



15 July 2021

Via Electronic Mail

Ms. Erin McDonnell  
Oregon Department of Environmental Quality  
Northwest Region  
700 NE Multnomah St, Suite 600  
Portland, OR 97232

Reference: 0583831

Subject: Quarter 2, 2021 Progress Report  
(April through June 2021)  
MMGL / Premier Edible Oils Site (ESCI #2013)

Dear Ms. McDonnell:

ERM-West, Inc. (ERM) is submitting this Quarterly Progress Report (QPR) on behalf of MMGL LLC (MMGL) to summarize Quarter 2, 2021 activities at the Premier Edible Oils (PEO) site located at 10400 North Burgard Way in Portland, Oregon.

Section II, H of the Voluntary Cleanup Agreement for the Upland Remedial Investigation/Feasibility Study and Source Control Measures between MMGL (formerly Schnitzer Investment Corporation) and the Oregon Department of Environmental Quality (DEQ), dated 6 March 2001, requires submittal QPRs summarizing site activities. The following progress report summarizes activities for Quarter 2, 2021 (January through March).

#### **Actions Taken Quarter 2, 2021 (April through June)**

- On 13 April, ERM conducted the GW SCM monthly water level monitoring. During this event, LNAPL was observed in MW-38 and MW-39. Observations are presented in Attachment A, Table Q2-2.
- On 15 April, ERM submitted the Q1 2021 Groundwater Source Control Measures (GW SCM) Quarterly Progress Report.
- On 3 May, ERM conducted the GW SCM monthly water level monitoring. During this event, LNAPL was observed in MW-38. A hydrocarbon odor was observed in MW-37 during the water level monitoring event but no measurable LNAPL was detected. Observations are present in Attachment A, Table Q2-3.
- Between 4 May and 11 May, ERM conducted the GW SCM quarterly groundwater monitoring. The air sparge system was shut down while conducting these activities. During this event, LNAPL was observed in MW-38. Observations are presented in Attachment A, Table Q2-7.
- Between 1 June and 3 June, ERM and Telluric Enterprises, LLC removed and upgraded the heat exchanger in the field trailer to new unit with a higher capacity and greater efficiency. The air sparge system was shut down while conducting these activities.
- On 3 June, ERM and True North Land Surveying surveyed the horizontal coordinates and vertical elevation of the two monitoring wells (MW-44 and MW-45) installed in January 2021.

Horizontal data was collected in NAD 83, Oregon North, International Feet and Vertical data was collected in NAVD88. Both top of casing and ground surface elevation data were collected.

- On 14 June, ERM conducted the GW SCM monthly water level monitoring. During this event, LNAPL was observed in MW-38. Observations are present in Attachment A, Table Q2-4.

#### **Data Received in Quarter 2, 2021 (April - June)**

- Laboratory reports received in Quarter 2, 2021 are included in Attachment A. These lab reports and a QAQC Validation Memo will be included in the Q1-Q2 2021 GW SCM Semi-Annual Monitoring Report.
- Field data collected in Quarter 2, 2021 is presented in Attachment B, Tables Q2-2 through Q2-12, and will be included in the Q1-Q2 2021 GW SCM Semi-Annual Monitoring Report.

#### **Issues Observed during Quarter 2, 2021 (April through June)**

A new heat exchanger was installed on 1-3 June. Following completion of the heat exchanger upgrade, the shallow zone of the air sparge system failed to restart due to faults in the AFD and blower.

Subcontractors for computer programming and the heat exchanger installation returned to the site on 7 July to identify the issue and make corrections. It was determined that the temperature sensor between the shallow blower and the heat exchanger malfunctioned and failed after the installation of the new heat exchanger. The temperature sensor will be replaced by the end of August. The programmer adjusted an auto-shutdown alarm to temporarily bypass the failed temperature sensor.

On 7 July, both systems were turned back on. Until the sensor is replaced, ERM field staff are manually checking the temperature gauge at the failed sensor to make sure the system continues to operate within design parameters and does not overheat.

#### **Actions Scheduled for Quarter 3, 2021 (July through August)**

- The Quarterly Progress Report for Quarter 2, 2021 will be prepared and submitted.
- The Semi-Annual Monitoring Report for Quarters 1 and 2, 2021 will be prepared and submitted.
- Monthly level transducer data downloading events and a quarterly groundwater sampling and water level monitoring event will be conducted.

If you have questions or comments pertaining to this progress report, please contact us at (503) 488-5282.

Yours sincerely



Rita Cooper  
*Project Manager*



Brendan Robinson, PE  
*Partner in Charge*

Attachments:

Attachment A – Q2 2021 Laboratory Reports

Attachment B – Q2 2021 Tables

CC w/ attachments:

Tom Graf, GrafCon

*Attachment A – Q1 2021 GW SCM  
Groundwater Laboratory Reports*

**Memorandum**

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<b>To</b>	Rita Cooper
<b>From</b>	Rachel James
<b>Date</b>	02 June 2021
<b>Reference</b>	0583831
<b>Subject</b>	Data Review of PEO Groundwater Sampling, Second Quarter 2021 Pace Analytical Services, LLC Data Packages 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667.

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The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017. Field duplicates were assessed following *Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures*, June 2018.

**HOLDING TIME AND PRESERVATION EVALUATION**

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. The samples arrived in good condition and properly preserved with one exception. Sample PEO-MW-11-202105 for metals and hardness analysis was received with a pH of 7.6. The laboratory added nitric acid to the sample, but the pH did not reach the method requirement of 2. The metals and hardness results were qualified as estimates (J) due to the inability to preserve the sample. The sample with a preservation exceedance is presented in Table 1.

The laboratory qualified the nitrate as nitrogen results for several samples as being filtered in the laboratory prior to analysis. This filtration step is described in the referenced method and qualifications were not necessary.

**BLANK EVALUATION**

The method and trip blank results were non-detected for each of the target analytes, with several exceptions. Non-detected results or results greater than five times the blank concentration for organics were considered not affected by the laboratory contamination and were not qualified. If the sample result was reported at a dilution, the reported value was divided by the dilution factor and the adjusted result used for method blank comparison purposes. Results within five times the blank concentration and less than the reporting limit (RL) were qualified as non-detect (U) at the RL. Results within five times the blank concentration and greater than the RL were qualified as estimated with a high bias (J+). The blank detections and associated qualified data are presented in Table 2.

## BLANK SPIKE EVALUATION

The LCS and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with the exceptions noted in Table 3. No data were qualified as the outliers could be verified by another in-control recovery.

## MATRIX SPIKE EVALUATION

The laboratories prepared several non-project samples for matrix spike (MS) and matrix spike duplicate (MSD) analysis. Matrix spike samples from non-project parent samples are not representative of the matrix for this project and were therefore not reviewed in this validation effort. For the MS/MSDs prepared from project samples, the recoveries and RPDs were within laboratory limits of acceptance with several exceptions. No data were qualified if the sample result was greater than four times the spike concentration, or if the outlier could be verified by an in-control result. The remaining sample result associated with a low MS recovery was qualified as an estimate with a low bias (J-). The MS/MSD outliers and associated qualification can be found in Table 3.

## SURROGATE SPIKE EVALUATION

The surrogate recoveries for project samples were within acceptable limits with several exceptions. Detected sample results associated with high surrogate recoveries were qualified as estimates with a high bias (J). Sample results associated with low surrogate recoveries were qualified as estimates with a low bias (J- for detects and UJ for non-detects), with one exception. The polynuclear aromatic hydrocarbons (PAH) surrogate recoveries for sample PEO-MW-11-202105 were very low (0%). A comparison was made against historical data for consistency and several non-detected results were historically detected. These results were rejected (R). Remaining non-detected results that had been consistently non-detected were qualified as estimates (UJ) and detected results were qualified as estimates with a low bias (J-). Surrogate spikes outside control limits and associated qualified sample data are provided in Table 4.

## CALIBRATION RANGE EXCEEDANCES

The sulfate results for MS/MSD samples prepared from PEO-MW-40-202105 exceeded the instrument calibration range as noted in Table 5. Qualifications were not applied to the parent sample based on the MS/MSD recoveries exceeding the calibration range. The parent sample results were within the calibration range.

## LABORATORY DUPLICATE EVALUATION

The laboratories prepared several non-project samples for laboratory duplicate analysis. Laboratory duplicate samples from non-project parent samples are not representative of the matrix for this project and were therefore not reviewed in this validation effort. The laboratory duplicate RPDs for samples prepared from project samples were within laboratory control limits with the exceptions noted in Table 6. The results for diesel fuel range silica gel (SG) in the primary and laboratory duplicate samples were less than five times the RL and the absolute differences between the results were greater than the RLs. The results were qualified as estimates (J) due to the imprecision.

## FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 7. An RPD control limit of 30 was used when both the sample and the field duplicate results were greater than or equal to five times the RL. A control limit of  $\pm$  two times the RL was used when at least one of the results was less than five times the reporting limit. Precision criteria was not applied if one or both results were less than the RL or non-detected. All analytes in the parent sample/field duplicate pairs met the control limits.

## TPH EVALUATION

The laboratory noted early and/or late peaks outside the GRO (Gasoline Range Organics) window for several samples. ERM qualified the affected results in the primary project samples as tentatively identified and estimated (NJ) as shown in Table 8. Laboratory duplicates and MS/MSD sample results were not qualified.

## OVERALL ASSESSMENT

Several non-detected PAH results for sample PEO-MW-11-202105 were rejected due to very low (0%) surrogate recovery and inconsistency with historical results. With exception of the rejected results, all of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically-defensible documents.

**Table 1**  
**Samples with Exceeded Preservation Requirements**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Sample ID	Method	Preservation Condition	Limits	Affected Analyte	ERM Qualifier
10559667	PEO-MW-11-202105	6020A	pH 7.6 upon receipt, pH 4 after nitric acid addition	pH < 2	Dissolved arsenic	J
		2340B			Dissolved manganese	J
					Hardness	J

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

Notes:

*J = Estimated detected result*

**Table 2**  
**Blank and Associated Suspect Sample Detections**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10558570	MB 3946203	PEO-MW-Z1-202105	Phenanthrene	0.025	0.040	0.014	0.039	µg/L	0.039 U
	MB 3945828	PEO-MW-32-202105	Motor Oil Range SG	0.13	0.40	0.16	0.41	mg/L	0.41 U
		PEO-MW-42-202105				0.14	0.42	mg/L	0.42 U
	MB 3950797	None for qualification	Motor Oil Range SG	0.13	0.40	--	--	mg/L	--
10559028	MB R3656685-2	PEO-MW-44-202105	GRO - NWTPH	53.8	100	38.4	100	µg/L	100 U
		PEO-MW-31-202105				50.2	100	µg/L	100 U
		PEO-MW-18-202105				70.8	100	µg/L	100 U
		PEO-MW-30-202105				244	100	µg/L	J+
		PEO-MW-08-202105				59.7	100	µg/L	100 U
		TRIP BLANK-20210506				55.5	100	µg/L	100 U
10559159	MB 3950797	PEO-MW-28-202105	Motor Oil Range SG	0.13	0.40	0.20	0.40	mg/L	0.40 U
10559454	MB 3954390	None for qualification	Diesel Fuel Range SG	0.088	0.40	--	--	mg/L	--
		PEO-MW-27-202105	Motor Oil Range SG	0.17	0.40	0.25	0.40	mg/L	0.40 U

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

**Notes:**

GRO = Gasoline range organics

MB = Method blank

mg/L = Milligrams per liter

J+ = Detected results are estimated with a high bias

SG = Silica gel

NWTPH = Northwest total petroleum hydrocarbons

U = Non-detected

µg/L = Micrograms per liter

**Table 3**  
**Spike Recoveries Outside of Acceptable Limits**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
10559454	LCS 3954391 LCSD 3954392	None for qualification	Diesel Fuel Range SG	47/68	50-150	36	20	--	--	--
			Motor Oil Range SG	54/74	50-150	31	20	--	--	--
MS/MSD										
10558838	PEO-MW-06-202105 MS	PEO-MW-06-202105	VPH Aliphatic Hydrocarbon (C10-C12)	9.64	70-130	--	--	726	µg/L	J-
10559454	PEO-MW-36-202105 MS/MSD	None for qualification	Manganese, Dissolved	8/321	75-125	15	20	4X	--	--
			EPH Aliphatic Hydrocarbon (C10-C12)	145/73.3	70-130	51.7	30	--	--	--
			m&p-Xylenes	73.6/104	43.0-146	29.2	26	--	--	--

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

**Notes:**

4X = The unspiked sample result was greater than four times the spike concentration

EPH = Extractable petroleum hydrocarbons

J- = Estimated detection with low bias

LCS/LCSD = Laboratory control sample/laboratory control sample duplicate

MS/MSD = Matrix spike/matrix spike duplicate

RPD = Relative percent difference

SG = Silica gel

µg/L = Micrograms per liter

VPH = Volatile petroleum hydrocarbons

**Table 4**  
**Surrogate Recovery Results out of Acceptable Limits**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier	
10559454	PEO-MW-36-202105	8270 SIM	p-Terphenyl-d14	67	70-125	All	1	J-/UJ	
	PEO-MW-27-202105	8270 SIM	p-Terphenyl-d14	64	70-125	All	1	J-/UJ	
	PEO-MW-39-202105	8270 SIM	p-Terphenyl-d14	66	70-125	All	1	J-/UJ	
	PEO-MW-39-202105	8260D	4-Bromofluorobenzene	127	77.0-126	All	1	J+	
10559667	PEO-MW-43-202105	8270 SIM	p-Terphenyl-d14	53	70-125	All	1	J-/UJ	
		8260D	4-Bromofluorobenzene	131	77.0-126	All	1	J+	
	PEO-MW-34-202105	8270 SIM	2-Fluorobiphenyl	50	51-125	All	1	J-/UJ	
			p-Terphenyl-d14	36	70-125				
	PEO-MW-02-202105	8270 SIM	p-Terphenyl-d14	41	70-125	All	1	J-/UJ	
	PEO-MW-11-202105	8270 SIM	2-Fluorobiphenyl p-Terphenyl-d14	0 0	51-125 70-125	All	5	Detects	J-
								1-Methylnaphthalene	R
								2-Methylnaphthalene	R
								Acenaphthene	R
								Acenaphthylene	R
Anthracene								R	
Fluorene								R	
Naphthalene								R	
Phenanthrene								R	
Benzo(a)anthracene								UJ	
Benzo(k)fluoranthene								UJ	
Dibenzo(a,h)anthracene								UJ	
Fluoranthene	UJ								

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

**Notes:**

J- = Detected results are estimated with a low bias

J-/UJ = Detected results are estimated with low bias; nondetected results are estimated at the report limit

J+ = Detected results are estimated with a high bias

SIM = Selected ion monitoring

R = Result is rejected

UJ = Nondetected, estimated report limit

**Table 5**  
**Calibration Range Exceedances**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Sample ID	Analyte	Reported Concentration	Units	ERM Qualifier
10559159	PEO-MW-40-202105 MS	Sulfate	106	mg/L	--
	PEO-MW-40-202105 MSD		107	mg/L	--

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

*Notes:*

*mg/L = Milligrams per liter*

*MS = Matrix spike*

*MSD = Matrix spike duplicate*

**Table 6**  
**Lab Duplicate Results and Calculated Relative Percent Differences**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Sample ID	Analyte	Concentration		Report Limit	Units	RPD	Absolute Difference	ERM Qualifier
			Sample	Duplicate					
10559028	PEO-MW-08-202105	Diesel Fuel Range SG	0.90	1.5	0.42	mg/L	--	0.60	J
10559454	PEO-MW-27-202105	Diesel Fuel Range SG	0.72	1.3	0.40	mg/L	--	0.58	J

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

*Notes:*

*J = Estimated detected result*

*mg/L = Milligrams per liter*

*RPD = Relative percent difference*

*SG = Silica gel*

**Table 7**  
**Field Duplicate Assessment**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
10558570	PEO-MW-33-202105/ PEO-MW-Z1-202105	Diesel Fuel Range SG	0.18	0.12	0.42	0.40	NC	NC	mg/L	NC	NC	--
		TPH as Gas	58.5	55.1	100	100.00	--	--	mg/L	6.0	30	--
		Total Hardness	95700	91700	0.50	0.50	--	--	µg/L	4.3	30	--
		Arsenic, Dissolved	10.7	10.9	0.50	0.50	0.2	1.0	µg/L	--	--	--
		Manganese, Dissolved	651	641	5.0	5.0	--	--	µg/L	1.5	30	--
		Acenaphthene	0.058	0.062	0.038	0.039	0.004	0.078	µg/L	--	--	--
		Acenaphthylene	0.0079	0.0073	0.038	0.039	NC	NC	µg/L	NC	NC	--
		Naphthalene	0.063	0.066	0.038	0.039	0.003	0.078	µg/L	--	--	--
		Phenanthrene	ND	0.014	0.038	0.039	NC	NC	µg/L	NC	NC	--
		Alkalinity, Total as CaCO3	94.0	93.7	5.0	5.0	--	--	mg/L	0.32	30	--
		Sulfate	32.0	32.3	1.2	1.2	--	--	mg/L	0.93	30	--
EPH Aliphatic Hydrocarbon (C10-C12)	24.3	ND	39.4	39.3	NC	NC	µg/L	--	--	--		
10558838	PEO-MW-06-202105/ PEO-MW-Z2-202105	Diesel Fuel Range SG	1.3	1.2	0.40	0.40	0.1	0.80	mg/L	--	--	--
		Motor Oil Range SG	0.15	0.13	0.40	0.40	NC	NC	mg/L	NC	NC	--
		TPH as Gas	4520	4620	200	500	--	--	µg/L	2.2	30	--
		Total Hardness	21100	21700	3300	3300	--	--	µg/L	2.8	30	--
		Arsenic, Dissolved	6.0	6.0	0.50	0.50	--	--	µg/L	0.0	30	--
		Manganese, Dissolved	418	426	0.50	0.50	--	--	µg/L	1.9	30	--
		Acenaphthene	1.4	1.5	0.038	0.039	--	--	µg/L	6.9	30	--
		Acenaphthylene	0.41	0.40	0.038	0.039	--	--	µg/L	2.5	30	--
		Benzo(a)anthracene	0.015	0.013	0.038	0.039	NC	NC	µg/L	NC	NC	--
		Benzo(b)fluoranthene	0.0075	ND	0.038	0.039	NC	NC	µg/L	NC	NC	--
		Chrysene	0.011	ND	0.038	0.039	NC	NC	µg/L	NC	NC	--
		Fluoranthene	0.060	0.063	0.038	0.039	0.003	0.078	µg/L	--	--	--
		Fluorene	2.7	2.9	0.038	0.039	--	--	µg/L	7.1	30	--
		1-Methylnaphthalene	34.7	30.6	0.38	0.39	--	--	µg/L	13	30	--
2-Methylnaphthalene	34.2	30.1	0.38	0.39	--	--	µg/L	13	30	--		

**Table 7**  
**Field Duplicate Assessment**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
10558838	PEO-MW-06-202105/ PEO-MW-Z2-202105	Naphthalene	5.6	5.2	0.038	0.039	--	--	µg/L	7.4	30	--
		Phenanthrene	1.4	1.7	0.038	0.039	--	--	µg/L	19	30	--
		Pyrene	0.066	0.068	0.038	0.039	0.002	0.078	µg/L	--	--	--
		Toluene	0.332	0.299	1.00	1.00	NC	NC	µg/L	NC	NC	--
		Alkalinity, Total as CaCO3	59.7	58.9	5.0	5.0	--	--	mg/L	1.3	30	--
		Sulfate	0.48	0.48	1.2	1.2	NC	NC	mg/L	NC	NC	--
		EPH Aliphatic Hydrocarbon (C10-C12)	45.6	59.1	39.5	39.3	--	--	µg/L	26	30	--
VPH Aliphatic Hydrocarbon (C10-C12)	726	631	25.0	25.0	--	--	µg/L	14	30	--		

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

*Notes:*

*EPH = Extractable petroleum hydrocarbons*

*mg/L = Milligrams per liter*

*NC = Not calculated, both results below reporting limit*

*ND = Not detected*

*RPD = Relative percent difference*

*SG = Silica gel*

*TPH = Total petroleum hydrocarbons*

*µg/L = Micrograms per liter*

*VPH = Volatile petroleum hydrocarbons*

**Table 8**  
**Suspect TPH Results**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Sample ID	Analyte	Reported Concentration	Units	Comment	ERM Qualifier
10558838	PEO-MW-06-202105	TPH as Gas	4520	µg/L	Late and early peaks present outside the GRO window.	NJ
	PEO-MW-Z2-202105		4620	µg/L		NJ
	PEO-MW-Z2-202105 MS		9270	µg/L		--
	PEO-MW-Z2-202105 MSD		9100	µg/L		--
10559159	PEO-MW-29-202105	TPH as Gas	4030	µg/L	Late and early peaks present outside the GRO window.	NJ
10559454	PEO-MW-36-202105	TPH as Gas	990	µg/L	Late and early peaks present outside the GRO window.	NJ
	PEO-MW-36-202105 MS		2060	µg/L		--
	PEO-MW-36-202105 MSD		2170	µg/L		--
	PEO-MW-39-202105		5530	µg/L		NJ
	PEO-MW-39-202105 lab duplicate		5530	µg/L		--
	PEO-MW-27-202105	TPH as Gas	170	µg/L	Early peaks present outside the GRO window.	NJ

**Table 8**  
**Suspect TPH Results**  
**PEO Groundwater Sampling**  
**Second Quarter 2021**  
**Portland, Oregon**

Lab Package	Sample ID	Analyte	Reported Concentration	Units	Comment	ERM Qualifier
10559667	PEO-MW-43-202105	TPH as Gas	11400	µg/L	Late peaks present outside the GRO window.	NJ
	PEO-MW-43-202105 lab duplicate		11300	µg/L		--
	PEO-MW-11-202105		1300	µg/L		NJ
	PEO-MW-34-202105	TPH as Gas	709	µg/L	Late and early peaks present outside the GRO window.	NJ
	PEO-MW-02-202105		296	µg/L		NJ

Lab packages reviewed: 10558570, 10558838, 10559028, 10559159, 10559454, and 10559667

*Notes:*

*GRO = Gasoline range organics*

*NJ = Tentatively identified and estimated - chromatogram did not resemble the standard hydrocarbon pattern*

*TPH = Total Petroleum Hydrocarbons*

*µg/L = Micrograms per liter*

May 21, 2021

Joe Casey  
ERM Portland  
1050 SW 6th Ave  
Suite 1650  
Portland, OR 97204

RE: Project: 583831-Revised Report  
Pace Project No.: 10558570

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2021. 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

This report was revised on May 21, 2021 to include the subcontract results.

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

Sincerely,



Julie Bowser  
julie.bowser@pacelabs.com  
612-607-6390  
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland  
ERM Global EDD Mailbox, ERM  
Stephanie Frith, ERM Portland  
Rachel James, ERM Portland



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 583831-Revised Report

Pace Project No.: 10558570

### Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414  
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01\*  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009\*  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014\*  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605\*  
Georgia Certification #: 959  
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 #: 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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## CERTIFICATIONS

Project: 583831-Revised Report

Pace Project No.: 10558570

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### **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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 583831-Revised Report

Pace Project No.: 10558570

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10558570001	PEO-MW-32-202105	Water	05/04/21 08:35	05/05/21 09:55
10558570002	PEO-MW-33-202105	Water	05/04/21 10:30	05/05/21 09:55
10558570003	PEO-MW-Z1-202105	Water	05/04/21 10:35	05/05/21 09:55
10558570004	PEO-MW-42-202105	Water	05/04/21 12:20	05/05/21 09:55
10558570005	PEO-MW-24a-202105	Water	05/04/21 13:20	05/05/21 09:55
10558570006	TRIP BLANK - 20210504	Water	05/04/21 08:00	05/05/21 09:55

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831-Revised Report

Pace Project No.: 10558570

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10558570001	PEO-MW-32-202105	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10558570002	PEO-MW-33-202105	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10558570003	PEO-MW-Z1-202105	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10558570004	PEO-MW-42-202105	NWTPH-Dx	TT2	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10558570005	PEO-MW-24a-202105	NWTPH-Dx	JVM	4	PASI-M

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### SAMPLE ANALYTE COUNT

Project: 583831-Revised Report

Pace Project No.: 10558570

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
<b>10558570006</b>	<b>TRIP BLANK - 20210504</b>	NWTPH-Gx	NS1	2	PASI-M
		EPA 8260D	JIC	8	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-32-202105**      **Lab ID: 10558570001**      Collected: 05/04/21 08:35      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.20J</b>	mg/L	0.41	0.089	1	05/05/21 15:06	05/06/21 15:26	68334-30-5	
Motor Oil Range SG	<b>0.16J</b>	mg/L	0.41	0.13	1	05/05/21 15:06	05/06/21 15:26	64742-65-0	B
<b>Surrogates</b>									
o-Terphenyl (S)	64	%	50-150		1	05/05/21 15:06	05/06/21 15:26	84-15-1	
n-Triacontane (S)	71	%	50-150		1	05/05/21 15:06	05/06/21 15:26		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>145</b>	ug/L	100	42.8	1		05/13/21 23:36		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	88	%	50-150		1		05/13/21 23:36	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>98800</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:03		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>9.7</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:10	7440-38-2	
Manganese, Dissolved	<b>1.2</b>	ug/L	0.50	0.22	1	05/13/21 05:58	05/18/21 23:10	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>0.018J</b>	ug/L	0.042	0.0085	1	05/05/21 17:38	05/10/21 08:52	83-32-9	
Acenaphthylene	ND	ug/L	0.042	0.0068	1	05/05/21 17:38	05/10/21 08:52	208-96-8	
Anthracene	ND	ug/L	0.042	0.0086	1	05/05/21 17:38	05/10/21 08:52	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.042	0.012	1	05/05/21 17:38	05/10/21 08:52	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.042	0.0093	1	05/05/21 17:38	05/10/21 08:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.042	0.0082	1	05/05/21 17:38	05/10/21 08:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.042	0.0089	1	05/05/21 17:38	05/10/21 08:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.042	0.0089	1	05/05/21 17:38	05/10/21 08:52	207-08-9	
Chrysene	ND	ug/L	0.042	0.012	1	05/05/21 17:38	05/10/21 08:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.042	0.011	1	05/05/21 17:38	05/10/21 08:52	53-70-3	
Fluoranthene	ND	ug/L	0.042	0.011	1	05/05/21 17:38	05/10/21 08:52	206-44-0	
Fluorene	ND	ug/L	0.042	0.0071	1	05/05/21 17:38	05/10/21 08:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.042	0.020	1	05/05/21 17:38	05/10/21 08:52	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.042	0.0065	1	05/05/21 17:38	05/10/21 08:52	90-12-0	
2-Methylnaphthalene	<b>0.013J</b>	ug/L	0.042	0.012	1	05/05/21 17:38	05/10/21 08:52	91-57-6	
Naphthalene	<b>0.071</b>	ug/L	0.042	0.012	1	05/05/21 17:38	05/10/21 08:52	91-20-3	
Phenanthrene	ND	ug/L	0.042	0.011	1	05/05/21 17:38	05/10/21 08:52	85-01-8	
Pyrene	ND	ug/L	0.042	0.016	1	05/05/21 17:38	05/10/21 08:52	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	65	%	51-125		1	05/05/21 17:38	05/10/21 08:52	321-60-8	
p-Terphenyl-d14 (S)	84	%	70-125		1	05/05/21 17:38	05/10/21 08:52	1718-51-0	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-32-202105**      **Lab ID: 10558570001**      Collected: 05/04/21 08:35      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	<b>0.397J</b>	ug/L	1.00	0.0941	1	05/09/21 23:57	05/09/21 23:57	71-43-2	J
Toluene	ND	ug/L	1.00	0.278	1	05/09/21 23:57	05/09/21 23:57	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/09/21 23:57	05/09/21 23:57	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/09/21 23:57	05/09/21 23:57	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/09/21 23:57	05/09/21 23:57	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	106	%	80.0-120		1	05/09/21 23:57	05/09/21 23:57	2037-26-5	
4-Bromofluorobenzene (S)	113	%	77.0-126		1	05/09/21 23:57	05/09/21 23:57	460-00-4	
1,2-Dichloroethane-d4 (S)	91.2	%	70.0-130		1	05/09/21 23:57	05/09/21 23:57	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>104</b>	mg/L	5.0	2.0	1		05/18/21 16:21		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>20.0</b>	mg/L	1.2	0.34	1		05/14/21 15:59	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.020J</b>	mg/L	0.10	0.018	1		05/05/21 15:20	14797-55-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-33-202105**      **Lab ID: 10558570002**      Collected: 05/04/21 10:30      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.18J</b>	mg/L	0.42	0.091	1	05/05/21 15:06	05/06/21 15:49	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.42	0.13	1	05/05/21 15:06	05/06/21 15:49	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	68	%	50-150		1	05/05/21 15:06	05/06/21 15:49	84-15-1	
n-Triacontane (S)	79	%	50-150		1	05/05/21 15:06	05/06/21 15:49		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>58.5J</b>	ug/L	100	42.8	1		05/14/21 00:31		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	90	%	50-150		1		05/14/21 00:31	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>95700</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:05		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>10.7</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:27	7440-38-2	
Manganese, Dissolved	<b>651</b>	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 10:37	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>0.058</b>	ug/L	0.038	0.0078	1	05/05/21 17:38	05/10/21 09:11	83-32-9	
Acenaphthylene	<b>0.0079J</b>	ug/L	0.038	0.0062	1	05/05/21 17:38	05/10/21 09:11	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/05/21 17:38	05/10/21 09:11	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:11	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/05/21 17:38	05/10/21 09:11	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0075	1	05/05/21 17:38	05/10/21 09:11	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/05/21 17:38	05/10/21 09:11	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/05/21 17:38	05/10/21 09:11	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:11	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/05/21 17:38	05/10/21 09:11	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/05/21 17:38	05/10/21 09:11	206-44-0	
Fluorene	ND	ug/L	0.038	0.0065	1	05/05/21 17:38	05/10/21 09:11	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/05/21 17:38	05/10/21 09:11	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/05/21 17:38	05/10/21 09:11	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:11	91-57-6	
Naphthalene	<b>0.063</b>	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:11	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0098	1	05/05/21 17:38	05/10/21 09:11	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/05/21 17:38	05/10/21 09:11	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	67	%	51-125		1	05/05/21 17:38	05/10/21 09:11	321-60-8	
p-Terphenyl-d14 (S)	88	%	70-125		1	05/05/21 17:38	05/10/21 09:11	1718-51-0	

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-33-202105**      **Lab ID: 10558570002**      Collected: 05/04/21 10:30      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/10/21 00:18	05/10/21 00:18	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/10/21 00:18	05/10/21 00:18	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/10/21 00:18	05/10/21 00:18	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/10/21 00:18	05/10/21 00:18	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/10/21 00:18	05/10/21 00:18	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	104	%	80.0-120		1	05/10/21 00:18	05/10/21 00:18	2037-26-5	
4-Bromofluorobenzene (S)	113	%	77.0-126		1	05/10/21 00:18	05/10/21 00:18	460-00-4	
1,2-Dichloroethane-d4 (S)	89.2	%	70.0-130		1	05/10/21 00:18	05/10/21 00:18	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>94.0</b>	mg/L	5.0	2.0	1		05/18/21 17:39		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>32.0</b>	mg/L	1.2	0.34	1		05/14/21 16:48	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/05/21 15:21	14797-55-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-Z1-202105**      **Lab ID: 10558570003**      Collected: 05/04/21 10:35      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.12J</b>	mg/L	0.40	0.088	1	05/05/21 15:06	05/06/21 16:00	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/05/21 15:06	05/06/21 16:00	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	61	%	50-150		1	05/05/21 15:06	05/06/21 16:00	84-15-1	
n-Triacontane (S)	71	%	50-150		1	05/05/21 15:06	05/06/21 16:00		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>55.1J</b>	ug/L	100	42.8	1		05/13/21 18:32		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	93	%	50-150		1		05/13/21 18:32	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>91700</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:17		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>10.9</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:31	7440-38-2	
Manganese, Dissolved	<b>641</b>	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 10:40	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>0.062</b>	ug/L	0.039	0.0078	1	05/05/21 17:38	05/10/21 09:30	83-32-9	
Acenaphthylene	<b>0.0073J</b>	ug/L	0.039	0.0062	1	05/05/21 17:38	05/10/21 09:30	208-96-8	
Anthracene	ND	ug/L	0.039	0.0079	1	05/05/21 17:38	05/10/21 09:30	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/05/21 17:38	05/10/21 09:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0085	1	05/05/21 17:38	05/10/21 09:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0075	1	05/05/21 17:38	05/10/21 09:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0081	1	05/05/21 17:38	05/10/21 09:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0082	1	05/05/21 17:38	05/10/21 09:30	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/05/21 17:38	05/10/21 09:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.010	1	05/05/21 17:38	05/10/21 09:30	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/05/21 17:38	05/10/21 09:30	206-44-0	
Fluorene	ND	ug/L	0.039	0.0065	1	05/05/21 17:38	05/10/21 09:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.018	1	05/05/21 17:38	05/10/21 09:30	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0059	1	05/05/21 17:38	05/10/21 09:30	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/05/21 17:38	05/10/21 09:30	91-57-6	
Naphthalene	<b>0.066</b>	ug/L	0.039	0.011	1	05/05/21 17:38	05/10/21 09:30	91-20-3	
Phenanthrene	<b>0.014J</b>	ug/L	0.039	0.0099	1	05/05/21 17:38	05/10/21 09:30	85-01-8	B
Pyrene	ND	ug/L	0.039	0.015	1	05/05/21 17:38	05/10/21 09:30	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	71	%	51-125		1	05/05/21 17:38	05/10/21 09:30	321-60-8	
p-Terphenyl-d14 (S)	90	%	70-125		1	05/05/21 17:38	05/10/21 09:30	1718-51-0	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-Z1-202105**      **Lab ID: 10558570003**      Collected: 05/04/21 10:35      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/10/21 00:39	05/10/21 00:39	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/10/21 00:39	05/10/21 00:39	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/10/21 00:39	05/10/21 00:39	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/10/21 00:39	05/10/21 00:39	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/10/21 00:39	05/10/21 00:39	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	104	%	80.0-120		1	05/10/21 00:39	05/10/21 00:39	2037-26-5	
4-Bromofluorobenzene (S)	114	%	77.0-126		1	05/10/21 00:39	05/10/21 00:39	460-00-4	
1,2-Dichloroethane-d4 (S)	93.0	%	70.0-130		1	05/10/21 00:39	05/10/21 00:39	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>93.7</b>	mg/L	5.0	2.0	1		05/18/21 17:44		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>32.3</b>	mg/L	1.2	0.34	1		05/14/21 17:04	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/05/21 15:24	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

Sample: PEO-MW-42-202105      Lab ID: 10558570004      Collected: 05/04/21 12:20      Received: 05/05/21 09:55      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.12J</b>	mg/L	0.42	0.091	1	05/05/21 15:06	05/06/21 16:11	68334-30-5	
Motor Oil Range SG	<b>0.14J</b>	mg/L	0.42	0.13	1	05/05/21 15:06	05/06/21 16:11	64742-65-0	B
<b>Surrogates</b>									
o-Terphenyl (S)	52	%	50-150		1	05/05/21 15:06	05/06/21 16:11	84-15-1	
n-Triacontane (S)	59	%	50-150		1	05/05/21 15:06	05/06/21 16:11		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/13/21 17:36		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	90	%	50-150		1		05/13/21 17:36	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>91500</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:18		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>5.4</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:34	7440-38-2	
Manganese, Dissolved	<b>503</b>	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 10:44	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/05/21 17:38	05/10/21 09:49	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/05/21 17:38	05/10/21 09:49	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/05/21 17:38	05/10/21 09:49	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:49	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/05/21 17:38	05/10/21 09:49	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0075	1	05/05/21 17:38	05/10/21 09:49	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/05/21 17:38	05/10/21 09:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/05/21 17:38	05/10/21 09:49	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/05/21 17:38	05/10/21 09:49	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/05/21 17:38	05/10/21 09:49	206-44-0	
Fluorene	ND	ug/L	0.038	0.0065	1	05/05/21 17:38	05/10/21 09:49	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/05/21 17:38	05/10/21 09:49	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/05/21 17:38	05/10/21 09:49	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:49	91-57-6	
Naphthalene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 09:49	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0098	1	05/05/21 17:38	05/10/21 09:49	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/05/21 17:38	05/10/21 09:49	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	70	%	51-125		1	05/05/21 17:38	05/10/21 09:49	321-60-8	
p-Terphenyl-d14 (S)	89	%	70-125		1	05/05/21 17:38	05/10/21 09:49	1718-51-0	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-42-202105**      **Lab ID: 10558570004**      Collected: 05/04/21 12:20      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/10/21 00:59	05/10/21 00:59	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/10/21 00:59	05/10/21 00:59	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/10/21 00:59	05/10/21 00:59	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/10/21 00:59	05/10/21 00:59	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/10/21 00:59	05/10/21 00:59	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	103	%	80.0-120		1	05/10/21 00:59	05/10/21 00:59	2037-26-5	
4-Bromofluorobenzene (S)	111	%	77.0-126		1	05/10/21 00:59	05/10/21 00:59	460-00-4	
1,2-Dichloroethane-d4 (S)	93.9	%	70.0-130		1	05/10/21 00:59	05/10/21 00:59	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>72.7</b>	mg/L	5.0	2.0	1		05/18/21 17:49		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>40.7</b>	mg/L	1.2	0.34	1		05/14/21 17:20	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/05/21 15:25	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

Sample: PEO-MW-24a-202105      Lab ID: 10558570005      Collected: 05/04/21 13:20      Received: 05/05/21 09:55      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.088	1	05/10/21 15:39	05/12/21 23:41	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/10/21 15:39	05/12/21 23:41	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	75	%	50-150		1	05/10/21 15:39	05/12/21 23:41	84-15-1	
n-Triacontane (S)	83	%	50-150		1	05/10/21 15:39	05/12/21 23:41		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/14/21 00:03		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	88	%	50-150		1		05/14/21 00:03	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>46700</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:20		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.71</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:45	7440-38-2	
Manganese, Dissolved	<b>569</b>	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 10:47	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/05/21 17:38	05/10/21 10:08	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/05/21 17:38	05/10/21 10:08	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/05/21 17:38	05/10/21 10:08	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 10:08	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/05/21 17:38	05/10/21 10:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0075	1	05/05/21 17:38	05/10/21 10:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/05/21 17:38	05/10/21 10:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/05/21 17:38	05/10/21 10:08	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 10:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/05/21 17:38	05/10/21 10:08	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/05/21 17:38	05/10/21 10:08	206-44-0	
Fluorene	ND	ug/L	0.038	0.0065	1	05/05/21 17:38	05/10/21 10:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/05/21 17:38	05/10/21 10:08	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/05/21 17:38	05/10/21 10:08	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 10:08	91-57-6	
Naphthalene	ND	ug/L	0.038	0.011	1	05/05/21 17:38	05/10/21 10:08	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0098	1	05/05/21 17:38	05/10/21 10:08	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/05/21 17:38	05/10/21 10:08	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	87	%	51-125		1	05/05/21 17:38	05/10/21 10:08	321-60-8	
p-Terphenyl-d14 (S)	92	%	70-125		1	05/05/21 17:38	05/10/21 10:08	1718-51-0	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: PEO-MW-24a-202105**      **Lab ID: 10558570005**      Collected: 05/04/21 13:20      Received: 05/05/21 09:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/10/21 01:19	05/10/21 01:19	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/10/21 01:19	05/10/21 01:19	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/10/21 01:19	05/10/21 01:19	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/10/21 01:19	05/10/21 01:19	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/10/21 01:19	05/10/21 01:19	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	106	%	80.0-120		1	05/10/21 01:19	05/10/21 01:19	2037-26-5	
4-Bromofluorobenzene (S)	114	%	77.0-126		1	05/10/21 01:19	05/10/21 01:19	460-00-4	
1,2-Dichloroethane-d4 (S)	92.3	%	70.0-130		1	05/10/21 01:19	05/10/21 01:19	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>61.3</b>	mg/L	5.0	2.0	1		05/18/21 17:54		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>3.0</b>	mg/L	1.2	0.34	1		05/14/21 17:36	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.26</b>	mg/L	0.10	0.018	1		05/05/21 15:26	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558570

**Sample: TRIP BLANK - 20210504**    **Lab ID: 10558570006**    Collected: 05/04/21 08:00    Received: 05/05/21 09:55    Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/13/21 21:45		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	88	%	50-150		1		05/13/21 21:45	98-08-8	
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/10/21 12:46	05/10/21 12:46	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/10/21 12:46	05/10/21 12:46	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/10/21 12:46	05/10/21 12:46	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/10/21 12:46	05/10/21 12:46	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/10/21 12:46	05/10/21 12:46	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	111	%	80.0-120		1	05/10/21 12:46	05/10/21 12:46	2037-26-5	
4-Bromofluorobenzene (S)	113	%	77.0-126		1	05/10/21 12:46	05/10/21 12:46	460-00-4	
1,2-Dichloroethane-d4 (S)	78.7	%	70.0-130		1	05/10/21 12:46	05/10/21 12:46	17060-07-0	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558570

QC Batch: 741259 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005, 10558570006

METHOD BLANK: 3952797 Matrix: Water  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005, 10558570006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/13/21 16:08	
a,a,a-Trifluorotoluene (S)	%	86	50-150		05/13/21 16:08	

METHOD BLANK: 3952798 Matrix: Water  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005, 10558570006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/13/21 21:17	
a,a,a-Trifluorotoluene (S)	%	91	50-150		05/13/21 21:17	

METHOD BLANK: 3952799 Matrix: Water  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005, 10558570006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/14/21 01:53	
a,a,a-Trifluorotoluene (S)	%	89	50-150		05/14/21 01:53	

LABORATORY CONTROL SAMPLE & LCSD: 3952800 3952801

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	881	894	88	89	75-127	1	20	
a,a,a-Trifluorotoluene (S)	%				104	102	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3958465 3958466

