2022	KLS
TFT - Hexane	NWVPH	**81.0**	07/25/2022	KLS
C25	NWEPH	**87.9**	07/27/2022	JNF
p-Terphenyl	NWEPH	**134**	07/27/2022	JNF

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-03
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 1:30:00 PM
CLIENT SAMPLE ID	SS-3-22 (4 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**89.4**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**84.4**	07/25/2022	KLS
TFT - Hexane	NWVPH	**89.8**	07/25/2022	KLS
C25	NWEPH	**84.4**	07/27/2022	JNF
p-Terphenyl	NWEPH	**83.9**	07/27/2022	JNF

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-04
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 2:00:00 PM
CLIENT SAMPLE ID	SS-4-22 (8 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**76.6**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**71.6**	07/25/2022	KLS
TFT - Hexane	NWVPH	**77.2**	07/25/2022	KLS
C25	NWEPH	**90.9**	07/27/2022	JNF
p-Terphenyl	NWEPH	**87.2**	07/27/2022	JNF

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-05
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 2:30:00 PM
CLIENT SAMPLE ID	SS-5-22 (4 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**73.9**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**69.7**	07/25/2022	KLS
TFT - Hexane	NWVPH	**74.5**	07/25/2022	KLS
C25	NWEPH	**73.7**	07/27/2022	JNF
p-Terphenyl	NWEPH	**78.3**	07/27/2022	JNF

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-06
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 4:00:00 PM
CLIENT SAMPLE ID	SS-6-22 (6 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**78.6**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**74.4**	07/25/2022	KLS
TFT - Hexane	NWVPH	**79.0**	07/25/2022	KLS
C25	NWEPH	**92.7**	07/27/2022	JNF
p-Terphenyl	NWEPH	**87.9**	07/27/2022	JNF

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-07
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 4:15:00 PM
CLIENT SAMPLE ID	SS-7-22 (4 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**75.6**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**71.1**	07/25/2022	KLS
TFT - Hexane	NWVPH	**76.2**	07/25/2022	KLS
C25	NWEPH	**88.4**	07/27/2022	JNF
p-Terphenyl	NWEPH	**85.1**	07/27/2022	JNF

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	7/29/2022 EV22070104 EV22070104-08
CLIENT CONTACT:	Ashley Yamaura	DATE RECEIVED:	07/22/2022
CLIENT PROJECT:	Phillips 66 - Oily Sewer	COLLECTION DATE:	7/20/2022 4:30:00 PM
CLIENT SAMPLE ID	SS-8-22 (4 FT)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	5.0	1	MG/KG	07/25/2022	KLS
Hexane	NWVPH	U	0.20	1	MG/KG	07/25/2022	KLS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	07/27/2022	JNF

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT - Aliphatic	NWVPH	**86.6**	07/25/2022	KLS
TFT - Aromatic	NWVPH	**81.1**	07/25/2022	KLS
TFT - Hexane	NWVPH	**86.9**	07/25/2022	KLS
C25	NWEPH	**81.2**	07/27/2022	JNF
p-Terphenyl	NWEPH	**80.0**	07/27/2022	JNF

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/29/2022
		ALS SDG#:	EV22070104
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ashley Yamaura		
CLIENT PROJECT:	Phillips 66 - Oily Sewer		

LABORATORY BLANK RESULTS

MBLK-R414052 - Batch R414052 - Soil by NWVPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	MG/KG	5.0	07/25/2022	KLS
>C6-C8 Aliphatics	NWVPH	U	MG/KG	5.0	07/25/2022	KLS
>C8-C10 Aliphatics	NWVPH	U	MG/KG	5.0	07/25/2022	KLS
>C8-C10 Aromatics	NWVPH	U	MG/KG	5.0	07/25/2022	KLS
Hexane	NWVPH	U	MG/KG	0.20	07/25/2022	KLS

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R414053 - Batch R414053 - Soil by NWEPH

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C12-C16 Aliphatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C16-C21 Aliphatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C21-C34 Aliphatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C10-C12 Aromatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C12-C16 Aromatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C16-C21 Aromatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF
>C21-C34 Aromatics	NWEPH	U	MG/KG	5.0	07/27/2022	JNF

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	7/29/2022
		ALS SDG#:	EV22070104
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ashley Yamaura		
CLIENT PROJECT:	Phillips 66 - Oily Sewer		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R414052 - Soil by NWVPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics - BS	NWVPH	**75.7**			70	130	07/25/2022	KLS
C5-C6 Aliphatics - BSD	NWVPH	**76.1**	**1**		70	130	07/25/2022	KLS
>C6-C8 Aliphatics - BS	NWVPH	**81.5**			70	130	07/25/2022	KLS
>C6-C8 Aliphatics - BSD	NWVPH	**82.2**	**1**		70	130	07/25/2022	KLS
>C8-C10 Aliphatics - BS	NWVPH	**83.9**			70	130	07/25/2022	KLS
>C8-C10 Aliphatics - BSD	NWVPH	**84.5**	**1**		70	130	07/25/2022	KLS
>C8-C10 Aromatics - BS	NWVPH	**81.2**			70	130	07/25/2022	KLS
>C8-C10 Aromatics - BSD	NWVPH	**81.6**	**0**		70	130	07/25/2022	KLS
Hexane - BS	NWVPH	**75.9**			70	130	07/25/2022	KLS
Hexane - BSD	NWVPH	**76.2**	**0**		70	130	07/25/2022	KLS

ALS Test Batch ID: R414053 - Soil by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aliphatics - BS	NWEPH	**75.5**			70	130	07/27/2022	JNF
>C10-C12 Aliphatics - BSD	NWEPH	**73.3**	**3**		70	130	07/27/2022	JNF
>C12-C16 Aliphatics - BS	NWEPH	**77.5**			70	130	07/27/2022	JNF
>C12-C16 Aliphatics - BSD	NWEPH	**76.4**	**1**		70	130	07/27/2022	JNF
>C16-C21 Aliphatics - BS	NWEPH	**78.0**			70	130	07/27/2022	JNF
>C16-C21 Aliphatics - BSD	NWEPH	**77.6**	**1**		70	130	07/27/2022	JNF
>C21-C34 Aliphatics - BS	NWEPH	**87.2**			70	130	07/27/2022	JNF
>C21-C34 Aliphatics - BSD	NWEPH	**85.2**	**2**		70	130	07/27/2022	JNF
>C10-C12 Aromatics - BS	NWEPH	**90.0**			70	130	07/27/2022	JNF
>C10-C12 Aromatics - BSD	NWEPH	**85.6**	**5**		70	130	07/27/2022	JNF
>C12-C16 Aromatics - BS	NWEPH	**91.2**			70	130	07/27/2022	JNF
>C12-C16 Aromatics - BSD	NWEPH	**85.7**	**6**		70	130	07/27/2022	JNF
>C16-C21 Aromatics - BS	NWEPH	**94.9**			70	130	07/27/2022	JNF
>C16-C21 Aromatics - BSD	NWEPH	**89.5**	**6**		70	130	07/27/2022	JNF
>C21-C34 Aromatics - BS	NWEPH	**98.7**			70	130	07/27/2022	JNF
>C21-C34 Aromatics - BSD	NWEPH	**92.7**	**6**		70	130	07/27/2022	JNF

APPROVED BY

Laboratory Director

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http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

Please reference project ID on invoice

ALS Job# (Laboratory Use Only): EV2207010 4

Date 7/21/22 Page 1 Of 1

PROJECT ID: Phillips 66 Oily sewer
REPORT TO COMPANY: Whatcom Env. Services
PROJECT MANAGER: Ashley Yamaura
ADDRESS: 228 E. CHAMPION ST #101
BHAM, WA 98225
PHONE: 360 752 9571 P.O. #:
E-MAIL: ayamaura@whatcom-es.com
INVOICE TO COMPANY:
ATTENTION: SAME AS ABOVE
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify): NWTPH - VPH	OTHER (Specify): NWTPH - EPH	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. SS-1-22 (3.75 FT)	7/20/22	12:30	soil	1															X	X	2	
2. SS-2-22 (3.75 FT)	"	1:00	"	2															X	X	"	
3. SS-3-22 (4 FT)		1:30		3															X	X		
4. SS-4-22 (8 FT)		2:00		4															X	X		
5. SS-5-22 (4 FT)		2:30		5															X	X		
6. SS-6-22 (6 FT)		4:00		6															X	X		
7. SS-7-22 (4 FT)		4:15		7															X	X		
8. SS-8-22 (4 FT)	"	4:30	"	8															X	X	"	
9.																						
10.																						