Parameter	Units	10560230001 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	899	935	87	90	71-139	4	30	
a,a,a-Trifluorotoluene (S)	%						102	100	50-150			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558570

SAMPLE DUPLICATE: 3952901

Parameter	Units	10558570003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	55.1J	49.2J		30	
a,a,a-Trifluorotoluene (S)	%.	93	91			

SAMPLE DUPLICATE: 3952902

Parameter	Units	10558838002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	89	90			

SAMPLE DUPLICATE: 3952903

Parameter	Units	10558838006 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	86	87			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558570

QC Batch:	741459	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

METHOD BLANK: 3953915 Matrix: Water

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/18/21 23:03	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/18/21 23:03	

LABORATORY CONTROL SAMPLE: 3953916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	96.6	97	80-120	
Manganese, Dissolved	ug/L	100	96.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3953917 3953918

Parameter	Units	10558570001 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	9.7	100	100	109	110	100	100	75-125	1	20	
Manganese, Dissolved	ug/L	1.2	100	100	99.9	99.9	99	99	75-125	0	20	

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558570

QC Batch: 1667343	Analysis Method: EPA 8260D
QC Batch Method: 8260D	Analysis Description: VOA (GC/MS) 8260D
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

METHOD BLANK: R3652396-3 Matrix: Water

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/09/21 20:04	
Ethylbenzene	ug/L	ND	1.00	0.137	05/09/21 20:04	
Toluene	ug/L	ND	1.00	0.278	05/09/21 20:04	
o-Xylene	ug/L	ND	1.00	0.174	05/09/21 20:04	
m&p-Xylene	ug/L	ND	2.00	0.430	05/09/21 20:04	
Toluene-d8 (S)	%	106	80.0-120		05/09/21 20:04	
4-Bromofluorobenzene (S)	%	112	77.0-126		05/09/21 20:04	
1,2-Dichloroethane-d4 (S)	%	90.6	70.0-130		05/09/21 20:04	

LABORATORY CONTROL SAMPLE & LCSD: R3652396-1 R3652396-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	5.00	5.43	5.57	109	111	70.0-123	2.55	20	
Ethylbenzene	ug/L	5.00	5.16	5.01	103	100	79.0-123	2.95	20	
Toluene	ug/L	5.00	5.02	5.17	100	103	79.0-120	2.94	20	
o-Xylene	ug/L	5.00	5.21	5.20	104	104	80.0-122	0.192	20	
m&p-Xylene	ug/L	10.0	9.98	10.3	99.8	103	80.0-122	3.16	20	
Toluene-d8 (S)	%				103	103	80.0-120			
4-Bromofluorobenzene (S)	%				112	111	77.0-126			
1,2-Dichloroethane-d4 (S)	%				95.9	93.8	70.0-130			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558570

QC Batch: 1667620	Analysis Method: EPA 8260D
QC Batch Method: 8260D	Analysis Description: VOA (GC/MS) 8260D
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10558570006

METHOD BLANK: R3652664-3 Matrix: Water

Associated Lab Samples: 10558570006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/10/21 10:21	
Ethylbenzene	ug/L	ND	1.00	0.137	05/10/21 10:21	
Toluene	ug/L	ND	1.00	0.278	05/10/21 10:21	
o-Xylene	ug/L	ND	1.00	0.174	05/10/21 10:21	
m&p-Xylene	ug/L	ND	2.00	0.430	05/10/21 10:21	
Toluene-d8 (S)	%	107	80.0-120		05/10/21 10:21	
4-Bromofluorobenzene (S)	%	115	77.0-126		05/10/21 10:21	
1,2-Dichloroethane-d4 (S)	%	74.9	70.0-130		05/10/21 10:21	

LABORATORY CONTROL SAMPLE & LCSD: R3652664-1 R3652664-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	5.00	4.75	4.79	95.0	95.8	70.0-123	0.839	20	
Ethylbenzene	ug/L	5.00	5.22	5.07	104	101	79.0-123	2.92	20	
Toluene	ug/L	5.00	4.63	4.63	92.6	92.6	79.0-120	0.00	20	
o-Xylene	ug/L	5.00	5.06	5.10	101	102	80.0-122	0.787	20	
m&p-Xylene	ug/L	10.0	10.7	10.8	107	108	80.0-122	0.930	20	
Toluene-d8 (S)	%				106	106	80.0-120			
4-Bromofluorobenzene (S)	%				116	111	77.0-126			
1,2-Dichloroethane-d4 (S)	%				81.3	75.8	70.0-130			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558570

QC Batch: 739886 Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

METHOD BLANK: 3946203 Matrix: Water  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/10/21 06:01	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/10/21 06:01	
Acenaphthene	ug/L	ND	0.040	0.0081	05/10/21 06:01	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/10/21 06:01	
Anthracene	ug/L	ND	0.040	0.0082	05/10/21 06:01	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/10/21 06:01	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/10/21 06:01	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/10/21 06:01	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/10/21 06:01	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/10/21 06:01	
Chrysene	ug/L	ND	0.040	0.011	05/10/21 06:01	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/10/21 06:01	
Fluoranthene	ug/L	ND	0.040	0.011	05/10/21 06:01	
Fluorene	ug/L	ND	0.040	0.0068	05/10/21 06:01	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/10/21 06:01	
Naphthalene	ug/L	ND	0.040	0.011	05/10/21 06:01	
Phenanthrene	ug/L	0.025J	0.040	0.010	05/10/21 06:01	
Pyrene	ug/L	ND	0.040	0.015	05/10/21 06:01	
2-Fluorobiphenyl (S)	%	84	51-125		05/10/21 06:01	
p-Terphenyl-d14 (S)	%	97	70-125		05/10/21 06:01	

LABORATORY CONTROL SAMPLE: 3946204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.98	98	34-125	
2-Methylnaphthalene	ug/L	1	0.82	82	34-125	
Acenaphthene	ug/L	1	0.85	85	35-125	
Acenaphthylene	ug/L	1	0.89	89	33-125	
Anthracene	ug/L	1	1.2	115	42-125	
Benzo(a)anthracene	ug/L	1	0.96	96	46-125	
Benzo(a)pyrene	ug/L	1	1.0	104	57-125	
Benzo(b)fluoranthene	ug/L	1	0.98	98	58-125	
Benzo(g,h,i)perylene	ug/L	1	0.96	96	55-125	
Benzo(k)fluoranthene	ug/L	1	1.1	114	55-125	
Chrysene	ug/L	1	1.0	104	56-125	
Dibenz(a,h)anthracene	ug/L	1	1.0	100	40-125	
Fluoranthene	ug/L	1	1.0	101	64-125	
Fluorene	ug/L	1	0.96	96	43-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.95	95	57-125	

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558570

LABORATORY CONTROL SAMPLE: 3946204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.83	83	30-125	
Phenanthrene	ug/L	1	0.84	84	47-125	
Pyrene	ug/L	1	1.0	100	46-125	
2-Fluorobiphenyl (S)	%			77	51-125	
p-Terphenyl-d14 (S)	%			94	70-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3946328 3946329

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10558589001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1-Methylnaphthalene	ug/L	ND	3	3	2.7	2.9	88	95	30-150	8	30	
2-Methylnaphthalene	ug/L	ND	3	3	2.2	2.4	73	81	30-150	10	30	
Acenaphthene	ug/L	ND	3	3	2.4	2.5	78	84	30-125	7	30	
Acenaphthylene	ug/L	ND	3	3	2.5	2.7	83	89	30-125	7	30	
Anthracene	ug/L	ND	3	3	3.2	3.4	105	111	42-125	6	30	
Benzo(a)anthracene	ug/L	ND	3	3	2.7	2.9	88	95	46-125	8	30	
Benzo(a)pyrene	ug/L	ND	3	3	2.9	3.2	95	105	53-125	10	30	
Benzo(b)fluoranthene	ug/L	ND	3	3	2.9	3.1	96	103	54-125	7	30	
Benzo(g,h,i)perylene	ug/L	ND	3	3	2.5	2.8	83	93	55-125	12	30	
Benzo(k)fluoranthene	ug/L	ND	3	3	3.2	3.4	105	113	55-125	7	30	
Chrysene	ug/L	ND	3	3	3.0	3.2	100	106	52-125	6	30	
Dibenz(a,h)anthracene	ug/L	ND	3	3	2.5	2.8	81	94	40-125	15	30	
Fluoranthene	ug/L	ND	3	3	2.8	3.0	92	100	61-125	8	30	
Fluorene	ug/L	ND	3	3	2.7	2.9	90	95	43-125	4	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	3	3	2.6	3.0	87	99	54-125	12	30	
Naphthalene	ug/L	ND	3	3	2.2	2.4	71	80	30-125	11	30	
Phenanthrene	ug/L	ND	3	3	2.4	2.5	77	81	44-125	5	30	
Pyrene	ug/L	ND	3	3	2.9	3.1	95	103	46-125	9	30	
2-Fluorobiphenyl (S)	%						71	75	51-125			P1
p-Terphenyl-d14 (S)	%						88	94	70-125			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558570

QC Batch: 739885 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004

METHOD BLANK: 3945828 Matrix: Water  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/06/21 14:53	
Motor Oil Range SG	mg/L	0.13J	0.40	0.12	05/06/21 14:53	
n-Triacontane (S)	%	90	50-150		05/06/21 14:53	
o-Terphenyl (S)	%	81	50-150		05/06/21 14:53	

LABORATORY CONTROL SAMPLE & LCSD: 3945829

Parameter	Units	3945830						RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits			
Diesel Fuel Range SG	mg/L	2	1.4	1.3	68	65	50-150	5	20	
Motor Oil Range SG	mg/L	2	1.5	1.4	73	68	50-150	7	20	
n-Triacontane (S)	%				68	65	50-150			
o-Terphenyl (S)	%				65	60	50-150			

SAMPLE DUPLICATE: 3945972

Parameter	Units	10558570001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Diesel Fuel Range SG	mg/L	0.20J	0.21J		30	
Motor Oil Range SG	mg/L	0.16J	0.15J		30	
n-Triacontane (S)	%	71	74			
o-Terphenyl (S)	%	64	65			

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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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558570

QC Batch: 740823	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570005

METHOD BLANK: 3950797 Matrix: Water

Associated Lab Samples: 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/12/21 23:08	
Motor Oil Range SG	mg/L	0.13J	0.40	0.12	05/12/21 23:08	
n-Triacontane (S)	%	90	50-150		05/12/21 23:08	
o-Terphenyl (S)	%	81	50-150		05/12/21 23:08	

LABORATORY CONTROL SAMPLE & LCSD: 3950798 3950799

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.6	1.8	79	88	50-150	10	20	
Motor Oil Range SG	mg/L	2	1.7	1.8	84	92	50-150	9	20	
n-Triacontane (S)	%				83	89	50-150			
o-Terphenyl (S)	%				76	86	50-150			

SAMPLE DUPLICATE: 3950800

Parameter	Units	10559159001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.10J		30	
Motor Oil Range SG	mg/L	ND	0.18J		30	
n-Triacontane (S)	%	89	86			
o-Terphenyl (S)	%	79	74			

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558570

QC Batch: 742211	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570001

METHOD BLANK: 3958134 Matrix: Water  
Associated Lab Samples: 10558570001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/18/21 13:53	

LABORATORY CONTROL SAMPLE & LCSD: 3958135 3958136

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	43.1	43.0	108	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3958137 3958138

Parameter	Units	10559022003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	59.2	40	40	99.9	100	102	102	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3958139 3958140

Parameter	Units	10559158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	327	40	40	366	368	97	103	80-120	1	20	

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### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 583831-Revised Report

Pace Project No.: 10558570

QC Batch:	742910	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10558570002, 10558570003, 10558570004, 10558570005		

METHOD BLANK: 3962010 Matrix: Water  
Associated Lab Samples: 10558570002, 10558570003, 10558570004, 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/18/21 16:25	

LABORATORY CONTROL SAMPLE & LCSD: 3962011 3962012

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.7	42.9	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962013 3962014

Parameter	Units	10560263001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	36.0	40	40	76.4	76.8	101	102	80-120	1	20	

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558570

QC Batch:	742036	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

METHOD BLANK: 3957164 Matrix: Water  
Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/14/21 15:27	

LABORATORY CONTROL SAMPLE: 3957165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	52.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957166 3957167

Parameter	Units	10558570001		3957167		% Rec		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	% Rec	% Rec				
Sulfate	mg/L	20.0	50	65.9	50	92	94	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957168 3957169

Parameter	Units	10559454001		3957169		% Rec		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	% Rec	% Rec				
Sulfate	mg/L	24.7	50	70.3	50	91	93	80-120	1	20	

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558570

QC Batch: 739873

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

METHOD BLANK: 3945782

Matrix: Water

Associated Lab Samples: 10558570001, 10558570002, 10558570003, 10558570004, 10558570005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	0.018	05/05/21 15:27	

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## QUALIFIERS

Project: 583831-Revised Report

Pace Project No.: 10558570

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### 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.

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.

P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831-Revised Report

Pace Project No.: 10558570

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10558570001	PEO-MW-32-202105	EPA Mod. 3510C	739885	NWTPH-Dx	740152
10558570002	PEO-MW-33-202105	EPA Mod. 3510C	739885	NWTPH-Dx	740152
10558570003	PEO-MW-Z1-202105	EPA Mod. 3510C	739885	NWTPH-Dx	740152
10558570004	PEO-MW-42-202105	EPA Mod. 3510C	739885	NWTPH-Dx	740152
10558570005	PEO-MW-24a-202105	EPA Mod. 3510C	740823	NWTPH-Dx	741287
10558570001	PEO-MW-32-202105	NWTPH-Gx	741259		
10558570002	PEO-MW-33-202105	NWTPH-Gx	741259		
10558570003	PEO-MW-Z1-202105	NWTPH-Gx	741259		
10558570004	PEO-MW-42-202105	NWTPH-Gx	741259		
10558570005	PEO-MW-24a-202105	NWTPH-Gx	741259		
10558570006	TRIP BLANK - 20210504	NWTPH-Gx	741259		
10558570001	PEO-MW-32-202105	EPA 3010A	741479	EPA 6010D	741910
10558570002	PEO-MW-33-202105	EPA 3010A	741479	EPA 6010D	741910
10558570003	PEO-MW-Z1-202105	EPA 3010A	741479	EPA 6010D	741910
10558570004	PEO-MW-42-202105	EPA 3010A	741479	EPA 6010D	741910
10558570005	PEO-MW-24a-202105	EPA 3010A	741479	EPA 6010D	741910
10558570001	PEO-MW-32-202105	EPA 3020A	741459	EPA 6020A	741933
10558570002	PEO-MW-33-202105	EPA 3020A	741459	EPA 6020A	741933
10558570003	PEO-MW-Z1-202105	EPA 3020A	741459	EPA 6020A	741933
10558570004	PEO-MW-42-202105	EPA 3020A	741459	EPA 6020A	741933
10558570005	PEO-MW-24a-202105	EPA 3020A	741459	EPA 6020A	741933
10558570001	PEO-MW-32-202105	EPA Mod. 3510C	739886	EPA 8270 by SIM	740714
10558570002	PEO-MW-33-202105	EPA Mod. 3510C	739886	EPA 8270 by SIM	740714
10558570003	PEO-MW-Z1-202105	EPA Mod. 3510C	739886	EPA 8270 by SIM	740714
10558570004	PEO-MW-42-202105	EPA Mod. 3510C	739886	EPA 8270 by SIM	740714
10558570005	PEO-MW-24a-202105	EPA Mod. 3510C	739886	EPA 8270 by SIM	740714
10558570001	PEO-MW-32-202105	8260D	1667343	EPA 8260D	1667343
10558570002	PEO-MW-33-202105	8260D	1667343	EPA 8260D	1667343
10558570003	PEO-MW-Z1-202105	8260D	1667343	EPA 8260D	1667343
10558570004	PEO-MW-42-202105	8260D	1667343	EPA 8260D	1667343
10558570005	PEO-MW-24a-202105	8260D	1667343	EPA 8260D	1667343
10558570006	TRIP BLANK - 20210504	8260D	1667620	EPA 8260D	1667620
10558570001	PEO-MW-32-202105	SM 2320B	742211		
10558570002	PEO-MW-33-202105	SM 2320B	742910		
10558570003	PEO-MW-Z1-202105	SM 2320B	742910		
10558570004	PEO-MW-42-202105	SM 2320B	742910		
10558570005	PEO-MW-24a-202105	SM 2320B	742910		
10558570001	PEO-MW-32-202105	EPA 300.0	742036		
10558570002	PEO-MW-33-202105	EPA 300.0	742036		
10558570003	PEO-MW-Z1-202105	EPA 300.0	742036		
10558570004	PEO-MW-42-202105	EPA 300.0	742036		
10558570005	PEO-MW-24a-202105	EPA 300.0	742036		
10558570001	PEO-MW-32-202105	EPA 353.2	739873		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831-Revised Report

Pace Project No.: 10558570

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10558570002	PEO-MW-33-202105	EPA 353.2	739873		
10558570003	PEO-MW-Z1-202105	EPA 353.2	739873		
10558570004	PEO-MW-42-202105	EPA 353.2	739873		
10558570005	PEO-MW-24a-202105	EPA 353.2	739873		

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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.



<b>Section A</b> Required Client Information:	<b>Section B</b> Required Project Information:	<b>Section C</b> Invoice Information:	
Company: ERM	Report To: Rita Cooper	Attention:	Page: _____ of _____
Address: 1050 SW 6th Ave, Suite 1650	Copy To:	Company Name:	REGULATORY AGENCY
Portland, OR 97204	Purchase Order No.:	Address:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Email To: rita.cooper@erm.com	Project Name:	Pace Quote Reference:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Phone: 207-329-6320	Project Number: 583831	Pace Project Manager: Julie Bowser	Site Location OR
Requested Due Date/TAT: Standard		Face Profile #:	STATE:

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER PRODUCT P SOLID/SOIL SOL OIL OIL RIPE RIPE AIR AIR OTHER OT TISSUE TS	SAMPLER TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLER TEMP AT COLLECTION	# OF CONTAINERS	UNPRESERVED	Requested Analysis Filtered (Y/N)										Pace Project No./ Lab I.D.																			
					COMPOSITE START	COMPOSITE END/DURATION				DATE	TIME	DATE	TIME	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> SO <sub>4</sub>	Methanol		Other	GRO (NWTPH-GX)	BTEX (SW826C/SW826C SIM)	VPH (NWTPH-VPH)	ORO (NWTPH-OR)	Dissolved Metals (As, Mn, 6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NWTPH-EPH)	Nitrate (EPA 353.2)	Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)	Nitrate + Nitrite	Residual Chlorine (Y/N)					
1	PEO-MW-32-202105		G	GW	5/4/21	8:35		19	X	X	X	X	X	X	X	X	X	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		661	
2	PEO-MW-33-202105		G	GW	5/4/21	10:30		19	X	X	X	X	X	X	X	X	X	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	662
3	PEO-MW-Z1-202105		G	GW	5/4/21	10:35		19	X	X	X	X	X	X	X	X	X	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	663
4	PEO-MW-42-202105		G	GW	5/4/21	12:20		19	X	X	X	X	X	X	X	X	X	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	664
5	PEO-MW-24a-202105		G	GW	5/4/21	13:20		19	X	X	X	X	X	X	X	X	X	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	665
6	TRIP BLANK - 20210504		G	GW	5/4/21	8:00		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	666	
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
		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									
				Joe Casey / ERM		5/4/21		15:00		J-CASEY		5/4/21		9:55		Y Y Y Y																							

<b>SAMPLER NAME AND SIGNATURE</b> PRINT Name of SAMPLER: Joe Casey SIGNATURE of SAMPLER:	
DATE Signed (MM/DD/YYYY): 5/4/21	

MO# : 10558570



10558570

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

7-2-10, 0.4, 0.2, 0.1



Document Name:  
Sample Condition Upon Receipt (SCUR) - MN

Document Revised: 14Apr2021

Page 1 of 1

Document No.:  
ENV-FRM-MIN4-0150 Rev.02

Pace Analytical Services -  
Minneapolis

Sample Condition  
Upon Receipt

Client Name:

ERM

Project #:

WO#: 10558570

Courier:

FedEx  UPS  USPS  Client  
 Pace  SpeeDee  Commercial

PM: JMT

Due Date: 05/19/21

CLIENT: ERM-Oregon

Tracking Number:

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)  OS418-LS  T4(0254)  T5(0489)  160285052 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: 1.0, 0.4, 0.2, 0.2 °C Average Corrected Temp (no temp blank only): °C  See Exceptions ENV-FRM-MIN4-0142  1 Container

Correction Factor: TMC Cooler Temp Corrected w/temp blank: 1.0, 0.4, 0.2, 0.2 °C

USDA Regulated Soil:  N/A, water sample/Other: Date/Initials of Person Examining Contents: MJK 5-5-21

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 (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO <sub>3</sub> <input checked="" type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate 1-5', 1-5'
Exceptions: <u>VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		Positive for Res. Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
		Res. Chlorine 0-6 Roll 221419 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. 6 water trip blanks
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): 300603

CLIENT NOTIFICATION/RESOLUTION

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

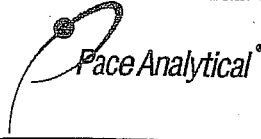
Comments/Resolution: \_\_\_\_\_

Project Manager Review: Julie Bauer

Date: 5/5/21

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: MJK Page 35 of 49

	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? <input type="checkbox"/> Yes <input type="checkbox"/> No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp												
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			

Tracking Number/Temperature	
1456 2247 1076	1.0
1456 2247 1080	0.4
1456 2247 1106	0.2
1456 2247 1091	0.2

Issue Type:	Container Type	# of Containers
Sample ID		

**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? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Comments:**

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H218

# Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed:  Yes  No

Owner Received Date: 5/5/2021 Results Requested By: 5/19/2021

Workorder: 10558570 Workorder Name: 583831

Report To		Subcontract To				Requested Analysis											
Julie Bowser Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 612-607-6390		Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858				BTEX by 8260B											

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				HCL VG9H									LAB USE ONLY
1	PEO-MW-32-202105	PS	5/4/2021 08:35	10558570001	Water	3													L1349130-01
2	PEO-MW-33-202105	PS	5/4/2021 10:30	10558570002	Water	3													02
3	PEO-MW-Z1-202105	PS	5/4/2021 10:35	10558570003	Water	3													03
4	PEO-MW-42-202105	PS	5/4/2021 12:20	10558570004	Water	3													04
5	PEO-MW-24a-202105	PS	5/4/2021 13:20	10558570005	Water	3													05
6	TRIP BLANK - 20210504	PS	5/4/2021 08:00	10558570006	Water	2													06

Transfers						Comments											
Released By	Date/Time	Received By	Date/Time			report xylene isomers, no total needed											
<i>[Signature]</i>	5/5/21 1545	<i>[Signature]</i>	5/6/21 0935														
Cooler Temperature on Receipt °C		Custody Seal <u>Y</u> or N		Received on Ice <u>Y</u> or N				Samples Intact <u>Y</u> 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.

2.1 + .1 = 2.2  
A20T

937192428106



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

**Pace Analytical Minnesota**

Julie Bowser  
1700 Elm Street, Ste. 200  
Minneapolis, MN 55414

**RE: 583831**

**Work Order Number: 2105066**

May 19, 2021

**Attention Julie Bowser:**

Fremont Analytical, Inc. received 6 sample(s) on 5/6/2021 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***  
***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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing  
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing  
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

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



Date: 05/19/2021

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831  
**Work Order:** 2105066

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2105066-001	PEO-MW-32-202105	05/04/2021 8:35 AM	05/06/2021 9:35 AM
2105066-002	PEO-MW-33-202105	05/04/2021 10:30 AM	05/06/2021 9:35 AM
2105066-003	PEO-MW-Z1-202105	05/04/2021 10:35 AM	05/06/2021 9:35 AM
2105066-004	PEO-MW-42-202105	05/04/2021 12:20 PM	05/06/2021 9:35 AM
2105066-005	PEO-MW-24a-202105	05/04/2021 1:20 PM	05/06/2021 9:35 AM
2105066-006	TRIP BLANK - 20210504	05/04/2021 8:00 AM	05/06/2021 9:35 AM

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

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Original

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

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**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:

- \* - 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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105066-001

**Collection Date:** 5/4/2021 8:35:00 AM

**Client Sample ID:** PEO-MW-32-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/18/2021 9:35:44 PM
Surr: 1-Chlorooctadecane	91.1	60 - 140		%Rec	1	5/18/2021 9:35:44 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 7:17:13 PM
Surr: 1,4-Difluorobenzene	86.2	65 - 140		%Rec	1	5/17/2021 7:17:13 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/17/2021 7:17:13 PM

**Lab ID:** 2105066-002

**Collection Date:** 5/4/2021 10:30:00 AM

**Client Sample ID:** PEO-MW-33-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	24.3	20.3	J	µg/L	1	5/18/2021 11:21:19 PM
Surr: 1-Chlorooctadecane	95.9	60 - 140		%Rec	1	5/18/2021 11:21:19 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 7:56:06 PM
Surr: 1,4-Difluorobenzene	90.1	65 - 140		%Rec	1	5/17/2021 7:56:06 PM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	5/17/2021 7:56:06 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105066-003

**Collection Date:** 5/4/2021 10:35:00 AM

**Client Sample ID:** PEO-MW-Z1-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/19/2021 12:13:55 AM
Surr: 1-Chlorooctadecane	105	60 - 140		%Rec	1	5/19/2021 12:13:55 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 8:35:08 PM
Surr: 1,4-Difluorobenzene	88.2	65 - 140		%Rec	1	5/17/2021 8:35:08 PM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/17/2021 8:35:08 PM

**Lab ID:** 2105066-004

**Collection Date:** 5/4/2021 12:20:00 PM

**Client Sample ID:** PEO-MW-42-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/19/2021 1:06:37 AM
Surr: 1-Chlorooctadecane	92.9	60 - 140		%Rec	1	5/19/2021 1:06:37 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 9:14:10 PM
Surr: 1,4-Difluorobenzene	89.6	65 - 140		%Rec	1	5/17/2021 9:14:10 PM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/17/2021 9:14:10 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105066-005

**Collection Date:** 5/4/2021 1:20:00 PM

**Client Sample ID:** PEO-MW-24a-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/19/2021 1:59:15 AM
Surr: 1-Chlorooctadecane	98.1	60 - 140		%Rec	1	5/19/2021 1:59:15 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 9:53:21 PM
Surr: 1,4-Difluorobenzene	88.3	65 - 140		%Rec	1	5/17/2021 9:53:21 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/17/2021 9:53:21 PM

**Lab ID:** 2105066-006

**Collection Date:** 5/4/2021 8:00:00 AM

**Client Sample ID:** TRIP BLANK - 20210504

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 4:40:14 PM
Surr: 1,4-Difluorobenzene	87.7	65 - 140		%Rec	1	5/17/2021 4:40:14 PM
Surr: Bromofluorobenzene	98.5	65 - 140		%Rec	1	5/17/2021 4:40:14 PM

**Work Order:** 2105066  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-32231</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357576</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.8		0	0						
Surr: 1-Chlorooctadecane	405		397.8		102	60	140				

Sample ID: <b>LCS-32231</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357577</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	351	39.7	495.8	0	70.9	70	130				
Surr: 1-Chlorooctadecane	391		396.6		98.6	60	140				

Sample ID: <b>LCS-32231</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>LCSW02</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357578</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	359	39.4	492.8	0	72.9	70	130	351.3	2.21	20	
Surr: 1-Chlorooctadecane	385		394.2		97.6	60	140		0		

Sample ID: <b>2105066-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>PEO-MW-32-202105</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357580</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	419	39.5	493.1	0	85.0	70	130				
Surr: 1-Chlorooctadecane	396		394.5		100	60	140				

Work Order: 2105066  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCS-32317</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357183</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	199	25.0	200.0	0	99.7	70	130				
Surr: 1,4-Difluorobenzene	51.2		50.00		102	65	140				
Surr: Bromofluorobenzene	51.7		50.00		103	65	140				

Sample ID: <b>MB-32317</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357176</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	43.1		50.00		86.2	65	140				
Surr: Bromofluorobenzene	49.5		50.00		99.1	65	140				

Sample ID: <b>2105066-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>PEO-MW-24a-202105</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357156</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	43.8		50.00		87.6	65	140		0		
Surr: Bromofluorobenzene	50.1		50.00		100	65	140		0		

Sample ID: <b>2105146-005ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357171</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	45.2		50.00		90.3	65	140		0		
Surr: Bromofluorobenzene	50.7		50.00		101	65	140		0		

**Work Order:** 2105066  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>2105092-004BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357162</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	745	25.0	200.0	725.5	9.64	70	130				S
Surr: 1,4-Difluorobenzene	52.2		50.00		104	65	140				
Surr: Bromofluorobenzene	49.4		50.00		98.9	65	140				

**NOTES:**

S - Outlying spike recovery observed (low bias).

Client Name: **PACEMI**  
 Logged by: **Clare Griggs**

Work Order Number: **2105066**  
 Date Received: **5/6/2021 9:35:00 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample	5.6

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

# Chain of Custody

PASI Minnesota Laboratory



Workorder: 10558570

Workorder Name: 583831

Results Requested By: 5/19/2021

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Minneapolis, MN 55414  
 Phone 612-607-6390  
 Email: julie.bowser@pacelabs.com

Fremont Analytical  
 3600 Fremont Ave N  
 Seattle, WA 98103

P.O. 10558570

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)	LAB USE ONLY
					HCL VG9H	AG1H			
1	PEO-MW-32-202105	5/4/2021 08:35	10558570001	Water	5		X	X	
2	PEO-MW-33-202105	5/4/2021 10:30	10558570002	Water	5		X	X	
3	PEO-MW-Z1-202105	5/4/2021 10:35	10558570003	Water	5		X	X	
4	PEO-MW-42-202105	5/4/2021 12:20	10558570004	Water	5		X	X	
5	PEO-MW-24a-202105	5/4/2021 13:20	10558570005	Water	5		X	X	
6	TRIP BLANK - 20210504	5/4/2021 08:00	10558570006	Water	2		X		

Transfers	Released By	Date/Time	Received By	Date/Time	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N
1	<i>Julie Bowser</i>	5/19/21	<i>Julie Bowser</i>	5/19/21 08:35						
2										
3										

J flag to MDL, EQUIS EDD needed

Comments

*MOSQUE*



May 21, 2021

Joe Casey  
ERM Portland  
1050 SW 6th Ave  
Suite 1650  
Portland, OR 97204

RE: Project: 583831-Revised Report  
Pace Project No.: 10558838

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 06, 2021. 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

This report was revised on May 21, 2021, to update the sample ID of the trip blank.

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

Sincerely,



Julie Bowser  
julie.bowser@pacelabs.com  
612-607-6390  
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland  
ERM Global EDD Mailbox, ERM  
Stephanie Frith, ERM Portland  
Rachel James, ERM Portland



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 583831-Revised Report

Pace Project No.: 10558838

### **Pace Analytical Services, LLC - Minneapolis MN**

1700 Elm Street SE, Minneapolis, MN 55414  
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01\*  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009\*  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014\*  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605\*  
Georgia Certification #: 959  
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 #: 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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## CERTIFICATIONS

Project: 583831-Revised Report

Pace Project No.: 10558838

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### **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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 583831-Revised Report

Pace Project No.: 10558838

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10558838001	PEO-MW-25-202105	Water	05/05/21 08:30	05/06/21 09:25
10558838002	PEO-MW-21-202105	Water	05/05/21 09:35	05/06/21 09:25
10558838003	PEO-MW-03-202105	Water	05/05/21 10:30	05/06/21 09:25
10558838004	PEO-MW-06-202105	Water	05/05/21 11:40	05/06/21 09:25
10558838005	PEO-MW-Z2-202105	Water	05/05/21 11:45	05/06/21 09:25
10558838006	PEO-MW-19-202105	Water	05/05/21 13:10	05/06/21 09:25
10558838007	TRIP BLANK-20210505	Water	05/05/21 08:00	05/06/21 09:25

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831-Revised Report

Pace Project No.: 10558838

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10558838001	PEO-MW-25-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	JAH	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	KEO	1	PASI-M
10558838002	PEO-MW-21-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	JAH	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	KEO	1	PASI-M
10558838003	PEO-MW-03-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	JAH	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	KEO	1	PASI-M
10558838004	PEO-MW-06-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	KEO	1	PASI-M
10558838005	PEO-MW-Z2-202105	NWTPH-Dx	JVM	4	PASI-M

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831-Revised Report

Pace Project No.: 10558838

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10558838006	PEO-MW-19-202105	NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	KEO	1	PASI-M
		NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
EPA 353.2	KEO	1	PASI-M		
10558838007	TRIP BLANK-20210505	NWTPH-Gx	NS1	2	PASI-M
		EPA 8260D	ACG	8	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-25-202105**      **Lab ID: 10558838001**      Collected: 05/05/21 08:30      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 20:00	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 20:00	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	69	%	50-150		1	05/07/21 15:28	05/10/21 20:00	84-15-1	
n-Triacontane (S)	83	%	50-150		1	05/07/21 15:28	05/10/21 20:00		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/14/21 03:43		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	85	%	50-150		1		05/14/21 03:43	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>42100</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:22		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.22J</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:48	7440-38-2	
Manganese, Dissolved	<b>3.4</b>	ug/L	0.50	0.22	1	05/13/21 05:58	05/18/21 23:48	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0077	1	05/07/21 15:21	05/11/21 19:39	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0061	1	05/07/21 15:21	05/11/21 19:39	208-96-8	
Anthracene	ND	ug/L	0.038	0.0078	1	05/07/21 15:21	05/11/21 19:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 19:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0084	1	05/07/21 15:21	05/11/21 19:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0074	1	05/07/21 15:21	05/11/21 19:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0080	1	05/07/21 15:21	05/11/21 19:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 19:39	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 19:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:39	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:39	206-44-0	
Fluorene	ND	ug/L	0.038	0.0064	1	05/07/21 15:21	05/11/21 19:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/07/21 15:21	05/11/21 19:39	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0058	1	05/07/21 15:21	05/11/21 19:39	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:39	91-57-6	
Naphthalene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:39	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0097	1	05/07/21 15:21	05/11/21 19:39	85-01-8	
Pyrene	ND	ug/L	0.038	0.014	1	05/07/21 15:21	05/11/21 19:39	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	86	%	51-125		1	05/07/21 15:21	05/11/21 19:39	321-60-8	
p-Terphenyl-d14 (S)	87	%	70-125		1	05/07/21 15:21	05/11/21 19:39	1718-51-0	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-25-202105**      **Lab ID: 10558838001**      Collected: 05/05/21 08:30      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 12:20	05/11/21 12:20	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/11/21 12:20	05/11/21 12:20	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 12:20	05/11/21 12:20	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 12:20	05/11/21 12:20	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 12:20	05/11/21 12:20	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	98.3	%	80.0-120		1	05/11/21 12:20	05/11/21 12:20	2037-26-5	
4-Bromofluorobenzene (S)	87.7	%	77.0-126		1	05/11/21 12:20	05/11/21 12:20	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70.0-130		1	05/11/21 12:20	05/11/21 12:20	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>47.6</b>	mg/L	5.0	2.0	1		05/18/21 17:59		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>5.3</b>	mg/L	1.2	0.34	1		05/14/21 17:52	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>1.8</b>	mg/L	0.10	0.018	1		05/06/21 16:55	14797-55-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-21-202105**      **Lab ID: 10558838002**      Collected: 05/05/21 09:35      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 20:22	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 20:22	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	67	%	50-150		1	05/07/21 15:28	05/10/21 20:22	84-15-1	
n-Triacontane (S)	85	%	50-150		1	05/07/21 15:28	05/10/21 20:22		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/13/21 22:12		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	89	%	50-150		1		05/13/21 22:12	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>33000</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:23		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.21J</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:52	7440-38-2	
Manganese, Dissolved	<b>35.8</b>	ug/L	0.50	0.22	1	05/13/21 05:58	05/18/21 23:52	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0077	1	05/07/21 15:21	05/11/21 19:58	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0061	1	05/07/21 15:21	05/11/21 19:58	208-96-8	
Anthracene	ND	ug/L	0.038	0.0078	1	05/07/21 15:21	05/11/21 19:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 19:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0084	1	05/07/21 15:21	05/11/21 19:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0074	1	05/07/21 15:21	05/11/21 19:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0080	1	05/07/21 15:21	05/11/21 19:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 19:58	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 19:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:58	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:58	206-44-0	
Fluorene	ND	ug/L	0.038	0.0064	1	05/07/21 15:21	05/11/21 19:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/07/21 15:21	05/11/21 19:58	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0058	1	05/07/21 15:21	05/11/21 19:58	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:58	91-57-6	
Naphthalene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 19:58	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0097	1	05/07/21 15:21	05/11/21 19:58	85-01-8	
Pyrene	ND	ug/L	0.038	0.014	1	05/07/21 15:21	05/11/21 19:58	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	81	%	51-125		1	05/07/21 15:21	05/11/21 19:58	321-60-8	
p-Terphenyl-d14 (S)	83	%	70-125		1	05/07/21 15:21	05/11/21 19:58	1718-51-0	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-21-202105**      **Lab ID: 10558838002**      Collected: 05/05/21 09:35      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D      Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 12:40	05/11/21 12:40	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/11/21 12:40	05/11/21 12:40	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 12:40	05/11/21 12:40	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 12:40	05/11/21 12:40	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 12:40	05/11/21 12:40	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	101	%	80.0-120		1	05/11/21 12:40	05/11/21 12:40	2037-26-5	
4-Bromofluorobenzene (S)	89.2	%	77.0-126		1	05/11/21 12:40	05/11/21 12:40	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70.0-130		1	05/11/21 12:40	05/11/21 12:40	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>44.6</b>	mg/L	5.0	2.0	1		05/18/21 18:03		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>2.7</b>	mg/L	1.2	0.34	1		05/14/21 18:40	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.14</b>	mg/L	0.10	0.018	1		05/06/21 16:58	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-03-202105**      **Lab ID: 10558838003**      Collected: 05/05/21 10:30      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.11J</b>	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 20:33	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 20:33	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	75	%	50-150		1	05/07/21 15:28	05/10/21 20:33	84-15-1	
n-Triacontane (S)	89	%	50-150		1	05/07/21 15:28	05/10/21 20:33		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/14/21 04:11		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	86	%	50-150		1		05/14/21 04:11	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>42900</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:25		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.28J</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:55	7440-38-2	
Manganese, Dissolved	<b>7.7</b>	ug/L	0.50	0.22	1	05/13/21 05:58	05/18/21 23:55	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/07/21 15:21	05/11/21 20:18	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/07/21 15:21	05/11/21 20:18	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/07/21 15:21	05/11/21 20:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/07/21 15:21	05/11/21 20:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0075	1	05/07/21 15:21	05/11/21 20:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 20:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 20:18	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 20:18	53-70-3	
Fluoranthene	<b>0.012J</b>	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 20:18	206-44-0	
Fluorene	ND	ug/L	0.038	0.0065	1	05/07/21 15:21	05/11/21 20:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/07/21 15:21	05/11/21 20:18	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/07/21 15:21	05/11/21 20:18	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:18	91-57-6	
Naphthalene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:18	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0098	1	05/07/21 15:21	05/11/21 20:18	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/07/21 15:21	05/11/21 20:18	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	82	%	51-125		1	05/07/21 15:21	05/11/21 20:18	321-60-8	
p-Terphenyl-d14 (S)	84	%	70-125		1	05/07/21 15:21	05/11/21 20:18	1718-51-0	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-03-202105**      **Lab ID: 10558838003**      Collected: 05/05/21 10:30      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 13:00	05/11/21 13:00	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/11/21 13:00	05/11/21 13:00	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 13:00	05/11/21 13:00	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 13:00	05/11/21 13:00	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 13:00	05/11/21 13:00	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	100	%	80.0-120		1	05/11/21 13:00	05/11/21 13:00	2037-26-5	
4-Bromofluorobenzene (S)	86.5	%	77.0-126		1	05/11/21 13:00	05/11/21 13:00	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	70.0-130		1	05/11/21 13:00	05/11/21 13:00	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>49.2</b>	mg/L	5.0	2.0	1		05/18/21 18:08		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>6.5</b>	mg/L	1.2	0.34	1		05/14/21 18:56	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.20</b>	mg/L	0.10	0.018	1		05/06/21 16:59	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-06-202105**      **Lab ID: 10558838004**      Collected: 05/05/21 11:40      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>1.3</b>	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 20:44	68334-30-5	
Motor Oil Range SG	<b>0.15J</b>	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 20:44	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	71	%	50-150		1	05/07/21 15:28	05/10/21 20:44	84-15-1	
n-Triacontane (S)	89	%	50-150		1	05/07/21 15:28	05/10/21 20:44		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>4520</b>	ug/L	200	85.6	2		05/14/21 05:06		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	133	%	50-150		2		05/14/21 05:06	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>21100</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:27		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>6.0</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/18/21 23:59	7440-38-2	
Manganese, Dissolved	<b>418</b>	ug/L	0.50	0.22	1	05/13/21 05:58	05/18/21 23:59	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>1.4</b>	ug/L	0.038	0.0078	1	05/07/21 15:21	05/11/21 20:37	83-32-9	
Acenaphthylene	<b>0.41</b>	ug/L	0.038	0.0062	1	05/07/21 15:21	05/11/21 20:37	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/07/21 15:21	05/11/21 20:37	120-12-7	
Benzo(a)anthracene	<b>0.015J</b>	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/07/21 15:21	05/11/21 20:37	50-32-8	
Benzo(b)fluoranthene	<b>0.0075J</b>	ug/L	0.038	0.0075	1	05/07/21 15:21	05/11/21 20:37	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 20:37	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 20:37	207-08-9	
Chrysene	<b>0.011J</b>	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 20:37	53-70-3	
Fluoranthene	<b>0.060</b>	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 20:37	206-44-0	
Fluorene	<b>2.7</b>	ug/L	0.038	0.0065	1	05/07/21 15:21	05/11/21 20:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/07/21 15:21	05/11/21 20:37	193-39-5	
1-Methylnaphthalene	<b>34.7</b>	ug/L	0.38	0.059	10	05/07/21 15:21	05/12/21 15:47	90-12-0	
2-Methylnaphthalene	<b>34.2</b>	ug/L	0.38	0.11	10	05/07/21 15:21	05/12/21 15:47	91-57-6	
Naphthalene	<b>5.6</b>	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 20:37	91-20-3	
Phenanthrene	<b>1.4</b>	ug/L	0.038	0.0098	1	05/07/21 15:21	05/11/21 20:37	85-01-8	
Pyrene	<b>0.066</b>	ug/L	0.038	0.015	1	05/07/21 15:21	05/11/21 20:37	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	83	%	51-125		1	05/07/21 15:21	05/11/21 20:37	321-60-8	
p-Terphenyl-d14 (S)	81	%	70-125		1	05/07/21 15:21	05/11/21 20:37	1718-51-0	

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-06-202105**      **Lab ID: 10558838004**      Collected: 05/05/21 11:40      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 13:26	05/11/21 13:26	71-43-2	
Toluene	<b>0.332J</b>	ug/L	1.00	0.278	1	05/11/21 13:26	05/11/21 13:26	108-88-3	J
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 13:26	05/11/21 13:26	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 13:26	05/11/21 13:26	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 13:26	05/11/21 13:26	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	107	%	80.0-120		1	05/11/21 13:26	05/11/21 13:26	2037-26-5	
4-Bromofluorobenzene (S)	108	%	77.0-126		1	05/11/21 13:26	05/11/21 13:26	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70.0-130		1	05/11/21 13:26	05/11/21 13:26	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>59.7</b>	mg/L	5.0	2.0	1		05/18/21 18:12		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>0.48J</b>	mg/L	1.2	0.34	1		05/14/21 19:12	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/06/21 17:01	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

Sample: PEO-MW-Z2-202105      Lab ID: 10558838005      Collected: 05/05/21 11:45      Received: 05/06/21 09:25      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.2	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 20:56	68334-30-5	
Motor Oil Range SG	0.13J	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 20:56	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	67	%	50-150		1	05/07/21 15:28	05/10/21 20:56	84-15-1	
n-Triacontane (S)	81	%	50-150		1	05/07/21 15:28	05/10/21 20:56		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	4620	ug/L	500	214	5		05/17/21 17:12		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	113	%	50-150		5		05/17/21 17:12	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	21700	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:28		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	6.0	ug/L	0.50	0.14	1	05/13/21 05:58	05/19/21 00:02	7440-38-2	
Manganese, Dissolved	426	ug/L	0.50	0.22	1	05/13/21 05:58	05/19/21 00:02	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	1.5	ug/L	0.039	0.0079	1	05/07/21 15:21	05/11/21 20:57	83-32-9	
Acenaphthylene	0.40	ug/L	0.039	0.0063	1	05/07/21 15:21	05/11/21 20:57	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/07/21 15:21	05/11/21 20:57	120-12-7	
Benzo(a)anthracene	0.013J	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 20:57	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/07/21 15:21	05/11/21 20:57	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/07/21 15:21	05/11/21 20:57	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/07/21 15:21	05/11/21 20:57	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/07/21 15:21	05/11/21 20:57	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 20:57	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 20:57	53-70-3	
Fluoranthene	0.063	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 20:57	206-44-0	
Fluorene	2.9	ug/L	0.039	0.0066	1	05/07/21 15:21	05/11/21 20:57	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/07/21 15:21	05/11/21 20:57	193-39-5	
1-Methylnaphthalene	30.6	ug/L	0.39	0.060	10	05/07/21 15:21	05/12/21 16:07	90-12-0	
2-Methylnaphthalene	30.1	ug/L	0.39	0.11	10	05/07/21 15:21	05/12/21 16:07	91-57-6	
Naphthalene	5.2	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 20:57	91-20-3	
Phenanthrene	1.7	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 20:57	85-01-8	
Pyrene	0.068	ug/L	0.039	0.015	1	05/07/21 15:21	05/11/21 20:57	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	83	%	51-125		1	05/07/21 15:21	05/11/21 20:57	321-60-8	
p-Terphenyl-d14 (S)	81	%	70-125		1	05/07/21 15:21	05/11/21 20:57	1718-51-0	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-Z2-202105**      **Lab ID: 10558838005**      Collected: 05/05/21 11:45      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 13:46	05/11/21 13:46	71-43-2	
Toluene	<b>0.299J</b>	ug/L	1.00	0.278	1	05/11/21 13:46	05/11/21 13:46	108-88-3	J
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 13:46	05/11/21 13:46	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 13:46	05/11/21 13:46	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 13:46	05/11/21 13:46	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	104	%	80.0-120		1	05/11/21 13:46	05/11/21 13:46	2037-26-5	
4-Bromofluorobenzene (S)	104	%	77.0-126		1	05/11/21 13:46	05/11/21 13:46	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70.0-130		1	05/11/21 13:46	05/11/21 13:46	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>58.9</b>	mg/L	5.0	2.0	1		05/19/21 14:29		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>0.48J</b>	mg/L	1.2	0.34	1		05/14/21 19:28	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/06/21 17:04	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

Sample: PEO-MW-19-202105      Lab ID: 10558838006      Collected: 05/05/21 13:10      Received: 05/06/21 09:25      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.20J</b>	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 21:07	68334-30-5	
Motor Oil Range SG	<b>0.13J</b>	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 21:07	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	71	%	50-150		1	05/07/21 15:28	05/10/21 21:07	84-15-1	
n-Triacontane (S)	82	%	50-150		1	05/07/21 15:28	05/10/21 21:07		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/14/21 02:48		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	86	%	50-150		1		05/14/21 02:48	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>89600</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:30		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.20J</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/19/21 00:06	7440-38-2	
Manganese, Dissolved	<b>492</b>	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 10:50	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/07/21 15:21	05/11/21 21:17	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/07/21 15:21	05/11/21 21:17	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/07/21 15:21	05/11/21 21:17	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 21:17	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/07/21 15:21	05/11/21 21:17	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0075	1	05/07/21 15:21	05/11/21 21:17	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 21:17	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/07/21 15:21	05/11/21 21:17	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 21:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 21:17	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/07/21 15:21	05/11/21 21:17	206-44-0	
Fluorene	<b>0.010J</b>	ug/L	0.038	0.0065	1	05/07/21 15:21	05/11/21 21:17	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/07/21 15:21	05/11/21 21:17	193-39-5	
1-Methylnaphthalene	<b>0.052</b>	ug/L	0.038	0.0059	1	05/07/21 15:21	05/11/21 21:17	90-12-0	
2-Methylnaphthalene	<b>0.058</b>	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 21:17	91-57-6	
Naphthalene	ND	ug/L	0.038	0.011	1	05/07/21 15:21	05/11/21 21:17	91-20-3	
Phenanthrene	<b>0.016J</b>	ug/L	0.038	0.0098	1	05/07/21 15:21	05/11/21 21:17	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/07/21 15:21	05/11/21 21:17	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	84	%	51-125		1	05/07/21 15:21	05/11/21 21:17	321-60-8	
p-Terphenyl-d14 (S)	85	%	70-125		1	05/07/21 15:21	05/11/21 21:17	1718-51-0	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: PEO-MW-19-202105**      **Lab ID: 10558838006**      Collected: 05/05/21 13:10      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 14:07	05/11/21 14:07	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/11/21 14:07	05/11/21 14:07	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 14:07	05/11/21 14:07	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 14:07	05/11/21 14:07	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 14:07	05/11/21 14:07	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	111	%	80.0-120		1	05/11/21 14:07	05/11/21 14:07	2037-26-5	
4-Bromofluorobenzene (S)	106	%	77.0-126		1	05/11/21 14:07	05/11/21 14:07	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70.0-130		1	05/11/21 14:07	05/11/21 14:07	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>133</b>	mg/L	5.0	2.0	1		05/19/21 14:34		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>10.5</b>	mg/L	1.2	0.34	1		05/14/21 19:44	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.17</b>	mg/L	0.10	0.018	1		05/06/21 17:05	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831-Revised Report

Pace Project No.: 10558838

**Sample: TRIP BLANK-20210505**      **Lab ID: 10558838007**      Collected: 05/05/21 08:00      Received: 05/06/21 09:25      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx									
Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/14/21 02:20		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	88	%	50-150		1		05/14/21 02:20	98-08-8	
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D      Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/11/21 12:26	05/11/21 12:26	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/11/21 12:26	05/11/21 12:26	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/11/21 12:26	05/11/21 12:26	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/11/21 12:26	05/11/21 12:26	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/11/21 12:26	05/11/21 12:26	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	109	%	80.0-120		1	05/11/21 12:26	05/11/21 12:26	2037-26-5	
4-Bromofluorobenzene (S)	104	%	77.0-126		1	05/11/21 12:26	05/11/21 12:26	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70.0-130		1	05/11/21 12:26	05/11/21 12:26	17060-07-0	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558838

QC Batch: 741259 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838006, 10558838007

METHOD BLANK: 3952797 Matrix: Water  
Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838006, 10558838007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/13/21 16:08	
a,a,a-Trifluorotoluene (S)	%	86	50-150		05/13/21 16:08	

METHOD BLANK: 3952798 Matrix: Water  
Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838006, 10558838007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/13/21 21:17	
a,a,a-Trifluorotoluene (S)	%	91	50-150		05/13/21 21:17	

METHOD BLANK: 3952799 Matrix: Water  
Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838006, 10558838007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/14/21 01:53	
a,a,a-Trifluorotoluene (S)	%	89	50-150		05/14/21 01:53	

LABORATORY CONTROL SAMPLE & LCSD: 3952800 3952801

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	881	894	88	89	75-127	1	20	
a,a,a-Trifluorotoluene (S)	%				104	102	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3958465 3958466

Parameter	Units	10560230001 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	899	935	87	90	71-139	4	30	
a,a,a-Trifluorotoluene (S)	%						102	100	50-150			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

SAMPLE DUPLICATE: 3952901

Parameter	Units	10558570003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	55.1J	49.2J		30	
a,a,a-Trifluorotoluene (S)	%.	93	91			

SAMPLE DUPLICATE: 3952902

Parameter	Units	10558838002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	89	90			

SAMPLE DUPLICATE: 3952903

Parameter	Units	10558838006 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	86	87			

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**QUALITY CONTROL DATA**

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch: 742499	Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx	Analysis Description: NWTPH-Gx Water
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838005

METHOD BLANK: 3959840 Matrix: Water

Associated Lab Samples: 10558838005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/17/21 16:17	
a,a,a-Trifluorotoluene (S)	%	91	50-150		05/17/21 16:17	

METHOD BLANK: 3959841 Matrix: Water

Associated Lab Samples: 10558838005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/17/21 21:21	
a,a,a-Trifluorotoluene (S)	%	87	50-150		05/17/21 21:21	

METHOD BLANK: 3960511 Matrix: Water

Associated Lab Samples: 10558838005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/18/21 01:28	
a,a,a-Trifluorotoluene (S)	%	85	50-150		05/18/21 01:28	

LABORATORY CONTROL SAMPLE & LCSD: 3959842 3959843

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	914	98	91	75-127	7	20	
a,a,a-Trifluorotoluene (S)	%				107	106	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3959844 3959845

Parameter	Units	10558838005 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	4620	5000	5000	9270	9100	93	90	71-139	2	30	G+,G-
a,a,a-Trifluorotoluene (S)	%						124	122	50-150			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

SAMPLE DUPLICATE: 3960485

Parameter	Units	10559159001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	84	85			

SAMPLE DUPLICATE: 3960486

Parameter	Units	10559667001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	11400	11300	1	30	G+
a,a,a-Trifluorotoluene (S)	%.	104	104			

SAMPLE DUPLICATE: 3960487

Parameter	Units	10559667002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	79.1J	80.6J		30	
a,a,a-Trifluorotoluene (S)	%.	88	85			

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch:	741459	Analysis Method:	EPA 6020A
QC Batch Method:	EPA 3020A	Analysis Description:	6020A Water Dissolved UPD4
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

METHOD BLANK: 3953915 Matrix: Water  
Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/18/21 23:03	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/18/21 23:03	

LABORATORY CONTROL SAMPLE: 3953916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	96.6	97	80-120	
Manganese, Dissolved	ug/L	100	96.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3953917 3953918

Parameter	Units	10558570001 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	9.7	100	100	109	110	100	100	75-125	1	20	
Manganese, Dissolved	ug/L	1.2	100	100	99.9	99.9	99	99	75-125	0	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch:	1668014	Analysis Method:	EPA 8260D
QC Batch Method:	8260D	Analysis Description:	VOA (GC/MS) 8260D
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10558838001, 10558838002, 10558838003

METHOD BLANK: R3655466-2 Matrix: Water

Associated Lab Samples: 10558838001, 10558838002, 10558838003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/11/21 06:14	
Ethylbenzene	ug/L	ND	1.00	0.137	05/11/21 06:14	
Toluene	ug/L	ND	1.00	0.278	05/11/21 06:14	
o-Xylene	ug/L	ND	1.00	0.174	05/11/21 06:14	
m&p-Xylene	ug/L	ND	2.00	0.430	05/11/21 06:14	
Toluene-d8 (S)	%	99.4	80.0-120		05/11/21 06:14	
4-Bromofluorobenzene (S)	%	87.1	77.0-126		05/11/21 06:14	
1,2-Dichloroethane-d4 (S)	%	116	70.0-130		05/11/21 06:14	

LABORATORY CONTROL SAMPLE: R3655466-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	5.00	4.68	93.6	70.0-123	
Ethylbenzene	ug/L	5.00	4.36	87.2	79.0-123	
Toluene	ug/L	5.00	4.64	92.8	79.0-120	
o-Xylene	ug/L	5.00	4.10	82.0	80.0-122	
m&p-Xylene	ug/L	10.0	8.82	88.2	80.0-122	
Toluene-d8 (S)	%			97.2	80.0-120	
4-Bromofluorobenzene (S)	%			87.8	77.0-126	
1,2-Dichloroethane-d4 (S)	%			115	70.0-130	

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch:	1668289	Analysis Method:	EPA 8260D
QC Batch Method:	8260D	Analysis Description:	VOA (GC/MS) 8260D
		Laboratory:	Pace National - Mt. Juliet

Associated Lab Samples: 10558838004, 10558838005, 10558838006, 10558838007

METHOD BLANK: R3652893-2 Matrix: Water

Associated Lab Samples: 10558838004, 10558838005, 10558838006, 10558838007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/11/21 09:33	
Ethylbenzene	ug/L	ND	1.00	0.137	05/11/21 09:33	
Toluene	ug/L	ND	1.00	0.278	05/11/21 09:33	
o-Xylene	ug/L	ND	1.00	0.174	05/11/21 09:33	
m&p-Xylene	ug/L	ND	2.00	0.430	05/11/21 09:33	
Toluene-d8 (S)	%	111	80.0-120		05/11/21 09:33	
4-Bromofluorobenzene (S)	%	103	77.0-126		05/11/21 09:33	
1,2-Dichloroethane-d4 (S)	%	101	70.0-130		05/11/21 09:33	

LABORATORY CONTROL SAMPLE: R3652893-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	5.00	4.17	83.4	70.0-123	
Ethylbenzene	ug/L	5.00	4.65	93.0	79.0-123	
Toluene	ug/L	5.00	4.35	87.0	79.0-120	
o-Xylene	ug/L	5.00	4.47	89.4	80.0-122	
m&p-Xylene	ug/L	10.0	9.00	90.0	80.0-122	
Toluene-d8 (S)	%			110	80.0-120	
4-Bromofluorobenzene (S)	%			106	77.0-126	
1,2-Dichloroethane-d4 (S)	%			101	70.0-130	

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558838

QC Batch: 740446 Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

METHOD BLANK: 3948937 Matrix: Water

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/11/21 18:00	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Acenaphthene	ug/L	ND	0.040	0.0081	05/11/21 18:00	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/11/21 18:00	
Anthracene	ug/L	ND	0.040	0.0082	05/11/21 18:00	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/11/21 18:00	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/11/21 18:00	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/11/21 18:00	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/11/21 18:00	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/11/21 18:00	
Chrysene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Fluoranthene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Fluorene	ug/L	ND	0.040	0.0068	05/11/21 18:00	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/11/21 18:00	
Naphthalene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Phenanthrene	ug/L	ND	0.040	0.010	05/11/21 18:00	
Pyrene	ug/L	ND	0.040	0.015	05/11/21 18:00	
2-Fluorobiphenyl (S)	%	66	51-125		05/11/21 18:00	
p-Terphenyl-d14 (S)	%	82	70-125		05/11/21 18:00	

LABORATORY CONTROL SAMPLE & LCSD: 3948938

3948939

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.79	0.79	79	79	34-125	1	20	
2-Methylnaphthalene	ug/L	1	0.81	0.81	81	81	34-125	0	20	
Acenaphthene	ug/L	1	0.85	0.85	85	85	35-125	1	20	
Acenaphthylene	ug/L	1	0.85	0.83	85	83	33-125	2	20	
Anthracene	ug/L	1	0.99	0.88	99	88	42-125	12	20	
Benzo(a)anthracene	ug/L	1	0.94	0.91	94	91	46-125	4	20	
Benzo(a)pyrene	ug/L	1	0.93	0.87	93	87	57-125	6	20	
Benzo(b)fluoranthene	ug/L	1	0.96	0.94	96	94	58-125	3	20	
Benzo(g,h,i)perylene	ug/L	1	0.94	0.89	94	89	55-125	6	20	
Benzo(k)fluoranthene	ug/L	1	0.93	0.89	93	89	55-125	4	20	
Chrysene	ug/L	1	0.93	0.89	93	89	56-125	4	20	
Dibenz(a,h)anthracene	ug/L	1	0.91	0.87	91	87	40-125	5	20	
Fluoranthene	ug/L	1	0.95	0.92	95	92	64-125	3	20	
Fluorene	ug/L	1	0.87	0.84	87	84	43-125	4	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.94	0.89	94	89	57-125	5	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

LABORATORY CONTROL SAMPLE & LCSD: 3948938		3948939									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.82	0.81	82	81	30-125	1	20		
Phenanthrene	ug/L	1	0.90	0.87	90	87	47-125	4	20		
Pyrene	ug/L	1	0.95	0.93	95	93	46-125	2	20		
2-Fluorobiphenyl (S)	%.				81	83	51-125				
p-Terphenyl-d14 (S)	%.				88	88	70-125				

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### QUALITY CONTROL DATA

Project: 583831-Revised Report  
Pace Project No.: 10558838

QC Batch: 740445	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

METHOD BLANK: 3948932 Matrix: Water

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/10/21 19:26	
Motor Oil Range SG	mg/L	ND	0.40	0.12	05/10/21 19:26	
n-Triacontane (S)	%	73	50-150		05/10/21 19:26	
o-Terphenyl (S)	%	62	50-150		05/10/21 19:26	

LABORATORY CONTROL SAMPLE & LCSD: 3948933

3948934

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.6	1.7	81	86	50-150	6	20	
Motor Oil Range SG	mg/L	2	1.7	1.8	84	89	50-150	6	20	
n-Triacontane (S)	%				81	88	50-150			
o-Terphenyl (S)	%				70	77	50-150			

SAMPLE DUPLICATE: 3948935

Parameter	Units	10558838001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	83	87			
o-Terphenyl (S)	%	69	73			

SAMPLE DUPLICATE: 3949242

Parameter	Units	10559028005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.90	1.5	48	30	D6
Motor Oil Range SG	mg/L	0.23J	0.19J		30	P2
n-Triacontane (S)	%	61	79			
o-Terphenyl (S)	%	52	74			

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch: 742910

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004

METHOD BLANK: 3962010

Matrix: Water

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/18/21 16:25	

LABORATORY CONTROL SAMPLE & LCSD: 3962011

3962012

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.7	42.9	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962013

3962014

Parameter	Units	10560263001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	36.0	40	40	76.4	76.8	101	102	80-120	1	20	

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**QUALITY CONTROL DATA**

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch: 742982

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838005, 10558838006

METHOD BLANK: 3962458

Matrix: Water

Associated Lab Samples: 10558838005, 10558838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/19/21 14:01	

LABORATORY CONTROL SAMPLE & LCSD: 3962459

3962460

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.9	42.9	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962461

3962462

Parameter	Units	10560606001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	37.8	40	40	77.6	77.9	100	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962463

3962464

Parameter	Units	10559307008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	96.7	40	40	137	137	101	101	80-120	0	20	

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**QUALITY CONTROL DATA**

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch:	742036	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Minneapolis
Associated Lab Samples:	10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006		

METHOD BLANK: 3957164 Matrix: Water  
Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/14/21 15:27	

LABORATORY CONTROL SAMPLE: 3957165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	52.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957166 3957167

Parameter	Units	10558570001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	20.0	50	50	65.9	67.1	92	94	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957168 3957169

Parameter	Units	10559454001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	24.7	50	50	70.3	71.3	91	93	80-120	1	20	

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### QUALITY CONTROL DATA

Project: 583831-Revised Report

Pace Project No.: 10558838

QC Batch: 740322

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

METHOD BLANK: 3948265

Matrix: Water

Associated Lab Samples: 10558838001, 10558838002, 10558838003, 10558838004, 10558838005, 10558838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	0.018	05/06/21 16:53	

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## QUALIFIERS

Project: 583831-Revised Report

Pace Project No.: 10558838

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### 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.

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

TNI - The NELAC Institute.

### BATCH QUALIFIERS

Batch: 741025

[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.

G+ Late peaks present outside the GRO window.

G- Early peaks present outside the GRO window.

J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.

P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831-Revised Report

Pace Project No.: 10558838

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10558838001	PEO-MW-25-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10558838002	PEO-MW-21-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10558838003	PEO-MW-03-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10558838004	PEO-MW-06-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10558838005	PEO-MW-Z2-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10558838006	PEO-MW-19-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10558838001	PEO-MW-25-202105	NWTPH-Gx	741259		
10558838002	PEO-MW-21-202105	NWTPH-Gx	741259		
10558838003	PEO-MW-03-202105	NWTPH-Gx	741259		
10558838004	PEO-MW-06-202105	NWTPH-Gx	741259		
10558838005	PEO-MW-Z2-202105	NWTPH-Gx	742499		
10558838006	PEO-MW-19-202105	NWTPH-Gx	741259		
10558838007	TRIP BLANK-20210505	NWTPH-Gx	741259		
10558838001	PEO-MW-25-202105	EPA 3010A	741479	EPA 6010D	741910
10558838002	PEO-MW-21-202105	EPA 3010A	741479	EPA 6010D	741910
10558838003	PEO-MW-03-202105	EPA 3010A	741479	EPA 6010D	741910
10558838004	PEO-MW-06-202105	EPA 3010A	741479	EPA 6010D	741910
10558838005	PEO-MW-Z2-202105	EPA 3010A	741479	EPA 6010D	741910
10558838006	PEO-MW-19-202105	EPA 3010A	741479	EPA 6010D	741910
10558838001	PEO-MW-25-202105	EPA 3020A	741459	EPA 6020A	741933
10558838002	PEO-MW-21-202105	EPA 3020A	741459	EPA 6020A	741933
10558838003	PEO-MW-03-202105	EPA 3020A	741459	EPA 6020A	741933
10558838004	PEO-MW-06-202105	EPA 3020A	741459	EPA 6020A	741933
10558838005	PEO-MW-Z2-202105	EPA 3020A	741459	EPA 6020A	741933
10558838006	PEO-MW-19-202105	EPA 3020A	741459	EPA 6020A	741933
10558838001	PEO-MW-25-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10558838002	PEO-MW-21-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10558838003	PEO-MW-03-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10558838004	PEO-MW-06-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10558838005	PEO-MW-Z2-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10558838006	PEO-MW-19-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10558838001	PEO-MW-25-202105	8260D	1668014	EPA 8260D	1668014
10558838002	PEO-MW-21-202105	8260D	1668014	EPA 8260D	1668014
10558838003	PEO-MW-03-202105	8260D	1668014	EPA 8260D	1668014
10558838004	PEO-MW-06-202105	8260D	1668289	EPA 8260D	1668289
10558838005	PEO-MW-Z2-202105	8260D	1668289	EPA 8260D	1668289
10558838006	PEO-MW-19-202105	8260D	1668289	EPA 8260D	1668289
10558838007	TRIP BLANK-20210505	8260D	1668289	EPA 8260D	1668289
10558838001	PEO-MW-25-202105	SM 2320B	742910		
10558838002	PEO-MW-21-202105	SM 2320B	742910		
10558838003	PEO-MW-03-202105	SM 2320B	742910		
10558838004	PEO-MW-06-202105	SM 2320B	742910		
10558838005	PEO-MW-Z2-202105	SM 2320B	742982		
10558838006	PEO-MW-19-202105	SM 2320B	742982		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831-Revised Report

Pace Project No.: 10558838

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10558838001	PEO-MW-25-202105	EPA 300.0	742036		
10558838002	PEO-MW-21-202105	EPA 300.0	742036		
10558838003	PEO-MW-03-202105	EPA 300.0	742036		
10558838004	PEO-MW-06-202105	EPA 300.0	742036		
10558838005	PEO-MW-Z2-202105	EPA 300.0	742036		
10558838006	PEO-MW-19-202105	EPA 300.0	742036		
10558838001	PEO-MW-25-202105	EPA 353.2	740322		
10558838002	PEO-MW-21-202105	EPA 353.2	740322		
10558838003	PEO-MW-03-202105	EPA 353.2	740322		
10558838004	PEO-MW-06-202105	EPA 353.2	740322		
10558838005	PEO-MW-Z2-202105	EPA 353.2	740322		
10558838006	PEO-MW-19-202105	EPA 353.2	740322		

### REPORT OF LABORATORY ANALYSIS

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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.



<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: ERM	Report To: Rita Cooper	Company Name:	Attention:	Company Name:	Attention:
Address: 1050 SW 6th Ave, Suite 1650	Copy To:	Address:		Address:	
Portland, OR 97204	Purchase Order No.:	REGULATORY AGENCY		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> OTHER
Email To: rita.cooper@erm.com	Project Name:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA		Site Location	OR
Phone: 207-329-6320	Project Number: 583831	State:			
Requested Due Date/TAT: Standard					

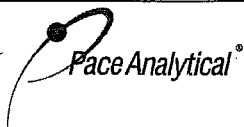
ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		PRESERVATIVES	# OF CONTAINERS	ANALYSIS TESTS	Requested Analysis Filtered (Y/N)												Pace Project No./ Lab I.D.					
					COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	Y	N	GRO (NWTPH-Gx)	BTEX (SW260C/SW8260C SIM)	VPH (NWTPH-VPH)	DRO (NWTPH-DX)	Dissolved Metals (As, Mn) (6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NWTPH-EPH)		Nitrate (EPA 353.2)	Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)	Nitrate + Nitrite	Residual Chlorine (Y/N)
1	PEO-MW-25-202105	DW	GW	G	5/5/21	8:30	-	19	3	3	3	2	1	X	2	1	X	1	X	1	X	1	X	1	X	1	661
2	PEO-MW-21-202105	WT	GW	G	5/5/21	9:35	-	19	3	3	3	2	1	X	2	1	X	1	X	1	X	1	X	1	X	1	662
3	PEO-MW-03-202105	WW	GW	G	5/5/21	10:30	-	19	3	3	3	2	1	X	2	1	X	1	X	1	X	1	X	1	X	1	663
4	PEO-MW-06-202105	P	GW	G	5/5/21	11:40	-	19	3	3	3	2	1	X	2	1	X	1	X	1	X	1	X	1	X	1	664
5	PEO-MW-22-202105	SL	GW	G	5/5/21	11:45	-	19	3	3	3	2	1	X	2	1	X	1	X	1	X	1	X	1	X	1	665
6	PEO-MW-19-202105	OL	GW	G	5/5/21	13:10	-	19	3	3	3	2	1	X	2	1	X	1	X	1	X	1	X	1	X	1	666
7	TRIP BLANK - 20210505	WP	GW	G	5/5/21	8:00	-	6	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	667	

ITEM #	ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS					
		DATE	TIME	DATE	TIME	Temp In °C	Received on Ice (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)		
1		5/5/21	15:00	5/5/21	15:00	5/5/21	19:25	Y	Y	Y	Y
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

**NO# : 10558838**

10558838

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Joe Casey  
 SIGNATURE of SAMPLER: *[Signature]*  
 DATE Signed (MM/DD/YYYY): 5/5/21



Document Name:  
Sample Condition Upon Receipt (SCUR) - MN

Document Revised: 14Apr2021

Page 1 of 1

Document No.:  
ENV-FRM-MIN4-0150 Rev.02

Pace Analytical Services -  
Minneapolis

Sample Condition  
Upon Receipt

Client Name:

Project #:

ERM

WO#: 10558838

Courier:  Fed.Ex  UPS  USPS  Client  
 Pace  SpeeDee  Commercial

PH: JMT Due Date: 05/28/21  
CLIENT: ERM-Oregon

Tracking Number:  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)  OS418-LS  T4(0254)  T5(0489)  160285052  
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: 1.2, 0.1, 0.2, 1.7, 0.3 °C

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

Correction Factor: Cooler Temp Corrected w/temp blank: 1.2, 0.1, 0.2, 1.7, 0.3 °C

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

Date/Initials of Person Examining Contents: ED 5/6/21

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 (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input checked="" type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate
Exceptions: <input checked="" type="checkbox"/> VOA Coliform, TOC/DOC Oil and Grease, <input checked="" type="checkbox"/> DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
		pH Paper Lot#
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): 300603 (6)
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION

Field Data Required?  Yes  No

Person Contacted: \_\_\_\_\_  
Comments/Resolution: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Project Manager Review: Julie Buser

Date: 5/6/21

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: ED Page 38 of 53



**SCUR Exceptions:**

**Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No																					
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																					
			<b>Multiple Cooler Project?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																					
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp															
No Temp Blank																								
Read Temp	Corrected Temp	Average Temp																						

Tracking Number/Temperature	
145622471128	1.2
145622471139	0.1
145622471150	0.2
145622471117	1.7
145622471140	0.3

Issue Type:	Container Type	# of Containers
Sample ID		

**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? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Comments:**

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

**Pace Analytical Minnesota**

Julie Bowser  
1700 Elm Street, Ste. 200  
Minneapolis, MN 55414

**RE: 583831**

**Work Order Number: 2105092**

May 20, 2021

**Attention Julie Bowser:**

Fremont Analytical, Inc. received 7 sample(s) on 5/7/2021 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***  
***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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing  
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing  
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original



Date: 05/20/2021

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831  
**Work Order:** 2105092

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2105092-001	PEO-MW-25-202105	05/05/2021 8:30 AM	05/07/2021 9:26 AM
2105092-002	PEO-MW-21-202105	05/05/2021 9:35 AM	05/07/2021 9:26 AM
2105092-003	PEO-MW-03-202105	05/05/2021 10:30 AM	05/07/2021 9:26 AM
2105092-004	PEO-MW-06-202105	05/05/2021 11:40 AM	05/07/2021 9:26 AM
2105092-005	PEO-MW-Z2-202105	05/05/2021 11:45 AM	05/07/2021 9:26 AM
2105092-006	PEO-MW-19-202105	05/05/2021 1:10 PM	05/07/2021 9:26 AM
2105092-007	TRIP BLANK-20210505	05/05/2021 8:00 AM	05/07/2021 9:26 AM

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

---

Original

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

---

**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:

- \* - 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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105092-001

**Collection Date:** 5/5/2021 8:30:00 AM

**Client Sample ID:** PEO-MW-25-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/19/2021 3:44:28 AM
Surr: 1-Chlorooctadecane	83.8	60 - 140		%Rec	1	5/19/2021 3:44:28 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 11:11:24 PM
Surr: 1,4-Difluorobenzene	90.8	65 - 140		%Rec	1	5/17/2021 11:11:24 PM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	5/17/2021 11:11:24 PM

**Lab ID:** 2105092-002

**Collection Date:** 5/5/2021 9:35:00 AM

**Client Sample ID:** PEO-MW-21-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/19/2021 4:37:06 AM
Surr: 1-Chlorooctadecane	78.9	60 - 140		%Rec	1	5/19/2021 4:37:06 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 11:50:36 PM
Surr: 1,4-Difluorobenzene	89.3	65 - 140		%Rec	1	5/17/2021 11:50:36 PM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/17/2021 11:50:36 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105092-003

**Collection Date:** 5/5/2021 10:30:00 AM

**Client Sample ID:** PEO-MW-03-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	22.8	20.5	J	µg/L	1	5/19/2021 5:29:33 AM
Surr: 1-Chlorooctadecane	81.1	60 - 140		%Rec	1	5/19/2021 5:29:33 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 1:48:19 AM
Surr: 1,4-Difluorobenzene	91.8	65 - 140		%Rec	1	5/18/2021 1:48:19 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	5/18/2021 1:48:19 AM

**Lab ID:** 2105092-004

**Collection Date:** 5/5/2021 11:40:00 AM

**Client Sample ID:** PEO-MW-06-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	45.6	20.4		µg/L	1	5/19/2021 7:52:43 PM
Surr: 1-Chlorooctadecane	77.2	60 - 140		%Rec	1	5/19/2021 7:52:43 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	726	12.2		µg/L	1	5/18/2021 2:27:22 AM
Surr: 1,4-Difluorobenzene	102	65 - 140		%Rec	1	5/18/2021 2:27:22 AM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/18/2021 2:27:22 AM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105092-005

**Collection Date:** 5/5/2021 11:45:00 AM

**Client Sample ID:** PEO-MW-Z2-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	59.1	20.3		µg/L	1	5/19/2021 8:45:44 PM
Surr: 1-Chlorooctadecane	74.2	60 - 140		%Rec	1	5/19/2021 8:45:44 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	631	12.2		µg/L	1	5/18/2021 3:06:23 AM
Surr: 1,4-Difluorobenzene	102	65 - 140		%Rec	1	5/18/2021 3:06:23 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	5/18/2021 3:06:23 AM

**Lab ID:** 2105092-006

**Collection Date:** 5/5/2021 1:10:00 PM

**Client Sample ID:** PEO-MW-19-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/19/2021 9:38:33 PM
Surr: 1-Chlorooctadecane	76.2	60 - 140		%Rec	1	5/19/2021 9:38:33 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 3:45:23 AM
Surr: 1,4-Difluorobenzene	92.4	65 - 140		%Rec	1	5/18/2021 3:45:23 AM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	5/18/2021 3:45:23 AM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105092-007

**Collection Date:** 5/5/2021 8:00:00 AM

**Client Sample ID:** TRIP BLANK-20210505

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Volatiles Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 5:19:25 PM
Surr: 1,4-Difluorobenzene	87.0	65 - 140		%Rec	1	5/17/2021 5:19:25 PM
Surr: Bromofluorobenzene	97.8	65 - 140		%Rec	1	5/17/2021 5:19:25 PM

Work Order: 2105092  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-32231</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357576</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.8		0	0						
Surr: 1-Chlorooctadecane	405		397.8		102	60	140				

Sample ID: <b>LCS-32231</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357577</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	351	39.7	495.8	0	70.9	70	130				
Surr: 1-Chlorooctadecane	391		396.6		98.6	60	140				

Sample ID: <b>LCS-32231</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>LCSW02</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357578</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	359	39.4	492.8	0	72.9	70	130	351.3	2.21	20	
Surr: 1-Chlorooctadecane	385		394.2		97.6	60	140		0		

Sample ID: <b>2105066-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357580</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	419	39.5	493.1	0	85.0	70	130				
Surr: 1-Chlorooctadecane	396		394.5		100	60	140				

**Work Order:** 2105092  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105146-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32231</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1358163</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	41.3		0	0			0	0	25	
Surr: 1-Chlorooctadecane	286		412.7		69.4	60	140		0		

Work Order: 2105092  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCS-32317</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357183</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	199	25.0	200.0	0	99.7	70	130				
Surr: 1,4-Difluorobenzene	51.2		50.00		102	65	140				
Surr: Bromofluorobenzene	51.7		50.00		103	65	140				

Sample ID: <b>MB-32317</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357176</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	43.1		50.00		86.2	65	140				
Surr: Bromofluorobenzene	49.5		50.00		99.1	65	140				

Sample ID: <b>2105066-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357156</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	43.8		50.00		87.6	65	140		0		
Surr: Bromofluorobenzene	50.1		50.00		100	65	140		0		

Sample ID: <b>2105146-005ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357171</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	45.2		50.00		90.3	65	140		0		
Surr: Bromofluorobenzene	50.7		50.00		101	65	140		0		

**Work Order:** 2105092  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>2105092-004BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>PEO-MW-06-202105</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357162</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	745	25.0	200.0	725.5	9.64	70	130				S
Surr: 1,4-Difluorobenzene	52.2		50.00		104	65	140				
Surr: Bromofluorobenzene	49.4		50.00		98.9	65	140				

**NOTES:**

S - Outlying spike recovery observed (low bias).