SPECIAL INSTRUCTIONS For VPH & EPH analysis please use reporting limits equal to or less than 5 mg/Kg. Thank you!

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ashley Yam, WES, 7/21/22, 1:00
   Received By:
2. Relinquished By:
   Received By: Shawn Robinson ALS 7/22/22 2:00 pm

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify:

*Turnaround request less than standard may incur Rush Charges

APPENDIX H

Confirmation Soil Sample Data Quality Assurance Review

This evaluation provides the results of verification and validation checks of analytical data for eight soil samples collected during the sampling event which occurred on July 20, 2022, at the Phillips 66 Ferndale Refinery. The samples were collected and analyzed as part of the Oily Water Sewer site investigation. All sample analyses were conducted at Pace Analytical Services, Pace National, and Fremont Analytical. This data quality evaluation covers Pace Project No: 10618041.

Laboratory quality control procedures have been verified using the applicable National Functional Guidelines (EPA, 2020a; EPA, 2020b). The verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; explanation of any significant corrective actions taken by the laboratory during the analytical process; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).
- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, surrogate recoveries, matrix spike results, laboratory duplicate and/or replicate results, and laboratory control sample results.
- Evaluation of overall data quality and completeness of analytical data.

Based on the verification and validation check, data qualifiers have been added to the sample results tables provided in the Report as needed. Data qualifier definitions are provided in the table footnotes. The absence of a data qualifier indicates that the reported result is acceptable without qualification. The data quality evaluation is summarized below.

Laboratory Data Package Completeness

The Pace Analytical laboratory data reports (10581546 & 10583611) contained a signed chain-of-custody, a cooler receipt form documenting the condition and temperature of the samples upon receipt at the laboratory, sample analytical results, and quality control results

(method blanks, surrogate recoveries, laboratory control sample results, and replicate sample results). Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

Sample Conditions and Analysis

The laboratories received the samples outside of required temperature range at 7.9 and 9.9 degrees Celsius. All analyses were performed as requested upon client approval. Preservation of samples, as specified by the analytical method, was verified by the laboratory.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within analytical method and project-specified holding times.

Initial and Continuing Calibrations

Appropriate calibration standard methods were followed as required. All initial and continuing calibration results were within acceptable range.

Lab Method Blanks

Several method blanks were analyzed with each batch of samples. No contamination of the selected analytes was detected in any of the method blanks.

Surrogate Recoveries

Appropriate compounds were used as surrogate spikes for low level semi volatile (8270E) and volatile (8260D) organic compound analyses. Surrogate spikes were added to all samples including Matrix Spikes, Matrix Spike Duplicates, Laboratory Control Samples, and blanks. Recovery values for the surrogate spikes were within the required control limits for all samples.

Laboratory Control Sample Results

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with each batch of samples. Recoveries for each LCS and/or LCSD were within the laboratory-specified control limits with the following exceptions:

- 1,4 dichlorobenzene results associated with the laboratory control sample were outside of the laboratory control limits.
- 1,1 dichloroethane results associated with the laboratory control sample were outside of the laboratory control limits.
- Allyl Chloride results associated with the laboratory control sample were outside of the laboratory control limits.
- Bromomethane results associated with the laboratory control sample were outside of the laboratory control limits.

Sample Duplicate and Matrix Spike/Matrix Spike Duplicate Results and Laboratory Duplicate Results

A sample duplicate and/or Matrix Spike/Matrix Spike Duplicate (MS/MSD) was analyzed with each batch of samples. The recovery values and relative percent difference (RPD) values for associated analyses were within the laboratory-specified control limits for all samples with the following exceptions:

- Acenaphthene MS recovery was below laboratory specified recommended limits. Batch accepted based on laboratory control sample recovery. No data qualifier is deemed necessary.

Sample Collection Methods

All sample collection and handling methods were followed as described in the approved Sampling and Analysis Plan (SAP) and laboratory methods.

Overall Assessment of the Data

This data set is 100% complete. Data precision was evaluated through sample duplicates, laboratory surrogate duplicates, and matrix spike duplicates. Data accuracy was evaluated through laboratory method blanks, surrogate spikes, and matrix spikes. Based on this data quality verification and validation, all of the data presented were determined to be acceptable.

APPENDIX I

MTCA TPH Data Worksheets

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/30/21
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-4-21 (3 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	1.232	0.03%
AL_EC >6-8	4.25	0.11%
AL_EC >8-10	31.6	0.80%
AL_EC >10-12	206	5.20%
AL_EC >12-16	618	15.59%
AL_EC >16-21	594	14.98%
AL_EC >21-34	1140	28.76%
AR_EC >8-10	49.2711	1.24%
AR_EC >10-12	40.627	1.02%
AR_EC >12-16	154.9934	3.91%
AR_EC >16-21	419	10.57%
AR_EC >21-34	704.5226	17.77%
Benzene	0.0136	0.00%
Toluene	0.0445	0.00%
Ethylbenzene	0.0108	0.00%
Total Xylenes	0.0181	0.00%
Naphthalene	0.273	0.01%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene	0.0066	0.00%
n-Hexane	0.038	0.00%
MTBE		0.00%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene	0.194	0.00%
Benzo(b)fluoranthene	0.0394	0.00%
Benzo(k)fluoranthene	0.0059	0.00%
Benzo(a)pyrene	0.0069	0.00%
Chrysene	0.208	0.01%
Dibenz(a,h)anthracene	0.0166	0.00%
Indeno(1,2,3-cd)pyrene	0.0066	0.00%
Sum	3964.3781	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/30/2021
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-4-21 (3 FT)
Measured Soil TPH Concentration, mg/kg: **3,964.378**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,485	4.61E-08	1.60E+00	Fail
	Method C	51,980	1.09E-08	7.63E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	100% NAPL	8.45E-07	2.86E-01	Pass
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,485.08**	**51,980.13**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.49E+03	2.89E-08	1.00E+00	YES	5.20E+04	1.43E-07	1.00E+00
Total Risk=1E-5	*NO*	8.61E+05	1.00E-05	3.46E+02	*NO*	3.64E+06	1.00E-05	6.99E+01
Risk of Benzene= 1E-6	*NO*	5.30E+06	6.16E-05	2.13E+03	NA			
Risk of cPAHs mixture= 1E-6	*NO*	8.75E+04	1.02E-06	3.52E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**NA**
Protective Ground Water Concentration, ug/L	**NA**
Protective Soil Concentration, mg/kg	**Soil-to-Ground Water is not a critical pathway!**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	1.30E+02	1.13E-06	3.02E-01	100% NAPL
Total Risk = 1E-5	YES	1.30E+02	1.13E-06	3.02E-01	100% NAPL
Total Risk = 1E-6	YES	1.28E+02	1.00E-06	2.95E-01	9.39E+03
Risk of cPAHs mixture= 1E-5	YES	1.30E+02	1.13E-06	3.02E-01	100% NAPL
Benzene MCL = 5 ug/L	YES	1.30E+02	1.13E-06	3.02E-01	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	1.30E+02	1.13E-06	3.02E-01	**100% NAPL**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/30/21
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-5-21 (5 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	1.2102	0.20%
AL_EC >6-8	1.15	0.19%
AL_EC >8-10	3.2	0.53%
AL_EC >10-12	29.1	4.86%
AL_EC >12-16	74.2	12.40%
AL_EC >16-21	78.8	13.17%
AL_EC >21-34	199	33.27%
AR_EC >8-10	3.2236	0.54%
AR_EC >10-12	4.2471	0.71%
AR_EC >12-16	24.01	4.01%
AR_EC >16-21	79.6	13.31%
AR_EC >21-34	97.9322	16.37%
Benzene	0.0331	0.01%
Toluene	0.103	0.02%
Ethylbenzene	0.0534	0.01%
Total Xylenes	0.573	0.10%
Naphthalene	0.0217	0.00%
1-Methyl Naphthalene	0.698	0.12%
2-Methyl Naphthalene	0.892	0.15%
n-Hexane	0.0798	0.01%
MTBE		0.00%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene	0.0063	0.00%
Benzo(b)fluoranthene	0.0052	0.00%
Benzo(k)fluoranthene	0.0031	0.00%
Benzo(a)pyrene	0.0036	0.00%
Chrysene	0.042	0.01%
Dibenz(a,h)anthracene	0.0042	0.00%
Indeno(1,2,3-cd)pyrene	0.0034	0.00%
Sum	598.1949	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/30/2021
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-5-21 (5 FT)
Measured Soil TPH Concentration, mg/kg: **598.195**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,719	3.59E-08	2.20E-01	Pass
	Method C	54,716	8.36E-09	1.09E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	732	6.92E-06	3.93E-01	Pass
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,719.09**	**54,716.48**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.72E+03	1.63E-07	1.00E+00	YES	5.47E+04	7.65E-07	1.00E+00
Total Risk=1E-5	*NO*	1.67E+05	1.00E-05	6.13E+01	*NO*	7.15E+05	1.00E-05	1.31E+01
Risk of Benzene= 1E-6	*NO*	3.29E+05	1.97E-05	1.21E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	7.45E+04	4.47E-06	2.74E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Benzene MCL = 5 ug/L**
Protective Ground Water Concentration, ug/L	**106.90**
Protective Soil Concentration, mg/kg	**731.72**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	1.41E+02	2.03E-05	7.74E-01	100% NAPL
Total Risk = 1E-5	*NO*	1.16E+02	1.00E-05	4.90E-01	1.18E+03
Total Risk = 1E-6	YES	3.27E+01	1.00E-06	1.05E-01	4.27E+01
Risk of cPAHs mixture= 1E-5	*NO*	1.41E+02	2.03E-05	7.74E-01	100% NAPL
Benzene MCL = 5 ug/L	YES	1.07E+02	7.78E-06	4.21E-01	7.32E+02
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	1.41E+02	2.03E-05	7.74E-01	**100% NAPL**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 04/27/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-1-22 (4 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.5391	2.59%
AL_EC >6-8	0.599	2.88%
AL_EC >8-10	0.535	2.57%
AL_EC >10-12	2.41	11.60%
AL_EC >12-16	1.025	4.93%
AL_EC >16-21	2.05	9.86%
AL_EC >21-34	3.295	15.85%
AR_EC >8-10	0.68763	3.31%
AR_EC >10-12	1.7036	8.20%
AR_EC >12-16	1.1672	5.62%
AR_EC >16-21	2.72	13.09%
AR_EC >21-34	3.9759	19.13%
Benzene	0.00059	0.00%
Toluene	0.00296	0.01%
Ethylbenzene	0.00059	0.00%
Total Xylenes	0.00178	0.01%
Naphthalene	0.0064	0.03%
1-Methyl Naphthalene	0.0064	0.03%
2-Methyl Naphthalene	0.0064	0.03%
n-Hexane	0.0059	0.03%
MTBE	0.00059	0.00%
Ethylene Dibromide (EDB)	0.00061	0.00%
1,2 Dichloroethane (EDC)	0.00061	0.00%
Benzo(a)anthracene	0.0063	0.03%
Benzo(b)fluoranthene	0.0063	0.03%
Benzo(k)fluoranthene	0.0063	0.03%
Benzo(a)pyrene	0.0063	0.03%
Chrysene	0.0063	0.03%
Dibenz(a,h)anthracene	0.0063	0.03%
Indeno(1,2,3-cd)pyrene	0.0063	0.03%
Sum	20.78436	100.00%