Client Name: **PACEMI**

 Work Order Number: **2105092**

 Logged by: **Carissa True**

 Date Received: **5/7/2021 9:26:00 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample 1	1.8
Sample 2	1.8

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

# Chain of Custody

PASI Minnesota Laboratory



Workorder: 10558838

Workorder Name: 583831

Results Requested By: 5/20/2021

2105092



Julie Bowser  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Minneapolis, MN 55414  
 Phone 612-607-6390  
 Email: julie.bowser@paceclabs.com

Subcontract To  
 Fremont Analytical  
 3600 Fremont Ave N  
 Seattle, WA 98103

P.O. 10558838

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		NWT PH VPH (Aliphatics C10-C12)	NWT PH EPH (Aliphatics C10-C12)	Requested Analysis	LAB USE ONLY
					1	2				
1	PEO-MW-25-202105	5/5/2021 08:30	10558838001	Water			X	X		
2	PEO-MW-21-202105	5/5/2021 09:35	10558838002	Water			X	X		
3	PEO-MW-03-202105	5/5/2021 10:30	10558838003	Water			X	X		
4	PEO-MW-06-202105	5/5/2021 11:40	10558838004	Water			X	X		
5	PEO-MW-22-202105	5/5/2021 11:45	10558838005	Water			X	X		
6	PEO-MW-19-202105	5/5/2021 13:10	10558838006	Water			X	X		
7	TRIP BLANK-20210506	5/5/2021 08:00	10558838007	Water			X	X		

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>Julie Bowser</i>	5/12/21	<i>MDL 195</i>	5/12/21	Report to MDL, EQUIS EDD needed
2					
3					

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

May 26, 2021

Joe Casey  
ERM Portland  
1050 SW 6th Ave  
Suite 1650  
Portland, OR 97204

RE: Project: 583831  
Pace Project No.: 10559028

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 07, 2021. 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 Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser  
julie.bowser@pacelabs.com  
612-607-6390  
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland  
ERM Global EDD Mailbox, ERM  
Stephanie Frith, ERM Portland  
Rachel James, ERM Portland



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 583831  
Pace Project No.: 10559028

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### **Pace Analytical Services, LLC - Minneapolis MN**

1700 Elm Street SE, Minneapolis, MN 55414  
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01\*  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009\*  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014\*  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605\*  
Georgia Certification #: 959  
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 #: 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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 583831  
Pace Project No.: 10559028

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10559028001	PEO-MW-44-202105	Water	05/06/21 08:40	05/07/21 09:40
10559028002	PEO-MW-31-202105	Water	05/06/21 09:40	05/07/21 09:40
10559028003	PEO-MW-18-202105	Water	05/06/21 10:35	05/07/21 09:40
10559028004	PEO-MW-30-202105	Water	05/06/21 11:35	05/07/21 09:40
10559028005	PEO-MW-08-202105	Water	05/06/21 12:45	05/07/21 09:40
10559028006	TRIP BLANK-20210506	Water	05/06/21 08:00	05/07/21 09:40

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559028

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10559028001	PEO-MW-44-202105	NWTPH-Dx	JVM	4	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559028002	PEO-MW-31-202105	NWTPH-Dx	JVM	4	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559028003	PEO-MW-18-202105	NWTPH-Dx	JVM	4	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559028004	PEO-MW-30-202105	NWTPH-Dx	JVM	4	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559028005	PEO-MW-08-202105	NWTPH-Dx	JVM	4	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-44-202105      Lab ID: 10559028001      Collected: 05/06/21 08:40      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.20J</b>	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 21:18	68334-30-5	
Motor Oil Range SG	<b>0.17J</b>	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 21:18	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	67	%	50-150		1	05/07/21 15:28	05/10/21 21:18	84-15-1	
n-Triacontane (S)	65	%	50-150		1	05/07/21 15:28	05/10/21 21:18		
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>96800</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:35		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>2.6</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/19/21 00:09	7440-38-2	
Manganese, Dissolved	<b>314</b>	ug/L	0.50	0.22	1	05/13/21 05:58	05/19/21 00:09	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>0.079</b>	ug/L	0.040	0.0080	1	05/07/21 15:21	05/11/21 21:37	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0064	1	05/07/21 15:21	05/11/21 21:37	208-96-8	
Anthracene	ND	ug/L	0.040	0.0081	1	05/07/21 15:21	05/11/21 21:37	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.012	1	05/07/21 15:21	05/11/21 21:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	0.0087	1	05/07/21 15:21	05/11/21 21:37	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0077	1	05/07/21 15:21	05/11/21 21:37	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	0.0083	1	05/07/21 15:21	05/11/21 21:37	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/07/21 15:21	05/11/21 21:37	207-08-9	
Chrysene	ND	ug/L	0.040	0.011	1	05/07/21 15:21	05/11/21 21:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.011	1	05/07/21 15:21	05/11/21 21:37	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.010	1	05/07/21 15:21	05/11/21 21:37	206-44-0	
Fluorene	ND	ug/L	0.040	0.0067	1	05/07/21 15:21	05/11/21 21:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.019	1	05/07/21 15:21	05/11/21 21:37	193-39-5	
1-Methylnaphthalene	<b>0.0088J</b>	ug/L	0.040	0.0061	1	05/07/21 15:21	05/11/21 21:37	90-12-0	
2-Methylnaphthalene	<b>0.013J</b>	ug/L	0.040	0.011	1	05/07/21 15:21	05/11/21 21:37	91-57-6	
Naphthalene	ND	ug/L	0.040	0.011	1	05/07/21 15:21	05/11/21 21:37	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.010	1	05/07/21 15:21	05/11/21 21:37	85-01-8	
Pyrene	ND	ug/L	0.040	0.015	1	05/07/21 15:21	05/11/21 21:37	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	82	%	51-125		1	05/07/21 15:21	05/11/21 21:37	321-60-8	
p-Terphenyl-d14 (S)	86	%	70-125		1	05/07/21 15:21	05/11/21 21:37	1718-51-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>120</b>	mg/L	5.0	2.0	1		05/19/21 16:40		

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-44-202105      Lab ID: 10559028001      Collected: 05/06/21 08:40      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	13.8	mg/L	1.2	0.34	1		05/14/21 20:00	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	0.26	mg/L	0.10	0.018	1		05/08/21 00:33	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-31-202105      Lab ID: 10559028002      Collected: 05/06/21 09:40      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.3	mg/L	0.40	0.088	1	05/07/21 15:28	05/10/21 21:29	68334-30-5	
Motor Oil Range SG	0.16J	mg/L	0.40	0.12	1	05/07/21 15:28	05/10/21 21:29	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	70	%	50-150		1	05/07/21 15:28	05/10/21 21:29	84-15-1	
n-Triacontane (S)	69	%	50-150		1	05/07/21 15:28	05/10/21 21:29		
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	177000	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:37		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	0.26J	ug/L	0.50	0.14	1	05/13/21 05:58	05/19/21 00:12	7440-38-2	
Manganese, Dissolved	208	ug/L	0.50	0.22	1	05/13/21 05:58	05/19/21 00:12	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0079	1	05/07/21 15:21	05/11/21 21:56	83-32-9	
Acenaphthylene	0.025J	ug/L	0.039	0.0063	1	05/07/21 15:21	05/11/21 21:56	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/07/21 15:21	05/11/21 21:56	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 21:56	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/07/21 15:21	05/11/21 21:56	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/07/21 15:21	05/11/21 21:56	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/07/21 15:21	05/11/21 21:56	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/07/21 15:21	05/11/21 21:56	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 21:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 21:56	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 21:56	206-44-0	
Fluorene	ND	ug/L	0.039	0.0066	1	05/07/21 15:21	05/11/21 21:56	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/07/21 15:21	05/11/21 21:56	193-39-5	
1-Methylnaphthalene	0.14	ug/L	0.039	0.0060	1	05/07/21 15:21	05/11/21 21:56	90-12-0	
2-Methylnaphthalene	0.064	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 21:56	91-57-6	
Naphthalene	0.026J	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 21:56	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 21:56	85-01-8	
Pyrene	ND	ug/L	0.039	0.015	1	05/07/21 15:21	05/11/21 21:56	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	87	%	51-125		1	05/07/21 15:21	05/11/21 21:56	321-60-8	
p-Terphenyl-d14 (S)	79	%	70-125		1	05/07/21 15:21	05/11/21 21:56	1718-51-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	89.8	mg/L	5.0	2.0	1		05/19/21 17:15		

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-31-202105      Lab ID: 10559028002      Collected: 05/06/21 09:40      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>104</b>	mg/L	6.0	1.7	5		05/15/21 15:31	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/08/21 00:34	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-18-202105      Lab ID: 10559028003      Collected: 05/06/21 10:35      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	1.8	mg/L	0.42	0.091	1	05/07/21 15:28	05/10/21 21:40	68334-30-5	
Motor Oil Range SG	0.24J	mg/L	0.42	0.13	1	05/07/21 15:28	05/10/21 21:40	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	77	%	50-150		1	05/07/21 15:28	05/10/21 21:40	84-15-1	
n-Triacontane (S)	86	%	50-150		1	05/07/21 15:28	05/10/21 21:40		
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	109000	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:38		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	2.9	ug/L	0.50	0.14	1	05/13/21 05:58	05/19/21 00:23	7440-38-2	
Manganese, Dissolved	1250	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 10:54	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0079	1	05/07/21 15:21	05/11/21 22:16	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0063	1	05/07/21 15:21	05/11/21 22:16	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/07/21 15:21	05/11/21 22:16	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:16	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/07/21 15:21	05/11/21 22:16	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/07/21 15:21	05/11/21 22:16	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/07/21 15:21	05/11/21 22:16	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/07/21 15:21	05/11/21 22:16	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:16	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:16	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 22:16	206-44-0	
Fluorene	0.090	ug/L	0.039	0.0066	1	05/07/21 15:21	05/11/21 22:16	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/07/21 15:21	05/11/21 22:16	193-39-5	
1-Methylnaphthalene	0.099	ug/L	0.039	0.0060	1	05/07/21 15:21	05/11/21 22:16	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:16	91-57-6	
Naphthalene	0.046	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:16	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 22:16	85-01-8	
Pyrene	0.027J	ug/L	0.039	0.015	1	05/07/21 15:21	05/11/21 22:16	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	88	%	51-125		1	05/07/21 15:21	05/11/21 22:16	321-60-8	
p-Terphenyl-d14 (S)	82	%	70-125		1	05/07/21 15:21	05/11/21 22:16	1718-51-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	72.2	mg/L	5.0	2.0	1		05/19/21 17:20		

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-18-202105      Lab ID: 10559028003      Collected: 05/06/21 10:35      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>74.9</b>	mg/L	1.2	0.34	1		05/14/21 20:32	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/08/21 00:35	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-30-202105      Lab ID: 10559028004      Collected: 05/06/21 11:35      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	11.3	mg/L	0.42	0.091	1	05/07/21 15:28	05/10/21 21:51	68334-30-5	
Motor Oil Range SG	0.41J	mg/L	0.42	0.13	1	05/07/21 15:28	05/10/21 21:51	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	75	%	50-150		1	05/07/21 15:28	05/10/21 21:51	84-15-1	
n-Triacontane (S)	74	%	50-150		1	05/07/21 15:28	05/10/21 21:51		
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	408000	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:40		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	13.9	ug/L	2.5	0.70	5	05/13/21 05:58	05/19/21 00:26	7440-38-2	
Manganese, Dissolved	4460	ug/L	25.0	11.0	50	05/13/21 05:58	05/19/21 10:57	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.90	ug/L	0.039	0.0079	1	05/07/21 15:21	05/11/21 22:36	83-32-9	
Acenaphthylene	17.8	ug/L	0.078	0.012	2	05/07/21 15:21	05/12/21 16:27	208-96-8	
Anthracene	ND	ug/L	0.039	0.0079	1	05/07/21 15:21	05/11/21 22:36	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:36	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0085	1	05/07/21 15:21	05/11/21 22:36	50-32-8	
Benzo(b)fluoranthene	0.011J	ug/L	0.039	0.0075	1	05/07/21 15:21	05/11/21 22:36	205-99-2	
Benzo(g,h,i)perylene	0.010J	ug/L	0.039	0.0082	1	05/07/21 15:21	05/11/21 22:36	191-24-2	
Benzo(k)fluoranthene	0.0090J	ug/L	0.039	0.0082	1	05/07/21 15:21	05/11/21 22:36	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:36	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 22:36	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 22:36	206-44-0	
Fluorene	ND	ug/L	0.039	0.0066	1	05/07/21 15:21	05/11/21 22:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/07/21 15:21	05/11/21 22:36	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/07/21 15:21	05/11/21 22:36	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:36	91-57-6	
Naphthalene	0.69	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:36	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.0099	1	05/07/21 15:21	05/11/21 22:36	85-01-8	
Pyrene	0.075	ug/L	0.039	0.015	1	05/07/21 15:21	05/11/21 22:36	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	64	%	51-125		1	05/07/21 15:21	05/11/21 22:36	321-60-8	
p-Terphenyl-d14 (S)	82	%	70-125		1	05/07/21 15:21	05/11/21 22:36	1718-51-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	178	mg/L	5.0	2.0	1		05/19/21 17:25		

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-30-202105      Lab ID: 10559028004      Collected: 05/06/21 11:35      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>281</b>	mg/L	6.0	1.7	5		05/15/21 15:47	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/08/21 00:37	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-08-202105      Lab ID: 10559028005      Collected: 05/06/21 12:45      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.90</b>	mg/L	0.42	0.091	1	05/07/21 15:28	05/12/21 22:35	68334-30-5	D6
Motor Oil Range SG	<b>0.23J</b>	mg/L	0.42	0.13	1	05/07/21 15:28	05/12/21 22:35	64742-65-0	P2
<b>Surrogates</b>									
o-Terphenyl (S)	52	%	50-150		1	05/07/21 15:28	05/12/21 22:35	84-15-1	
n-Triacontane (S)	61	%	50-150		1	05/07/21 15:28	05/12/21 22:35		
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>73200</b>	ug/L	3300	268	1	05/13/21 05:47	05/13/21 18:42		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.30J</b>	ug/L	0.50	0.14	1	05/13/21 05:58	05/19/21 00:30	7440-38-2	
Manganese, Dissolved	<b>1260</b>	ug/L	5.0	2.2	10	05/13/21 05:58	05/19/21 11:01	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0079	1	05/07/21 15:21	05/11/21 22:56	83-32-9	
Acenaphthylene	<b>0.022J</b>	ug/L	0.039	0.0063	1	05/07/21 15:21	05/11/21 22:56	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/07/21 15:21	05/11/21 22:56	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:56	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/07/21 15:21	05/11/21 22:56	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/07/21 15:21	05/11/21 22:56	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/07/21 15:21	05/11/21 22:56	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/07/21 15:21	05/11/21 22:56	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:56	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 22:56	206-44-0	
Fluorene	ND	ug/L	0.039	0.0066	1	05/07/21 15:21	05/11/21 22:56	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/07/21 15:21	05/11/21 22:56	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/07/21 15:21	05/11/21 22:56	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:56	91-57-6	
Naphthalene	ND	ug/L	0.039	0.011	1	05/07/21 15:21	05/11/21 22:56	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.010	1	05/07/21 15:21	05/11/21 22:56	85-01-8	
Pyrene	ND	ug/L	0.039	0.015	1	05/07/21 15:21	05/11/21 22:56	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	88	%	51-125		1	05/07/21 15:21	05/11/21 22:56	321-60-8	
p-Terphenyl-d14 (S)	82	%	70-125		1	05/07/21 15:21	05/11/21 22:56	1718-51-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	ND	mg/L	5.0	2.0	1		05/19/21 17:34		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559028

Sample: PEO-MW-08-202105      Lab ID: 10559028005      Collected: 05/06/21 12:45      Received: 05/07/21 09:40      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>97.7</b>	mg/L	6.0	1.7	5		05/15/21 16:03	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.073J</b>	mg/L	0.10	0.018	1		05/08/21 00:38	14797-55-8	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559028

QC Batch: 741459      Analysis Method: EPA 6020A  
QC Batch Method: EPA 3020A      Analysis Description: 6020A Water Dissolved UPD4  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

METHOD BLANK: 3953915      Matrix: Water  
Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/18/21 23:03	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/18/21 23:03	

LABORATORY CONTROL SAMPLE: 3953916

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	96.6	97	80-120	
Manganese, Dissolved	ug/L	100	96.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3953917      3953918

Parameter	Units	10558570001 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	9.7	100	100	109	110	100	100	75-125	1	20	
Manganese, Dissolved	ug/L	1.2	100	100	99.9	99.9	99	99	75-125	0	20	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559028

QC Batch: 740446      Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C      Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

METHOD BLANK: 3948937      Matrix: Water  
Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/11/21 18:00	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Acenaphthene	ug/L	ND	0.040	0.0081	05/11/21 18:00	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/11/21 18:00	
Anthracene	ug/L	ND	0.040	0.0082	05/11/21 18:00	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/11/21 18:00	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/11/21 18:00	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/11/21 18:00	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/11/21 18:00	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/11/21 18:00	
Chrysene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Fluoranthene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Fluorene	ug/L	ND	0.040	0.0068	05/11/21 18:00	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/11/21 18:00	
Naphthalene	ug/L	ND	0.040	0.011	05/11/21 18:00	
Phenanthrene	ug/L	ND	0.040	0.010	05/11/21 18:00	
Pyrene	ug/L	ND	0.040	0.015	05/11/21 18:00	
2-Fluorobiphenyl (S)	%	66	51-125		05/11/21 18:00	
p-Terphenyl-d14 (S)	%	82	70-125		05/11/21 18:00	

LABORATORY CONTROL SAMPLE & LCSD: 3948938

3948939

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.79	0.79	79	79	34-125	1	20	
2-Methylnaphthalene	ug/L	1	0.81	0.81	81	81	34-125	0	20	
Acenaphthene	ug/L	1	0.85	0.85	85	85	35-125	1	20	
Acenaphthylene	ug/L	1	0.85	0.83	85	83	33-125	2	20	
Anthracene	ug/L	1	0.99	0.88	99	88	42-125	12	20	
Benzo(a)anthracene	ug/L	1	0.94	0.91	94	91	46-125	4	20	
Benzo(a)pyrene	ug/L	1	0.93	0.87	93	87	57-125	6	20	
Benzo(b)fluoranthene	ug/L	1	0.96	0.94	96	94	58-125	3	20	
Benzo(g,h,i)perylene	ug/L	1	0.94	0.89	94	89	55-125	6	20	
Benzo(k)fluoranthene	ug/L	1	0.93	0.89	93	89	55-125	4	20	
Chrysene	ug/L	1	0.93	0.89	93	89	56-125	4	20	
Dibenz(a,h)anthracene	ug/L	1	0.91	0.87	91	87	40-125	5	20	
Fluoranthene	ug/L	1	0.95	0.92	95	92	64-125	3	20	
Fluorene	ug/L	1	0.87	0.84	87	84	43-125	4	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.94	0.89	94	89	57-125	5	20	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559028

LABORATORY CONTROL SAMPLE & LCSD: 3948938		3948939									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.82	0.81	82	81	30-125	1	20		
Phenanthrene	ug/L	1	0.90	0.87	90	87	47-125	4	20		
Pyrene	ug/L	1	0.95	0.93	95	93	46-125	2	20		
2-Fluorobiphenyl (S)	%.				81	83	51-125				
p-Terphenyl-d14 (S)	%.				88	88	70-125				

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559028

QC Batch: 740445 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

METHOD BLANK: 3948932 Matrix: Water  
Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/10/21 19:26	
Motor Oil Range SG	mg/L	ND	0.40	0.12	05/10/21 19:26	
n-Triacontane (S)	%	73	50-150		05/10/21 19:26	
o-Terphenyl (S)	%	62	50-150		05/10/21 19:26	

LABORATORY CONTROL SAMPLE & LCSD: 3948933 3948934

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.6	1.7	81	86	50-150	6	20	
Motor Oil Range SG	mg/L	2	1.7	1.8	84	89	50-150	6	20	
n-Triacontane (S)	%				81	88	50-150			
o-Terphenyl (S)	%				70	77	50-150			

SAMPLE DUPLICATE: 3948935

Parameter	Units	10558838001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	83	87			
o-Terphenyl (S)	%	69	73			

SAMPLE DUPLICATE: 3949242

Parameter	Units	10559028005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.90	1.5	48	30	D6
Motor Oil Range SG	mg/L	0.23J	0.19J		30	P2
n-Triacontane (S)	%	61	79			
o-Terphenyl (S)	%	52	74			

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559028

QC Batch: 742982	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559028001

METHOD BLANK: 3962458 Matrix: Water

Associated Lab Samples: 10559028001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/19/21 14:01	

LABORATORY CONTROL SAMPLE & LCSD: 3962459 3962460

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.9	42.9	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962461 3962462

Parameter	Units	10560606001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	37.8	40	40	77.6	77.9	100	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962463 3962464

Parameter	Units	10559307008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	96.7	40	40	137	137	101	101	80-120	0	20	

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559028

QC Batch: 742983 Analysis Method: SM 2320B  
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559028002, 10559028003, 10559028004, 10559028005

METHOD BLANK: 3962470 Matrix: Water  
Associated Lab Samples: 10559028002, 10559028003, 10559028004, 10559028005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/19/21 16:45	

LABORATORY CONTROL SAMPLE & LCSD: 3962471 3962472

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.6	42.9	107	107	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962473 3962474

Parameter	Units	10559131001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	35.3	40	40	75.7	75.8	101	101	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962475 3962476

Parameter	Units	10559307007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	88.6	40	40	129	130	101	104	80-120	1	20	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559028

QC Batch: 742036 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

METHOD BLANK: 3957164 Matrix: Water  
Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/14/21 15:27	

LABORATORY CONTROL SAMPLE: 3957165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	52.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957166 3957167

Parameter	Units	10558570001		3957167		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Sulfate	mg/L	20.0	50	50	65.9	67.1	92	94	80-120	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957168 3957169

Parameter	Units	10559454001		3957169		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Sulfate	mg/L	24.7	50	50	70.3	71.3	91	93	80-120	1	20		

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559028

QC Batch:	740620	Analysis Method:	EPA 353.2
QC Batch Method:	EPA 353.2	Analysis Description:	353.2 Nitrate + Nitrite, preserved
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559028001, 10559028002, 10559028003, 10559028004, 10559028005

METHOD BLANK:	3950008	Matrix:	Water
Associated Lab Samples:	10559028001, 10559028002, 10559028003, 10559028004, 10559028005		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	0.018	05/08/21 00:31	FS

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## QUALIFIERS

Project: 583831  
Pace Project No.: 10559028

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### 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.

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

TNI - The NELAC Institute.

### BATCH QUALIFIERS

Batch: 741025

[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.

FS The sample was filtered in the laboratory prior to analysis.

P2 Re-extraction or re-analysis could not be performed due to insufficient sample amount.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 583831  
Pace Project No.: 10559028

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10559028001	PEO-MW-44-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10559028002	PEO-MW-31-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10559028003	PEO-MW-18-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10559028004	PEO-MW-30-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10559028005	PEO-MW-08-202105	EPA Mod. 3510C	740445	NWTPH-Dx	741071
10559028001	PEO-MW-44-202105	EPA 3010A	741479	EPA 6010D	741910
10559028002	PEO-MW-31-202105	EPA 3010A	741479	EPA 6010D	741910
10559028003	PEO-MW-18-202105	EPA 3010A	741479	EPA 6010D	741910
10559028004	PEO-MW-30-202105	EPA 3010A	741479	EPA 6010D	741910
10559028005	PEO-MW-08-202105	EPA 3010A	741479	EPA 6010D	741910
10559028001	PEO-MW-44-202105	EPA 3020A	741459	EPA 6020A	741933
10559028002	PEO-MW-31-202105	EPA 3020A	741459	EPA 6020A	741933
10559028003	PEO-MW-18-202105	EPA 3020A	741459	EPA 6020A	741933
10559028004	PEO-MW-30-202105	EPA 3020A	741459	EPA 6020A	741933
10559028005	PEO-MW-08-202105	EPA 3020A	741459	EPA 6020A	741933
10559028001	PEO-MW-44-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10559028002	PEO-MW-31-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10559028003	PEO-MW-18-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10559028004	PEO-MW-30-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10559028005	PEO-MW-08-202105	EPA Mod. 3510C	740446	EPA 8270 by SIM	741025
10559028001	PEO-MW-44-202105	SM 2320B	742982		
10559028002	PEO-MW-31-202105	SM 2320B	742983		
10559028003	PEO-MW-18-202105	SM 2320B	742983		
10559028004	PEO-MW-30-202105	SM 2320B	742983		
10559028005	PEO-MW-08-202105	SM 2320B	742983		
10559028001	PEO-MW-44-202105	EPA 300.0	742036		
10559028002	PEO-MW-31-202105	EPA 300.0	742036		
10559028003	PEO-MW-18-202105	EPA 300.0	742036		
10559028004	PEO-MW-30-202105	EPA 300.0	742036		
10559028005	PEO-MW-08-202105	EPA 300.0	742036		
10559028001	PEO-MW-44-202105	EPA 353.2	740620		
10559028002	PEO-MW-31-202105	EPA 353.2	740620		
10559028003	PEO-MW-18-202105	EPA 353.2	740620		
10559028004	PEO-MW-30-202105	EPA 353.2	740620		
10559028005	PEO-MW-08-202105	EPA 353.2	740620		

**REPORT OF LABORATORY ANALYSIS**

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



# 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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: <b>ERM</b>		Report To: <b>Rita Cooper</b>		Attention:	
Address: <b>1050 SW 6th Ave, Suite 1650</b>		Copy To:		Company Name:	
Portland, OR 97204		Purchase Order No.:		Address:	
Email To: <b>rita.cooper@erm.com</b>		Project Name:		Pace Quote Reference:	
Phone: <b>207-329-6320</b>		Project Number: <b>583831</b>		Pace Project Manager:	
Requested Due Date/TAT: <b>Standard</b>				Pace Profile #:	

<b>REGULATORY AGENCY</b>	
<input type="checkbox"/> NPDES	<input type="checkbox"/> GROUND WATER
<input type="checkbox"/> UST	<input type="checkbox"/> RCRA
<input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> OTHER

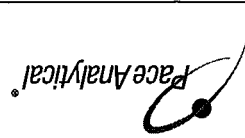
ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Y/N	Requested Analysis Filtered (Y/N)												Pace Project No./ Lab I.D.						
				COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	DATE	TIME	GRO (NWTPH-GX)	BTEX (SW8260C/SW8260C SIM)	VPH (NWTPH-VPH)	DRO (NWTPH-DX)	Dissolved Metals (As, Mn) (6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NWTPH-EPH)		Nitrate (EPA 353.2)	Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)	Nitrate + Nitrite	Residual Chlorine (Y/N)	
1	PEO-MW-44-202105	DRINKING WATER WATER WASTE WATER PRODUCT SOIL/SOLID OIL WIPE AIR OTHER TISSUE	GW	5/6/21	8:40		19	H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> O <sub>3</sub> Methanol Other	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	201
2	PEO-MW-31-202105		GW	5/6/21	9:40		19		-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	602
3	PEO-MW-18-202105		GW	5/6/21	10:35		19		-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	603
4	PEO-MW-30-202105		GW	5/6/21	11:35		19		-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	604
5	PEO-MW-08-202105		GW	5/6/21	12:45		19		-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	605
6	TRIP BLANK-20210506		GW	5/6/21	8:00		6		-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	606
7																												
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS			
		Joe Casey / ERM		5/6/21		Joe Casey / PACE		5/12/21		15:00		Received on Ice (Y/N) <input type="checkbox"/> Sealed Coolery (Y/N) <input type="checkbox"/> Custody (Y/N) <input type="checkbox"/> Samples Intact (Y/N) <input type="checkbox"/>			

**NO# : 10559028**

10559028

SAMPLER NAME AND SIGNATURE  
PRINT Name of SAMPLER: Joe Casey  
SIGNATURE of SAMPLER: [Signature]  
DATE Signed (MM/DD/YY): 5/6/21



Document Name: Sample Condition Upon Receipt (SCUR) - MN	Document No.: ENV-FRM-MIN4-0150 Rev.02	Minnesota
Document Revised: 14Apr2021	Page 1 of 1	Face Analytical Services -

Sample Condition Upon Receipt

Client Name: ERM

Project #:

**MO# : 10559028**

PM: JMT Due Date: 05/21/21

CLIENT: ERM-Oregon

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

Courier:  Fed Ex  UPS  USPS  Commercial  Client

Client Name: ERM

Seals Intact?  Yes  No

Biological Tissue Frozen?  Yes  No

Custody Seal on Cooler/Box Present?  Yes  No

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Temp Blank?  Yes  No

Thermometer:  T1(0461)  T2(1336)  T3(0459)  OS418-1S  T4(0254)  T5(0489)  160285052

Type:  Wet  Blue  None  Dry  Melted

Were All Container Temps Taken?  Yes  No  N/A

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: 2.1, 3.8, 0.4, 0.8°C

Average Corrected  See Exceptions ENV-FRM-MIN4-0142

Temp (no temp blank)  1 Container

Correction Factor: TIME

Cooler Temp Corrected w/temp blank: 2.1, 3.8, 0.4, 0.8°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, Hawaii and Puerto Rico?  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 (F-MN-Q-338) and include with SCUR/COC paperwork.

1. Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
4. Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6. Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7. Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8. Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9. -Face Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
10. Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
11. Field Filtered Volume Received for Dissolved Tests? <i>5/17/21</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
12. Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
13. Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
14. All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
15. All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , >2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
16. Exceptions: <input checked="" type="checkbox"/> OA Coliform, TOC/DOC Oil and Grease, (DRQ/8015 (water) and Dioxin/PFAS)	
17. Extra labels present on soil VOA or WIDRO containers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
18. Headspace in VOA Vials (greater than 6mm)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
19. Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
20. Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Field Data Required?  Yes  No

Comments/Resolution: \_\_\_\_\_

Project Manager Review: *Julia Busse*

Date: 5/17/21

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: *END*



# Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed:  Yes  No

Owner Received Date: 5/7/2021 Results Requested By: 5/21/2021



Workorder: 10559028 Workorder Name: 583831

Report To	Subcontract To	Requested Analysis											
Julie Bowser Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 612-607-6390	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858	1181											

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers					BTEX by 8260D	LAB USE ONLY
						HCL	V	C	G	H		
1	PEO-MW-44-202105	PS	5/6/2021 08:40	10559028001	Water	3					X	L135069201
2	PEO-MW-31-202105	PS	5/6/2021 09:40	10559028002	Water	3					X	02
3	PEO-MW-18-202105	PS	5/6/2021 10:35	10559028003	Water	3					X	03
4	PEO-MW-30-202105	PS	5/6/2021 11:35	10559028004	Water	3					X	04
5	PEO-MW-08-202105	PS	5/6/2021 12:45	10559028005	Water	3					X	05
6	TRIP BLANK-20210506	PS	5/6/2021 08:00	10559028006	Water	2					X	06

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i> PACE	5-7-21 17:50	<i>[Signature]</i> Jolday	5/19/21 09:45	report isomers for xylene, not total
2					
3	A-2 JCU				

Cooler Temperature on Receipt  $5 \pm 0.1$  °C  Custody Seal Y or  N Received on Ice  or N Samples Intact  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.

TR# 9371 9292 8345

*[Handwritten notes]*  
30 = 40 mil  
4 = 40 mil TB



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

**Pace Analytical Minnesota**

Julie Bowser  
1700 Elm Street, Ste. 200  
Minneapolis, MN 55414

**RE: 583831**

**Work Order Number: 2105146**

May 26, 2021

**Attention Julie Bowser:**

Fremont Analytical, Inc. received 6 sample(s) on 5/11/2021 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***  
***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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing  
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing  
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

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



Date: 05/26/2021

---

**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831  
**Work Order:** 2105146

## Work Order Sample Summary

---

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2105146-001	PEO-MW-44-202105	05/06/2021 8:40 AM	05/11/2021 9:06 AM
2105146-002	PEO-MW-31-202105	05/06/2021 9:40 AM	05/11/2021 9:06 AM
2105146-003	PEO-MW-18-202105	05/06/2021 10:35 AM	05/11/2021 9:06 AM
2105146-004	PEO-MW-30-202105	05/06/2021 11:35 AM	05/11/2021 9:06 AM
2105146-005	PEO-MW-08-202105	05/06/2021 12:35 AM	05/11/2021 9:06 AM
2105146-006	TRIP BLANK-20210506	05/06/2021 8:00 AM	05/11/2021 9:06 AM

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

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Original

**CLIENT:** Pace Analytical Minnesota

**Project:** 583831

---

**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:

- \* - 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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105146-001

**Collection Date:** 5/6/2021 8:40:00 AM

**Client Sample ID:** PEO-MW-44-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/19/2021 10:31:40 PM
Surr: 1-Chlorooctadecane	74.7	60 - 140		%Rec	1	5/19/2021 10:31:40 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 4:24:29 AM
Surr: 1,4-Difluorobenzene	92.6	65 - 140		%Rec	1	5/18/2021 4:24:29 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	5/18/2021 4:24:29 AM

**Lab ID:** 2105146-002

**Collection Date:** 5/6/2021 9:40:00 AM

**Client Sample ID:** PEO-MW-31-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/19/2021 11:24:25 PM
Surr: 1-Chlorooctadecane	73.9	60 - 140		%Rec	1	5/19/2021 11:24:25 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 5:03:37 AM
Surr: 1,4-Difluorobenzene	89.9	65 - 140		%Rec	1	5/18/2021 5:03:37 AM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/18/2021 5:03:37 AM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105146-003

**Collection Date:** 5/6/2021 10:35:00 AM

**Client Sample ID:** PEO-MW-18-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32367

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	225	20.4		µg/L	1	5/25/2021 12:02:14 AM
Surr: 1-Chlorooctadecane	69.6	60 - 140		%Rec	1	5/25/2021 12:02:14 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 5:42:37 AM
Surr: 1,4-Difluorobenzene	91.4	65 - 140		%Rec	1	5/18/2021 5:42:37 AM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/18/2021 5:42:37 AM

**Lab ID:** 2105146-004

**Collection Date:** 5/6/2021 11:35:00 AM

**Client Sample ID:** PEO-MW-30-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/20/2021 1:09:53 AM
Surr: 1-Chlorooctadecane	76.0	60 - 140		%Rec	1	5/20/2021 1:09:53 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 6:21:40 AM
Surr: 1,4-Difluorobenzene	94.1	65 - 140		%Rec	1	5/18/2021 6:21:40 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	5/18/2021 6:21:40 AM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105146-005

**Collection Date:** 5/6/2021 12:35:00 AM

**Client Sample ID:** PEO-MW-08-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32231 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.5		µg/L	1	5/20/2021 2:02:39 AM
Surr: 1-Chlorooctadecane	66.0	60 - 140		%Rec	1	5/20/2021 2:02:39 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/18/2021 7:00:53 AM
Surr: 1,4-Difluorobenzene	89.5	65 - 140		%Rec	1	5/18/2021 7:00:53 AM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/18/2021 7:00:53 AM

**Lab ID:** 2105146-006

**Collection Date:** 5/6/2021 8:00:00 AM

**Client Sample ID:** TRIP BLANK-20210506

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32317 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/17/2021 5:58:37 PM
Surr: 1,4-Difluorobenzene	89.8	65 - 140		%Rec	1	5/17/2021 5:58:37 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/17/2021 5:58:37 PM

**Work Order:** 2105146  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-32231</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>				Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>				
Client ID: <b>MBLKW</b>	Batch ID: <b>32231</b>					Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357576</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.8		0	0						
Surr: 1-Chlorooctadecane	405		397.8		102	60	140				

Sample ID: <b>LCS-32231</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>32231</b>					Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357577</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	351	39.7	495.8	0	70.9	70	130				
Surr: 1-Chlorooctadecane	391		396.6		98.6	60	140				

Sample ID: <b>LCS-32231</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>				
Client ID: <b>LCSW02</b>	Batch ID: <b>32231</b>					Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357578</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	359	39.4	492.8	0	72.9	70	130	351.3	2.21	20	
Surr: 1-Chlorooctadecane	385		394.2		97.6	60	140		0		

Sample ID: <b>2105066-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>32231</b>					Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357580</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	419	39.5	493.1	0	85.0	70	130				
Surr: 1-Chlorooctadecane	396		394.5		100	60	140				

Work Order: 2105146  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105146-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>				Prep Date: <b>5/7/2021</b>	RunNo: <b>67336</b>				
Client ID: <b>PEO-MW-08-202105</b>	Batch ID: <b>32231</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1358163</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	41.3		0	0			0	0	25	
Surr: 1-Chlorooctadecane	286		412.7		69.4	60	140		0		

Sample ID: <b>MB-32367</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>				Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>				
Client ID: <b>MBLKW</b>	Batch ID: <b>32367</b>					Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361076</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.3		0	0						
Surr: 1-Chlorooctadecane	275		393.1		69.9	60	140				

Sample ID: <b>LCS-32367</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>32367</b>					Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361077</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	358	39.3	491.8	0	72.9	70	130				
Surr: 1-Chlorooctadecane	300		393.5		76.2	60	140				

Sample ID: <b>LCS-32367</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>				
Client ID: <b>LCSW02</b>	Batch ID: <b>32367</b>					Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361078</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	346	39.5	494.2	0	70.1	70	130	358.4	3.45	20	
Surr: 1-Chlorooctadecane	274		395.4		69.4	60	140		0		

**Work Order:** 2105146  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105199-002BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32367</b>		Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361080</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	353	40.0	499.5	0	70.7	70	130				
Surr: 1-Chlorooctadecane	339		399.6		85.0	60	140				

Work Order: 2105146  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCS-32317</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357183</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	199	25.0	200.0	0	99.7	70	130				
Surr: 1,4-Difluorobenzene	51.2		50.00		102	65	140				
Surr: Bromofluorobenzene	51.7		50.00		103	65	140				

Sample ID: <b>MB-32317</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357176</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	43.1		50.00		86.2	65	140				
Surr: Bromofluorobenzene	49.5		50.00		99.1	65	140				

Sample ID: <b>2105066-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/17/2021</b>	SeqNo: <b>1357156</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	43.8		50.00		87.6	65	140		0		
Surr: Bromofluorobenzene	50.1		50.00		100	65	140		0		

Sample ID: <b>2105146-005ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>PEO-MW-08-202105</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357171</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	45.2		50.00		90.3	65	140		0		
Surr: Bromofluorobenzene	50.7		50.00		101	65	140		0		

**Work Order:** 2105146  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>2105092-004BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67315</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32317</b>		Analysis Date: <b>5/18/2021</b>	SeqNo: <b>1357162</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	745	25.0	200.0	725.5	9.64	70	130				S
Surr: 1,4-Difluorobenzene	52.2		50.00		104	65	140				
Surr: Bromofluorobenzene	49.4		50.00		98.9	65	140				

**NOTES:**

S - Outlying spike recovery observed (low bias).

Client Name: **PACEMI**

 Work Order Number: **2105146**

 Logged by: **Gabrielle Coeuille**

 Date Received: **5/11/2021 9:06:00 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample 1	4.1
Temp Blank 1	1.1

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

# Chain of Custody

PASI Minnesota Laboratory



Workorder: 10559028

Workorder Name: 583831

Results Requested By: 5/21/2021

Report / Invoice To

Subcontract To

Requested Analysis

Julie Bowser  
Pace Analytical Minnesota  
1700 Elm Street  
Minneapolis, MN 55414  
Phone 612-607-6390  
Email: julie.bowser@pacelabs.com

Fremont Analytical  
3600 Fremont Ave N  
Seattle, WA 98103

P.O. 10559028

State of Sample Origin: OR

Preserved Containers

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	HCL VG9H + AG1H	NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)	LAB USE ONLY
1	PEO-MW-44-202105	5/6/2021 08:40	10559028001	Water		X	X	
2	PEO-MW-31-202105	5/6/2021 09:40	10559028002	Water		X	X	
3	PEO-MW-18-202105	5/6/2021 10:35	10559028003	Water		X	X	
4	PEO-MW-30-202105	5/6/2021 11:35	10559028004	Water		X	X	
5	PEO-MW-08-202105	5/6/2021 12:45	10559028005	Water		X	X	
6	TRIP BLANK-20210506	5/6/2021 08:00	10559028006	Water		X		

Comments

Report to MDL, EQUIS EDD needed

Transfers	Released By	Date/Time	Received By	Date/Time	Cooler Temperature on Receipt °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N
1	<i>Julie Bowser</i>	5/17/21	<i>Stacy Ducken</i>	5/17/21				
2								
3								

2051410



## Pace Analytical - Minnesota

Sample Delivery Group: L1350092  
Samples Received: 05/08/2021  
Project Number: 10559028  
Description: 583831  
Site: 001  
Report To: Julie Bowser  
1700 Elm Street Suite 200  
Minneapolis, MN 55414

Entire Report Reviewed By:



Nancy McLain  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

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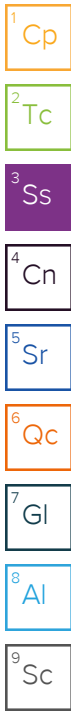
# SAMPLE SUMMARY

## PEO-MW-44-202105 L1350092-01 GW

Collected by  
Collected date/time  
Received date/time

05/06/21 08:40 05/08/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1671961	1	05/17/21 14:19	05/17/21 14:19	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1668542	1	05/12/21 04:58	05/12/21 04:58	JCP	Mt. Juliet, TN



## PEO-MW-31-202105 L1350092-02 GW

Collected by  
Collected date/time  
Received date/time

05/06/21 09:40 05/08/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1671961	1	05/17/21 14:40	05/17/21 14:40	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1669229	1	05/13/21 14:08	05/13/21 14:08	JHH	Mt. Juliet, TN

## PEO-MW-18-202105 L1350092-03 GW

Collected by  
Collected date/time  
Received date/time

05/06/21 10:35 05/08/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1671961	1	05/17/21 15:02	05/17/21 15:02	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1669229	1	05/13/21 14:29	05/13/21 14:29	JHH	Mt. Juliet, TN

## PEO-MW-30-202105 L1350092-04 GW

Collected by  
Collected date/time  
Received date/time

05/06/21 11:35 05/08/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1671961	1	05/17/21 15:24	05/17/21 15:24	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1669229	1	05/13/21 14:49	05/13/21 14:49	JHH	Mt. Juliet, TN

## PEO-MW-08-202105 L1350092-05 GW

Collected by  
Collected date/time  
Received date/time

05/06/21 12:45 05/08/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1671961	1	05/17/21 15:45	05/17/21 15:45	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1669229	1	05/13/21 15:09	05/13/21 15:09	JHH	Mt. Juliet, TN

## TRIP BLANK-20210506 L1350092-06 GW

Collected by  
Collected date/time  
Received date/time

05/06/21 08:00 05/08/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1671961	1	05/17/21 13:57	05/17/21 13:57	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1669229	1	05/13/21 11:46	05/13/21 11:46	JHH	Mt. Juliet, TN

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Nancy McLain  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	38.4	<u>B</u> <u>J</u>	31.6	100	1	05/17/2021 14:19	<a href="#">WG1671961</a>
(S) a,a,a-Trifluorotoluene(FID)	99.9			78.0-120		05/17/2021 14:19	<a href="#">WG1671961</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.223	<u>J</u>	0.0941	1.00	1	05/12/2021 04:58	<a href="#">WG1668542</a>
Toluene	U		0.278	1.00	1	05/12/2021 04:58	<a href="#">WG1668542</a>
Ethylbenzene	U		0.137	1.00	1	05/12/2021 04:58	<a href="#">WG1668542</a>
o-Xylene	U		0.174	1.00	1	05/12/2021 04:58	<a href="#">WG1668542</a>
m&p-Xylene	U		0.430	2.00	1	05/12/2021 04:58	<a href="#">WG1668542</a>
(S) Toluene-d8	99.4			80.0-120		05/12/2021 04:58	<a href="#">WG1668542</a>
(S) 4-Bromofluorobenzene	114			77.0-126		05/12/2021 04:58	<a href="#">WG1668542</a>
(S) 1,2-Dichloroethane-d4	76.2			70.0-130		05/12/2021 04:58	<a href="#">WG1668542</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	50.2	<u>B</u> <u>J</u>	31.6	100	1	05/17/2021 14:40	<a href="#">WG1671961</a>
(S) a,a,a-Trifluorotoluene(FID)	98.9			78.0-120		05/17/2021 14:40	<a href="#">WG1671961</a>

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/13/2021 14:08	<a href="#">WG1669229</a>
Toluene	U		0.278	1.00	1	05/13/2021 14:08	<a href="#">WG1669229</a>
Ethylbenzene	U		0.137	1.00	1	05/13/2021 14:08	<a href="#">WG1669229</a>
o-Xylene	U		0.174	1.00	1	05/13/2021 14:08	<a href="#">WG1669229</a>
m&p-Xylene	U		0.430	2.00	1	05/13/2021 14:08	<a href="#">WG1669229</a>
(S) Toluene-d8	111			80.0-120		05/13/2021 14:08	<a href="#">WG1669229</a>
(S) 4-Bromofluorobenzene	98.8			77.0-126		05/13/2021 14:08	<a href="#">WG1669229</a>
(S) 1,2-Dichloroethane-d4	117			70.0-130		05/13/2021 14:08	<a href="#">WG1669229</a>

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	70.8	<u>B</u> <u>J</u>	31.6	100	1	05/17/2021 15:02	<a href="#">WG1671961</a>
(S) a,a,a-Trifluorotoluene(FID)	98.2			78.0-120		05/17/2021 15:02	<a href="#">WG1671961</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.184	<u>J</u>	0.0941	1.00	1	05/13/2021 14:29	<a href="#">WG1669229</a>
Toluene	U		0.278	1.00	1	05/13/2021 14:29	<a href="#">WG1669229</a>
Ethylbenzene	U		0.137	1.00	1	05/13/2021 14:29	<a href="#">WG1669229</a>
o-Xylene	U		0.174	1.00	1	05/13/2021 14:29	<a href="#">WG1669229</a>
m&p-Xylene	U		0.430	2.00	1	05/13/2021 14:29	<a href="#">WG1669229</a>
(S) Toluene-d8	111			80.0-120		05/13/2021 14:29	<a href="#">WG1669229</a>
(S) 4-Bromofluorobenzene	99.8			77.0-126		05/13/2021 14:29	<a href="#">WG1669229</a>
(S) 1,2-Dichloroethane-d4	115			70.0-130		05/13/2021 14:29	<a href="#">WG1669229</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	244	<u>B</u>	31.6	100	1	05/17/2021 15:24	<a href="#">WG1671961</a>
(S) a,a,a-Trifluorotoluene(FID)	98.6			78.0-120		05/17/2021 15:24	<a href="#">WG1671961</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.486	<u>J</u>	0.0941	1.00	1	05/13/2021 14:49	<a href="#">WG1669229</a>
Toluene	U		0.278	1.00	1	05/13/2021 14:49	<a href="#">WG1669229</a>
Ethylbenzene	U		0.137	1.00	1	05/13/2021 14:49	<a href="#">WG1669229</a>
o-Xylene	0.397	<u>J</u>	0.174	1.00	1	05/13/2021 14:49	<a href="#">WG1669229</a>
m&p-Xylene	U		0.430	2.00	1	05/13/2021 14:49	<a href="#">WG1669229</a>
(S) Toluene-d8	112			80.0-120		05/13/2021 14:49	<a href="#">WG1669229</a>
(S) 4-Bromofluorobenzene	103			77.0-126		05/13/2021 14:49	<a href="#">WG1669229</a>
(S) 1,2-Dichloroethane-d4	115			70.0-130		05/13/2021 14:49	<a href="#">WG1669229</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	59.7	<u>B</u> <u>J</u>	31.6	100	1	05/17/2021 15:45	<a href="#">WG1671961</a>
(S) a,a,a-Trifluorotoluene(FID)	97.5			78.0-120		05/17/2021 15:45	<a href="#">WG1671961</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/13/2021 15:09	<a href="#">WG1669229</a>
Toluene	U		0.278	1.00	1	05/13/2021 15:09	<a href="#">WG1669229</a>
Ethylbenzene	U		0.137	1.00	1	05/13/2021 15:09	<a href="#">WG1669229</a>
o-Xylene	U		0.174	1.00	1	05/13/2021 15:09	<a href="#">WG1669229</a>
m&p-Xylene	U		0.430	2.00	1	05/13/2021 15:09	<a href="#">WG1669229</a>
(S) Toluene-d8	110			80.0-120		05/13/2021 15:09	<a href="#">WG1669229</a>
(S) 4-Bromofluorobenzene	98.1			77.0-126		05/13/2021 15:09	<a href="#">WG1669229</a>
(S) 1,2-Dichloroethane-d4	110			70.0-130		05/13/2021 15:09	<a href="#">WG1669229</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	55.5	<u>B</u> <u>J</u>	31.6	100	1	05/17/2021 13:57	<a href="#">WG1671961</a>
(S) a,a,a-Trifluorotoluene(FID)	98.2			78.0-120		05/17/2021 13:57	<a href="#">WG1671961</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/13/2021 11:46	<a href="#">WG1669229</a>
Toluene	U		0.278	1.00	1	05/13/2021 11:46	<a href="#">WG1669229</a>
Ethylbenzene	U		0.137	1.00	1	05/13/2021 11:46	<a href="#">WG1669229</a>
o-Xylene	U		0.174	1.00	1	05/13/2021 11:46	<a href="#">WG1669229</a>
m&p-Xylene	U		0.430	2.00	1	05/13/2021 11:46	<a href="#">WG1669229</a>
(S) Toluene-d8	108			80.0-120		05/13/2021 11:46	<a href="#">WG1669229</a>
(S) 4-Bromofluorobenzene	98.2			77.0-126		05/13/2021 11:46	<a href="#">WG1669229</a>
(S) 1,2-Dichloroethane-d4	110			70.0-130		05/13/2021 11:46	<a href="#">WG1669229</a>

Method Blank (MB)

(MB) R3656685-2 05/17/21 13:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	53.8	↓	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	98.1			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3656685-1 05/17/21 12:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4990	90.7	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			104	78.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3655861-2 05/12/21 00:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Toluene	U		0.278	1.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
(S) Toluene-d8	101			80.0-120
(S) 4-Bromofluorobenzene	118			77.0-126
(S) 1,2-Dichloroethane-d4	73.1			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3655861-1 05/11/21 23:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	5.54	111	70.0-123	
Ethylbenzene	5.00	5.03	101	79.0-123	
Toluene	5.00	4.95	99.0	79.0-120	
o-Xylene	5.00	5.25	105	80.0-122	
m&p-Xylenes	10.0	9.97	99.7	80.0-122	
(S) Toluene-d8			98.6	80.0-120	
(S) 4-Bromofluorobenzene			116	77.0-126	
(S) 1,2-Dichloroethane-d4			75.5	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3654418-2 05/13/21 10:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Toluene	U		0.278	1.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
<i>(S) Toluene-d8</i>	108			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	96.6			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	114			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3654418-1 05/13/21 10:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	4.80	96.0	70.0-123	
Ethylbenzene	5.00	4.46	89.2	79.0-123	
Toluene	5.00	4.91	98.2	79.0-120	
o-Xylene	5.00	4.66	93.2	80.0-122	
m&p-Xylenes	10.0	9.14	91.4	80.0-122	
<i>(S) Toluene-d8</i>			107	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			98.8	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			109	70.0-130	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

# GLOSSARY OF TERMS

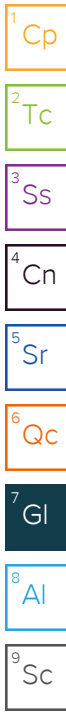
## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.



# ACCREDITATIONS & LOCATIONS

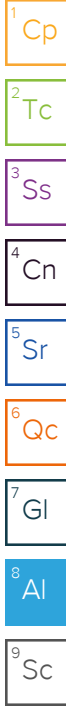
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



# Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed:  Yes  No

Owner Received Date: 5/7/2021

Results Requested By: 5/21/2021



Workorder: 10559028

Workorder Name: 583831

Report To	Subcontract To	Requested Analysis											
Julie Bowser Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 612-607-6390	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858	1181											

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers						BTEX by 8260D	LAB USE ONLY
						HCL	V	C	G	H			
1	PEO-MW-44-202105	PS	5/6/2021 08:40	10559028001	Water	3						X	L135069201
2	PEO-MW-31-202105	PS	5/6/2021 09:40	10559028002	Water	3						X	22
3	PEO-MW-18-202105	PS	5/6/2021 10:35	10559028003	Water	3						X	03
4	PEO-MW-30-202105	PS	5/6/2021 11:35	10559028004	Water	3						X	04
5	PEO-MW-08-202105	PS	5/6/2021 12:45	10559028005	Water	3						X	05
6	TRIP BLANK-20210506	PS	5/6/2021 08:00	10559028006	Water	2						X	06

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i> PACE	5-7-21 17:50	<i>[Signature]</i> Jolday	5/19/21 09:45	report isomers for xylene, not total
2					
3	A-2 JCU				

Cooler Temperature on Receipt  $5.0 \pm 0.1$  °C  Y or  N 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.

TR# 9371 9292 8345

*[Handwritten notes]*  
30 = 40 mil  
4 = 40 mil TB

May 25, 2021

Joe Casey  
ERM Portland  
1050 SW 6th Ave  
Suite 1650  
Portland, OR 97204

RE: Project: 583831  
Pace Project No.: 10559159

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 08, 2021. 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 Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser  
julie.bowser@pacelabs.com  
612-607-6390  
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland  
ERM Global EDD Mailbox, ERM  
Stephanie Frith, ERM Portland  
Rachel James, ERM Portland



## REPORT OF LABORATORY ANALYSIS

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

## CERTIFICATIONS

Project: 583831  
Pace Project No.: 10559159

---

### **Pace Analytical Services, LLC - Minneapolis MN**

1700 Elm Street SE, Minneapolis, MN 55414  
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01\*  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009\*  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014\*  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605\*  
Georgia Certification #: 959  
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 #: 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 (\*).

---

## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

## SAMPLE SUMMARY

Project: 583831  
Pace Project No.: 10559159

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10559159001	PEO-MW-41-202105	Water	05/07/21 08:30	05/08/21 09:00
10559159002	PEO-MW-40-202105	Water	05/07/21 09:25	05/08/21 09:00
10559159003	PEO-MW-45-202105	Water	05/07/21 10:40	05/08/21 09:00
10559159004	PEO-MW-29-202105	Water	05/07/21 11:40	05/08/21 09:00
10559159005	PEO-MW-28-202105	Water	05/07/21 13:00	05/08/21 09:00
10559159006	TRIP BLANK-20210507	Water	05/07/21 08:00	05/08/21 09:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559159

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10559159001	PEO-MW-41-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559159002	PEO-MW-40-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559159003	PEO-MW-45-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559159004	PEO-MW-29-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
10559159005	PEO-MW-28-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559159

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	AR3	1	PASI-M
<b>10559159006</b>	<b>TRIP BLANK-20210507</b>	NWTPH-Gx	NS1	2	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

Sample: PEO-MW-41-202105      Lab ID: 10559159001      Collected: 05/07/21 08:30      Received: 05/08/21 09:00      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.088	1	05/10/21 15:39	05/12/21 23:52	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/10/21 15:39	05/12/21 23:52	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	79	%	50-150		1	05/10/21 15:39	05/12/21 23:52	84-15-1	
n-Triacontane (S)	89	%	50-150		1	05/10/21 15:39	05/12/21 23:52		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/17/21 22:16		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	84	%	50-150		1		05/17/21 22:16	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>45100</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 13:51		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>0.37J</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:29	7440-38-2	
Manganese, Dissolved	<b>402</b>	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 11:32	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0077	1	05/10/21 11:18	05/12/21 05:30	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0061	1	05/10/21 11:18	05/12/21 05:30	208-96-8	
Anthracene	ND	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 05:30	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 05:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0084	1	05/10/21 11:18	05/12/21 05:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0074	1	05/10/21 11:18	05/12/21 05:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0080	1	05/10/21 11:18	05/12/21 05:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/10/21 11:18	05/12/21 05:30	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 05:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 05:30	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 05:30	206-44-0	
Fluorene	ND	ug/L	0.038	0.0064	1	05/10/21 11:18	05/12/21 05:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/10/21 11:18	05/12/21 05:30	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0058	1	05/10/21 11:18	05/12/21 05:30	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 05:30	91-57-6	
Naphthalene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 05:30	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0097	1	05/10/21 11:18	05/12/21 05:30	85-01-8	
Pyrene	ND	ug/L	0.038	0.014	1	05/10/21 11:18	05/12/21 05:30	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	79	%	51-125		1	05/10/21 11:18	05/12/21 05:30	321-60-8	
p-Terphenyl-d14 (S)	94	%	70-125		1	05/10/21 11:18	05/12/21 05:30	1718-51-0	

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

Sample: PEO-MW-41-202105      Lab ID: 10559159001      Collected: 05/07/21 08:30      Received: 05/08/21 09:00      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO <sub>3</sub>	<b>57.2</b>	mg/L	5.0	2.0	1		05/19/21 22:31		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>3.7</b>	mg/L	1.2	0.34	1		05/15/21 20:19	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/08/21 17:57	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

**Sample: PEO-MW-40-202105**      **Lab ID: 10559159002**      Collected: 05/07/21 09:25      Received: 05/08/21 09:00      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	ND	mg/L	0.40	0.088	1	05/14/21 13:17	05/16/21 22:18	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/14/21 13:17	05/16/21 22:18	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	65	%	50-150		1	05/14/21 13:17	05/16/21 22:18	84-15-1	
n-Triacontane (S)	70	%	50-150		1	05/14/21 13:17	05/16/21 22:18		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/18/21 00:06		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	84	%	50-150		1		05/18/21 00:06	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>89000</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 13:52		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>3.7</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:32	7440-38-2	
Manganese, Dissolved	<b>1050</b>	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 11:35	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 05:49	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/10/21 11:18	05/12/21 05:49	208-96-8	
Anthracene	ND	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 05:49	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 05:49	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0084	1	05/10/21 11:18	05/12/21 05:49	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0074	1	05/10/21 11:18	05/12/21 05:49	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0080	1	05/10/21 11:18	05/12/21 05:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/10/21 11:18	05/12/21 05:49	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 05:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 05:49	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 05:49	206-44-0	
Fluorene	ND	ug/L	0.038	0.0065	1	05/10/21 11:18	05/12/21 05:49	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/10/21 11:18	05/12/21 05:49	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/10/21 11:18	05/12/21 05:49	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 05:49	91-57-6	
Naphthalene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 05:49	91-20-3	
Phenanthrene	<b>0.011J</b>	ug/L	0.038	0.0098	1	05/10/21 11:18	05/12/21 05:49	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/10/21 11:18	05/12/21 05:49	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	80	%	51-125		1	05/10/21 11:18	05/12/21 05:49	321-60-8	
p-Terphenyl-d14 (S)	90	%	70-125		1	05/10/21 11:18	05/12/21 05:49	1718-51-0	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

Sample: PEO-MW-40-202105      Lab ID: 10559159002      Collected: 05/07/21 09:25      Received: 05/08/21 09:00      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>41.1</b>	mg/L	5.0	2.0	1		05/19/21 22:36		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>64.4</b>	mg/L	1.2	0.34	1		05/15/21 21:08	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/08/21 18:01	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

**Sample: PEO-MW-45-202105**      **Lab ID: 10559159003**      Collected: 05/07/21 10:40      Received: 05/08/21 09:00      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.089J</b>	mg/L	0.40	0.088	1	05/10/21 15:39	05/13/21 00:25	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/10/21 15:39	05/13/21 00:25	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	79	%	50-150		1	05/10/21 15:39	05/13/21 00:25	84-15-1	
n-Triacontane (S)	91	%	50-150		1	05/10/21 15:39	05/13/21 00:25		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/17/21 23:38		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	82	%	50-150		1		05/17/21 23:38	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>66500</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 13:54		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	ND	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:36	7440-38-2	
Manganese, Dissolved	<b>198</b>	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 11:39	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 06:08	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/10/21 11:18	05/12/21 06:08	208-96-8	
Anthracene	ND	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 06:08	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:08	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0084	1	05/10/21 11:18	05/12/21 06:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0074	1	05/10/21 11:18	05/12/21 06:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0080	1	05/10/21 11:18	05/12/21 06:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/10/21 11:18	05/12/21 06:08	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:08	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:08	206-44-0	
Fluorene	ND	ug/L	0.038	0.0065	1	05/10/21 11:18	05/12/21 06:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/10/21 11:18	05/12/21 06:08	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/10/21 11:18	05/12/21 06:08	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:08	91-57-6	
Naphthalene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:08	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0098	1	05/10/21 11:18	05/12/21 06:08	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/10/21 11:18	05/12/21 06:08	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	76	%	51-125		1	05/10/21 11:18	05/12/21 06:08	321-60-8	
p-Terphenyl-d14 (S)	90	%	70-125		1	05/10/21 11:18	05/12/21 06:08	1718-51-0	

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

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**Sample: PEO-MW-45-202105**      **Lab ID: 10559159003**      Collected: 05/07/21 10:40      Received: 05/08/21 09:00      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO <sub>3</sub>	<b>2.2J</b>	mg/L	5.0	2.0	1		05/20/21 01:08		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>73.3</b>	mg/L	1.2	0.34	1		05/15/21 21:56	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	<b>1.1</b>	mg/L	0.10	0.018	1		05/08/21 18:02	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

Sample: PEO-MW-29-202105      Lab ID: 10559159004      Collected: 05/07/21 11:40      Received: 05/08/21 09:00      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.091J</b>	mg/L	0.40	0.088	1	05/10/21 15:39	05/13/21 00:36	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	0.12	1	05/10/21 15:39	05/13/21 00:36	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	79	%	50-150		1	05/10/21 15:39	05/13/21 00:36	84-15-1	
n-Triacontane (S)	89	%	50-150		1	05/10/21 15:39	05/13/21 00:36		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>4030</b>	ug/L	500	214	5		05/17/21 16:45		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	108	%	50-150		5		05/17/21 16:45	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>189000</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 13:56		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>43.8</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:39	7440-38-2	
Manganese, Dissolved	<b>3110</b>	ug/L	10.0	4.4	20	05/18/21 13:11	05/25/21 11:50	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>1.5</b>	ug/L	0.038	0.0077	1	05/10/21 11:18	05/12/21 06:27	83-32-9	
Acenaphthylene	<b>0.19</b>	ug/L	0.038	0.0061	1	05/10/21 11:18	05/12/21 06:27	208-96-8	
Anthracene	<b>0.87</b>	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 06:27	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:27	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0084	1	05/10/21 11:18	05/12/21 06:27	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0074	1	05/10/21 11:18	05/12/21 06:27	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0080	1	05/10/21 11:18	05/12/21 06:27	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/10/21 11:18	05/12/21 06:27	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:27	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:27	53-70-3	
Fluoranthene	<b>0.084</b>	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:27	206-44-0	
Fluorene	<b>1.6</b>	ug/L	0.038	0.0064	1	05/10/21 11:18	05/12/21 06:27	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/10/21 11:18	05/12/21 06:27	193-39-5	
1-Methylnaphthalene	<b>1.0</b>	ug/L	0.038	0.0058	1	05/10/21 11:18	05/12/21 06:27	90-12-0	
2-Methylnaphthalene	<b>0.21</b>	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:27	91-57-6	
Naphthalene	<b>1.9</b>	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:27	91-20-3	
Phenanthrene	<b>0.92</b>	ug/L	0.038	0.0097	1	05/10/21 11:18	05/12/21 06:27	85-01-8	
Pyrene	<b>0.077</b>	ug/L	0.038	0.014	1	05/10/21 11:18	05/12/21 06:27	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	91	%	51-125		1	05/10/21 11:18	05/12/21 06:27	321-60-8	
p-Terphenyl-d14 (S)	90	%	70-125		1	05/10/21 11:18	05/12/21 06:27	1718-51-0	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

**Sample: PEO-MW-29-202105**      **Lab ID: 10559159004**      Collected: 05/07/21 11:40      Received: 05/08/21 09:00      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO <sub>3</sub>	<b>242</b>	mg/L	5.0	2.0	1		05/19/21 22:42		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	ND	mg/L	1.2	0.34	1		05/15/21 22:12	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/08/21 18:03	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

Sample: PEO-MW-28-202105      Lab ID: 10559159005      Collected: 05/07/21 13:00      Received: 05/08/21 09:00      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	2.9	mg/L	0.40	0.088	1	05/10/21 15:39	05/13/21 00:47	68334-30-5	
Motor Oil Range SG	0.20J	mg/L	0.40	0.12	1	05/10/21 15:39	05/13/21 00:47	64742-65-0	B
<b>Surrogates</b>									
o-Terphenyl (S)	66	%	50-150		1	05/10/21 15:39	05/13/21 00:47	84-15-1	
n-Triacontane (S)	73	%	50-150		1	05/10/21 15:39	05/13/21 00:47		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/17/21 23:11		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	85	%	50-150		1		05/17/21 23:11	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	54900	ug/L	3300	268	1	05/18/21 13:07	05/19/21 13:57		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	ND	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:42	7440-38-2	
Manganese, Dissolved	1.1	ug/L	0.50	0.22	1	05/18/21 13:11	05/25/21 11:53	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.038	0.0078	1	05/10/21 11:18	05/12/21 06:46	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/10/21 11:18	05/12/21 06:46	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/10/21 11:18	05/12/21 06:46	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:46	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	0.0085	1	05/10/21 11:18	05/12/21 06:46	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	0.0075	1	05/10/21 11:18	05/12/21 06:46	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	0.0081	1	05/10/21 11:18	05/12/21 06:46	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	0.0081	1	05/10/21 11:18	05/12/21 06:46	207-08-9	
Chrysene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:46	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:46	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/10/21 11:18	05/12/21 06:46	206-44-0	
Fluorene	0.0076J	ug/L	0.038	0.0065	1	05/10/21 11:18	05/12/21 06:46	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	0.018	1	05/10/21 11:18	05/12/21 06:46	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	0.0059	1	05/10/21 11:18	05/12/21 06:46	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:46	91-57-6	
Naphthalene	0.013J	ug/L	0.038	0.011	1	05/10/21 11:18	05/12/21 06:46	91-20-3	
Phenanthrene	0.014J	ug/L	0.038	0.0098	1	05/10/21 11:18	05/12/21 06:46	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/10/21 11:18	05/12/21 06:46	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	71	%	51-125		1	05/10/21 11:18	05/12/21 06:46	321-60-8	
p-Terphenyl-d14 (S)	87	%	70-125		1	05/10/21 11:18	05/12/21 06:46	1718-51-0	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

Sample: PEO-MW-28-202105      Lab ID: 10559159005      Collected: 05/07/21 13:00      Received: 05/08/21 09:00      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	62.2	mg/L	5.0	2.0	1		05/19/21 22:52		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	5.1	mg/L	1.2	0.34	1		05/15/21 22:28	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	2.8	mg/L	0.20	0.035	2		05/08/21 18:12	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559159

**Sample: TRIP BLANK-20210507**      **Lab ID: 10559159006**      Collected: 05/07/21 08:00      Received: 05/08/21 09:00      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/17/21 19:58		
<b>Surrogates</b> a,a,a-Trifluorotoluene (S)	92	%	50-150		1		05/17/21 19:58	98-08-8	

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559159

QC Batch: 742499 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005, 10559159006

METHOD BLANK: 3959840 Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005, 10559159006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/17/21 16:17	
a,a,a-Trifluorotoluene (S)	%	91	50-150		05/17/21 16:17	

METHOD BLANK: 3959841 Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005, 10559159006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/17/21 21:21	
a,a,a-Trifluorotoluene (S)	%	87	50-150		05/17/21 21:21	

METHOD BLANK: 3960511 Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005, 10559159006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/18/21 01:28	
a,a,a-Trifluorotoluene (S)	%	85	50-150		05/18/21 01:28	

LABORATORY CONTROL SAMPLE & LCSD: 3959842 3959843

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	914	98	91	75-127	7	20	
a,a,a-Trifluorotoluene (S)	%				107	106	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3959844 3959845

Parameter	Units	10558838005 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	4620	5000	5000	9270	9100	93	90	71-139	2	30	G+,G-
a,a,a-Trifluorotoluene (S)	%						124	122	50-150			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559159

SAMPLE DUPLICATE: 3960485

Parameter	Units	10559159001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	84	85			

SAMPLE DUPLICATE: 3960486

Parameter	Units	10559667001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	11400	11300	1	30	G+
a,a,a-Trifluorotoluene (S)	%.	104	104			

SAMPLE DUPLICATE: 3960487

Parameter	Units	10559667002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	79.1J	80.6J		30	
a,a,a-Trifluorotoluene (S)	%.	88	85			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559159

QC Batch: 742321      Analysis Method: EPA 6020A  
QC Batch Method: EPA 3020A      Analysis Description: 6020A Water Dissolved UPD4  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

METHOD BLANK: 3959337      Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/25/21 11:25	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/25/21 11:25	

LABORATORY CONTROL SAMPLE: 3959338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.8	94	80-120	
Manganese, Dissolved	ug/L	100	91.1	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3959339      3959340

Parameter	Units	10559454001 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	11.2	100	100	110	108	99	97	75-125	1	20	
Manganese, Dissolved	ug/L	1870	100	100	1880	2190	8	321	75-125	15	20 P6	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559159

QC Batch: 740727      Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C      Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

METHOD BLANK: 3950561      Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/12/21 03:54	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/12/21 03:54	
Acenaphthene	ug/L	ND	0.040	0.0081	05/12/21 03:54	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/12/21 03:54	
Anthracene	ug/L	ND	0.040	0.0082	05/12/21 03:54	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/12/21 03:54	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/12/21 03:54	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/12/21 03:54	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/12/21 03:54	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/12/21 03:54	
Chrysene	ug/L	ND	0.040	0.011	05/12/21 03:54	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/12/21 03:54	
Fluoranthene	ug/L	ND	0.040	0.011	05/12/21 03:54	
Fluorene	ug/L	ND	0.040	0.0068	05/12/21 03:54	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/12/21 03:54	
Naphthalene	ug/L	ND	0.040	0.011	05/12/21 03:54	
Phenanthrene	ug/L	ND	0.040	0.010	05/12/21 03:54	
Pyrene	ug/L	ND	0.040	0.015	05/12/21 03:54	
2-Fluorobiphenyl (S)	%	75	51-125		05/12/21 03:54	
p-Terphenyl-d14 (S)	%	80	70-125		05/12/21 03:54	

LABORATORY CONTROL SAMPLE & LCSD: 3950562

Parameter	Units	Spike Conc.	3950563		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
1-Methylnaphthalene	ug/L	1	0.75	0.78	75	78	34-125	4	20	
2-Methylnaphthalene	ug/L	1	0.83	0.85	83	85	34-125	2	20	
Acenaphthene	ug/L	1	0.85	0.84	85	84	35-125	1	20	
Acenaphthylene	ug/L	1	0.85	0.88	85	88	33-125	3	20	
Anthracene	ug/L	1	0.89	0.96	89	96	42-125	8	20	
Benzo(a)anthracene	ug/L	1	0.84	0.89	84	89	46-125	6	20	
Benzo(a)pyrene	ug/L	1	0.90	0.95	90	95	57-125	6	20	
Benzo(b)fluoranthene	ug/L	1	0.85	0.91	85	91	58-125	7	20	
Benzo(g,h,i)perylene	ug/L	1	0.95	0.99	95	99	55-125	4	20	
Benzo(k)fluoranthene	ug/L	1	0.93	0.97	93	97	55-125	5	20	
Chrysene	ug/L	1	0.90	0.95	90	95	56-125	6	20	
Dibenz(a,h)anthracene	ug/L	1	1.0	0.97	100	97	40-125	4	20	
Fluoranthene	ug/L	1	0.83	0.91	83	91	64-125	9	20	
Fluorene	ug/L	1	0.81	0.83	81	83	43-125	3	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.91	0.99	91	99	57-125	8	20	

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559159

LABORATORY CONTROL SAMPLE & LCSD: 3950562		3950563									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.78	0.80	78	80	30-125	2	20		
Phenanthrene	ug/L	1	0.78	0.84	78	84	47-125	7	20		
Pyrene	ug/L	1	0.87	0.93	87	93	46-125	6	20		
2-Fluorobiphenyl (S)	%.				80	82	51-125				
p-Terphenyl-d14 (S)	%.				88	94	70-125				

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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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559159

QC Batch: 740823 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559159001, 10559159003, 10559159004, 10559159005

METHOD BLANK: 3950797 Matrix: Water  
Associated Lab Samples: 10559159001, 10559159003, 10559159004, 10559159005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/12/21 23:08	
Motor Oil Range SG	mg/L	0.13J	0.40	0.12	05/12/21 23:08	
n-Triacontane (S)	%	90	50-150		05/12/21 23:08	
o-Terphenyl (S)	%	81	50-150		05/12/21 23:08	

LABORATORY CONTROL SAMPLE & LCSD: 3950798

Parameter	Units	3950799							RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits				
Diesel Fuel Range SG	mg/L	2	1.6	1.8	79	88	50-150	10	20		
Motor Oil Range SG	mg/L	2	1.7	1.8	84	92	50-150	9	20		
n-Triacontane (S)	%				83	89	50-150				
o-Terphenyl (S)	%				76	86	50-150				

SAMPLE DUPLICATE: 3950800

Parameter	Units	10559159001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.10J		30	
Motor Oil Range SG	mg/L	ND	0.18J		30	
n-Triacontane (S)	%	89	86			
o-Terphenyl (S)	%	79	74			

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559159

QC Batch: 742118	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559159002

METHOD BLANK: 3957558 Matrix: Water

Associated Lab Samples: 10559159002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/16/21 21:44	
Motor Oil Range SG	mg/L	ND	0.40	0.12	05/16/21 21:44	
n-Triacontane (S)	%.	73	50-150		05/16/21 21:44	
o-Terphenyl (S)	%.	64	50-150		05/16/21 21:44	

LABORATORY CONTROL SAMPLE & LCSD: 3957559

3957560

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.5	1.5	76	75	50-150	2	20	
Motor Oil Range SG	mg/L	2	1.5	1.5	77	75	50-150	2	20	
n-Triacontane (S)	%.				74	70	50-150			
o-Terphenyl (S)	%.				71	64	50-150			

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### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559159

QC Batch: 742984 Analysis Method: SM 2320B  
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

METHOD BLANK: 3962477 Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/19/21 21:53	

LABORATORY CONTROL SAMPLE & LCSD: 3962478 3962479

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.8	42.7	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962480 3962481

Parameter	Units	10559486001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	78.3	40	40	119	120	103	104	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962482 3962483

Parameter	Units	10559307013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	ND	40	40	31.4	31.4	79	78	80-120	0	20	M3

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**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559159

QC Batch: 742040 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

METHOD BLANK: 3957186 Matrix: Water  
Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/15/21 17:39	

LABORATORY CONTROL SAMPLE: 3957187

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	46.7	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957188 3957189

Parameter	Units	10559159001		10559159002		10559159003		10559159004		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Sulfate	mg/L	3.7	50	50	50	51.7	52.7	96	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957190 3957191

Parameter	Units	10559159002		10559159003		10559159004		10559159005		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Sulfate	mg/L	64.4	50	50	50	106	107	83	85	80-120	1	20	E

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**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: 583831  
 Pace Project No.: 10559159

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QC Batch: 740643                                  Analysis Method: EPA 353.2  
 QC Batch Method: EPA 353.2                    Analysis Description: 353.2 Nitrate + Nitrite, preserved  
                                                                                                                          Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

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METHOD BLANK: 3950313                                  Matrix: Water  
 Associated Lab Samples: 10559159001, 10559159002, 10559159003, 10559159004, 10559159005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	0.018	05/08/21 18:05	FS

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**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 583831  
Pace Project No.: 10559159

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### 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.

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

TNI - The NELAC Institute.

### BATCH QUALIFIERS

Batch: 741349

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

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

FS The sample was filtered in the laboratory prior to analysis.

G+ Late peaks present outside the GRO window.

G- Early peaks present outside the GRO window.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 583831  
Pace Project No.: 10559159

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10559159001	PEO-MW-41-202105	EPA Mod. 3510C	740823	NWTPH-Dx	741287
10559159002	PEO-MW-40-202105	EPA Mod. 3510C	742118	NWTPH-Dx	742380
10559159003	PEO-MW-45-202105	EPA Mod. 3510C	740823	NWTPH-Dx	741287
10559159004	PEO-MW-29-202105	EPA Mod. 3510C	740823	NWTPH-Dx	741287
10559159005	PEO-MW-28-202105	EPA Mod. 3510C	740823	NWTPH-Dx	741287
10559159001	PEO-MW-41-202105	NWTPH-Gx	742499		
10559159002	PEO-MW-40-202105	NWTPH-Gx	742499		
10559159003	PEO-MW-45-202105	NWTPH-Gx	742499		
10559159004	PEO-MW-29-202105	NWTPH-Gx	742499		
10559159005	PEO-MW-28-202105	NWTPH-Gx	742499		
10559159006	TRIP BLANK-20210507	NWTPH-Gx	742499		
10559159001	PEO-MW-41-202105	EPA 3010A	742320	EPA 6010D	743014
10559159002	PEO-MW-40-202105	EPA 3010A	742320	EPA 6010D	743014
10559159003	PEO-MW-45-202105	EPA 3010A	742320	EPA 6010D	743014
10559159004	PEO-MW-29-202105	EPA 3010A	742320	EPA 6010D	743014
10559159005	PEO-MW-28-202105	EPA 3010A	742320	EPA 6010D	743014
10559159001	PEO-MW-41-202105	EPA 3020A	742321	EPA 6020A	743011
10559159002	PEO-MW-40-202105	EPA 3020A	742321	EPA 6020A	743011
10559159003	PEO-MW-45-202105	EPA 3020A	742321	EPA 6020A	743011
10559159004	PEO-MW-29-202105	EPA 3020A	742321	EPA 6020A	743011
10559159005	PEO-MW-28-202105	EPA 3020A	742321	EPA 6020A	743011
10559159001	PEO-MW-41-202105	EPA Mod. 3510C	740727	EPA 8270 by SIM	741349
10559159002	PEO-MW-40-202105	EPA Mod. 3510C	740727	EPA 8270 by SIM	741349
10559159003	PEO-MW-45-202105	EPA Mod. 3510C	740727	EPA 8270 by SIM	741349
10559159004	PEO-MW-29-202105	EPA Mod. 3510C	740727	EPA 8270 by SIM	741349
10559159005	PEO-MW-28-202105	EPA Mod. 3510C	740727	EPA 8270 by SIM	741349
10559159001	PEO-MW-41-202105	SM 2320B	742984		
10559159002	PEO-MW-40-202105	SM 2320B	742984		
10559159003	PEO-MW-45-202105	SM 2320B	742984		
10559159004	PEO-MW-29-202105	SM 2320B	742984		
10559159005	PEO-MW-28-202105	SM 2320B	742984		
10559159001	PEO-MW-41-202105	EPA 300.0	742040		
10559159002	PEO-MW-40-202105	EPA 300.0	742040		
10559159003	PEO-MW-45-202105	EPA 300.0	742040		
10559159004	PEO-MW-29-202105	EPA 300.0	742040		
10559159005	PEO-MW-28-202105	EPA 300.0	742040		
10559159001	PEO-MW-41-202105	EPA 353.2	740643		
10559159002	PEO-MW-40-202105	EPA 353.2	740643		
10559159003	PEO-MW-45-202105	EPA 353.2	740643		
10559159004	PEO-MW-29-202105	EPA 353.2	740643		
10559159005	PEO-MW-28-202105	EPA 353.2	740643		

**REPORT OF LABORATORY ANALYSIS**

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NO#: 10559159



10559159

**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: ERM  
 Address: 1050 SW 6th Ave, Suite 1650  
 Portland, OR 97204  
 Email To: rita.cooper@erm.com  
 Phone: 207-329-6320 Fax:  
 Requested Due Date/TAT: Standard

**Section B**  
 Required Project Information:  
 Report To: Rita Cooper  
 Copy To:  
 Purchase Order No.:  
 Project Name: Julie Bowser  
 Project Number: 583831

**Section C**  
 Invoice Information:  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager:  
 Pace Profile #:

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER

Site Location: \_\_\_\_\_ OR \_\_\_\_\_  
 STATE: \_\_\_\_\_

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WT WATER PRODUCT P SOIL/SOLID SL OIL OL WIPE WIP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Y/N	Requested Analysis Filtered (Y/N)											Pace Project No./ Lab I.D.					
			COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	GR (NMT-PH-Gx)	BTEX (SW8260C/SW8260C SIM)	VPH (NMT-PH-VPH)	DRO (NMT-PH-Dx)	Dissolved Metals (As, Mn) (6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NMT-PH-EPH)	Nitrate (EPA 353.2)		Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)	Nitrate + Nitrite	Residual Chlorine (Y/N)	
1	PEO-MW-41-202105	GW	G	5/7/21	8:30		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001
2	PEO-MW-40-202105	GW	G	5/7/21	9:25		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	002
3	PEO-MW-45-202105	GW	G	5/7/21	10:40		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	003
4	PEO-MW-29-202105	GW	G	5/7/21	11:40		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	004
5	PEO-MW-28-202105	GW	G	5/7/21	13:00		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	005
6	TRIP BLANK-20210507	GW	G	5/7/21	8:00		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	006
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Received on	Temp in °C	Sealed Cooler	Custody	Samples In tact
	Joe Casey / ERM	5/7/21	15:00	OK PACE	5/21	09:00	13.0			Y	Y	Y

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Document Name:  
**Sample Condition Upon Receipt (SCUR) - MN**  
 Document No.:  
**ENV-FRM-MIN4-0150 Rev.02**

Document Revised: 14Apr2021  
**Page 1 of 1**  
 Pace Analytical Services -  
**Minneapolis**

**Sample Condition Upon Receipt**

Client Name: ERM

Project #:

**WO# : 10559159**  
 PH: JMT      Due Date: 05/24/21  
 CLIENT: ERM-Orange

Courier:  Fed Ex    UPS    USPS    Client  
 Pace    Speedee    Commercial

Tracking Number: \_\_\_\_\_  
 See Exceptions  ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present?  Yes    No      Seals Intact?  Yes    No      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)    OS418-LS   Type of Ice:  Wet    Blue    None    Dry    Melted  
 T4(0254)    T5(0489)    160285052

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: 1.3, 1.4, 2.0, 1.4 °C  
 Correction Factor: true      Cooler Temp Corrected w/temp blank: 1.3, 1.4, 2.0, 1.4 °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: MS-824  
 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 (F-MN-Q-338) and include with SCUR/COC paperwork.**

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. <u>one AG14 for own receipt Boden person</u>
Containers Intact? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	9. <u>one AG14 from 001 + 002 - Boden person</u>
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>1-5 Y1      Y2</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO <sub>3</sub> <input checked="" type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/3015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No      See Exception ENV-FRM-MIN4-0142 Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No      pH Paper Lot# Res. Chlorine      0-6 Roll      0-6 Strip      0-14 Strip <u>221119</u>
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>300663 (6)</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

**CLIENT NOTIFICATION/RESOLUTION**      Field Data Required?  Yes    No  
 Person Contacted: \_\_\_\_\_      Date/Time: \_\_\_\_\_  
 Comments/Resolution: \_\_\_\_\_

Project Manager Review: Julie Bauer      Date: 5/10/21

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).



**SCUR Exceptions:**

**Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> 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			
1456	2247	1426	1.3
		1390	1.6
		1389	2.0
		1378	1.4

Issue Type:		Container Type	# of Containers
Sample ID			

**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? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Comments:**

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Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

State Of Origin: OR  
Cert. Needed:  Yes  No



Workorder: 10559159 Workorder Name: 583831

Owner Received Date: 5/8/2021 Results Requested By: 5/24/2021

Report To	Subcontract To	Requested Analysis																				
Julie Bowser Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 612-607-6390	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858	X																				
		BTEX by 8260D																				

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers												LAB USE ONLY					
						HCL	VO9H																
1	PEO-MW-41-202105	PS	5/7/2021 08:30	10559159001	Water	3																	21350923
2	PEO-MW-40-202105	PS	5/7/2021 09:25	10559159002	Water	3																	-c1
3	PEO-MW-45-202105	PS	5/7/2021 10:40	10559159003	Water	3																	-c2
4	PEO-MW-29-202105	PS	5/7/2021 11:40	10559159004	Water	3																	-c3
5	PEO-MW-28-202105	PS	5/7/2021 13:00	10559159005	Water	3																	-c4
6	TRIP BLANK-20210507	PS	5/7/2021 08:00	10559159006	Water	2																	-c5

					Comments											
Transfers	Released By	Date/Time	Received By	Date/Time												
1	<i>[Signature]</i>	5/11/21 15:00	<i>[Signature]</i>	5/11/21 10:00												
2																
3																

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.

*1.4hr = 1.5*

*Fedex: 9371 9292 9249*

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



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

**Pace Analytical Minnesota**

Julie Bowser  
1700 Elm Street, Ste. 200  
Minneapolis, MN 55414

**RE: 583831**

**Work Order Number: 2105153**

May 25, 2021

**Attention Julie Bowser:**

Fremont Analytical, Inc. received 6 sample(s) on 5/11/2021 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***  
***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

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing  
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing  
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831  
**Work Order:** 2105153

**Work Order Sample Summary**

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
2105153-001	PEO-MW-41-202105	05/07/2021 8:30 AM	05/11/2021 1:58 PM
2105153-002	PEO-MW-40-202105	05/07/2021 9:25 AM	05/11/2021 1:58 PM
2105153-003	PEO-MW-45-202105	05/07/2021 10:40 AM	05/11/2021 1:58 PM
2105153-004	PEO-MW-29-202105	05/07/2021 11:40 AM	05/11/2021 1:58 PM
2105153-005	PEO-MW-28-202105	05/07/2021 1:00 PM	05/11/2021 1:58 PM
2105153-006	TRIP BLANK-20210507	05/07/2021 8:00 AM	05/11/2021 1:58 PM

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

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

---

**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:

- \* - 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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105153-001

**Collection Date:** 5/7/2021 8:30:00 AM

**Client Sample ID:** PEO-MW-41-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/21/2021 7:22:42 PM
Surr: 1-Chlorooctadecane	87.5	60 - 140		%Rec	1	5/21/2021 7:22:42 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 3:28:40 PM
Surr: 1,4-Difluorobenzene	87.1	65 - 140		%Rec	1	5/20/2021 3:28:40 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/20/2021 3:28:40 PM

**Lab ID:** 2105153-002

**Collection Date:** 5/7/2021 9:25:00 AM

**Client Sample ID:** PEO-MW-40-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319

Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/21/2021 8:15:46 PM
Surr: 1-Chlorooctadecane	86.1	60 - 140		%Rec	1	5/21/2021 8:15:46 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 4:07:34 PM
Surr: 1,4-Difluorobenzene	87.4	65 - 140		%Rec	1	5/20/2021 4:07:34 PM
Surr: Bromofluorobenzene	99.9	65 - 140		%Rec	1	5/20/2021 4:07:34 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105153-003

**Collection Date:** 5/7/2021 10:40:00 AM

**Client Sample ID:** PEO-MW-45-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/21/2021 9:08:56 PM
Surr: 1-Chlorooctadecane	84.4	60 - 140		%Rec	1	5/21/2021 9:08:56 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 4:46:37 PM
Surr: 1,4-Difluorobenzene	85.3	65 - 140		%Rec	1	5/20/2021 4:46:37 PM
Surr: Bromofluorobenzene	98.1	65 - 140		%Rec	1	5/20/2021 4:46:37 PM

**Lab ID:** 2105153-004

**Collection Date:** 5/7/2021 11:40:00 AM

**Client Sample ID:** PEO-MW-29-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/21/2021 10:01:53 PM
Surr: 1-Chlorooctadecane	86.9	60 - 140		%Rec	1	5/21/2021 10:01:53 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	391	12.2		µg/L	1	5/20/2021 5:25:41 PM
Surr: 1,4-Difluorobenzene	101	65 - 140		%Rec	1	5/20/2021 5:25:41 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/20/2021 5:25:41 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105153-005

**Collection Date:** 5/7/2021 1:00:00 PM

**Client Sample ID:** PEO-MW-28-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/21/2021 10:54:56 PM
Surr: 1-Chlorooctadecane	89.9	60 - 140		%Rec	1	5/21/2021 10:54:56 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 6:04:40 PM
Surr: 1,4-Difluorobenzene	89.9	65 - 140		%Rec	1	5/20/2021 6:04:40 PM
Surr: Bromofluorobenzene	100	65 - 140		%Rec	1	5/20/2021 6:04:40 PM

**Lab ID:** 2105153-006

**Collection Date:** 5/7/2021 8:00:00 AM

**Client Sample ID:** TRIP BLANK-20210507

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 1:30:50 PM
Surr: 1,4-Difluorobenzene	86.6	65 - 140		%Rec	1	5/20/2021 1:30:50 PM
Surr: Bromofluorobenzene	97.7	65 - 140		%Rec	1	5/20/2021 1:30:50 PM

Work Order: 2105153  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-32319</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>MBLKW</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360235</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.7		0	0						
Surr: 1-Chlorooctadecane	371		396.7		93.6	60	140				

Sample ID: <b>LCS-32319</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360236</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	396	39.6	495.0	0	79.9	70	130				
Surr: 1-Chlorooctadecane	395		396.0		99.6	60	140				

Sample ID: <b>LCS-32319</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>LCSW02</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360237</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	380	39.6	494.6	0	76.9	70	130	395.5	3.91	20	
Surr: 1-Chlorooctadecane	402		395.6		102	60	140		0		

Sample ID: <b>2105199-001BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/22/2021</b>	SeqNo: <b>1360334</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	868	39.9	499.0	145.1	145	70	130				S
Surr: 1-Chlorooctadecane	344		399.2		86.1	60	140				
Surr: o-Terphenyl	0.240		399.2		0.0600	60	140				S

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

**Work Order:** 2105153  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105199-001BMSD</b>		SampType: <b>MSD</b>		Units: <b>µg/L</b>		Prep Date: <b>5/14/2021</b>		RunNo: <b>67455</b>			
Client ID: <b>BATCH</b>		Batch ID: <b>32319</b>				Analysis Date: <b>5/22/2021</b>		SeqNo: <b>1360335</b>			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	512	40.0	499.7	145.1	73.3	70	130	868.3	51.7	30	R
Surr: 1-Chlorooctadecane	306		399.8		76.6	60	140		0		
Surr: o-Terphenyl	0.200		399.8		0.0500	60	140		0		S

**NOTES:**

R - High RPD observed, spike recovery is within range.