Notes for Data Entry | Set Default Hydrogeology | Clear All Soil Concentration Data Entry Cells | Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 4/27/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-1-22 (4 FT)
Measured Soil TPH Concentration, mg/kg: **20.784**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,699	1.38E-08	9.45E-03	Pass
	Method C	44,773	3.15E-09	4.65E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	4	5.64E-06	2.41E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	3,568	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,698.94**	**44,773.07**
Most Stringent Criterion	**Risk of cPAHs mixture= 1E-6**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	*NO*	2.20E+03	1.46E-06	1.00E+00	YES	4.48E+04	6.78E-06	1.00E+00
Total Risk=1E-5	*NO*	1.51E+04	1.00E-05	6.85E+00	*NO*	6.60E+04	1.00E-05	1.48E+00
Risk of Benzene= 1E-6	*NO*	6.41E+05	4.25E-04	2.91E+02	NA			
Risk of cPAHs mixture= 1E-6	YES	1.70E+03	1.13E-06	7.72E-01				
EDB	*NO*	1.70E+04	1.13E-05	7.74E+00				
EDC	*NO*	3.74E+05	2.48E-04	1.70E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**14.54**
Protective Soil Concentration, mg/kg	**3.65**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	3.19E+02	5.54E-05	1.00E+00	2.42E+02
Total Risk = 1E-5	*NO*	1.14E+02	1.00E-05	3.80E-01	3.73E+01
Total Risk = 1E-6	YES	1.45E+01	1.00E-06	4.96E-02	3.65E+00
Risk of cPAHs mixture= 1E-5	*NO*	6.26E+02	3.19E-04	1.94E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.19E+02	2.60E-04	1.71E+00	5.62E+03
MTBE = 20 ug/L	*NO*	4.98E+02	2.33E-04	1.62E+00	3.43E+03

Note: 100% NAPL is 78000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	2.36E-04	1.62E+00	**3.57E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/02/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-1-22 (6-7.5 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.915	2.05%
AL_EC >6-8	0.55	1.23%
AL_EC >8-10	0.92	2.06%
AL_EC >10-12	5.15	11.52%
AL_EC >12-16	5.15	11.52%
AL_EC >16-21	5.15	11.52%
AL_EC >21-34	5.15	11.52%
AR_EC >8-10	1.103	2.47%
AR_EC >10-12	5.1444	11.51%
AR_EC >12-16	5.1388	11.50%
AR_EC >16-21	5.15	11.52%
AR_EC >21-34	5.1108	11.43%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.0015	0.00%
Naphthalene	0.0056	0.01%
1-Methyl Naphthalene	0.0056	0.01%
2-Methyl Naphthalene	0.0056	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.0056	0.01%
Benzo(b)fluoranthene	0.0056	0.01%
Benzo(k)fluoranthene	0.0056	0.01%
Benzo(a)pyrene	0.0056	0.01%
Chrysene	0.0056	0.01%
Dibenz(a,h)anthracene	0.0056	0.01%
Indeno(1,2,3-cd)pyrene	0.0056	0.01%
Sum	44.7	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/2/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-1-22 (6-7.5 FT)
Measured Soil TPH Concentration, mg/kg: **44.700**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,989	1.22E-08	2.25E-02	Pass
	Method C	43,388	2.79E-09	1.03E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	10	4.55E-06	5.38E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	22,330	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,988.65**	**43,387.73**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.99E+03	5.41E-07	1.00E+00	YES	4.34E+04	2.70E-06	1.00E+00
Total Risk=1E-5	*NO*	3.68E+04	1.00E-05	1.85E+01	*NO*	1.60E+05	1.00E-05	3.70E+00
Risk of Benzene= 1E-6	*NO*	1.63E+06	4.42E-04	8.17E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	4.11E+03	1.12E-06	2.07E+00				
EDB	*NO*	4.47E+04	1.22E-05	2.25E+01				
EDC	*NO*	9.82E+05	2.67E-04	4.94E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**38.52**
Protective Soil Concentration, mg/kg	**9.65**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.76E+02	1.35E-05	1.00E+00	1.44E+02
Total Risk = 1E-5	*NO*	2.39E+02	1.00E-05	8.71E-01	1.03E+02
Total Risk = 1E-6	YES	3.85E+01	1.00E-06	1.39E-01	9.65E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.18E+02	1.18E-04	1.73E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.18E+02	1.18E-04	1.73E+00	100% NAPL
MTBE = 20 ug/L	*NO*	4.88E+02	1.07E-04	1.68E+00	1.15E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.13E-04	1.71E+00	**2.23E+04**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 04/27/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-2-22 (4 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.4729	2.26%
AL_EC >6-8	0.359	1.72%
AL_EC >8-10	0.4735	2.26%
AL_EC >10-12	2.485	11.88%
AL_EC >12-16	1.06	5.07%
AL_EC >16-21	2.115	10.11%
AL_EC >21-34	3.4	16.25%
AR_EC >8-10	0.60756	2.90%
AR_EC >10-12	1.7587	8.41%
AR_EC >12-16	1.2024	5.75%
AR_EC >16-21	2.805	13.41%
AR_EC >21-34	4.1059	19.62%
Benzene	0.00061	0.00%
Toluene	0.003055	0.01%
Ethylbenzene	0.00061	0.00%
Total Xylenes	0.00183	0.01%
Naphthalene	0.0063	0.03%
1-Methyl Naphthalene	0.0063	0.03%
2-Methyl Naphthalene	0.0063	0.03%
n-Hexane	0.0061	0.03%
MTBE	0.00061	0.00%
Ethylene Dibromide (EDB)	0.00061	0.00%
1,2 Dichloroethane (EDC)	0.00061	0.00%
Benzo(a)anthracene	0.0063	0.03%
Benzo(b)fluoranthene	0.0063	0.03%
Benzo(k)fluoranthene	0.0063	0.03%
Benzo(a)pyrene	0.0063	0.03%
Chrysene	0.0063	0.03%
Dibenz(a,h)anthracene	0.0063	0.03%
Indeno(1,2,3-cd)pyrene	0.0063	0.03%
Sum	20.921995	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 4/27/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-2-22 (4 FT)
Measured Soil TPH Concentration, mg/kg: **20.922**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,710	1.38E-08	9.62E-03	Pass
	Method C	44,133	3.15E-09	4.74E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	4	5.65E-06	2.44E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	6,473	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,710.19**	**44,132.96**
Most Stringent Criterion	**Risk of cPAHs mixture= 1E-6**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	*NO*	2.17E+03	1.43E-06	1.00E+00	YES	4.41E+04	6.64E-06	1.00E+00
Total Risk=1E-5	*NO*	1.52E+04	1.00E-05	6.99E+00	*NO*	6.65E+04	1.00E-05	1.51E+00
Risk of Benzene= 1E-6	*NO*	6.24E+05	4.11E-04	2.87E+02	NA			
Risk of cPAHs mixture= 1E-6	YES	1.71E+03	1.13E-06	7.87E-01				
EDB	*NO*	1.71E+04	1.13E-05	7.89E+00				
EDC	*NO*	3.77E+05	2.48E-04	1.73E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**13.95**
Protective Soil Concentration, mg/kg	**3.67**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.98E+02	5.38E-05	1.00E+00	2.35E+02
Total Risk = 1E-5	*NO*	1.08E+02	1.00E-05	3.83E-01	3.75E+01
Total Risk = 1E-6	YES	1.39E+01	1.00E-06	5.00E-02	3.67E+00
Risk of cPAHs mixture= 1E-5	*NO*	6.05E+02	3.24E-04	1.98E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	4.84E+02	2.51E-04	1.70E+00	4.44E+03
MTBE = 20 ug/L	*NO*	4.72E+02	2.33E-04	1.64E+00	3.32E+03