Work Order: 2105153  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCS-32366</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360055</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	207	25.0	200.0	0	104	70	130				
Surr: 1,4-Difluorobenzene	52.0		50.00		104	65	140				
Surr: Bromofluorobenzene	52.5		50.00		105	65	140				

Sample ID: <b>MB-32366</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360054</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	43.4		50.00		86.7	65	140				
Surr: Bromofluorobenzene	50.2		50.00		100	65	140				

Sample ID: <b>2105153-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>PEO-MW-28-202105</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360034</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	44.3		50.00		88.6	65	140		0		
Surr: Bromofluorobenzene	50.1		50.00		100	65	140		0		

Sample ID: <b>2105198-003ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360042</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	250		0	0			0	0	25	D
Surr: 1,4-Difluorobenzene	453		500.0		90.6	65	140		0		D
Surr: Bromofluorobenzene	512		500.0		102	65	140		0		D

Work Order: 2105153  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>2105199-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>			Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>				Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360044</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	194	25.0	200.0	43.43	75.4	70	130				
Surr: 1,4-Difluorobenzene	55.4		50.00		111	65	140				
Surr: Bromofluorobenzene	50.2		50.00		100	65	140				

Sample ID: <b>2105199-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>			Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>				Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360045</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	256	25.0	200.0	43.43	106	70	130	194.2	27.4	30	
Surr: 1,4-Difluorobenzene	55.7		50.00		111	65	140		0		
Surr: Bromofluorobenzene	51.3		50.00		103	65	140		0		

Client Name: **PACEMI**  
 Logged by: **Clare Griggs**

Work Order Number: **2105153**  
 Date Received: **5/11/2021 1:58:00 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

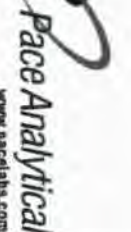
Item #	Temp °C
Sample	1.4

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

# Chain of Custody

2105153

PASI Minnesota Laboratory  
 1700 Elm Street  
 Minneapolis, MN 55414  
 Phone 612-607-6390  
 Email: julie.bowser@paceclabs.com



Workorder: 10559159  
 Subcontract To: 583831  
 Workorder Name: 583831

Fremont Analytical  
 3600 Fremont Ave N  
 Seattle, WA 98103

P.O. 10559159

Results Requested By: 5/24/2021

Requested Analysis

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers	NWTPH VPH (Aliphatics C10-C12)	NWTPH EPH (Aliphatics C10-C12)	LAB USE ONLY
1	PEO-MW-4-1-202105	5/7/2021 08:30	10559159001	Water		X	X	
2	PEO-MW-4-0-202105	5/7/2021 09:25	10559159002	Water		X	X	
3	PEO-MW-4-5-202105	5/7/2021 10:40	10559159003	Water		X	X	
4	PEO-MW-29-202105	5/7/2021 11:40	10559159004	Water	4	X	X	
5	PEO-MW-28-202105	5/7/2021 13:00	10559159005	Water		X	X	
6	TRIP BLANK-20210507	5/7/2021 08:00	10559159006	Water	2	X		

Comments

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	Julie Bowser	5/14/21 11:30	Julie Bowser	5/14/21 13:58				
2								
3								

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

Report to MDL, EQUIS EDD

## Pace Analytical - Minnesota

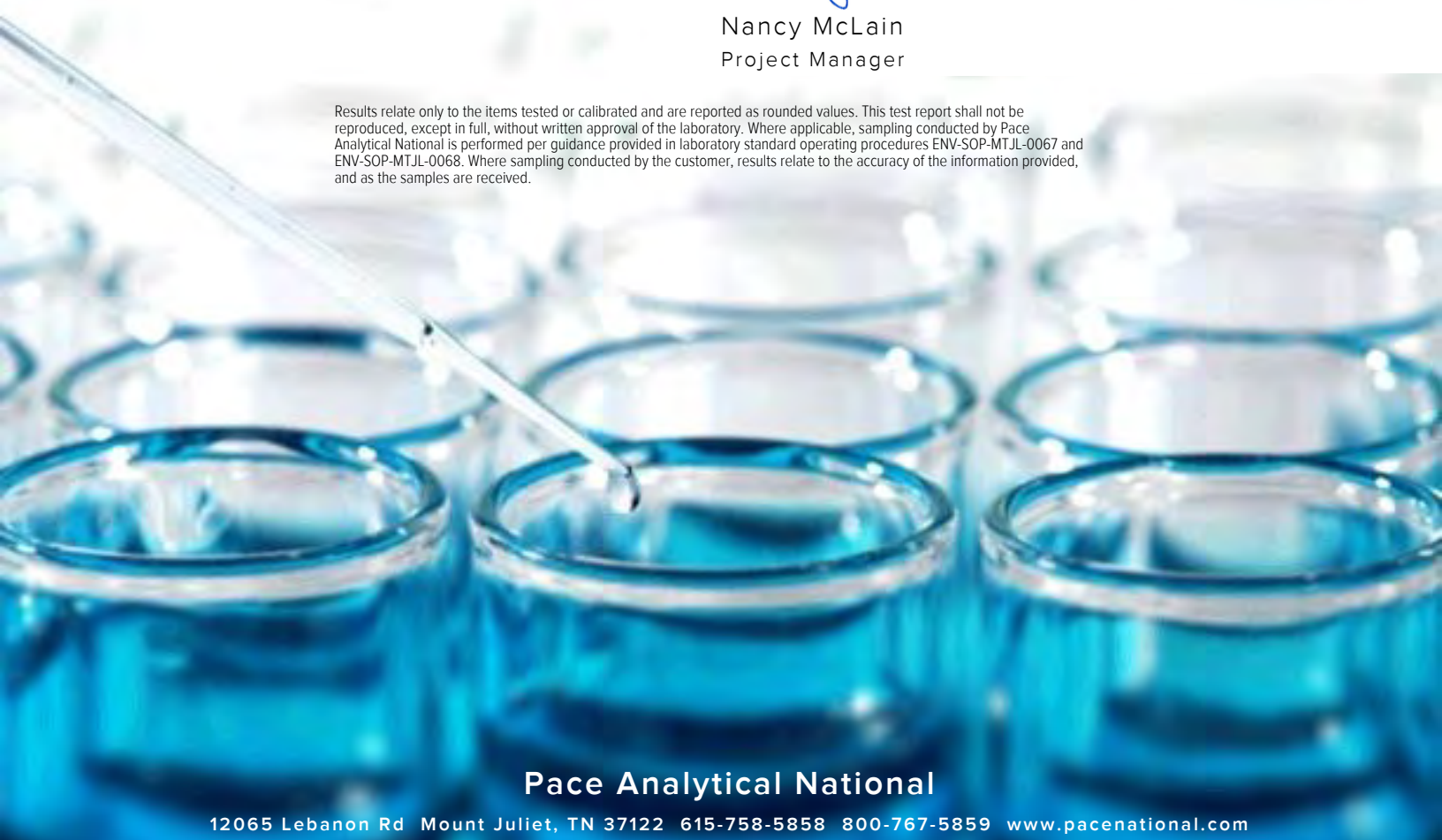
Sample Delivery Group: L1350923  
Samples Received: 05/11/2021  
Project Number: 10559159  
Description: 583831  
Site: 001  
Report To: Julie Bowser  
1700 Elm Street Suite 200  
Minneapolis, MN 55414

Entire Report Reviewed By:



Nancy McLain  
Project Manager










Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

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# SAMPLE SUMMARY

## PEO-MW-41-202105 L1350923-01 GW

Collected by  
Collected date/time  
Received date/time

05/07/21 08:30 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1670679	1	05/14/21 12:11	05/14/21 12:11	DWR	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

## PEO-MW-40-202105 L1350923-02 GW

Collected by  
Collected date/time  
Received date/time

05/07/21 09:25 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1670679	1	05/14/21 12:31	05/14/21 12:31	DWR	Mt. Juliet, TN

4 Cn

5 Sr

## PEO-MW-45-202105 L1350923-03 GW

Collected by  
Collected date/time  
Received date/time

05/07/21 10:40 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1670679	1	05/14/21 12:51	05/14/21 12:51	DWR	Mt. Juliet, TN

6 Qc

7 Gl

## PEO-MW-29-202105 L1350923-04 GW

Collected by  
Collected date/time  
Received date/time

05/07/21 11:40 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1672927	1	05/18/21 22:49	05/18/21 22:49	ACG	Mt. Juliet, TN

8 Al

9 Sc

## PEO-MW-28-202105 L1350923-05 GW

Collected by  
Collected date/time  
Received date/time

05/07/21 13:00 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1670679	1	05/14/21 13:11	05/14/21 13:11	DWR	Mt. Juliet, TN

## TRIP BLANK-20210507 L1350923-06 GW

Collected by  
Collected date/time  
Received date/time

05/07/21 08:00 05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1670679	1	05/14/21 11:12	05/14/21 11:12	DWR	Mt. Juliet, TN

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Nancy McLain  
Project Manager

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/14/2021 12:11	<a href="#">WG1670679</a>
Toluene	U		0.278	1.00	1	05/14/2021 12:11	<a href="#">WG1670679</a>
Ethylbenzene	U		0.137	1.00	1	05/14/2021 12:11	<a href="#">WG1670679</a>
o-Xylene	U		0.174	1.00	1	05/14/2021 12:11	<a href="#">WG1670679</a>
m&p-Xylene	U		0.430	2.00	1	05/14/2021 12:11	<a href="#">WG1670679</a>
(S) Toluene-d8	102			80.0-120		05/14/2021 12:11	<a href="#">WG1670679</a>
(S) 4-Bromofluorobenzene	100			77.0-126		05/14/2021 12:11	<a href="#">WG1670679</a>
(S) 1,2-Dichloroethane-d4	86.0			70.0-130		05/14/2021 12:11	<a href="#">WG1670679</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/14/2021 12:31	<a href="#">WG1670679</a>
Toluene	U		0.278	1.00	1	05/14/2021 12:31	<a href="#">WG1670679</a>
Ethylbenzene	U		0.137	1.00	1	05/14/2021 12:31	<a href="#">WG1670679</a>
o-Xylene	U		0.174	1.00	1	05/14/2021 12:31	<a href="#">WG1670679</a>
m&p-Xylene	U		0.430	2.00	1	05/14/2021 12:31	<a href="#">WG1670679</a>
(S) Toluene-d8	99.5			80.0-120		05/14/2021 12:31	<a href="#">WG1670679</a>
(S) 4-Bromofluorobenzene	87.9			77.0-126		05/14/2021 12:31	<a href="#">WG1670679</a>
(S) 1,2-Dichloroethane-d4	86.0			70.0-130		05/14/2021 12:31	<a href="#">WG1670679</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/14/2021 12:51	<a href="#">WG1670679</a>
Toluene	U		0.278	1.00	1	05/14/2021 12:51	<a href="#">WG1670679</a>
Ethylbenzene	U		0.137	1.00	1	05/14/2021 12:51	<a href="#">WG1670679</a>
o-Xylene	U		0.174	1.00	1	05/14/2021 12:51	<a href="#">WG1670679</a>
m&p-Xylene	U		0.430	2.00	1	05/14/2021 12:51	<a href="#">WG1670679</a>
(S) Toluene-d8	99.0			80.0-120		05/14/2021 12:51	<a href="#">WG1670679</a>
(S) 4-Bromofluorobenzene	91.6			77.0-126		05/14/2021 12:51	<a href="#">WG1670679</a>
(S) 1,2-Dichloroethane-d4	93.9			70.0-130		05/14/2021 12:51	<a href="#">WG1670679</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	1.12		0.0941	1.00	1	05/18/2021 22:49	<a href="#">WG1672927</a>
Toluene	2.25		0.278	1.00	1	05/18/2021 22:49	<a href="#">WG1672927</a>
Ethylbenzene	1.29		0.137	1.00	1	05/18/2021 22:49	<a href="#">WG1672927</a>
o-Xylene	0.726	J	0.174	1.00	1	05/18/2021 22:49	<a href="#">WG1672927</a>
m&p-Xylene	4.70		0.430	2.00	1	05/18/2021 22:49	<a href="#">WG1672927</a>
(S) Toluene-d8	116			80.0-120		05/18/2021 22:49	<a href="#">WG1672927</a>
(S) 4-Bromofluorobenzene	122			77.0-126		05/18/2021 22:49	<a href="#">WG1672927</a>
(S) 1,2-Dichloroethane-d4	103			70.0-130		05/18/2021 22:49	<a href="#">WG1672927</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/14/2021 13:11	<a href="#">WG1670679</a>
Toluene	U		0.278	1.00	1	05/14/2021 13:11	<a href="#">WG1670679</a>
Ethylbenzene	U		0.137	1.00	1	05/14/2021 13:11	<a href="#">WG1670679</a>
o-Xylene	U		0.174	1.00	1	05/14/2021 13:11	<a href="#">WG1670679</a>
m&p-Xylene	U		0.430	2.00	1	05/14/2021 13:11	<a href="#">WG1670679</a>
(S) Toluene-d8	96.3			80.0-120		05/14/2021 13:11	<a href="#">WG1670679</a>
(S) 4-Bromofluorobenzene	92.3			77.0-126		05/14/2021 13:11	<a href="#">WG1670679</a>
(S) 1,2-Dichloroethane-d4	83.5			70.0-130		05/14/2021 13:11	<a href="#">WG1670679</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/14/2021 11:12	<a href="#">WG1670679</a>
Toluene	U		0.278	1.00	1	05/14/2021 11:12	<a href="#">WG1670679</a>
Ethylbenzene	U		0.137	1.00	1	05/14/2021 11:12	<a href="#">WG1670679</a>
o-Xylene	U		0.174	1.00	1	05/14/2021 11:12	<a href="#">WG1670679</a>
m&p-Xylene	U		0.430	2.00	1	05/14/2021 11:12	<a href="#">WG1670679</a>
(S) Toluene-d8	101			80.0-120		05/14/2021 11:12	<a href="#">WG1670679</a>
(S) 4-Bromofluorobenzene	97.6			77.0-126		05/14/2021 11:12	<a href="#">WG1670679</a>
(S) 1,2-Dichloroethane-d4	86.9			70.0-130		05/14/2021 11:12	<a href="#">WG1670679</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3655976-2 05/14/21 10:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Toluene	U		0.278	1.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
<i>(S) Toluene-d8</i>	97.2			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	98.9			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	85.6			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3655976-1 05/14/21 09:21

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.54	90.8	70.0-123	
Ethylbenzene	5.00	4.53	90.6	79.0-123	
Toluene	5.00	4.40	88.0	79.0-120	
o-Xylene	5.00	4.10	82.0	80.0-122	
m&p-Xylenes	10.0	8.65	86.5	80.0-122	
<i>(S) Toluene-d8</i>			99.9	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			98.4	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			91.3	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3656289-3 05/18/21 17:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Toluene	U		0.278	1.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	87.0			77.0-126
(S) 1,2-Dichloroethane-d4	106			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3656289-1 05/18/21 16:12 • (LCSD) R3656289-2 05/18/21 17:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.71	5.40	114	108	70.0-123			5.58	20
Ethylbenzene	5.00	4.25	4.34	85.0	86.8	79.0-123			2.10	20
Toluene	5.00	4.91	4.66	98.2	93.2	79.0-120			5.22	20
o-Xylene	5.00	4.27	4.15	85.4	83.0	80.0-122			2.85	20
m&p-Xylenes	10.0	9.16	8.31	91.6	83.1	80.0-122			9.73	20
(S) Toluene-d8				98.2	96.6	80.0-120				
(S) 4-Bromofluorobenzene				87.1	94.6	77.0-126				
(S) 1,2-Dichloroethane-d4				105	105	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

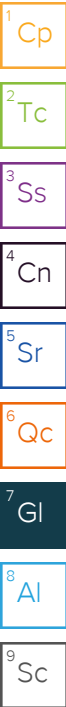
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	-------------------------------------------------------------------------------------



# ACCREDITATIONS & LOCATIONS

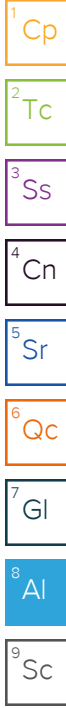
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





May 27, 2021

Joe Casey  
ERM Portland  
1050 SW 6th Ave  
Suite 1650  
Portland, OR 97204

RE: Project: 583831  
Pace Project No.: 10559454

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory between May 11, 2021 and May 12, 2021. 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 Analytical Services - Minneapolis

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

Sincerely,



Julie Bowser  
julie.bowser@pacelabs.com  
612-607-6390  
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland  
ERM Global EDD Mailbox, ERM  
Stephanie Frith, ERM Portland  
Rachel James, ERM Portland



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 583831  
Pace Project No.: 10559454

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### **Pace Analytical Services, LLC - Minneapolis MN**

1700 Elm Street SE, Minneapolis, MN 55414  
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab

A2LA Certification #: 2926.01\*  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009\*  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014\*  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605\*  
Georgia Certification #: 959  
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 #: 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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 583831  
Pace Project No.: 10559454

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10559454001	PEO-MW-36-202105	Water	05/10/21 08:30	05/11/21 10:20
10559454002	PEO-MW-27-202105	Water	05/10/21 10:25	05/12/21 08:50
10559454003	PEO-MW-37-202105	Water	05/10/21 11:35	05/11/21 10:20
10559454004	PEO-MW-39-202105	Water	05/10/21 12:20	05/11/21 10:20
10559454005	PEO-MW-26-202105	Water	05/10/21 13:15	05/11/21 10:20
10559454006	Trip Blank-20210510	Water	05/10/21 08:00	05/11/21 10:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559454

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10559454001	PEO-MW-36-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559454002	PEO-MW-27-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559454003	PEO-MW-37-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559454004	PEO-MW-39-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559454005	PEO-MW-26-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559454

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	AR3	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
<b>10559454006</b>	<b>Trip Blank-20210510</b>	NWTPH-Gx	NS1	2	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-36-202105      Lab ID: 10559454001      Collected: 05/10/21 08:30      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	2.3	mg/L	0.40	0.088	1	05/11/21 14:35	05/13/21 03:00	68334-30-5	
Motor Oil Range SG	0.23J	mg/L	0.40	0.12	1	05/11/21 14:35	05/13/21 03:00	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	66	%	50-150		1	05/11/21 14:35	05/13/21 03:00	84-15-1	
n-Triacontane (S)	74	%	50-150		1	05/11/21 14:35	05/13/21 03:00		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	990	ug/L	100	42.8	1		05/19/21 19:11		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	100	%	50-150		1		05/19/21 19:11	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	110000	ug/L	3300	268	1	05/18/21 13:07	05/19/21 13:59		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	11.2	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 01:03	7440-38-2	
Manganese, Dissolved	1870	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 11:57	7439-96-5	P6
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	1.7	ug/L	0.039	0.0079	1	05/11/21 16:40	05/12/21 13:49	83-32-9	
Acenaphthylene	0.15	ug/L	0.039	0.0063	1	05/11/21 16:40	05/12/21 13:49	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/11/21 16:40	05/12/21 13:49	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 13:49	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/11/21 16:40	05/12/21 13:49	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/11/21 16:40	05/12/21 13:49	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/11/21 16:40	05/12/21 13:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/11/21 16:40	05/12/21 13:49	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 13:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 13:49	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 13:49	206-44-0	
Fluorene	1.5	ug/L	0.039	0.0066	1	05/11/21 16:40	05/12/21 13:49	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/11/21 16:40	05/12/21 13:49	193-39-5	
1-Methylnaphthalene	0.69	ug/L	0.039	0.0060	1	05/11/21 16:40	05/12/21 13:49	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 13:49	91-57-6	
Naphthalene	1.5	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 13:49	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 13:49	85-01-8	
Pyrene	0.052	ug/L	0.039	0.015	1	05/11/21 16:40	05/12/21 13:49	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	82	%	51-125		1	05/11/21 16:40	05/12/21 13:49	321-60-8	
p-Terphenyl-d14 (S)	67	%	70-125		1	05/11/21 16:40	05/12/21 13:49	1718-51-0	S5

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-36-202105      Lab ID: 10559454001      Collected: 05/10/21 08:30      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>119</b>	mg/L	5.0	2.0	1		05/21/21 18:50		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>24.7</b>	mg/L	1.2	0.34	1		05/14/21 21:53	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.028J</b>	mg/L	0.10	0.018	1		05/11/21 16:10	14797-55-8	FS

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-27-202105      Lab ID: 10559454002      Collected: 05/10/21 10:25      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.72</b>	mg/L	0.40	0.088	1	05/12/21 14:54	05/16/21 20:49	68334-30-5	B,D6,L2
Motor Oil Range SG	<b>0.25J</b>	mg/L	0.40	0.12	1	05/12/21 14:54	05/16/21 20:49	64742-65-0	B,P2
<b>Surrogates</b>									
o-Terphenyl (S)	50	%	50-150		1	05/12/21 14:54	05/16/21 20:49	84-15-1	
n-Triacontane (S)	59	%	50-150		1	05/12/21 14:54	05/16/21 20:49		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>170</b>	ug/L	100	42.8	1		05/19/21 23:47		G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	92	%	50-150		1		05/19/21 23:47	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>74100</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 14:16		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>40.0</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:46	7440-38-2	
Manganese, Dissolved	<b>1220</b>	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 12:32	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>0.55</b>	ug/L	0.039	0.0078	1	05/12/21 13:54	05/13/21 12:36	83-32-9	
Acenaphthylene	<b>0.10</b>	ug/L	0.039	0.0062	1	05/12/21 13:54	05/13/21 12:36	208-96-8	
Anthracene	ND	ug/L	0.039	0.0079	1	05/12/21 13:54	05/13/21 12:36	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 12:36	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0085	1	05/12/21 13:54	05/13/21 12:36	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0075	1	05/12/21 13:54	05/13/21 12:36	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0081	1	05/12/21 13:54	05/13/21 12:36	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0082	1	05/12/21 13:54	05/13/21 12:36	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 12:36	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.010	1	05/12/21 13:54	05/13/21 12:36	53-70-3	
Fluoranthene	<b>0.038J</b>	ug/L	0.039	0.010	1	05/12/21 13:54	05/13/21 12:36	206-44-0	
Fluorene	<b>0.51</b>	ug/L	0.039	0.0065	1	05/12/21 13:54	05/13/21 12:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.018	1	05/12/21 13:54	05/13/21 12:36	193-39-5	
1-Methylnaphthalene	<b>0.067</b>	ug/L	0.039	0.0059	1	05/12/21 13:54	05/13/21 12:36	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 12:36	91-57-6	
Naphthalene	<b>0.11</b>	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 12:36	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.0099	1	05/12/21 13:54	05/13/21 12:36	85-01-8	
Pyrene	ND	ug/L	0.039	0.015	1	05/12/21 13:54	05/13/21 12:36	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	64	%	51-125		1	05/12/21 13:54	05/13/21 12:36	321-60-8	
p-Terphenyl-d14 (S)	64	%	70-125		1	05/12/21 13:54	05/13/21 12:36	1718-51-0	S5

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-27-202105      Lab ID: 10559454002      Collected: 05/10/21 10:25      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	45.2	mg/L	5.0	2.0	1		05/21/21 19:20		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	49.9	mg/L	1.2	0.34	1		05/15/21 23:32	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/12/21 10:03	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-37-202105      Lab ID: 10559454003      Collected: 05/10/21 11:35      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.18J</b>	mg/L	0.40	0.088	1	05/11/21 14:35	05/13/21 03:33	68334-30-5	
Motor Oil Range SG	<b>0.14J</b>	mg/L	0.40	0.12	1	05/11/21 14:35	05/13/21 03:33	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	69	%	50-150		1	05/11/21 14:35	05/13/21 03:33	84-15-1	
n-Triacontane (S)	75	%	50-150		1	05/11/21 14:35	05/13/21 03:33		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/20/21 00:14		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	85	%	50-150		1		05/20/21 00:14	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>54900</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 14:11		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>2.8</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 01:19	7440-38-2	
Manganese, Dissolved	<b>136</b>	ug/L	2.5	1.1	5	05/18/21 13:11	05/25/21 12:14	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0079	1	05/11/21 16:40	05/12/21 14:48	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0063	1	05/11/21 16:40	05/12/21 14:48	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/11/21 16:40	05/12/21 14:48	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 14:48	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/11/21 16:40	05/12/21 14:48	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/11/21 16:40	05/12/21 14:48	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/11/21 16:40	05/12/21 14:48	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/11/21 16:40	05/12/21 14:48	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 14:48	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 14:48	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 14:48	206-44-0	
Fluorene	ND	ug/L	0.039	0.0066	1	05/11/21 16:40	05/12/21 14:48	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/11/21 16:40	05/12/21 14:48	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/11/21 16:40	05/12/21 14:48	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 14:48	91-57-6	
Naphthalene	<b>0.012J</b>	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 14:48	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 14:48	85-01-8	
Pyrene	ND	ug/L	0.039	0.015	1	05/11/21 16:40	05/12/21 14:48	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	80	%	51-125		1	05/11/21 16:40	05/12/21 14:48	321-60-8	
p-Terphenyl-d14 (S)	80	%	70-125		1	05/11/21 16:40	05/12/21 14:48	1718-51-0	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-37-202105      Lab ID: 10559454003      Collected: 05/10/21 11:35      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO <sub>3</sub>	<b>41.0</b>	mg/L	5.0	2.0	1		05/21/21 19:24		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>31.8</b>	mg/L	1.2	0.34	1		05/14/21 22:41	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/11/21 16:13	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-39-202105      Lab ID: 10559454004      Collected: 05/10/21 12:20      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	5.3	mg/L	0.40	0.088	1	05/11/21 14:35	05/13/21 03:44	68334-30-5	
Motor Oil Range SG	0.27J	mg/L	0.40	0.12	1	05/11/21 14:35	05/13/21 03:44	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	67	%	50-150		1	05/11/21 14:35	05/13/21 03:44	84-15-1	
n-Triacontane (S)	72	%	50-150		1	05/11/21 14:35	05/13/21 03:44		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	5530	ug/L	500	214	5		05/20/21 00:42		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	115	%	50-150		5		05/20/21 00:42	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	160000	ug/L	3300	268	1	05/18/21 13:07	05/19/21 14:12		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	41.1	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 01:23	7440-38-2	
Manganese, Dissolved	2730	ug/L	10.0	4.4	20	05/18/21 13:11	05/25/21 12:18	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	1.9	ug/L	0.039	0.0079	1	05/11/21 16:40	05/12/21 15:08	83-32-9	
Acenaphthylene	0.15	ug/L	0.039	0.0063	1	05/11/21 16:40	05/12/21 15:08	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/11/21 16:40	05/12/21 15:08	120-12-7	
Benzo(a)anthracene	0.019J	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:08	56-55-3	
Benzo(a)pyrene	0.013J	ug/L	0.039	0.0086	1	05/11/21 16:40	05/12/21 15:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/11/21 16:40	05/12/21 15:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/11/21 16:40	05/12/21 15:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/11/21 16:40	05/12/21 15:08	207-08-9	
Chrysene	0.023J	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:08	53-70-3	
Fluoranthene	ND	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 15:08	206-44-0	
Fluorene	1.6	ug/L	0.039	0.0066	1	05/11/21 16:40	05/12/21 15:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/11/21 16:40	05/12/21 15:08	193-39-5	
1-Methylnaphthalene	15.1	ug/L	0.20	0.030	5	05/11/21 16:40	05/13/21 16:24	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:08	91-57-6	
Naphthalene	2.9	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:08	91-20-3	
Phenanthrene	ND	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 15:08	85-01-8	
Pyrene	ND	ug/L	0.039	0.015	1	05/11/21 16:40	05/12/21 15:08	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	82	%	51-125		1	05/11/21 16:40	05/12/21 15:08	321-60-8	
p-Terphenyl-d14 (S)	66	%	70-125		1	05/11/21 16:40	05/12/21 15:08	1718-51-0	S5

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-39-202105      Lab ID: 10559454004      Collected: 05/10/21 12:20      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO <sub>3</sub>	<b>242</b>	mg/L	5.0	2.0	1		05/21/21 19:27		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>0.64J</b>	mg/L	1.2	0.34	1		05/14/21 22:57	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.020J</b>	mg/L	0.10	0.018	1		05/11/21 16:14	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-26-202105      Lab ID: 10559454005      Collected: 05/10/21 13:15      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.20J</b>	mg/L	0.40	0.088	1	05/11/21 14:35	05/13/21 03:55	68334-30-5	
Motor Oil Range SG	<b>0.13J</b>	mg/L	0.40	0.12	1	05/11/21 14:35	05/13/21 03:55	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	67	%	50-150		1	05/11/21 14:35	05/13/21 03:55	84-15-1	
n-Triacontane (S)	74	%	50-150		1	05/11/21 14:35	05/13/21 03:55		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/19/21 21:29		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	90	%	50-150		1		05/19/21 21:29	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>30200</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 14:14		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>1.3</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 01:26	7440-38-2	
Manganese, Dissolved	<b>82.6</b>	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 12:22	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	<b>0.016J</b>	ug/L	0.039	0.0079	1	05/11/21 16:40	05/12/21 15:27	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0063	1	05/11/21 16:40	05/12/21 15:27	208-96-8	
Anthracene	ND	ug/L	0.039	0.0080	1	05/11/21 16:40	05/12/21 15:27	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:27	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0086	1	05/11/21 16:40	05/12/21 15:27	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0076	1	05/11/21 16:40	05/12/21 15:27	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/11/21 16:40	05/12/21 15:27	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0083	1	05/11/21 16:40	05/12/21 15:27	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:27	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:27	53-70-3	
Fluoranthene	<b>0.030J</b>	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 15:27	206-44-0	
Fluorene	<b>0.024J</b>	ug/L	0.039	0.0066	1	05/11/21 16:40	05/12/21 15:27	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/11/21 16:40	05/12/21 15:27	193-39-5	
1-Methylnaphthalene	<b>0.11</b>	ug/L	0.039	0.0060	1	05/11/21 16:40	05/12/21 15:27	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:27	91-57-6	
Naphthalene	<b>0.028J</b>	ug/L	0.039	0.011	1	05/11/21 16:40	05/12/21 15:27	91-20-3	
Phenanthrene	<b>0.045</b>	ug/L	0.039	0.010	1	05/11/21 16:40	05/12/21 15:27	85-01-8	
Pyrene	<b>0.024J</b>	ug/L	0.039	0.015	1	05/11/21 16:40	05/12/21 15:27	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	68	%	51-125		1	05/11/21 16:40	05/12/21 15:27	321-60-8	
p-Terphenyl-d14 (S)	72	%	70-125		1	05/11/21 16:40	05/12/21 15:27	1718-51-0	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Sample: PEO-MW-26-202105      Lab ID: 10559454005      Collected: 05/10/21 13:15      Received: 05/11/21 10:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO <sub>3</sub>	<b>22.1</b>	mg/L	5.0	2.0	1		05/21/21 19:37		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis									
Sulfate	<b>23.3</b>	mg/L	1.2	0.34	1		05/14/21 23:13	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2 Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.17</b>	mg/L	0.10	0.018	1		05/11/21 16:15	14797-55-8	

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559454

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: Trip Blank-20210510      Lab ID: 10559454006      Collected: 05/10/21 08:00      Received: 05/11/21 10:20      Matrix: Water</b>									
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/20/21 02:05		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	85	%	50-150		1		05/20/21 02:05	98-08-8	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 743124 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005, 10559454006

METHOD BLANK: 3962918 Matrix: Water  
Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005, 10559454006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/19/21 18:43	
a,a,a-Trifluorotoluene (S)	%.	96	50-150		05/19/21 18:43	

METHOD BLANK: 3962919 Matrix: Water  
Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005, 10559454006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/19/21 23:19	
a,a,a-Trifluorotoluene (S)	%.	86	50-150		05/19/21 23:19	

LABORATORY CONTROL SAMPLE & LCSD: 3962920 3962921

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	984	922	98	92	75-127	6	20	
a,a,a-Trifluorotoluene (S)	%.				111	101	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3962922 3962923

Parameter	Units	10559454001 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	990	1000	1000	2060	2170	107	118	71-139	5	30	G+,G-
a,a,a-Trifluorotoluene (S)	%.						113	115	50-150			

SAMPLE DUPLICATE: 3964053

Parameter	Units	10559454004 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	5530	5530	0	30	G+,G-
a,a,a-Trifluorotoluene (S)	%.	115	113			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

SAMPLE DUPLICATE: 3964054

Parameter	Units	10559454005 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	90	89			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 742321      Analysis Method: EPA 6020A  
QC Batch Method: EPA 3020A      Analysis Description: 6020A Water Dissolved UPD4  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005

METHOD BLANK: 3959337      Matrix: Water  
Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/25/21 11:25	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/25/21 11:25	

LABORATORY CONTROL SAMPLE: 3959338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.8	94	80-120	
Manganese, Dissolved	ug/L	100	91.1	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3959339      3959340

Parameter	Units	10559454001 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	11.2	100	100	110	108	99	97	75-125	1	20	
Manganese, Dissolved	ug/L	1870	100	100	1880	2190	8	321	75-125	15	20 P6	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 741273 Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454001, 10559454003, 10559454004, 10559454005

METHOD BLANK: 3952862 Matrix: Water  
Associated Lab Samples: 10559454001, 10559454003, 10559454004, 10559454005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/12/21 13:10	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/12/21 13:10	
Acenaphthene	ug/L	ND	0.040	0.0081	05/12/21 13:10	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/12/21 13:10	
Anthracene	ug/L	ND	0.040	0.0082	05/12/21 13:10	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/12/21 13:10	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/12/21 13:10	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/12/21 13:10	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/12/21 13:10	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/12/21 13:10	
Chrysene	ug/L	ND	0.040	0.011	05/12/21 13:10	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/12/21 13:10	
Fluoranthene	ug/L	ND	0.040	0.011	05/12/21 13:10	
Fluorene	ug/L	ND	0.040	0.0068	05/12/21 13:10	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/12/21 13:10	
Naphthalene	ug/L	ND	0.040	0.011	05/12/21 13:10	
Phenanthrene	ug/L	ND	0.040	0.010	05/12/21 13:10	
Pyrene	ug/L	ND	0.040	0.015	05/12/21 13:10	
2-Fluorobiphenyl (S)	%	79	51-125		05/12/21 13:10	
p-Terphenyl-d14 (S)	%	79	70-125		05/12/21 13:10	

LABORATORY CONTROL SAMPLE: 3952863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.68	68	34-125	
2-Methylnaphthalene	ug/L	1	0.69	69	34-125	
Acenaphthene	ug/L	1	0.78	78	35-125	
Acenaphthylene	ug/L	1	0.76	76	33-125	
Anthracene	ug/L	1	0.85	85	42-125	
Benzo(a)anthracene	ug/L	1	0.85	85	46-125	
Benzo(a)pyrene	ug/L	1	0.84	84	57-125	
Benzo(b)fluoranthene	ug/L	1	0.87	87	58-125	
Benzo(g,h,i)perylene	ug/L	1	0.88	88	55-125	
Benzo(k)fluoranthene	ug/L	1	0.82	82	55-125	
Chrysene	ug/L	1	0.84	84	56-125	
Dibenz(a,h)anthracene	ug/L	1	0.84	84	40-125	
Fluoranthene	ug/L	1	0.83	83	64-125	
Fluorene	ug/L	1	0.80	80	43-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.89	89	57-125	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

LABORATORY CONTROL SAMPLE: 3952863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	1	0.72	72	30-125	
Phenanthrene	ug/L	1	0.82	82	47-125	
Pyrene	ug/L	1	0.87	87	46-125	
2-Fluorobiphenyl (S)	%			78	51-125	
p-Terphenyl-d14 (S)	%			83	70-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3952864 3952865

Parameter	Units	MS 10559454001		MSD 3952865		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result						
1-Methylnaphthalene	ug/L	0.69	0.98	0.98	1.2	1.4	57	70	30-150	10	30
2-Methylnaphthalene	ug/L	ND	0.98	0.98	0.69	0.75	71	77	30-150	9	30
Acenaphthene	ug/L	1.7	0.98	0.98	2.4	2.5	64	83	30-125	7	30
Acenaphthylene	ug/L	0.15	0.98	0.98	0.77	0.89	63	75	30-125	15	30
Anthracene	ug/L	ND	0.98	0.98	0.82	0.86	84	88	42-125	5	30
Benzo(a)anthracene	ug/L	ND	0.98	0.98	0.68	0.71	70	73	46-125	5	30
Benzo(a)pyrene	ug/L	ND	0.98	0.98	0.59	0.63	60	64	53-125	7	30
Benzo(b)fluoranthene	ug/L	ND	0.98	0.98	0.60	0.64	61	65	54-125	6	30
Benzo(g,h,i)perylene	ug/L	ND	0.98	0.98	0.58	0.64	59	65	55-125	10	30
Benzo(k)fluoranthene	ug/L	ND	0.98	0.98	0.58	0.61	59	62	55-125	5	30
Chrysene	ug/L	ND	0.98	0.98	0.69	0.72	71	74	52-125	4	30
Dibenz(a,h)anthracene	ug/L	ND	0.98	0.98	0.52	0.59	54	60	40-125	11	30
Fluoranthene	ug/L	ND	0.98	0.98	0.81	0.82	83	84	61-125	2	30
Fluorene	ug/L	1.5	0.98	0.98	1.9	2.2	46	73	43-125	13	30
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.98	0.98	0.54	0.58	56	60	54-125	7	30
Naphthalene	ug/L	1.5	0.98	0.98	1.8	2.0	31	47	30-125	8	30
Phenanthrene	ug/L	ND	0.98	0.98	0.84	0.86	86	88	44-125	2	30
Pyrene	ug/L	0.052	0.98	0.98	0.80	0.83	77	80	46-125	4	30
2-Fluorobiphenyl (S)	%						82	83	51-125		
p-Terphenyl-d14 (S)	%						70	72	70-125		

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559454

QC Batch: 741474 Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454002

METHOD BLANK: 3953971 Matrix: Water  
Associated Lab Samples: 10559454002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/13/21 11:38	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Acenaphthene	ug/L	ND	0.040	0.0081	05/13/21 11:38	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/13/21 11:38	
Anthracene	ug/L	ND	0.040	0.0082	05/13/21 11:38	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/13/21 11:38	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/13/21 11:38	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/13/21 11:38	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/13/21 11:38	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/13/21 11:38	
Chrysene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Fluoranthene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Fluorene	ug/L	ND	0.040	0.0068	05/13/21 11:38	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/13/21 11:38	
Naphthalene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Phenanthrene	ug/L	ND	0.040	0.010	05/13/21 11:38	
Pyrene	ug/L	ND	0.040	0.015	05/13/21 11:38	
2-Fluorobiphenyl (S)	%	70	51-125		05/13/21 11:38	
p-Terphenyl-d14 (S)	%	83	70-125		05/13/21 11:38	

LABORATORY CONTROL SAMPLE & LCSD: 3953972 3954187

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.59	0.61	59	61	34-125	4	20	
2-Methylnaphthalene	ug/L	1	0.61	0.60	61	60	34-125	1	20	
Acenaphthene	ug/L	1	0.72	0.69	72	69	35-125	4	20	
Acenaphthylene	ug/L	1	0.74	0.70	74	70	33-125	6	20	
Anthracene	ug/L	1	0.79	0.74	79	74	42-125	5	20	
Benzo(a)anthracene	ug/L	1	0.80	0.74	80	74	46-125	9	20	
Benzo(a)pyrene	ug/L	1	0.81	0.75	81	75	57-125	9	20	
Benzo(b)fluoranthene	ug/L	1	0.81	0.77	81	77	58-125	6	20	
Benzo(g,h,i)perylene	ug/L	1	0.98	0.88	98	88	55-125	10	20	
Benzo(k)fluoranthene	ug/L	1	0.87	0.78	87	78	55-125	12	20	
Chrysene	ug/L	1	0.86	0.79	86	79	56-125	9	20	
Dibenz(a,h)anthracene	ug/L	1	0.93	0.86	93	86	40-125	8	20	
Fluoranthene	ug/L	1	0.81	0.68	81	68	64-125	18	20	
Fluorene	ug/L	1	0.76	0.73	76	73	43-125	4	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.95	0.82	95	82	57-125	14	20	

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559454

LABORATORY CONTROL SAMPLE & LCSD: 3953972		3954187									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.61	0.58	61	58	30-125	5	20		
Phenanthrene	ug/L	1	0.76	0.70	76	70	47-125	9	20		
Pyrene	ug/L	1	0.81	0.74	81	74	46-125	9	20		
2-Fluorobiphenyl (S)	%.				69	65	51-125				
p-Terphenyl-d14 (S)	%.				91	80	70-125				

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 741208 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454001, 10559454003, 10559454004, 10559454005

METHOD BLANK: 3952510 Matrix: Water  
Associated Lab Samples: 10559454001, 10559454003, 10559454004, 10559454005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/13/21 02:38	
Motor Oil Range SG	mg/L	ND	0.40	0.12	05/13/21 02:38	
n-Triacontane (S)	%	74	50-150		05/13/21 02:38	
o-Terphenyl (S)	%	66	50-150		05/13/21 02:38	

LABORATORY CONTROL SAMPLE: 3952511

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.7	85	50-150	
Motor Oil Range SG	mg/L	2	2.2	109	50-150	
n-Triacontane (S)	%			87	50-150	
o-Terphenyl (S)	%			79	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3952512 3952513

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10559454001 Result	Spike Conc.	Spike Conc.	Result						
Diesel Fuel Range SG	mg/L	2.3	2	2	3.9	4.1	77	91	50-150	7	30
Motor Oil Range SG	mg/L	0.23J	2	2	1.6	1.6	67	70	50-150	4	30
n-Triacontane (S)	%						73	75	50-150		
o-Terphenyl (S)	%						67	69	50-150		

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 741540	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454002

METHOD BLANK: 3954390 Matrix: Water

Associated Lab Samples: 10559454002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	0.088J	0.40	0.088	05/16/21 19:32	
Motor Oil Range SG	mg/L	0.17J	0.40	0.12	05/16/21 19:32	
n-Triacontane (S)	%	60	50-150		05/16/21 19:32	
o-Terphenyl (S)	%	48	50-150		05/16/21 19:32	S0

LABORATORY CONTROL SAMPLE & LCSD: 3954391

3954392

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	0.95	1.4	47	68	50-150	36	20	L2,R1
Motor Oil Range SG	mg/L	2	1.1	1.5	54	74	50-150	31	20	R1
n-Triacontane (S)	%				50	68	50-150			
o-Terphenyl (S)	%				44	65	50-150			S0

SAMPLE DUPLICATE: 3954393

Parameter	Units	10559454002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.72	1.3	59	30	D6
Motor Oil Range SG	mg/L	0.25J	0.25J		30	P2
n-Triacontane (S)	%	59	83			
o-Terphenyl (S)	%	50	76			

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### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559454

QC Batch: 743706 Analysis Method: SM 2320B  
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005

METHOD BLANK: 3966045 Matrix: Water  
Associated Lab Samples: 10559454001, 10559454002, 10559454003, 10559454004, 10559454005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/21/21 16:39	

LABORATORY CONTROL SAMPLE & LCSD: 3966046 3966047

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.7	43.4	107	108	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3966048 3966049

Parameter	Units	10559478001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	115	40	40	157	156	105	101	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3966050 3966051

Parameter	Units	10559454001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	119	40	40	159	159	99	100	80-120	0	20	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 742036 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454001, 10559454003, 10559454004, 10559454005

METHOD BLANK: 3957164 Matrix: Water  
Associated Lab Samples: 10559454001, 10559454003, 10559454004, 10559454005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/14/21 15:27	

LABORATORY CONTROL SAMPLE: 3957165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	52.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957166 3957167

Parameter	Units	10558570001		3957167		% Rec		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	% Rec	% Rec				
Sulfate	mg/L	20.0	50	65.9	50	92	94	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957168 3957169

Parameter	Units	10559454001		3957169		% Rec		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	% Rec	% Rec				
Sulfate	mg/L	24.7	50	70.3	50	91	93	80-120	1	20	

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559454

QC Batch: 742040      Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0      Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454002

METHOD BLANK: 3957186      Matrix: Water  
Associated Lab Samples: 10559454002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/15/21 17:39	

LABORATORY CONTROL SAMPLE: 3957187

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	46.7	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957188      3957189

Parameter	Units	10559159001		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Sulfate	mg/L	3.7	50	50	50	51.7	52.7	96	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957190      3957191

Parameter	Units	10559159002		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Sulfate	mg/L	64.4	50	50	50	106	107	83	85	80-120	1	20 E	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559454

QC Batch: 741439	Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2	Analysis Description: 353.2 Nitrate + Nitrite, preserved
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559454002

METHOD BLANK: 3953835 Matrix: Water

Associated Lab Samples: 10559454002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	0.018	05/12/21 10:15	

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## QUALIFIERS

Project: 583831  
Pace Project No.: 10559454

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### 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.