Note: 100% NAPL is 78000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	2.70E-04	1.76E+00	**6.47E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/02/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-2-22 (6-7.5 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis	Composition Ratio
	mg/kg	%
Petroleum EC Fraction		
AL_EC >5-6	1.005	2.21%
AL_EC >6-8	0.605	1.33%
AL_EC >8-10	1.01	2.22%
AL_EC >10-12	5.2	11.44%
AL_EC >12-16	5.2	11.44%
AL_EC >16-21	5.2	11.44%
AL_EC >21-34	5.2	11.44%
AR_EC >8-10	1.20601	2.65%
AR_EC >10-12	5.1944	11.43%
AR_EC >12-16	5.1888	11.42%
AR_EC >16-21	5.2	11.44%
AR_EC >21-34	5.1608	11.36%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.00349	0.01%
Naphthalene	0.0056	0.01%
1-Methyl Naphthalene	0.0056	0.01%
2-Methyl Naphthalene	0.0056	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.0056	0.01%
Benzo(b)fluoranthene	0.0056	0.01%
Benzo(k)fluoranthene	0.0056	0.01%
Benzo(a)pyrene	0.0056	0.01%
Chrysene	0.0056	0.01%
Dibenz(a,h)anthracene	0.0056	0.01%
Indeno(1,2,3-cd)pyrene	0.0056	0.01%
Sum	45.44	100.00%

Notes for Data Entry | Set Default Hydrogeology | Clear All Soil Concentration Data Entry Cells | Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/2/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-2-22 (6-7.5 FT)
Measured Soil TPH Concentration, mg/kg: **45.440**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,992	1.22E-08	2.28E-02	Pass
	Method C	43,502	2.79E-09	1.04E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	10	4.55E-06	5.45E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	11,517	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,992.49**	**43,502.05**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.99E+03	5.33E-07	1.00E+00	YES	4.35E+04	2.67E-06	1.00E+00
Total Risk=1E-5	*NO*	3.74E+04	1.00E-05	1.88E+01	*NO*	1.63E+05	1.00E-05	3.75E+00
Risk of Benzene= 1E-6	*NO*	1.65E+06	4.42E-04	8.29E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	4.18E+03	1.12E-06	2.10E+00				
EDB	*NO*	4.54E+04	1.22E-05	2.28E+01				
EDC	*NO*	9.99E+05	2.67E-04	5.01E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**43.99**
Protective Soil Concentration, mg/kg	**9.73**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.82E+02	1.33E-05	1.00E+00	1.44E+02
Total Risk = 1E-5	*NO*	2.46E+02	1.00E-05	8.78E-01	1.05E+02
Total Risk = 1E-6	YES	4.40E+01	1.00E-06	1.55E-01	9.73E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.30E+02	1.16E-04	1.72E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.30E+02	1.16E-04	1.72E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.01E+02	1.05E-04	1.68E+00	1.19E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.05E-04	1.67E+00	**1.15E+04**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 04/27/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-3-22 (4.5 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.56385	1.71%
AL_EC >6-8	0.517	1.57%
AL_EC >8-10	0.56	1.70%
AL_EC >10-12	2.55	7.72%
AL_EC >12-16	5.3	16.05%
AL_EC >16-21	2.17	6.57%
AL_EC >21-34	9.45	28.62%
AR_EC >8-10	1.687535	5.11%
AR_EC >10-12	1.8088	5.48%
AR_EC >12-16	1.2376	3.75%
AR_EC >16-21	2.88	8.72%
AR_EC >21-34	4.2166	12.77%
Benzene	0.000615	0.00%
Toluene	0.003085	0.01%
Ethylbenzene	0.000615	0.00%
Total Xylenes	0.00185	0.01%
Naphthalene	0.0062	0.02%
1-Methyl Naphthalene	0.0062	0.02%
2-Methyl Naphthalene	0.0062	0.02%
n-Hexane	0.00615	0.02%
MTBE	0.000615	0.00%
Ethylene Dibromide (EDB)	0.000615	0.00%
1,2 Dichloroethane (EDC)	0.000615	0.00%
Benzo(a)anthracene	0.0062	0.02%
Benzo(b)fluoranthene	0.0062	0.02%
Benzo(k)fluoranthene	0.0062	0.02%
Benzo(a)pyrene	0.0062	0.02%
Chrysene	0.0062	0.02%
Dibenz(a,h)anthracene	0.0062	0.02%
Indeno(1,2,3-cd)pyrene	0.0062	0.02%
Sum	33.017545	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 4/27/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-3-22 (4.5 FT)
Measured Soil TPH Concentration, mg/kg: **33.018**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,147	1.36E-08	1.54E-02	Pass
	Method C	46,752	3.10E-09	7.06E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	6	5.64E-06	2.61E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	2,420	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,146.61**	**46,751.66**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.15E+03	8.84E-07	1.00E+00	YES	4.68E+04	4.39E-06	1.00E+00
Total Risk=1E-5	*NO*	2.43E+04	1.00E-05	1.13E+01	*NO*	1.06E+05	1.00E-05	2.28E+00
Risk of Benzene= 1E-6	*NO*	9.76E+05	4.02E-04	4.55E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	2.74E+03	1.13E-06	1.28E+00				
EDB	*NO*	2.68E+04	1.11E-05	1.25E+01				
EDC	*NO*	5.90E+05	2.43E-04	2.75E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**19.33**
Protective Soil Concentration, mg/kg	**5.75**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	3.96E+02	6.17E-05	1.00E+00	4.92E+02
Total Risk = 1E-5	*NO*	1.45E+02	1.00E-05	4.02E-01	5.97E+01
Total Risk = 1E-6	YES	1.93E+01	1.00E-06	5.65E-02	5.75E+00
Risk of cPAHs mixture= 1E-5	*NO*	6.13E+02	2.22E-04	1.60E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	6.13E+02	2.22E-04	1.60E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.31E+02	1.78E-04	1.42E+00	5.56E+03

Note: 100% NAPL is 74000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.43E-04	1.30E+00	**2.42E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/02/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-3-22 (6-7.5 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.975	2.25%
AL_EC >6-8	0.59	1.36%
AL_EC >8-10	0.98	2.26%
AL_EC >10-12	4.955	11.42%
AL_EC >12-16	4.955	11.42%
AL_EC >16-21	4.955	11.42%
AL_EC >21-34	4.955	11.42%
AR_EC >8-10	1.17095	2.70%
AR_EC >10-12	4.94925	11.41%
AR_EC >12-16	4.9435	11.40%
AR_EC >16-21	4.955	11.42%
AR_EC >21-34	4.91475	11.33%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.00355	0.01%
Naphthalene	0.00575	0.01%
1-Methyl Naphthalene	0.00575	0.01%
2-Methyl Naphthalene	0.00575	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.00575	0.01%
Benzo(b)fluoranthene	0.00575	0.01%
Benzo(k)fluoranthene	0.00575	0.01%
Benzo(a)pyrene	0.00575	0.01%
Chrysene	0.00575	0.01%
Dibenz(a,h)anthracene	0.00575	0.01%
Indeno(1,2,3-cd)pyrene	0.00575	0.01%
Sum	43.37	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/2/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-3-22 (6-7.5 FT)
Measured Soil TPH Concentration, mg/kg: **43.370**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,992	1.25E-08	2.18E-02	Pass
	Method C	43,458	2.86E-09	9.98E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	9	4.56E-06	5.28E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	9,193	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,992.49**	**43,457.62**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.99E+03	5.72E-07	1.00E+00	YES	4.35E+04	2.86E-06	1.00E+00
Total Risk=1E-5	*NO*	3.48E+04	1.00E-05	1.75E+01	*NO*	1.52E+05	1.00E-05	3.49E+00
Risk of Benzene= 1E-6	*NO*	1.58E+06	4.53E-04	7.92E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.88E+03	1.12E-06	1.95E+00				
EDB	*NO*	4.34E+04	1.25E-05	2.18E+01				
EDC	*NO*	9.53E+05	2.74E-04	4.79E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**42.27**
Protective Soil Concentration, mg/kg	**9.28**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.84E+02	1.39E-05	1.00E+00	1.43E+02
Total Risk = 1E-5	*NO*	2.41E+02	1.00E-05	8.58E-01	9.97E+01
Total Risk = 1E-6	YES	4.23E+01	1.00E-06	1.49E-01	9.28E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.36E+02	1.21E-04	1.74E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.36E+02	1.21E-04	1.74E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.04E+02	1.09E-04	1.68E+00	1.11E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.07E-04	1.67E+00	**9.19E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/02/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-4-22 (6-8 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.995	2.39%
AL_EC >6-8	0.6	1.44%
AL_EC >8-10	1	2.41%
AL_EC >10-12	4.72	11.36%
AL_EC >12-16	4.72	11.36%
AL_EC >16-21	4.72	11.36%
AL_EC >21-34	4.72	11.36%
AR_EC >8-10	1.19161	2.87%
AR_EC >10-12	4.7144	11.34%
AR_EC >12-16	4.7088	11.33%
AR_EC >16-21	4.6808	11.26%
AR_EC >21-34	4.72	11.36%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.00339	0.01%
Naphthalene	0.0056	0.01%
1-Methyl Naphthalene	0.0056	0.01%
2-Methyl Naphthalene	0.0056	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.0056	0.01%
Benzo(b)fluoranthene	0.0056	0.01%
Benzo(k)fluoranthene	0.0056	0.01%
Benzo(a)pyrene	0.0056	0.01%
Chrysene	0.0056	0.01%
Dibenz(a,h)anthracene	0.0056	0.01%
Indeno(1,2,3-cd)pyrene	0.0056	0.01%
Sum	41.5605	100.00%

Notes for Data Entry | Set Default Hydrogeology | Clear All Soil Concentration Data Entry Cells | Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/2/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: B-4-22 (6-8 FT)
Measured Soil TPH Concentration, mg/kg: **41.561**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,992	1.22E-08	2.08E-02	Pass
	Method C	43,540	2.79E-09	9.55E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	9	4.56E-06	5.13E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	5,167	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,992.49**	**43,540.29**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.99E+03	5.83E-07	9.99E-01	YES	4.35E+04	2.92E-06	1.00E+00
Total Risk=1E-5	*NO*	3.42E+04	1.00E-05	1.71E+01	*NO*	1.49E+05	1.00E-05	3.43E+00
Risk of Benzene= 1E-6	*NO*	1.51E+06	4.42E-04	7.58E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.82E+03	1.12E-06	1.92E+00				
EDB	*NO*	4.16E+04	1.22E-05	2.08E+01				
EDC	*NO*	9.13E+05	2.67E-04	4.58E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**41.09**
Protective Soil Concentration, mg/kg	**8.89**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.89E+02	1.44E-05	1.00E+00	1.43E+02
Total Risk = 1E-5	*NO*	2.40E+02	1.00E-05	8.41E-01	9.52E+01
Total Risk = 1E-6	YES	4.11E+01	1.00E-06	1.43E-01	8.89E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.49E+02	1.26E-04	1.74E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.49E+02	1.26E-04	1.74E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.15E+02	1.13E-04	1.69E+00	1.04E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.02E-04	1.64E+00	**5.17E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/02/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-1 (14-15 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.795	1.88%
AL_EC >6-8	0.4785	1.13%
AL_EC >8-10	0.8	1.89%
AL_EC >10-12	4.9	11.60%
AL_EC >12-16	4.9	11.60%
AL_EC >16-21	4.9	11.60%
AL_EC >21-34	4.9	11.60%
AR_EC >8-10	0.953	2.26%
AR_EC >10-12	4.886	11.57%
AR_EC >12-16	4.8642	11.52%
AR_EC >16-21	4.9	11.60%
AR_EC >21-34	4.86045	11.51%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.0015	0.00%
Naphthalene	0.014	0.03%
1-Methyl Naphthalene	0.0179	0.04%
2-Methyl Naphthalene	0.0179	0.04%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.00565	0.01%
Benzo(b)fluoranthene	0.00565	0.01%
Benzo(k)fluoranthene	0.00565	0.01%
Benzo(a)pyrene	0.00565	0.01%
Chrysene	0.00565	0.01%
Dibenz(a,h)anthracene	0.00565	0.01%
Indeno(1,2,3-cd)pyrene	0.00565	0.01%
Sum	42.2385	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/2/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-1 (14-15 FT)
Measured Soil TPH Concentration, mg/kg: **42.239**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,978	1.27E-08	2.14E-02	Pass
	Method C	43,047	2.92E-09	9.81E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	9	4.68E-06	5.24E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	39,408	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,978.30**	**43,046.76**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.98E+03	5.95E-07	1.00E+00	YES	4.30E+04	2.97E-06	1.00E+00
Total Risk=1E-5	*NO*	3.32E+04	1.00E-05	1.68E+01	*NO*	1.45E+05	1.00E-05	3.36E+00
Risk of Benzene= 1E-6	*NO*	1.54E+06	4.62E-04	7.76E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.85E+03	1.16E-06	1.95E+00				
EDB	*NO*	4.22E+04	1.27E-05	2.14E+01				
EDC	*NO*	9.28E+05	2.79E-04	4.69E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**38.93**
Protective Soil Concentration, mg/kg	**8.77**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.67E+02	1.41E-05	1.00E+00	1.39E+02
Total Risk = 1E-5	*NO*	2.25E+02	1.00E-05	8.48E-01	9.49E+01
Total Risk = 1E-6	YES	3.89E+01	1.00E-06	1.43E-01	8.77E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.09E+02	1.26E-04	1.77E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.09E+02	1.26E-04	1.77E+00	100% NAPL
MTBE = 20 ug/L	*NO*	4.75E+02	1.13E-04	1.71E+00	1.06E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.23E-04	1.76E+00	**3.94E+04**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/03/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-2 (5.5-7 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	1.12	2.60%
AL_EC >6-8	0.675	1.57%
AL_EC >8-10	1.125	2.61%
AL_EC >10-12	4.855	11.26%
AL_EC >12-16	4.855	11.26%
AL_EC >16-21	4.855	11.26%
AL_EC >21-34	4.855	11.26%
AR_EC >8-10	1.3435	3.12%
AR_EC >10-12	4.855	11.26%
AR_EC >12-16	4.8433	11.23%
AR_EC >16-21	4.855	11.26%
AR_EC >21-34	4.81405	11.16%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.0015	0.00%
Naphthalene	0.00585	0.01%
1-Methyl Naphthalene	0.00585	0.01%
2-Methyl Naphthalene	0.00585	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.00585	0.01%
Benzo(b)fluoranthene	0.00585	0.01%
Benzo(k)fluoranthene	0.00585	0.01%
Benzo(a)pyrene	0.00585	0.01%
Chrysene	0.00585	0.01%
Dibenz(a,h)anthracene	0.00585	0.01%
Indeno(1,2,3-cd)pyrene	0.00585	0.01%
Sum	43.12135	100.00%