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

TNI - The NELAC Institute.

### WORKORDER QUALIFIERS

WO: 10559454

[1] All vials and sample MW-27 arrived on 5/12/21 at 8:50 am due to a FedEx delay.

### BATCH QUALIFIERS

Batch: 741797

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

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

FS The sample was filtered in the laboratory prior to analysis.

G+ Late peaks present outside the GRO window.

G- Early peaks present outside the GRO window.

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.

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.

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 583831  
Pace Project No.: 10559454

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### ANALYTE QUALIFIERS

- S0 Surrogate recovery outside laboratory control limits.
- S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

## REPORT OF LABORATORY ANALYSIS

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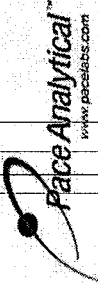
### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831  
Pace Project No.: 10559454

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10559454001	PEO-MW-36-202105	EPA Mod. 3510C	741208	NWTPH-Dx	741594
10559454002	PEO-MW-27-202105	EPA Mod. 3510C	741540	NWTPH-Dx	741898
10559454003	PEO-MW-37-202105	EPA Mod. 3510C	741208	NWTPH-Dx	741594
10559454004	PEO-MW-39-202105	EPA Mod. 3510C	741208	NWTPH-Dx	741594
10559454005	PEO-MW-26-202105	EPA Mod. 3510C	741208	NWTPH-Dx	741594
10559454001	PEO-MW-36-202105	NWTPH-Gx	743124		
10559454002	PEO-MW-27-202105	NWTPH-Gx	743124		
10559454003	PEO-MW-37-202105	NWTPH-Gx	743124		
10559454004	PEO-MW-39-202105	NWTPH-Gx	743124		
10559454005	PEO-MW-26-202105	NWTPH-Gx	743124		
10559454006	Trip Blank-20210510	NWTPH-Gx	743124		
10559454001	PEO-MW-36-202105	EPA 3010A	742320	EPA 6010D	743014
10559454002	PEO-MW-27-202105	EPA 3010A	742320	EPA 6010D	743014
10559454003	PEO-MW-37-202105	EPA 3010A	742320	EPA 6010D	743014
10559454004	PEO-MW-39-202105	EPA 3010A	742320	EPA 6010D	743014
10559454005	PEO-MW-26-202105	EPA 3010A	742320	EPA 6010D	743014
10559454001	PEO-MW-36-202105	EPA 3020A	742321	EPA 6020A	743011
10559454002	PEO-MW-27-202105	EPA 3020A	742321	EPA 6020A	743011
10559454003	PEO-MW-37-202105	EPA 3020A	742321	EPA 6020A	743011
10559454004	PEO-MW-39-202105	EPA 3020A	742321	EPA 6020A	743011
10559454005	PEO-MW-26-202105	EPA 3020A	742321	EPA 6020A	743011
10559454001	PEO-MW-36-202105	EPA Mod. 3510C	741273	EPA 8270 by SIM	741507
10559454002	PEO-MW-27-202105	EPA Mod. 3510C	741474	EPA 8270 by SIM	741797
10559454003	PEO-MW-37-202105	EPA Mod. 3510C	741273	EPA 8270 by SIM	741507
10559454004	PEO-MW-39-202105	EPA Mod. 3510C	741273	EPA 8270 by SIM	741507
10559454005	PEO-MW-26-202105	EPA Mod. 3510C	741273	EPA 8270 by SIM	741507
10559454001	PEO-MW-36-202105	SM 2320B	743706		
10559454002	PEO-MW-27-202105	SM 2320B	743706		
10559454003	PEO-MW-37-202105	SM 2320B	743706		
10559454004	PEO-MW-39-202105	SM 2320B	743706		
10559454005	PEO-MW-26-202105	SM 2320B	743706		
10559454001	PEO-MW-36-202105	EPA 300.0	742036		
10559454002	PEO-MW-27-202105	EPA 300.0	742040		
10559454003	PEO-MW-37-202105	EPA 300.0	742036		
10559454004	PEO-MW-39-202105	EPA 300.0	742036		
10559454005	PEO-MW-26-202105	EPA 300.0	742036		
10559454001	PEO-MW-36-202105	EPA 353.2	741256		
10559454002	PEO-MW-27-202105	EPA 353.2	741439		
10559454003	PEO-MW-37-202105	EPA 353.2	741256		
10559454004	PEO-MW-39-202105	EPA 353.2	741256		
10559454005	PEO-MW-26-202105	EPA 353.2	741256		

### REPORT OF LABORATORY ANALYSIS

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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.

<b>Section A</b> Required Client Information: Company: ERM Address: 1050 SW 6th Ave, Suite 1650 Portland, OR 97204 Email To: rita.cooper@erm.com Phone: 207-829-6320 Fax: Requested Due Date/TAT: Standard		<b>Section B</b> Required Project Information: Report To: Rita Cooper Copy To: Purchase Order No.: Project Name: Julie Bowser Project Number: 583831		<b>Section C</b> Invoice Information: Attention: Company Name: Address: Pace Quote Reference: Pace Project Manager: Pace Profile #:	
Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WT PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS		MATRIX CODE (see valid codes to left) SAMPLE TYPE (G=GRAB C=COMP) DATE TIME COMPOSITE START COMPOSITE END/GRAB SAMPLE TEMP AT COLLECTION		REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER Site Location STATE: OR	

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Unpreserved	Requested Analysis Filtered (Y/N)										Pace Project No./ Lab I.D.							
					DATE	TIME			H <sub>2</sub> SO <sub>4</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	GRO (NWTPH-GX)	BTEX (SW8260C/SW8260C SIM)	VPH (NWTPH-VPH)	DRO (NWTPH-DX)		Dissolved Metals (As, Mn) (6020A)	Hardness (SM2340B)	SVOC (EPA 8270 SIM)	EPH (NWTPH-EPH)	Nitrate (EPA 353.2)	Total Alkalinity (SM 2320B)	Sulfate (EPA 300.0)
1	PEO-MW-36-202105		GW	G	5/10/21	8:30		57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001
2	PEO-MW-27-202105		GW	G	5/10/21	10:25	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	002
3	PEO-MW-37-202105		GW	G	5/10/21	11:35	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	003
4	PEO-MW-39-202105		GW	G	5/10/21	12:20	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	004
5	PEO-MW-26-202105		GW	G	5/10/21	13:15	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	005
6	TRIP-BLANK-20210507		GW	G	5/10/21	8:00	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	006
7	TRIP BLANK-20210510																									

WO#: 10559454

10559454

ITEM #	ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS							
		DATE	TIME	DATE	TIME	DATE	TIME	Temp in °C	Received on	Ice (Y/N)	Sealed Cooler	Custody	Samples Intact				
		Joe Casey / ERM	15:00	5/10/21	15:00	Joe Casey / ERM	15:00	5/10/21	15:00	10:20	10:20	14.12	3.6/1.5	Y	Y	Y	Y

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: Joe Casey  
 SIGNATURE of SAMPLER:  
 DATE Signed (MM/DD/YY): 5/10/21



Document Name:  
**Sample Condition Upon Receipt (SCUR) - MN**  
 Document No.:  
**ENV-FRM-MIN4-0150 Rev.02**

Document Revised: 14Apr2021  
**Page 1 of 1**  
 Pace Analytical Services -  
 Minneapolis

**Sample Condition Upon Receipt**

Client Name:

ERM

Project #:

**WO# : 10559454**

Courier:  Fed Ex  UPS  USPS  Client  
 Pace  SpeedDee  Commercial

PM: JMT Due Date: 05/25/21  
 CLIENT: ERM-0regon

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)  OS418-LS Type  Wet  Blue  None  Dry  Melted  
 T4(0254)  T5(0489)  160285052 of Ice: \_\_\_\_\_

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, 1.2, 3.6, 1.5 °C Average Corrected Temp (no temp blank only): \_\_\_\_\_ °C  See Exceptions ENV-FRM-MIN4-0142  1 Container

Correction Factor: Time Cooler Temp Corrected w/temp blank: 1.4, 1.2, 3.6, 1.5 °C

USDA Regulated Soil: (  N/A, water sample/Other: \_\_\_\_\_ ) Date/Initials of Person Examining Contents: ED 5/11/21  
 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 (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>001, 003-005</u>  <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO <sub>3</sub> <input checked="" type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate <u>001: 3/3</u> <u>001: 3/3</u> <u>003-005: 1/1</u> <u>003-005: 1/1</u>
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142 Chlorine? <input type="checkbox"/> No <b>pH Paper Lot#</b>
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip <u>221419</u>
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

**CLIENT NOTIFICATION/RESOLUTION**

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Field Data Required?  Yes  No  
 Comments/Resolution: Samples that are missing are from delayed FedEx coolers. The coolers arrived on 5/12/21 at 8:50am.

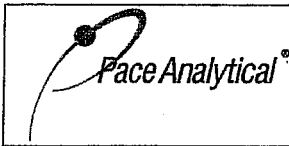
Project Manager Review: \_\_\_\_\_

Julie Buser

Date: 5/12/21

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: JS (2)



**SCUR Exceptions:**

**Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No																
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr> <td>1.8</td> <td>True</td> <td>3.6</td> </tr> <tr> <td>5.1</td> <td>True</td> <td rowspan="3">Cooler! 1456 2247 1356</td> </tr> <tr> <td>3.8</td> <td>True</td> </tr> <tr> <td>3.6</td> <td>True</td> </tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp	1.8	True	3.6	5.1	True	Cooler! 1456 2247 1356	3.8	True	3.6	True
No Temp Blank																			
Read Temp	Corrected Temp	Average Temp																	
1.8	True	3.6																	
5.1	True	Cooler! 1456 2247 1356																	
3.8	True																		
3.6	True																		

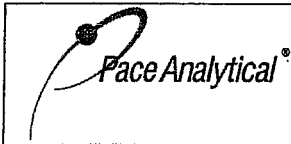
Tracking Number/Temperature	
1456 2247 1323	1.4
1456 2247 1345	1.2
1456 2247 1356	3.6
1456 2247 1312	1.5

Issue Type: MISSING	Container Type	# of Containers
Sample ID		
PEO-MW-36-202105	VG9H	27
↓	AG1H	2
	AG1U	2
PEO-MW-27-202105	VG9H	9
	AG3H	2
	BP3N	1
	AG1H	2
	AG1U	2
	BP4U	1
	BP3U	1
	BP3S	1

**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? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Comments:**



**SCUR Exceptions:**

**Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			<b>Multiple Cooler Project?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp												
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			

Tracking Number/Temperature

Issue Type: <i>missing</i>	Container Type	# of Containers
<i>PEO-MW-37-202105</i>	<i>VG9H</i>	<i>9</i>
<i>PEO-MW-39-202105</i>	<i>VG9H</i>	<i>9</i>
<i>PEO-MW-26-202105</i>	<i>VG9H</i>	<i>9</i>
<i>Trip Blank-20210510</i>	<i>VG9H</i>	<i>6</i>

**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? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Comments:**



Sample Condition Upon Receipt	Client Name: <u>ERM</u>	Project #: _____	WO#: 10559454
Courier:	<input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input type="checkbox"/> Pace <input type="checkbox"/> Speedee <input type="checkbox"/> Commercial	See Exceptions <input checked="" type="checkbox"/> ENV-FRM-MIN4-0142	PM: JMT    Due Date: 05/25/21 CLIENT: ERM-0regon
Tracking Number: _____			

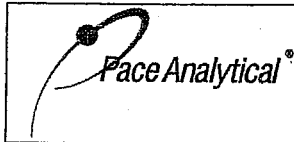
Custody Seal on Cooler/Box Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Biological Tissue Frozen? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Packing Material: <input type="checkbox"/> Bubble Wrap <input checked="" type="checkbox"/> Bubble Bags <input type="checkbox"/> None <input type="checkbox"/> Other: _____	Temp Blank? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Thermometer: <input checked="" type="checkbox"/> T1(0461) <input type="checkbox"/> T2(1336) <input type="checkbox"/> T3(0459) <input type="checkbox"/> OS418-LS <input type="checkbox"/> T4(0254) <input type="checkbox"/> T5(0489) <input type="checkbox"/> 160285052	Type of Ice: <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Blue <input type="checkbox"/> None <input type="checkbox"/> Dry <input type="checkbox"/> Melted	

Did Samples Originate in West Virginia? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Were All Container Temps Taken? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Temp should be above freezing to 6°C    Cooler Temp Read w/temp blank: <u>3.2, 1.9</u> °C	Average Corrected Temp (no temp blank only): _____ °C
Correction Factor: <u>TIME</u> Cooler Temp Corrected w/temp blank: <u>3.2, 1.9</u> °C	<input type="checkbox"/> See Exceptions ENV-FRM-MIN4-0142 <input type="checkbox"/> 1 Container

USDA Regulated Soil: (  N/A, water sample/Other: \_\_\_\_\_ )    Date/Initials of Person Examining Contents: ED 5/11/21  
 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 (F-MN-Q-338) and include with SCUR/COC paperwork.**

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, <u>DRD</u> 8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No    pH Paper Lot# Res. Chlorine    0-6 Roll    0-6 Strip    0-14 Strip
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>300663 (6)</u>
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

**CLIENT NOTIFICATION/RESOLUTION**  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Field Data Required?  Yes     No  
 Comments/Resolution: \_\_\_\_\_ The missing sample/containers for the shipment that arrived on 5/11/21  
 Project Manager Review: Julie Buser Date: 5/12/21



**SCUR Exceptions:**

**Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			<b>Multiple Cooler Project?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp												
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			

Tracking Number/Temperature	
145622471334	3.2
145622471367	1.9

Issue Type:	Container Type	# of Containers
Sample ID		

**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? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Comments:**

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# Internal Transfer Chain of Custody

D185



Samples Pre-Logged into eCOC.

State Of Origin: OR

Cert. Needed:  Yes  No

Owner Received Date: 5/11/2021 Results Requested By: 5/25/2021

Workorder: 10559454

Workorder Name: 583831

Report To	Subcontract To	Requested Analysis											
Julie Bowser Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 612-607-6390	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858	<div style="float: right; font-size: 2em;">L1352490</div>											

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers										LAB USE ONLY		
						HCL VG9H												
1	PEO-MW-36-202105	RQS	5/10/2021 08:30	10559454001	Water	9												MS/MSD -01
2	PEO-MW-27-202105	PS	5/10/2021 10:25	10559454002	Water	3												-02
3	PEO-MW-37-202105	PS	5/10/2021 11:35	10559454003	Water	3												-03
4	PEO-MW-39-202105	PS	5/10/2021 12:20	10559454004	Water	3												-04
5	PEO-MW-26-202105	PS	5/10/2021 13:15	10559454005	Water	3												-05
6	Trip Blank-20210510	PS	5/10/2021 08:00	10559454006	Water	2												-06

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	5/12/21 17:00	<i>[Signature]</i>	5/13/21 5:00	report xylene isomers, not totals
2					
3					

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.

*Handwritten notes:* A/B 1.1 + 0 = 1.1

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	If Applicable
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	VOA Zero Headpace:
Bottles arrive intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Pres. Correct/Check:
Correct bottles used:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Sufficient volume sent:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	



**Pace Analytical Minnesota**

Julie Bowser  
1700 Elm Street, Ste. 200  
Minneapolis, MN 55414

**RE: 583831**

**Work Order Number: 2105199**

May 26, 2021

**Attention Julie Bowser:**

Fremont Analytical, Inc. received 6 sample(s) on 5/13/2021 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***

***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: 05/26/2021

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831  
**Work Order:** 2105199

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2105199-001	PEO-MW-36-202105	05/10/2021 8:30 AM	05/13/2021 9:30 AM
2105199-002	PEO-MW-27-202105	05/10/2021 10:25 AM	05/13/2021 9:30 AM
2105199-003	PEO-MW-37-202105	05/10/2021 11:35 AM	05/13/2021 9:30 AM
2105199-004	PEO-MW-39-202105	05/10/2021 12:20 PM	05/13/2021 9:30 AM
2105199-005	PEO-MW-26-202105	05/10/2021 1:15 PM	05/13/2021 9:30 AM
2105199-006	Trip Blank-20210510	05/10/2021 8:00 AM	05/13/2021 9:30 AM

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

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Original

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

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**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.

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### 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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105199-001

**Collection Date:** 5/10/2021 8:30:00 AM

**Client Sample ID:** PEO-MW-36-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	145	20.3		µg/L	1	5/22/2021 5:04:33 AM
Surr: 1-Chlorooctadecane	82.5	60 - 140		%Rec	1	5/22/2021 5:04:33 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	43.4	12.2		µg/L	1	5/20/2021 10:00:06 PM
Surr: 1,4-Difluorobenzene	98.9	65 - 140		%Rec	1	5/20/2021 10:00:06 PM
Surr: Bromofluorobenzene	100	65 - 140		%Rec	1	5/20/2021 10:00:06 PM

**Lab ID:** 2105199-002

**Collection Date:** 5/10/2021 10:25:00 AM

**Client Sample ID:** PEO-MW-27-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32367 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.6		µg/L	1	5/24/2021 10:16:23 PM
Surr: 1-Chlorooctadecane	136	60 - 140		%Rec	1	5/24/2021 10:16:23 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 10:39:21 PM
Surr: 1,4-Difluorobenzene	89.5	65 - 140		%Rec	1	5/20/2021 10:39:21 PM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	5/20/2021 10:39:21 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105199-003

**Collection Date:** 5/10/2021 11:35:00 AM

**Client Sample ID:** PEO-MW-37-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.4		µg/L	1	5/22/2021 7:42:46 AM
Surr: 1-Chlorooctadecane	94.8	60 - 140		%Rec	1	5/22/2021 7:42:46 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 11:18:24 PM
Surr: 1,4-Difluorobenzene	90.9	65 - 140		%Rec	1	5/20/2021 11:18:24 PM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/20/2021 11:18:24 PM

**Lab ID:** 2105199-004

**Collection Date:** 5/10/2021 12:20:00 PM

**Client Sample ID:** PEO-MW-39-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/22/2021 8:35:23 AM
Surr: 1-Chlorooctadecane	80.1	60 - 140		%Rec	1	5/22/2021 8:35:23 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	449	12.2		µg/L	1	5/20/2021 11:57:26 PM
Surr: 1,4-Difluorobenzene	124	65 - 140		%Rec	1	5/20/2021 11:57:26 PM
Surr: Bromofluorobenzene	106	65 - 140		%Rec	1	5/20/2021 11:57:26 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105199-005

**Collection Date:** 5/10/2021 1:15:00 PM

**Client Sample ID:** PEO-MW-26-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	5/22/2021 9:28:10 AM
Surr: 1-Chlorooctadecane	88.8	60 - 140		%Rec	1	5/22/2021 9:28:10 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/21/2021 12:36:29 AM
Surr: 1,4-Difluorobenzene	89.8	65 - 140		%Rec	1	5/21/2021 12:36:29 AM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	5/21/2021 12:36:29 AM

**Lab ID:** 2105199-006

**Collection Date:** 5/10/2021 8:00:00 AM

**Client Sample ID:** Trip Blank-20210510

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 2:49:23 PM
Surr: 1,4-Difluorobenzene	87.4	65 - 140		%Rec	1	5/20/2021 2:49:23 PM
Surr: Bromofluorobenzene	99.0	65 - 140		%Rec	1	5/20/2021 2:49:23 PM

Work Order: 2105199  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-32319</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>MBLKW</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360235</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.7		0	0						
Surr: 1-Chlorooctadecane	371		396.7		93.6	60	140				

Sample ID: <b>LCS-32319</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360236</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	396	39.6	495.0	0	79.9	70	130				
Surr: 1-Chlorooctadecane	395		396.0		99.6	60	140				

Sample ID: <b>LCS-32319</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>LCSW02</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360237</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	380	39.6	494.6	0	76.9	70	130	395.5	3.91	20	
Surr: 1-Chlorooctadecane	402		395.6		102	60	140		0		

Sample ID: <b>2105199-001BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>PEO-MW-36-202105</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/22/2021</b>	SeqNo: <b>1360334</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	868	39.9	499.0	145.1	145	70	130				S
Surr: 1-Chlorooctadecane	344		399.2		86.1	60	140				

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

**Work Order:** 2105199  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105199-001BMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>PEO-MW-36-202105</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/22/2021</b>	SeqNo: <b>1360335</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	512	40.0	499.7	145.1	73.3	70	130	868.3	51.7	30	R
Surr: 1-Chlorooctadecane	306		399.8		76.6	60	140		0		

**NOTES:**

R - High RPD observed, spike recovery is within range.

Sample ID: <b>MB-32367</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>				Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>				
Client ID: <b>MBLKW</b>	Batch ID: <b>32367</b>					Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361076</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.3		0	0						
Surr: 1-Chlorooctadecane	275		393.1		69.9	60	140				

Sample ID: <b>LCS-32367</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>32367</b>					Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361077</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	358	39.3	491.8	0	72.9	70	130				
Surr: 1-Chlorooctadecane	300		393.5		76.2	60	140				

Sample ID: <b>LCSD-32367</b>	SampType: <b>LCSD</b>	Units: <b>µg/L</b>				Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>				
Client ID: <b>LCSW02</b>	Batch ID: <b>32367</b>					Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361078</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	346	39.5	494.2	0	70.1	70	130	358.4	3.45	20	
Surr: 1-Chlorooctadecane	274		395.4		69.4	60	140		0		

**Work Order:** 2105199  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105199-002BMS</b>	SampType: <b>MS</b>		Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67483</b>						
Client ID: <b>PEO-MW-27-202105</b>	Batch ID: <b>32367</b>			Analysis Date: <b>5/24/2021</b>	SeqNo: <b>1361080</b>						
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	353	40.0	499.5	0	70.7	70	130				
Surr: 1-Chlorooctadecane	339		399.6		85.0	60	140				

Work Order: 2105199  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCS-32366</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360055</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	207	25.0	200.0	0	104	70	130				
Surr: 1,4-Difluorobenzene	52.0		50.00		104	65	140				
Surr: Bromofluorobenzene	52.5		50.00		105	65	140				

Sample ID: <b>MB-32366</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360054</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	43.4		50.00		86.7	65	140				
Surr: Bromofluorobenzene	50.2		50.00		100	65	140				

Sample ID: <b>2105153-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360034</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	44.3		50.00		88.6	65	140		0		
Surr: Bromofluorobenzene	50.1		50.00		100	65	140		0		

Sample ID: <b>2105198-003ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360042</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	250		0	0			0	0	25	D
Surr: 1,4-Difluorobenzene	453		500.0		90.6	65	140		0		D
Surr: Bromofluorobenzene	512		500.0		102	65	140		0		D

**Work Order:** 2105199  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>2105199-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>PEO-MW-36-202105</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360044</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	194	25.0	200.0	43.43	75.4	70	130				
Surr: 1,4-Difluorobenzene	55.4		50.00		111	65	140				
Surr: Bromofluorobenzene	50.2		50.00		100	65	140				

Sample ID: <b>2105199-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>PEO-MW-36-202105</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360045</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	256	25.0	200.0	43.43	106	70	130	194.2	27.4	30	
Surr: 1,4-Difluorobenzene	55.7		50.00		111	65	140		0		
Surr: Bromofluorobenzene	51.3		50.00		103	65	140		0		

Client Name: **PACEMI**

 Work Order Number: **2105199**

 Logged by: **Gabrielle Coeulle**

 Date Received: **5/13/2021 9:30:00 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:	<input type="text" value="Julie Bowser"/>	Date:	<input type="text" value="5/13/2021"/>
By Whom:	<input type="text" value="Gabrielle Coeulle"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Confirming sample 1 should be run and charged as MS/MSD? No EPH volume for sampl"/>		
Client Instructions:	<input type="text" value="Yes. Will provide additional volume 5/18/21"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample 1	3.9

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

Client Name: **PACEMI**

 Work Order Number: **2105199**

 Logged by: **Gabrielle Coeuille**

 Date Received: **5/13/2021 9:30:00 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample 1	3.4
Temp Blank 1	0.5

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

# Chain of Custody

PASI Minnesota Laboratory



Workorder: 10559454

Workorder Name: 583831

Results Requested By: 5/25/2021

*2105199*



Report / Invoice To

Julie Bowser  
Pace Analytical Minnesota  
1700 Elm Street  
Minneapolis, MN 55414  
Phone 612-607-6390  
Email: julie.bowser@pacelabs.com

Subcontract To

Fremont Analytical  
3600 Fremont Ave N  
Seattle, WA 98103

P.O. 10559454

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
					HCL VG9H + AGIH			
1	PEO-MW-36-202105	5/10/2021 08:30	10559454001	Water	12			
2	PEO-MW-27-202105	5/10/2021 10:25	10559454002	Water	5			MS/MSD required
3	PEO-MW-37-202105	5/10/2021 11:35	10559454003	Water	5			
4	PEO-MW-39-202105	5/10/2021 12:20	10559454004	Water	5			
5	PEO-MW-26-202105	5/10/2021 13:15	10559454005	Water	5			
6	Trip Blank-20210510	5/10/2021 08:00	10559454006	Water	2			

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Samples Intact
1	<i>Julie Bowser</i>	5/10/21 1500	<i>Carrie Burton</i>			
2						
3						

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

Report to MDL, EQUIS EDD needed

# Chain of Custody

PASI Minnesota Laboratory



Workorder: 10559454

Workorder Name: 563831

Results Requested By: 5/25/2021

2105199



belongs on WO # 2105199

Report / Invoice To  
 Julie Bowser  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Minneapolis, MN 55414  
 Phone 612-607-6390  
 Email: julie.bowser@paceclabs.com

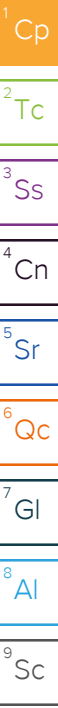
Subcontract To  
 Fremont Analytical  
 3600 Fremont Ave N  
 Seattle, WA 98103

P.O. 10559454

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Date/Time	Received on Ice	Samples Intact	Comments
					HCL VG9H + AGIH						
1	PEO-MW-36-202105	5/10/2021 08:30	10559454001	Water	12						LAB USE ONLY
2	PEO-MW-27-202105	5/10/2021 10:25	10559454002	Water	5						MS/MSD required
3	PEO-MW-37-202105	5/10/2021 11:35	10559454003	Water	5						
4	PEO-MW-39-202105	5/10/2021 12:20	10559454004	Water	5						
5	PEO-MW-26-202105	5/10/2021 13:15	10559454005	Water	5						
6	Trip Blank-20210510	5/10/2021 08:00	10559454006	Water	2						
Cooler Temperature on Receipt    °C    Custody Seal Y or N    Received on Ice Y or N    Samples Intact Y or N											
Transfers	Released By	Date/Time	Received By	Date/Time	Report to MDL, EQUIS EDD needed						
1	Julie Bowser	5/17/21 10:50	Julie Bowser	5/18/21 08:47							
2											
3											

\* ONLY 2-1 L ambers HCLs being sent for EPH, all other containers originally sent,



## Pace Analytical - Minnesota

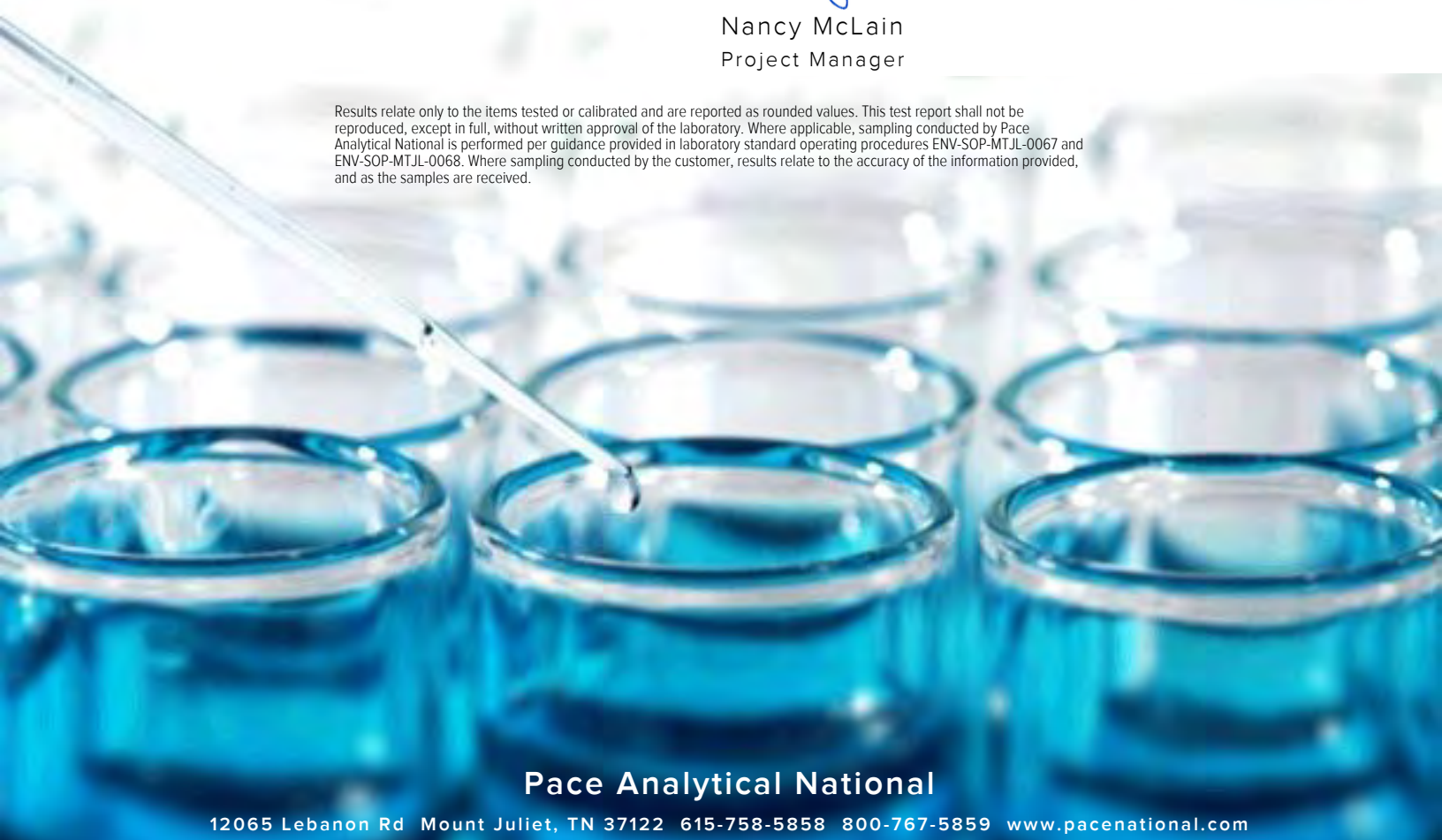
Sample Delivery Group: L1352490  
Samples Received: 05/13/2021  
Project Number: 10559454  
Description: 583831  
Site: 001  
Report To: Julie Bowser  
1700 Elm Street Suite 200  
Minneapolis, MN 55414

Entire Report Reviewed By:



Nancy McLain  
Project Manager










Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

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# SAMPLE SUMMARY

## PEO-MW-36-202105 L1352490-01 GW

Collected by  
Collected date/time  
Received date/time

05/10/21 08:30  
05/13/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1671919	1	05/17/21 22:53	05/17/21 22:53	BMB	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

## PEO-MW-27-202105 L1352490-02 GW

Collected by  
Collected date/time  
Received date/time

05/10/21 10:25  
05/13/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1671919	1	05/17/21 23:12	05/17/21 23:12	BMB	Mt. Juliet, TN

4 Cn

5 Sr

## PEO-MW-37-202105 L1352490-03 GW

Collected by  
Collected date/time  
Received date/time

05/10/21 11:35  
05/13/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1671919	1	05/17/21 23:32	05/17/21 23:32	BMB	Mt. Juliet, TN

6 Qc

7 Gl

8 Al

## PEO-MW-39-202105 L1352490-04 GW

Collected by  
Collected date/time  
Received date/time

05/10/21 12:20  
05/13/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1671919	1	05/17/21 23:52	05/17/21 23:52	BMB	Mt. Juliet, TN

9 Sc

## PEO-MW-26-202105 L1352490-05 GW

Collected by  
Collected date/time  
Received date/time

05/10/21 13:15  
05/13/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1671919	1	05/18/21 00:12	05/18/21 00:12	BMB	Mt. Juliet, TN

## TRIP BLANK-20210510 L1352490-06 GW

Collected by  
Collected date/time  
Received date/time

05/10/21 08:00  
05/13/21 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1671919	1	05/17/21 18:54	05/17/21 18:54	BMB	Mt. Juliet, TN

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Nancy McLain  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	2.07		0.0941	1.00	1	05/17/2021 22:53	<a href="#">WG1671919</a>
Toluene	1.61		0.278	1.00	1	05/17/2021 22:53	<a href="#">WG1671919</a>
Ethylbenzene	0.519	J	0.137	1.00	1	05/17/2021 22:53	<a href="#">WG1671919</a>
o-Xylene	0.950	J	0.174	1.00	1	05/17/2021 22:53	<a href="#">WG1671919</a>
m&p-Xylene	1.66	J J3	0.430	2.00	1	05/17/2021 22:53	<a href="#">WG1671919</a>
(S) Toluene-d8	103			80.0-120		05/17/2021 22:53	<a href="#">WG1671919</a>
(S) 4-Bromofluorobenzene	103			77.0-126		05/17/2021 22:53	<a href="#">WG1671919</a>
(S) 1,2-Dichloroethane-d4	100			70.0-130		05/17/2021 22:53	<a href="#">WG1671919</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/17/2021 23:12	<a href="#">WG1671919</a>
Toluene	U		0.278	1.00	1	05/17/2021 23:12	<a href="#">WG1671919</a>
Ethylbenzene	U		0.137	1.00	1	05/17/2021 23:12	<a href="#">WG1671919</a>
o-Xylene	U		0.174	1.00	1	05/17/2021 23:12	<a href="#">WG1671919</a>
m&p-Xylene	U		0.430	2.00	1	05/17/2021 23:12	<a href="#">WG1671919</a>
(S) Toluene-d8	98.1			80.0-120		05/17/2021 23:12	<a href="#">WG1671919</a>
(S) 4-Bromofluorobenzene	102			77.0-126		05/17/2021 23:12	<a href="#">WG1671919</a>
(S) 1,2-Dichloroethane-d4	90.3			70.0-130		05/17/2021 23:12	<a href="#">WG1671919</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/17/2021 23:32	<a href="#">WG1671919</a>
Toluene	U		0.278	1.00	1	05/17/2021 23:32	<a href="#">WG1671919</a>
Ethylbenzene	U		0.137	1.00	1	05/17/2021 23:32	<a href="#">WG1671919</a>
o-Xylene	U		0.174	1.00	1	05/17/2021 23:32	<a href="#">WG1671919</a>
m&p-Xylene	U		0.430	2.00	1	05/17/2021 23:32	<a href="#">WG1671919</a>
(S) Toluene-d8	98.2			80.0-120		05/17/2021 23:32	<a href="#">WG1671919</a>
(S) 4-Bromofluorobenzene	92.6			77.0-126		05/17/2021 23:32	<a href="#">WG1671919</a>
(S) 1,2-Dichloroethane-d4	96.1			70.0-130		05/17/2021 23:32	<a href="#">WG1671919</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	31.4		0.0941	1.00	1	05/17/2021 23:52	<a href="#">WG1671919</a>
Toluene	24.8		0.278	1.00	1	05/17/2021 23:52	<a href="#">WG1671919</a>
Ethylbenzene	7.45		0.137	1.00	1	05/17/2021 23:52	<a href="#">WG1671919</a>
o-Xylene	12.8		0.174	1.00	1	05/17/2021 23:52	<a href="#">WG1671919</a>
m&p-Xylene	32.8		0.430	2.00	1	05/17/2021 23:52	<a href="#">WG1671919</a>
(S) Toluene-d8	114			80.0-120		05/17/2021 23:52	<a href="#">WG1671919</a>
(S) 4-Bromofluorobenzene	127	<a href="#">J1</a>		77.0-126		05/17/2021 23:52	<a href="#">WG1671919</a>
(S) 1,2-Dichloroethane-d4	94.4			70.0-130		05/17/2021 23:52	<a href="#">WG1671919</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/18/2021 00:12	<a href="#">WG1671919</a>
Toluene	U		0.278	1.00	1	05/18/2021 00:12	<a href="#">WG1671919</a>
Ethylbenzene	U		0.137	1.00	1	05/18/2021 00:12	<a href="#">WG1671919</a>
o-Xylene	U		0.174	1.00	1	05/18/2021 00:12	<a href="#">WG1671919</a>
m&p-Xylene	U		0.430	2.00	1	05/18/2021 00:12	<a href="#">WG1671919</a>
(S) Toluene-d8	103			80.0-120		05/18/2021 00:12	<a href="#">WG1671919</a>
(S) 4-Bromofluorobenzene	99.4			77.0-126		05/18/2021 00:12	<a href="#">WG1671919</a>
(S) 1,2-Dichloroethane-d4	93.5			70.0-130		05/18/2021 00:12	<a href="#">WG1671919</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	05/17/2021 18:54	<a href="#">WG1671919</a>
Toluene	U		0.278	1.00	1	05/17/2021 18:54	<a href="#">WG1671919</a>
Ethylbenzene	U		0.137	1.00	1	05/17/2021 18:54	<a href="#">WG1671919</a>
o-Xylene	U		0.174	1.00	1	05/17/2021 18:54	<a href="#">WG1671919</a>
m&p-Xylene	U		0.430	2.00	1	05/17/2021 18:54	<a href="#">WG1671919</a>
(S) Toluene-d8	103			80.0-120		05/17/2021 18:54	<a href="#">WG1671919</a>
(S) 4-Bromofluorobenzene	102			77.0-126		05/17/2021 18:54	<a href="#">WG1671919</a>
(S) 1,2-Dichloroethane-d4	90.9			70.0-130		05/17/2021 18:54	<a href="#">WG1671919</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3656601-2 05/17/21 18:34

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Toluene	U		0.278	1.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
(S) Toluene-d8	100			80.0-120
(S) 4-Bromofluorobenzene	103			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3656601-1 05/17/21 17:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	4.48	89.6	70.0-123	
Ethylbenzene	5.00	4.45	89.0	79.0-123	
Toluene	5.00	4.58	91.6	79.0-120	
o-Xylene	5.00	4.42	88.4	80.0-122	
m&p-Xylenes	10.0	8.84	88.4	80.0-122	
(S) Toluene-d8			103	80.0-120	
(S) 4-Bromofluorobenzene			102	77.0-126	
(S) 1,2-Dichloroethane-d4			98.9	70.0-130	

7 Gl

8 Al

9 Sc

L1352490-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1352490-01 05/17/21 22:53 • (MS) R3656601-3 05/18/21 01:32 • (MSD) R3656601-4 05/18/21 01:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Benzene	5.00	2.07	5.92	6.85	77.0	95.6	1	17.0-158			14.6	27
Ethylbenzene	5.00	0.519	4.74	5.72	84.4	104	1	30.0-155			18.7	27
Toluene	5.00	1.61	5.51	6.91	78.0	106	1	26.0-154			22.5	28
o-Xylene	5.00	0.950	5.06	6.01	82.2	101	1	45.0-144			17.2	26
m&p-Xylenes	10.0	1.66	9.02	12.1	73.6	104	1	43.0-146		J3	29.2	26
(S) Toluene-d8					92.1	99.9		80.0-120				
(S) 4-Bromofluorobenzene					104	107		77.0-126				
(S) 1,2-Dichloroethane-d4					97.4	88.8		70.0-130				

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

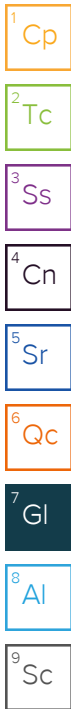
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.