Notes for Data Entry | Set Default Hydrogeology | Clear All Soil Concentration Data Entry Cells | Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/2/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-2 (5.5-7 FT)
Measured Soil TPH Concentration, mg/kg: **43.121**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,998	1.27E-08	2.16E-02	Pass
	Method C	43,642	2.90E-09	9.88E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	9	4.56E-06	5.27E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	2,889	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,998.08**	**43,642.00**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.00E+03	5.86E-07	1.00E+00	YES	4.36E+04	2.94E-06	1.00E+00
Total Risk=1E-5	*NO*	3.41E+04	1.00E-05	1.71E+01	*NO*	1.48E+05	1.00E-05	3.40E+00
Risk of Benzene= 1E-6	*NO*	1.57E+06	4.60E-04	7.85E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.80E+03	1.11E-06	1.90E+00				
EDB	*NO*	4.31E+04	1.27E-05	2.16E+01				
EDC	*NO*	9.48E+05	2.78E-04	4.74E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**43.19**
Protective Soil Concentration, mg/kg	**9.22**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.96E+02	1.39E-05	1.00E+00	1.42E+02
Total Risk = 1E-5	*NO*	2.51E+02	1.00E-05	8.58E-01	9.91E+01
Total Risk = 1E-6	YES	4.32E+01	1.00E-06	1.48E-01	9.22E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.62E+02	1.20E-04	1.73E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.62E+02	1.20E-04	1.73E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.30E+02	1.09E-04	1.68E+00	1.10E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	8.52E-05	1.58E+00	**2.89E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/03/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-2 (13.5-15 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	1.045	2.25%
AL_EC >6-8	0.63	1.36%
AL_EC >8-10	1.05	2.26%
AL_EC >10-12	5.3	11.42%
AL_EC >12-16	5.3	11.42%
AL_EC >16-21	5.3	11.42%
AL_EC >21-34	5.3	11.42%
AR_EC >8-10	1.258	2.71%
AR_EC >10-12	5.2943	11.41%
AR_EC >12-16	5.2886	11.40%
AR_EC >16-21	5.3	11.42%
AR_EC >21-34	5.2434	11.30%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.0015	0.00%
Naphthalene	0.0057	0.01%
1-Methyl Naphthalene	0.0057	0.01%
2-Methyl Naphthalene	0.0057	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.0131	0.03%
Benzo(b)fluoranthene	0.0057	0.01%
Benzo(k)fluoranthene	0.0057	0.01%
Benzo(a)pyrene	0.0057	0.01%
Chrysene	0.015	0.03%
Dibenz(a,h)anthracene	0.0057	0.01%
Indeno(1,2,3-cd)pyrene	0.0057	0.01%
Sum	46.395	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/3/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-2 (13.5-15 FT)
Measured Soil TPH Concentration, mg/kg: **46.395**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,994	1.34E-08	2.33E-02	Pass
	Method C	43,549	3.09E-09	1.07E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	10	4.55E-06	5.52E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	10,262	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,994.06**	**43,549.00**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.99E+03	5.77E-07	1.00E+00	YES	4.35E+04	2.90E-06	1.00E+00
Total Risk=1E-5	*NO*	3.46E+04	1.00E-05	1.73E+01	*NO*	1.50E+05	1.00E-05	3.45E+00
Risk of Benzene= 1E-6	*NO*	1.69E+06	4.88E-04	8.46E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.82E+03	1.11E-06	1.92E+00				
EDB	*NO*	4.64E+04	1.34E-05	2.33E+01				
EDC	*NO*	1.02E+06	2.95E-04	5.11E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**44.95**
Protective Soil Concentration, mg/kg	**9.93**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.84E+02	1.30E-05	1.00E+00	1.44E+02
Total Risk = 1E-5	*NO*	2.50E+02	1.00E-05	8.87E-01	1.07E+02
Total Risk = 1E-6	YES	4.49E+01	1.00E-06	1.58E-01	9.93E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.32E+02	1.13E-04	1.72E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.32E+02	1.13E-04	1.72E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.03E+02	1.03E-04	1.67E+00	1.23E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	1.01E-04	1.66E+00	**1.03E+04**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/03/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-3 (8.5-10 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	1.065	2.50%
AL_EC >6-8	0.64	1.50%
AL_EC >8-10	1.07	2.51%
AL_EC >10-12	4.81	11.31%
AL_EC >12-16	4.81	11.31%
AL_EC >16-21	4.81	11.31%
AL_EC >21-34	4.81	11.31%
AR_EC >8-10	1.278	3.00%
AR_EC >10-12	4.80445	11.29%
AR_EC >12-16	4.7989	11.28%
AR_EC >16-21	4.81	11.31%
AR_EC >21-34	4.77115	11.21%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.0015	0.00%
Naphthalene	0.00555	0.01%
1-Methyl Naphthalene	0.00555	0.01%
2-Methyl Naphthalene	0.00555	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.00555	0.01%
Benzo(b)fluoranthene	0.00555	0.01%
Benzo(k)fluoranthene	0.00555	0.01%
Benzo(a)pyrene	0.00555	0.01%
Chrysene	0.00555	0.01%
Dibenz(a,h)anthracene	0.00555	0.01%
Indeno(1,2,3-cd)pyrene	0.00555	0.01%
Sum	42.545	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/3/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-3 (8.5-10 FT)
Measured Soil TPH Concentration, mg/kg: **42.545**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,997	1.21E-08	2.13E-02	Pass
	Method C	43,623	2.76E-09	9.75E-04	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	9	4.56E-06	5.22E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	3,784	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,996.86**	**43,622.74**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.00E+03	5.66E-07	1.00E+00	YES	4.36E+04	2.83E-06	1.00E+00
Total Risk=1E-5	*NO*	3.53E+04	1.00E-05	1.77E+01	*NO*	1.54E+05	1.00E-05	3.53E+00
Risk of Benzene= 1E-6	*NO*	1.55E+06	4.38E-04	7.75E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.95E+03	1.12E-06	1.98E+00				
EDB	*NO*	4.25E+04	1.21E-05	2.13E+01				
EDC	*NO*	9.35E+05	2.65E-04	4.68E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**42.29**
Protective Soil Concentration, mg/kg	**9.11**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.92E+02	1.41E-05	1.00E+00	1.43E+02
Total Risk = 1E-5	*NO*	2.46E+02	1.00E-05	8.51E-01	9.77E+01
Total Risk = 1E-6	YES	4.23E+01	1.00E-06	1.46E-01	9.11E+00
Risk of cPAHs mixture= 1E-5	*NO*	5.56E+02	1.22E-04	1.73E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	5.56E+02	1.22E-04	1.73E+00	100% NAPL
MTBE = 20 ug/L	*NO*	5.23E+02	1.10E-04	1.68E+00	1.08E+04

Note: 100% NAPL is 76000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	9.27E-05	1.61E+00	**3.78E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 05/03/22
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-3 (13.5-15 FT)

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.89	1.89%
AL_EC >6-8	0.535	1.13%
AL_EC >8-10	0.895	1.90%
AL_EC >10-12	9.75	20.65%
AL_EC >12-16	4.865	10.31%
AL_EC >16-21	4.865	10.31%
AL_EC >21-34	4.865	10.31%
AR_EC >8-10	1.073	2.27%
AR_EC >10-12	4.85925	10.29%
AR_EC >12-16	4.8535	10.28%
AR_EC >16-21	4.865	10.31%
AR_EC >21-34	4.82475	10.22%
Benzene	0.0005	0.00%
Toluene	0.003	0.01%
Ethylbenzene	0.0005	0.00%
Total Xylenes	0.0015	0.00%
Naphthalene	0.00575	0.01%
1-Methyl Naphthalene	0.00575	0.01%
2-Methyl Naphthalene	0.00575	0.01%
n-Hexane	0.005	0.01%
MTBE	0.0005	0.00%
Ethylene Dibromide (EDB)	0.0005	0.00%
1,2 Dichloroethane (EDC)	0.0005	0.00%
Benzo(a)anthracene	0.00575	0.01%
Benzo(b)fluoranthene	0.00575	0.01%
Benzo(k)fluoranthene	0.00575	0.01%
Benzo(a)pyrene	0.00575	0.01%
Chrysene	0.00575	0.01%
Dibenz(a,h)anthracene	0.00575	0.01%
Indeno(1,2,3-cd)pyrene	0.00575	0.01%
Sum	47.21	100.00%

Notes for Data Entry | Set Default Hydrogeology
Clear All Soil Concentration Data Entry Cells
Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 5/3/2022
Site Name: Phillips 66 Ferndale Refinery
Sample Name: MW-OWS-3 (13.5-15 FT)
Measured Soil TPH Concentration, mg/kg: **47.210**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	1,723	1.25E-08	2.74E-02	Pass
	Method C	38,672	2.86E-09	1.22E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	10	4.54E-06	4.98E-01	Fail
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**1,722.88**	**38,672.03**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	1.72E+03	4.54E-07	1.00E+00	YES	3.87E+04	2.34E-06	1.00E+00
Total Risk=1E-5	*NO*	3.79E+04	1.00E-05	2.20E+01	*NO*	1.65E+05	1.00E-05	4.27E+00
Risk of Benzene= 1E-6	*NO*	1.72E+06	4.53E-04	9.96E+02	NA			
Risk of cPAHs mixture= 1E-6	*NO*	4.23E+03	1.12E-06	2.45E+00				
EDB	*NO*	4.72E+04	1.25E-05	2.74E+01				
EDC	*NO*	1.04E+06	2.74E-04	6.02E+02				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-6**
Protective Ground Water Concentration, ug/L	**40.66**
Protective Soil Concentration, mg/kg	**10.11**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.81E+02	1.77E-05	1.00E+00	2.12E+02
Total Risk = 1E-5	*NO*	2.18E+02	1.00E-05	7.92E-01	1.10E+02
Total Risk = 1E-6	YES	4.07E+01	1.00E-06	1.46E-01	1.01E+01
Risk of cPAHs mixture= 1E-5	*NO*	4.65E+02	1.10E-04	1.55E+00	100% NAPL
Benzene MCL = 5 ug/L	*NO*	4.65E+02	1.10E-04	1.55E+00	100% NAPL
MTBE = 20 ug/L	*NO*	4.39E+02	1.01E-04	1.51E+00	1.27E+04

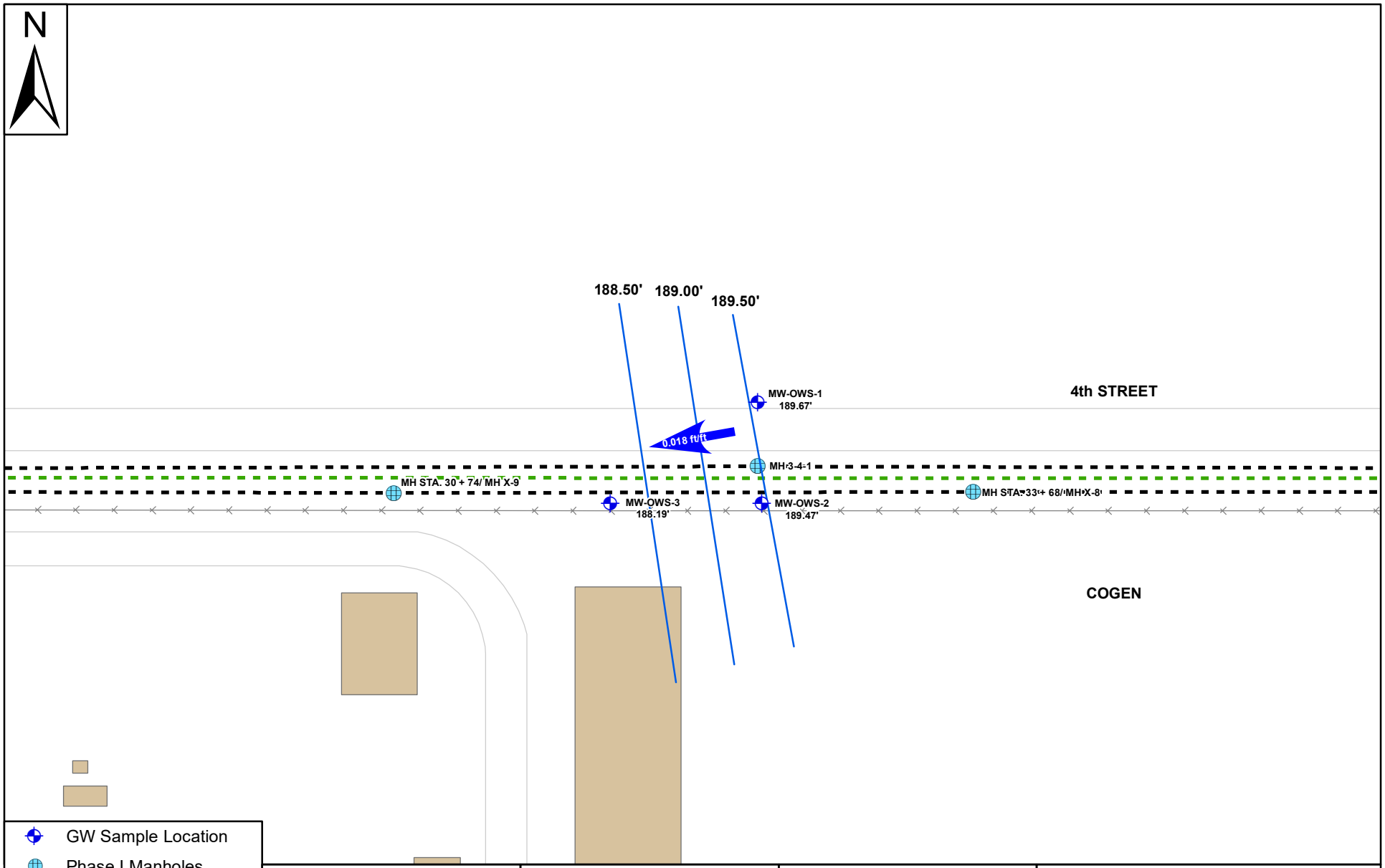
Note: 100% NAPL is 75000 mg/kg TPH.

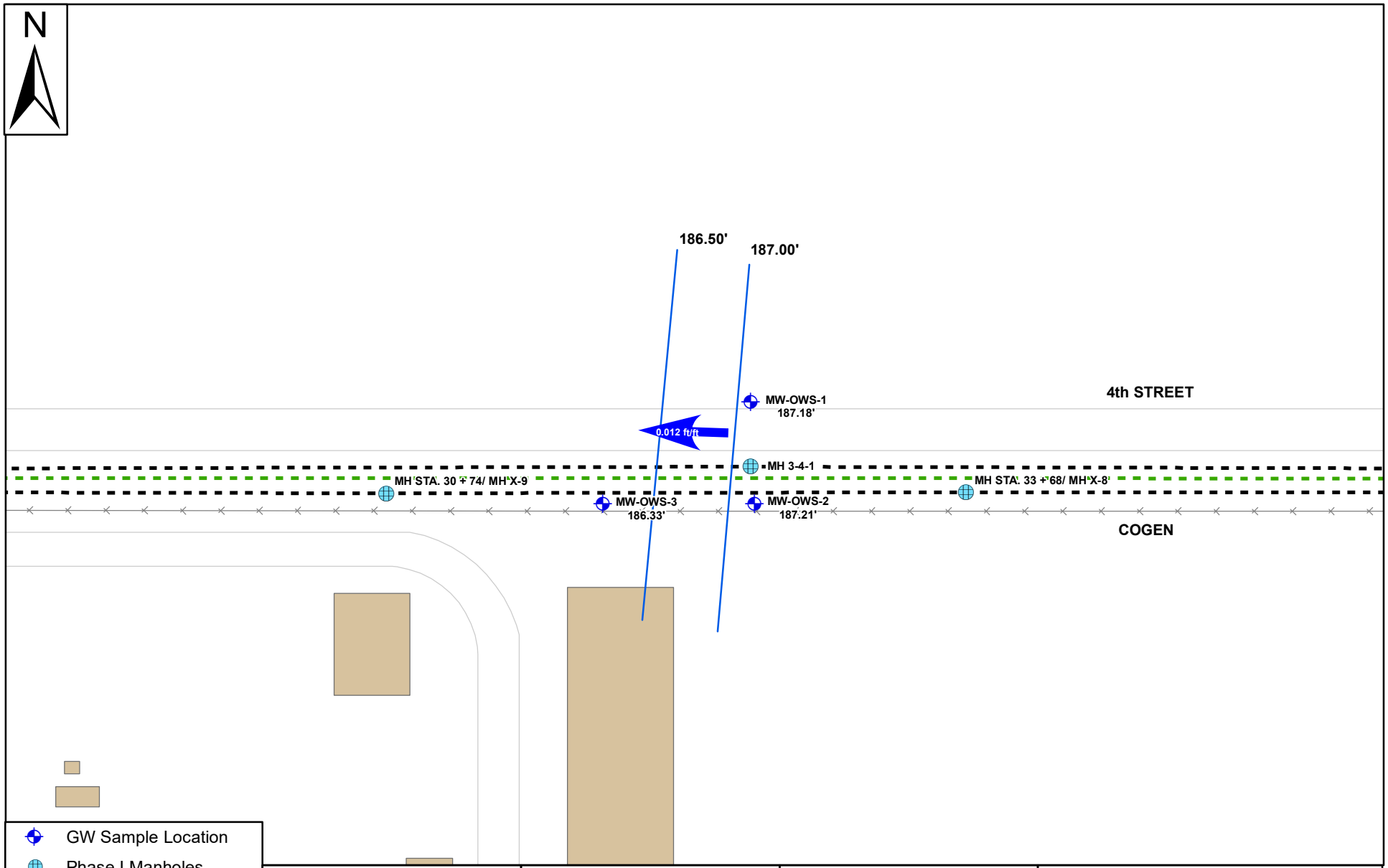
3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	4.65E+02	1.10E-04	1.55E+00	**100% NAPL**

APPENDIX J

Groundwater Contour Maps


N
188.50'
189.00'
189.50'
MW-OWS-1
189.67'
4th STREET
0.018 ft/ft
MH-3-4-1
MH STA. 30 + 74/ MH X-9
MH STA. 33 + 68/ MH X-8
MW-OWS-3
188.19'
MW-OWS-2
189.47'
COGEN
GW Sample Location
Phase I Manholes
OWS Major Trunk Lines
Storm Sewer Trunk Lines
June Groundwater Contours
Fence Line
0
35
70
Feet
1 inch = 70 feet
All data are approximate and should be used for relative location reference only.
Prepared for:
Phillips 66 Company
Ferndale Refinery
Prepared by:
nwhatcom ENVIRONMENTAL
June 2022
Groundwater Contour Map
Oily Water Sewer Investigation
1/30/2023
Figure J-1



Prepared for:

Phillips 66 Company

Ferndale Refinery

Prepared by:

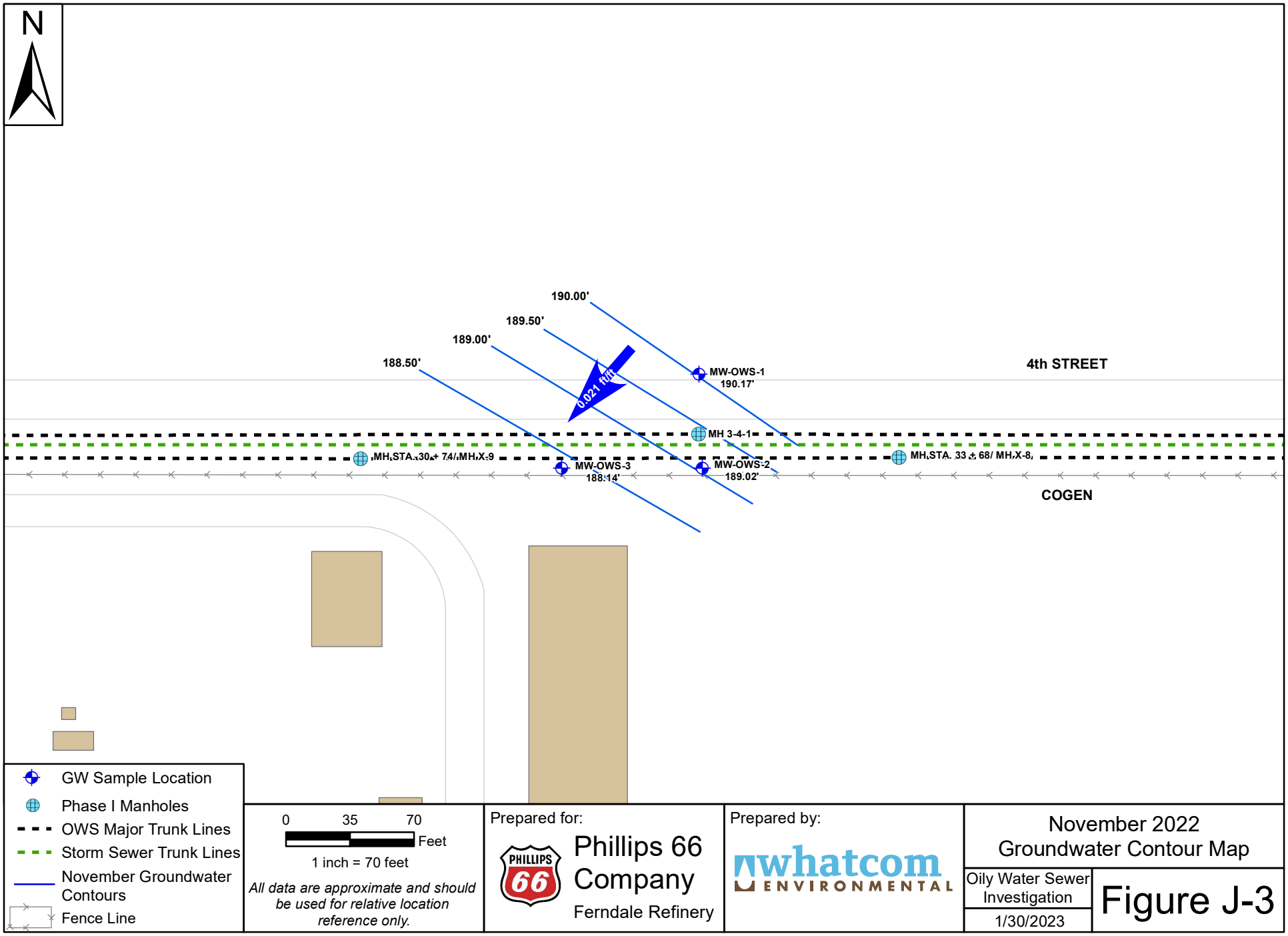
nwhatcom ENVIRONMENTAL

August 2022
Groundwater Contour Map

Oily Water Sewer Investigation

1/30/2023

Figure J-2


N
190.00'
189.50'
189.00'
188.50'
0.021 ft/ft
MW-OWS-1
190.17'
4th STREET
MH 3-4-1
MH STA. 30+ 74/ MH X-9
MW-OWS-3
188.14'
MW-OWS-2
189.02'
MH STA. 33 + 68/ MH X-8
COGEN
GW Sample Location
Phase I Manholes
OWS Major Trunk Lines
Storm Sewer Trunk Lines
November Groundwater Contours
Fence Line
0
35
70
Feet
1 inch = 70 feet
All data are approximate and should be used for relative location reference only.
Prepared for:
Phillips 66 Company
Ferndale Refinery
Prepared by:
nwhatcom ENVIRONMENTAL
November 2022
Groundwater Contour Map
Oily Water Sewer Investigation
1/30/2023
Figure J-3