# ACCREDITATIONS & LOCATIONS

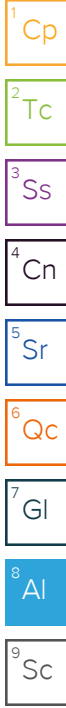
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





May 28, 2021

Joe Casey  
ERM Portland  
1050 SW 6th Ave  
Suite 1650  
Portland, OR 97204

RE: Project: 583831  
Pace Project No.: 10559667

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 12, 2021. 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,



Julie Bowser  
julie.bowser@pacelabs.com  
612-607-6390  
Project Manager

Enclosures

cc: Rita Cooper, ERM Portland  
ERM Global EDD Mailbox, ERM  
Stephanie Frith, ERM Portland  
Rachel James, ERM Portland



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: 583831  
Pace Project No.: 10559667

### 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 #: 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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## CERTIFICATIONS

Project: 583831  
Pace Project No.: 10559667

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### **Pace Analytical Services National**

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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 583831  
Pace Project No.: 10559667

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10559667001	PEO-MW-43-202105	Water	05/11/21 08:25	05/12/21 08:50
10559667002	PEO-MW-35-202105	Water	05/11/21 09:25	05/12/21 08:50
10559667003	PEO-MW-34-202105	Water	05/11/21 10:20	05/12/21 08:50
10559667004	PEO-MW-02-202105	Water	05/11/21 11:35	05/12/21 08:50
10559667005	PEO-MW-11-202105	Water	05/11/21 13:25	05/12/21 08:50
10559667006	Trip Blank-20210511	Water	05/11/21 08:00	05/12/21 08:50

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559667

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10559667001	PEO-MW-43-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	BMB	8	PAN
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559667002	PEO-MW-35-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	BMB	8	PAN
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559667003	PEO-MW-34-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	ACG	8	PAN
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559667004	PEO-MW-02-202105	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	TPR	8	PAN
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10559667005	PEO-MW-11-202105	NWTPH-Dx	JVM	4	PASI-M

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 583831  
Pace Project No.: 10559667

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	NS1	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	BWB	2	PASI-M
		EPA 8270 by SIM	JNG	20	PASI-M
		EPA 8260D	BMB	8	PAN
		SM 2320B	KEO	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
<b>10559667006</b>	<b>Trip Blank-20210511</b>	NWTPH-Gx	NS1	2	PASI-M
		EPA 8260D	BMB	8	PAN

PAN = Pace National - Mt. Juliet

PASI-M = Pace Analytical Services - Minneapolis

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-43-202105      Lab ID: 10559667001      Collected: 05/11/21 08:25      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	18.2	mg/L	0.80	0.18	2	05/17/21 16:42	05/19/21 15:29	68334-30-5	
Motor Oil Range SG	0.89	mg/L	0.80	0.25	2	05/17/21 16:42	05/19/21 15:29	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	87	%	50-150		2	05/17/21 16:42	05/19/21 15:29	84-15-1	
n-Triacontane (S)	76	%	50-150		2	05/17/21 16:42	05/19/21 15:29		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	11400	ug/L	500	214	5		05/17/21 17:40		G+
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	104	%	50-150		5		05/17/21 17:40	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	105000	ug/L	3300	268	1	05/18/21 13:07	05/19/21 14:17		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	35.1	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 00:49	7440-38-2	
Manganese, Dissolved	2000	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 12:36	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	0.93	ug/L	0.038	0.0078	1	05/12/21 13:54	05/13/21 12:55	83-32-9	
Acenaphthylene	ND	ug/L	0.038	0.0062	1	05/12/21 13:54	05/13/21 12:55	208-96-8	
Anthracene	ND	ug/L	0.038	0.0079	1	05/12/21 13:54	05/13/21 12:55	120-12-7	
Benzo(a)anthracene	0.21	ug/L	0.038	0.011	1	05/12/21 13:54	05/13/21 12:55	56-55-3	
Benzo(a)pyrene	0.11	ug/L	0.038	0.0085	1	05/12/21 13:54	05/13/21 12:55	50-32-8	
Benzo(b)fluoranthene	0.23	ug/L	0.038	0.0075	1	05/12/21 13:54	05/13/21 12:55	205-99-2	
Benzo(g,h,i)perylene	0.089	ug/L	0.038	0.0081	1	05/12/21 13:54	05/13/21 12:55	191-24-2	
Benzo(k)fluoranthene	0.10	ug/L	0.038	0.0081	1	05/12/21 13:54	05/13/21 12:55	207-08-9	
Chrysene	0.20	ug/L	0.038	0.011	1	05/12/21 13:54	05/13/21 12:55	218-01-9	
Dibenz(a,h)anthracene	0.022J	ug/L	0.038	0.010	1	05/12/21 13:54	05/13/21 12:55	53-70-3	
Fluoranthene	ND	ug/L	0.038	0.010	1	05/12/21 13:54	05/13/21 12:55	206-44-0	
Fluorene	0.31	ug/L	0.038	0.0065	1	05/12/21 13:54	05/13/21 12:55	86-73-7	
Indeno(1,2,3-cd)pyrene	0.11	ug/L	0.038	0.018	1	05/12/21 13:54	05/13/21 12:55	193-39-5	
1-Methylnaphthalene	0.61	ug/L	0.038	0.0059	1	05/12/21 13:54	05/13/21 12:55	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	0.011	1	05/12/21 13:54	05/13/21 12:55	91-57-6	
Naphthalene	1.8	ug/L	0.038	0.011	1	05/12/21 13:54	05/13/21 12:55	91-20-3	
Phenanthrene	ND	ug/L	0.038	0.0098	1	05/12/21 13:54	05/13/21 12:55	85-01-8	
Pyrene	ND	ug/L	0.038	0.015	1	05/12/21 13:54	05/13/21 12:55	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	51	%	51-125		1	05/12/21 13:54	05/13/21 12:55	321-60-8	
p-Terphenyl-d14 (S)	53	%	70-125		1	05/12/21 13:54	05/13/21 12:55	1718-51-0	S5

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

**Sample: PEO-MW-43-202105**      **Lab ID: 10559667001**      Collected: 05/11/21 08:25      Received: 05/12/21 08:50      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	1.41	ug/L	1.00	0.0941	1	05/19/21 19:11	05/19/21 19:11	71-43-2	
Toluene	1.75	ug/L	1.00	0.278	1	05/19/21 19:11	05/19/21 19:11	108-88-3	
Ethylbenzene	0.935J	ug/L	1.00	0.137	1	05/19/21 19:11	05/19/21 19:11	100-41-4	J
o-Xylene	1.33	ug/L	1.00	0.174	1	05/19/21 19:11	05/19/21 19:11	95-47-6	
m&p-Xylene	8.01	ug/L	2.00	0.430	1	05/19/21 19:11	05/19/21 19:11	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	109	%	80.0-120		1	05/19/21 19:11	05/19/21 19:11	2037-26-5	
4-Bromofluorobenzene (S)	131	%	77.0-126		1	05/19/21 19:11	05/19/21 19:11	460-00-4	ST
1,2-Dichloroethane-d4 (S)	116	%	70.0-130		1	05/19/21 19:11	05/19/21 19:11	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	149	mg/L	5.0	2.0	1		05/24/21 10:04		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	1.8	mg/L	1.2	0.34	1		05/15/21 23:48	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/12/21 12:08	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-35-202105      Lab ID: 10559667002      Collected: 05/11/21 09:25      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	<b>0.54</b>	mg/L	0.40	0.088	1	05/17/21 16:42	05/18/21 18:22	68334-30-5	
Motor Oil Range SG	<b>0.16J</b>	mg/L	0.40	0.12	1	05/17/21 16:42	05/18/21 18:22	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	67	%	50-150		1	05/17/21 16:42	05/18/21 18:22	84-15-1	
n-Triacontane (S)	75	%	50-150		1	05/17/21 16:42	05/18/21 18:22		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	<b>79.1J</b>	ug/L	100	42.8	1		05/18/21 01:55		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	88	%	50-150		1		05/18/21 01:55	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	<b>46900</b>	ug/L	3300	268	1	05/18/21 13:07	05/19/21 14:19		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	<b>15.1</b>	ug/L	0.50	0.14	1	05/18/21 13:11	05/25/21 01:30	7440-38-2	
Manganese, Dissolved	<b>728</b>	ug/L	5.0	2.2	10	05/18/21 13:11	05/25/21 12:39	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.039	0.0079	1	05/12/21 13:54	05/13/21 16:43	83-32-9	
Acenaphthylene	ND	ug/L	0.039	0.0062	1	05/12/21 13:54	05/13/21 16:43	208-96-8	
Anthracene	ND	ug/L	0.039	0.0079	1	05/12/21 13:54	05/13/21 16:43	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 16:43	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	0.0085	1	05/12/21 13:54	05/13/21 16:43	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	0.0075	1	05/12/21 13:54	05/13/21 16:43	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	0.0082	1	05/12/21 13:54	05/13/21 16:43	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	0.0082	1	05/12/21 13:54	05/13/21 16:43	207-08-9	
Chrysene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 16:43	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	0.010	1	05/12/21 13:54	05/13/21 16:43	53-70-3	
Fluoranthene	<b>0.075</b>	ug/L	0.039	0.010	1	05/12/21 13:54	05/13/21 16:43	206-44-0	
Fluorene	ND	ug/L	0.039	0.0066	1	05/12/21 13:54	05/13/21 16:43	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	0.019	1	05/12/21 13:54	05/13/21 16:43	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	0.0060	1	05/12/21 13:54	05/13/21 16:43	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 16:43	91-57-6	
Naphthalene	ND	ug/L	0.039	0.011	1	05/12/21 13:54	05/13/21 16:43	91-20-3	
Phenanthrene	<b>0.035J</b>	ug/L	0.039	0.0099	1	05/12/21 13:54	05/13/21 16:43	85-01-8	
Pyrene	<b>0.067</b>	ug/L	0.039	0.015	1	05/12/21 13:54	05/13/21 16:43	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	72	%	51-125		1	05/12/21 13:54	05/13/21 16:43	321-60-8	
p-Terphenyl-d14 (S)	70	%	70-125		1	05/12/21 13:54	05/13/21 16:43	1718-51-0	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

**Sample: PEO-MW-35-202105**      **Lab ID: 10559667002**      Collected: 05/11/21 09:25      Received: 05/12/21 08:50      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/18/21 14:00	05/18/21 14:00	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/18/21 14:00	05/18/21 14:00	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/18/21 14:00	05/18/21 14:00	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/18/21 14:00	05/18/21 14:00	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/18/21 14:00	05/18/21 14:00	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	112	%	80.0-120		1	05/18/21 14:00	05/18/21 14:00	2037-26-5	
4-Bromofluorobenzene (S)	105	%	77.0-126		1	05/18/21 14:00	05/18/21 14:00	460-00-4	
1,2-Dichloroethane-d4 (S)	91.3	%	70.0-130		1	05/18/21 14:00	05/18/21 14:00	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>24.5</b>	mg/L	5.0	2.0	1		05/24/21 10:31		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>38.6</b>	mg/L	1.2	0.34	1		05/16/21 00:04	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/12/21 12:09	14797-55-8	

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-34-202105      Lab ID: 10559667003      Collected: 05/11/21 10:20      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	56.5	mg/L	4.2	0.91	10	05/17/21 16:42	05/18/21 17:38	68334-30-5	
Motor Oil Range SG	5.3	mg/L	4.2	1.3	10	05/17/21 16:42	05/18/21 17:38	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	103	%	50-150		10	05/17/21 16:42	05/18/21 17:38	84-15-1	
n-Triacontane (S)	55	%	50-150		10	05/17/21 16:42	05/18/21 17:38		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	709	ug/L	100	42.8	1		05/18/21 02:50		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	90	%	50-150		1		05/18/21 02:50	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	167000	ug/L	3300	268	1	05/25/21 13:13	05/26/21 10:56		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	5.1	ug/L	2.5	0.70	5	05/25/21 13:13	05/27/21 05:03	7440-38-2	
Manganese, Dissolved	2610	ug/L	25.0	11.0	50	05/25/21 13:13	05/27/21 12:35	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0081	1	05/12/21 13:54	05/13/21 17:02	83-32-9	
Acenaphthylene	7.4	ug/L	0.040	0.0064	1	05/12/21 13:54	05/13/21 17:02	208-96-8	
Anthracene	ND	ug/L	0.040	0.0082	1	05/12/21 13:54	05/13/21 17:02	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.012	1	05/12/21 13:54	05/13/21 17:02	56-55-3	
Benzo(a)pyrene	0.13	ug/L	0.040	0.0088	1	05/12/21 13:54	05/13/21 17:02	50-32-8	
Benzo(b)fluoranthene	0.12	ug/L	0.040	0.0078	1	05/12/21 13:54	05/13/21 17:02	205-99-2	
Benzo(g,h,i)perylene	0.14	ug/L	0.040	0.0084	1	05/12/21 13:54	05/13/21 17:02	191-24-2	
Benzo(k)fluoranthene	0.028J	ug/L	0.040	0.0085	1	05/12/21 13:54	05/13/21 17:02	207-08-9	
Chrysene	0.19	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:02	218-01-9	
Dibenz(a,h)anthracene	0.023J	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:02	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:02	206-44-0	
Fluorene	ND	ug/L	0.040	0.0068	1	05/12/21 13:54	05/13/21 17:02	86-73-7	
Indeno(1,2,3-cd)pyrene	0.13	ug/L	0.040	0.019	1	05/12/21 13:54	05/13/21 17:02	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0061	1	05/12/21 13:54	05/13/21 17:02	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:02	91-57-6	
Naphthalene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:02	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.010	1	05/12/21 13:54	05/13/21 17:02	85-01-8	
Pyrene	ND	ug/L	0.040	0.015	1	05/12/21 13:54	05/13/21 17:02	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	50	%	51-125		1	05/12/21 13:54	05/13/21 17:02	321-60-8	S5
p-Terphenyl-d14 (S)	36	%	70-125		1	05/12/21 13:54	05/13/21 17:02	1718-51-0	S5

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-34-202105      Lab ID: 10559667003      Collected: 05/11/21 10:20      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	<b>0.413J</b>	ug/L	1.00	0.0941	1	05/19/21 10:05	05/19/21 10:05	71-43-2	J
Toluene	<b>1.47</b>	ug/L	1.00	0.278	1	05/19/21 10:05	05/19/21 10:05	108-88-3	
Ethylbenzene	<b>0.198J</b>	ug/L	1.00	0.137	1	05/19/21 10:05	05/19/21 10:05	100-41-4	J
o-Xylene	<b>0.406J</b>	ug/L	1.00	0.174	1	05/19/21 10:05	05/19/21 10:05	95-47-6	J
m&p-Xylene	<b>0.779J</b>	ug/L	2.00	0.430	1	05/19/21 10:05	05/19/21 10:05	179601-23-1	J
<b>Surrogates</b>									
Toluene-d8 (S)	104	%	80.0-120		1	05/19/21 10:05	05/19/21 10:05	2037-26-5	
4-Bromofluorobenzene (S)	103	%	77.0-126		1	05/19/21 10:05	05/19/21 10:05	460-00-4	
1,2-Dichloroethane-d4 (S)	96.6	%	70.0-130		1	05/19/21 10:05	05/19/21 10:05	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>404</b>	mg/L	5.0	2.0	1		05/24/21 10:35		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>14.0</b>	mg/L	1.2	0.34	1		05/16/21 00:20	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/12/21 12:12	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-02-202105      Lab ID: 10559667004      Collected: 05/11/21 11:35      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	22.0	mg/L	0.80	0.18	2	05/17/21 16:42	05/19/21 15:07	68334-30-5	
Motor Oil Range SG	1.2	mg/L	0.80	0.25	2	05/17/21 16:42	05/19/21 15:07	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	78	%	50-150		2	05/17/21 16:42	05/19/21 15:07	84-15-1	
n-Triacontane (S)	60	%	50-150		2	05/17/21 16:42	05/19/21 15:07		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	296	ug/L	100	42.8	1		05/18/21 03:18		G+,G-
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	84	%	50-150		1		05/18/21 03:18	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	243000	ug/L	3300	268	1	05/25/21 13:13	05/26/21 11:01		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	14.1	ug/L	2.5	0.70	5	05/25/21 13:13	05/27/21 05:07	7440-38-2	
Manganese, Dissolved	3710	ug/L	25.0	11.0	50	05/25/21 13:13	05/27/21 12:39	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.040	0.0080	1	05/12/21 13:54	05/13/21 17:21	83-32-9	
Acenaphthylene	ND	ug/L	0.040	0.0064	1	05/12/21 13:54	05/13/21 17:21	208-96-8	
Anthracene	ND	ug/L	0.040	0.0081	1	05/12/21 13:54	05/13/21 17:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	0.012	1	05/12/21 13:54	05/13/21 17:21	56-55-3	
Benzo(a)pyrene	0.028J	ug/L	0.040	0.0087	1	05/12/21 13:54	05/13/21 17:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	0.0077	1	05/12/21 13:54	05/13/21 17:21	205-99-2	
Benzo(g,h,i)perylene	0.028J	ug/L	0.040	0.0083	1	05/12/21 13:54	05/13/21 17:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	0.0084	1	05/12/21 13:54	05/13/21 17:21	207-08-9	
Chrysene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:21	53-70-3	
Fluoranthene	ND	ug/L	0.040	0.010	1	05/12/21 13:54	05/13/21 17:21	206-44-0	
Fluorene	ND	ug/L	0.040	0.0067	1	05/12/21 13:54	05/13/21 17:21	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	0.019	1	05/12/21 13:54	05/13/21 17:21	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	0.0061	1	05/12/21 13:54	05/13/21 17:21	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:21	91-57-6	
Naphthalene	ND	ug/L	0.040	0.011	1	05/12/21 13:54	05/13/21 17:21	91-20-3	
Phenanthrene	ND	ug/L	0.040	0.010	1	05/12/21 13:54	05/13/21 17:21	85-01-8	
Pyrene	ND	ug/L	0.040	0.015	1	05/12/21 13:54	05/13/21 17:21	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	55	%	51-125		1	05/12/21 13:54	05/13/21 17:21	321-60-8	
p-Terphenyl-d14 (S)	41	%	70-125		1	05/12/21 13:54	05/13/21 17:21	1718-51-0	S5

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-02-202105      Lab ID: 10559667004      Collected: 05/11/21 11:35      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D      Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	ND	ug/L	5.00	0.471	5	05/21/21 03:59	05/21/21 03:59	71-43-2	
Toluene	ND	ug/L	5.00	1.39	5	05/21/21 03:59	05/21/21 03:59	108-88-3	
Ethylbenzene	ND	ug/L	5.00	0.685	5	05/21/21 03:59	05/21/21 03:59	100-41-4	
o-Xylene	ND	ug/L	5.00	0.870	5	05/21/21 03:59	05/21/21 03:59	95-47-6	
m&p-Xylene	ND	ug/L	10.0	2.15	5	05/21/21 03:59	05/21/21 03:59	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	107	%	80.0-120		5	05/21/21 03:59	05/21/21 03:59	2037-26-5	
4-Bromofluorobenzene (S)	93.8	%	77.0-126		5	05/21/21 03:59	05/21/21 03:59	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70.0-130		5	05/21/21 03:59	05/21/21 03:59	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	<b>343</b>	mg/L	5.0	2.0	1		05/24/21 11:30		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	<b>4.3</b>	mg/L	1.2	0.34	1		05/16/21 00:37	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	<b>0.020J</b>	mg/L	0.10	0.018	1		05/12/21 12:13	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: PEO-MW-11-202105      Lab ID: 10559667005      Collected: 05/11/21 13:25      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>									
Analytical Method: NWTPH-Dx    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Diesel Fuel Range SG	44.9	mg/L	4.0	0.88	10	05/17/21 16:42	05/19/21 15:18	68334-30-5	
Motor Oil Range SG	2.3J	mg/L	4.0	1.2	10	05/17/21 16:42	05/19/21 15:18	64742-65-0	
<b>Surrogates</b>									
o-Terphenyl (S)	115	%	50-150		10	05/17/21 16:42	05/19/21 15:18	84-15-1	
n-Triacontane (S)	75	%	50-150		10	05/17/21 16:42	05/19/21 15:18		
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	1300	ug/L	100	42.8	1		05/18/21 03:45		G+
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	88	%	50-150		1		05/18/21 03:45	98-08-8	
<b>6010D MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Minneapolis									
Total Hardness by 2340B, Dissolved	299000	ug/L	3300	268	1	05/25/21 13:13	05/26/21 11:03		
<b>6020A MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020A    Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis									
Arsenic, Dissolved	14.7	ug/L	2.5	0.70	5	05/25/21 13:13	05/27/21 05:11	7440-38-2	
Manganese, Dissolved	3570	ug/L	25.0	11.0	50	05/25/21 13:13	05/27/21 12:42	7439-96-5	
<b>8270 MSSV PAH by SIM</b>									
Analytical Method: EPA 8270 by SIM    Preparation Method: EPA Mod. 3510C Pace Analytical Services - Minneapolis									
Acenaphthene	ND	ug/L	0.20	0.041	5	05/12/21 13:54	05/14/21 12:28	83-32-9	
Acenaphthylene	ND	ug/L	0.20	0.032	5	05/12/21 13:54	05/14/21 12:28	208-96-8	
Anthracene	ND	ug/L	0.20	0.041	5	05/12/21 13:54	05/14/21 12:28	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.20	0.059	5	05/12/21 13:54	05/14/21 12:28	56-55-3	
Benzo(a)pyrene	0.20J	ug/L	0.20	0.044	5	05/12/21 13:54	05/14/21 12:28	50-32-8	
Benzo(b)fluoranthene	0.16J	ug/L	0.20	0.039	5	05/12/21 13:54	05/14/21 12:28	205-99-2	
Benzo(g,h,i)perylene	0.19J	ug/L	0.20	0.042	5	05/12/21 13:54	05/14/21 12:28	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	0.043	5	05/12/21 13:54	05/14/21 12:28	207-08-9	
Chrysene	0.28	ug/L	0.20	0.056	5	05/12/21 13:54	05/14/21 12:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.20	0.055	5	05/12/21 13:54	05/14/21 12:28	53-70-3	
Fluoranthene	ND	ug/L	0.20	0.054	5	05/12/21 13:54	05/14/21 12:28	206-44-0	
Fluorene	ND	ug/L	0.20	0.034	5	05/12/21 13:54	05/14/21 12:28	86-73-7	
Indeno(1,2,3-cd)pyrene	0.14J	ug/L	0.20	0.096	5	05/12/21 13:54	05/14/21 12:28	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.20	0.031	5	05/12/21 13:54	05/14/21 12:28	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.20	0.056	5	05/12/21 13:54	05/14/21 12:28	91-57-6	
Naphthalene	ND	ug/L	0.20	0.056	5	05/12/21 13:54	05/14/21 12:28	91-20-3	
Phenanthrene	ND	ug/L	0.20	0.052	5	05/12/21 13:54	05/14/21 12:28	85-01-8	
Pyrene	1.1	ug/L	0.20	0.077	5	05/12/21 13:54	05/14/21 12:28	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	0	%	51-125		5	05/12/21 13:54	05/14/21 12:28	321-60-8	D3,S5
p-Terphenyl-d14 (S)	0	%	70-125		5	05/12/21 13:54	05/14/21 12:28	1718-51-0	S5

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## ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

**Sample: PEO-MW-11-202105**      **Lab ID: 10559667005**      Collected: 05/11/21 13:25      Received: 05/12/21 08:50      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D    Preparation Method: 8260D									
Pace National - Mt. Juliet									
Benzene	3.35J	ug/L	5.00	0.471	5	05/20/21 03:49	05/20/21 03:49	71-43-2	J
Toluene	ND	ug/L	5.00	1.39	5	05/20/21 03:49	05/20/21 03:49	108-88-3	
Ethylbenzene	ND	ug/L	5.00	0.685	5	05/20/21 03:49	05/20/21 03:49	100-41-4	
o-Xylene	ND	ug/L	5.00	0.870	5	05/20/21 03:49	05/20/21 03:49	95-47-6	
m&p-Xylene	ND	ug/L	10.0	2.15	5	05/20/21 03:49	05/20/21 03:49	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	111	%	80.0-120		5	05/20/21 03:49	05/20/21 03:49	2037-26-5	
4-Bromofluorobenzene (S)	97.6	%	77.0-126		5	05/20/21 03:49	05/20/21 03:49	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70.0-130		5	05/20/21 03:49	05/20/21 03:49	17060-07-0	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Minneapolis									
Alkalinity, Total as CaCO3	617	mg/L	5.0	2.0	1		05/24/21 15:07		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Minneapolis									
Sulfate	2.5	mg/L	1.2	0.34	1		05/16/21 00:53	14808-79-8	
<b>353.2 Nitrate + Nitrite</b>									
Analytical Method: EPA 353.2									
Pace Analytical Services - Minneapolis									
Nitrate as N	ND	mg/L	0.10	0.018	1		05/12/21 12:17	14797-55-8	FS

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### ANALYTICAL RESULTS

Project: 583831  
Pace Project No.: 10559667

Sample: Trip Blank-20210511      Lab ID: 10559667006      Collected: 05/11/21 08:00      Received: 05/12/21 08:50      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Gx GCV</b>									
Analytical Method: NWTPH-Gx Pace Analytical Services - Minneapolis									
TPH as Gas	ND	ug/L	100	42.8	1		05/17/21 21:48		
<b>Surrogates</b>									
a,a,a-Trifluorotoluene (S)	85	%	50-150		1		05/17/21 21:48	98-08-8	
<b>VOA (GC/MS) 8260D</b>									
Analytical Method: EPA 8260D      Preparation Method: 8260D Pace National - Mt. Juliet									
Benzene	ND	ug/L	1.00	0.0941	1	05/19/21 21:54	05/19/21 21:54	71-43-2	
Toluene	ND	ug/L	1.00	0.278	1	05/19/21 21:54	05/19/21 21:54	108-88-3	
Ethylbenzene	ND	ug/L	1.00	0.137	1	05/19/21 21:54	05/19/21 21:54	100-41-4	
o-Xylene	ND	ug/L	1.00	0.174	1	05/19/21 21:54	05/19/21 21:54	95-47-6	
m&p-Xylene	ND	ug/L	2.00	0.430	1	05/19/21 21:54	05/19/21 21:54	179601-23-1	
<b>Surrogates</b>									
Toluene-d8 (S)	116	%	80.0-120		1	05/19/21 21:54	05/19/21 21:54	2037-26-5	
4-Bromofluorobenzene (S)	108	%	77.0-126		1	05/19/21 21:54	05/19/21 21:54	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70.0-130		1	05/19/21 21:54	05/19/21 21:54	17060-07-0	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 742499 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005, 10559667006

METHOD BLANK: 3959840 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005, 10559667006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/17/21 16:17	
a,a,a-Trifluorotoluene (S)	%	91	50-150		05/17/21 16:17	

METHOD BLANK: 3959841 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005, 10559667006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/17/21 21:21	
a,a,a-Trifluorotoluene (S)	%	87	50-150		05/17/21 21:21	

METHOD BLANK: 3960511 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005, 10559667006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	42.8	05/18/21 01:28	
a,a,a-Trifluorotoluene (S)	%	85	50-150		05/18/21 01:28	

LABORATORY CONTROL SAMPLE & LCSD: 3959842 3959843

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	914	98	91	75-127	7	20	
a,a,a-Trifluorotoluene (S)	%				107	106	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3959844 3959845

Parameter	Units	10558838005 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	4620	5000	5000	9270	9100	93	90	71-139	2	30	G+,G-
a,a,a-Trifluorotoluene (S)	%						124	122	50-150			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

SAMPLE DUPLICATE: 3960485

Parameter	Units	10559159001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	84	85			

SAMPLE DUPLICATE: 3960486

Parameter	Units	10559667001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	11400	11300	1	30	G+
a,a,a-Trifluorotoluene (S)	%.	104	104			

SAMPLE DUPLICATE: 3960487

Parameter	Units	10559667002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	79.1J	80.6J		30	
a,a,a-Trifluorotoluene (S)	%.	88	85			

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559667

QC Batch: 742321 Analysis Method: EPA 6020A  
QC Batch Method: EPA 3020A Analysis Description: 6020A Water Dissolved UPD4  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667001, 10559667002

METHOD BLANK: 3959337 Matrix: Water

Associated Lab Samples: 10559667001, 10559667002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/25/21 11:25	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/25/21 11:25	

LABORATORY CONTROL SAMPLE: 3959338

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.8	94	80-120	
Manganese, Dissolved	ug/L	100	91.1	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3959339 3959340

Parameter	Units	10559454001 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	11.2	100	100	110	108	99	97	75-125	1	20	
Manganese, Dissolved	ug/L	1870	100	100	1880	2190	8	321	75-125	15	20 P6	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 744395	Analysis Method: EPA 6020A
QC Batch Method: EPA 3020A	Analysis Description: 6020A Water Dissolved UPD4
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667003, 10559667004, 10559667005

METHOD BLANK: 3969704 Matrix: Water

Associated Lab Samples: 10559667003, 10559667004, 10559667005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	0.14	05/27/21 04:52	
Manganese, Dissolved	ug/L	ND	0.50	0.22	05/27/21 12:27	

LABORATORY CONTROL SAMPLE & LCSD: 3969705 3969754

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Arsenic, Dissolved	ug/L	100	102	102	102	102	80-120	0	20	
Manganese, Dissolved	ug/L	100	99.6	99.4	100	99	80-120	0	20	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 1672747	Analysis Method: EPA 8260D
QC Batch Method: 8260D	Analysis Description: VOA (GC/MS) 8260D
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10559667002

METHOD BLANK: R3656140-2 Matrix: Water

Associated Lab Samples: 10559667002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/18/21 11:43	
Ethylbenzene	ug/L	ND	1.00	0.137	05/18/21 11:43	
Toluene	ug/L	ND	1.00	0.278	05/18/21 11:43	
o-Xylene	ug/L	ND	1.00	0.174	05/18/21 11:43	
m&p-Xylene	ug/L	ND	2.00	0.430	05/18/21 11:43	
Toluene-d8 (S)	%	111	80.0-120		05/18/21 11:43	
4-Bromofluorobenzene (S)	%	103	77.0-126		05/18/21 11:43	
1,2-Dichloroethane-d4 (S)	%	92.8	70.0-130		05/18/21 11:43	

LABORATORY CONTROL SAMPLE: R3656140-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	5.00	5.50	110	70.0-123	
Ethylbenzene	ug/L	5.00	5.98	120	79.0-123	
Toluene	ug/L	5.00	5.97	119	79.0-120	
o-Xylene	ug/L	5.00	5.91	118	80.0-122	
m&p-Xylene	ug/L	10.0	12.0	120	80.0-122	
Toluene-d8 (S)	%			112	80.0-120	
4-Bromofluorobenzene (S)	%			106	77.0-126	
1,2-Dichloroethane-d4 (S)	%			93.3	70.0-130	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 1673101      Analysis Method: EPA 8260D  
QC Batch Method: 8260D      Analysis Description: VOA (GC/MS) 8260D  
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10559667005, 10559667006

METHOD BLANK: R3657275-2      Matrix: Water

Associated Lab Samples: 10559667005, 10559667006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/19/21 21:30	
Ethylbenzene	ug/L	ND	1.00	0.137	05/19/21 21:30	
Toluene	ug/L	ND	1.00	0.278	05/19/21 21:30	
o-Xylene	ug/L	ND	1.00	0.174	05/19/21 21:30	
m&p-Xylene	ug/L	ND	2.00	0.430	05/19/21 21:30	
Toluene-d8 (S)	%	120	80.0-120		05/19/21 21:30	
4-Bromofluorobenzene (S)	%	111	77.0-126		05/19/21 21:30	
1,2-Dichloroethane-d4 (S)	%	116	70.0-130		05/19/21 21:30	

LABORATORY CONTROL SAMPLE: R3657275-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	5.00	5.66	113	70.0-123	
Ethylbenzene	ug/L	5.00	5.62	112	79.0-123	
Toluene	ug/L	5.00	5.65	113	79.0-120	
o-Xylene	ug/L	5.00	5.25	105	80.0-122	
m&p-Xylene	ug/L	10.0	10.6	106	80.0-122	
Toluene-d8 (S)	%			108	80.0-120	
4-Bromofluorobenzene (S)	%			103	77.0-126	
1,2-Dichloroethane-d4 (S)	%			114	70.0-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3657275-3      R3657275-4

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		L1354296-05 Result	Spike Conc.	Spike Conc.	Result						
Benzene	ug/L	ND	5.00	5.00	4.51	4.23	90.2	84.6	17.0-158	6.41	27
Ethylbenzene	ug/L	ND	5.00	5.00	4.10	4.61	82.0	92.2	30.0-155	11.7	27
Toluene	ug/L	ND	5.00	5.00	4.53	4.70	90.6	94.0	26.0-154	3.68	28
o-Xylene	ug/L	ND	5.00	5.00	4.18	4.38	83.6	87.6	45.0-144	4.67	26
m&p-Xylene	ug/L	ND	10.0	10.0	9.66	9.05	96.6	90.5	43.0-146	6.52	26
Toluene-d8 (S)	%						108	109	80.0-120		
4-Bromofluorobenzene (S)	%						106	109	77.0-126		
1,2-Dichloroethane-d4 (S)	%						115	113	70.0-130		

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 1673139	Analysis Method: EPA 8260D
QC Batch Method: 8260D	Analysis Description: VOA (GC/MS) 8260D
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10559667003

METHOD BLANK: R3656309-2 Matrix: Water

Associated Lab Samples: 10559667003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/19/21 09:25	
Ethylbenzene	ug/L	ND	1.00	0.137	05/19/21 09:25	
Toluene	ug/L	ND	1.00	0.278	05/19/21 09:25	
o-Xylene	ug/L	ND	1.00	0.174	05/19/21 09:25	
m&p-Xylene	ug/L	ND	2.00	0.430	05/19/21 09:25	
Toluene-d8 (S)	%	102	80.0-120		05/19/21 09:25	
4-Bromofluorobenzene (S)	%	96.9	77.0-126		05/19/21 09:25	
1,2-Dichloroethane-d4 (S)	%	87.9	70.0-130		05/19/21 09:25	

LABORATORY CONTROL SAMPLE: R3656309-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	5.00	4.45	89.0	70.0-123	
Ethylbenzene	ug/L	5.00	4.79	95.8	79.0-123	
Toluene	ug/L	5.00	4.67	93.4	79.0-120	
o-Xylene	ug/L	5.00	4.46	89.2	80.0-122	
m&p-Xylene	ug/L	10.0	8.88	88.8	80.0-122	
Toluene-d8 (S)	%			103	80.0-120	
4-Bromofluorobenzene (S)	%			97.6	77.0-126	
1,2-Dichloroethane-d4 (S)	%			94.4	70.0-130	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 1673801	Analysis Method: EPA 8260D
QC Batch Method: 8260D	Analysis Description: VOA (GC/MS) 8260D
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10559667001

METHOD BLANK: R3656708-2 Matrix: Water

Associated Lab Samples: 10559667001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/19/21 09:51	
Ethylbenzene	ug/L	ND	1.00	0.137	05/19/21 09:51	
Toluene	ug/L	ND	1.00	0.278	05/19/21 09:51	
o-Xylene	ug/L	ND	1.00	0.174	05/19/21 09:51	
m&p-Xylene	ug/L	ND	2.00	0.430	05/19/21 09:51	
Toluene-d8 (S)	%	106	80.0-120		05/19/21 09:51	
4-Bromofluorobenzene (S)	%	94.4	77.0-126		05/19/21 09:51	
1,2-Dichloroethane-d4 (S)	%	120	70.0-130		05/19/21 09:51	

LABORATORY CONTROL SAMPLE: R3656708-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	5.00	4.17	83.4	70.0-123	
Ethylbenzene	ug/L	5.00	4.57	91.4	79.0-123	
Toluene	ug/L	5.00	4.14	82.8	79.0-120	
o-Xylene	ug/L	5.00	4.29	85.8	80.0-122	
m&p-Xylene	ug/L	10.0	8.61	86.1	80.0-122	
Toluene-d8 (S)	%			103	80.0-120	
4-Bromofluorobenzene (S)	%			99.9	77.0-126	
1,2-Dichloroethane-d4 (S)	%			115	70.0-130	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 1674746	Analysis Method: EPA 8260D
QC Batch Method: 8260D	Analysis Description: VOA (GC/MS) 8260D
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10559667004

METHOD BLANK: R3657621-3 Matrix: Water

Associated Lab Samples: 10559667004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzene	ug/L	ND	1.00	0.0941	05/20/21 22:33	
Ethylbenzene	ug/L	ND	1.00	0.137	05/20/21 22:33	
Toluene	ug/L	ND	1.00	0.278	05/20/21 22:33	
o-Xylene	ug/L	ND	1.00	0.174	05/20/21 22:33	
m&p-Xylene	ug/L	ND	2.00	0.430	05/20/21 22:33	
Toluene-d8 (S)	%	102	80.0-120		05/20/21 22:33	
4-Bromofluorobenzene (S)	%	101	77.0-126		05/20/21 22:33	
1,2-Dichloroethane-d4 (S)	%	115	70.0-130		05/20/21 22:33	

LABORATORY CONTROL SAMPLE & LCSD: R3657621-1 R3657621-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	5.00	4.95	4.88	99.0	97.6	70.0-123	1.42	20	
Ethylbenzene	ug/L	5.00	4.25	4.31	85.0	86.2	79.0-123	1.40	20	
Toluene	ug/L	5.00	4.12	4.22	82.4	84.4	79.0-120	2.40	20	
o-Xylene	ug/L	5.00	4.18	4.26	83.6	85.2	80.0-122	1.90	20	
m&p-Xylene	ug/L	10.0	8.43	8.74	84.3	87.4	80.0-122	3.61	20	
Toluene-d8 (S)	%				103	104	80.0-120			
4-Bromofluorobenzene (S)	%				95.9	98.1	77.0-126			
1,2-Dichloroethane-d4 (S)	%				115	112	70.0-130			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 741474 Analysis Method: EPA 8270 by SIM  
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

METHOD BLANK: 3953971 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	0.0061	05/13/21 11:38	
2-Methylnaphthalene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Acenaphthene	ug/L	ND	0.040	0.0081	05/13/21 11:38	
Acenaphthylene	ug/L	ND	0.040	0.0064	05/13/21 11:38	
Anthracene	ug/L	ND	0.040	0.0082	05/13/21 11:38	
Benzo(a)anthracene	ug/L	ND	0.040	0.012	05/13/21 11:38	
Benzo(a)pyrene	ug/L	ND	0.040	0.0088	05/13/21 11:38	
Benzo(b)fluoranthene	ug/L	ND	0.040	0.0078	05/13/21 11:38	
Benzo(g,h,i)perylene	ug/L	ND	0.040	0.0084	05/13/21 11:38	
Benzo(k)fluoranthene	ug/L	ND	0.040	0.0085	05/13/21 11:38	
Chrysene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Dibenz(a,h)anthracene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Fluoranthene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Fluorene	ug/L	ND	0.040	0.0068	05/13/21 11:38	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	0.019	05/13/21 11:38	
Naphthalene	ug/L	ND	0.040	0.011	05/13/21 11:38	
Phenanthrene	ug/L	ND	0.040	0.010	05/13/21 11:38	
Pyrene	ug/L	ND	0.040	0.015	05/13/21 11:38	
2-Fluorobiphenyl (S)	%	70	51-125		05/13/21 11:38	
p-Terphenyl-d14 (S)	%	83	70-125		05/13/21 11:38	

LABORATORY CONTROL SAMPLE & LCSD: 3953972 3954187

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.59	0.61	59	61	34-125	4	20	
2-Methylnaphthalene	ug/L	1	0.61	0.60	61	60	34-125	1	20	
Acenaphthene	ug/L	1	0.72	0.69	72	69	35-125	4	20	
Acenaphthylene	ug/L	1	0.74	0.70	74	70	33-125	6	20	
Anthracene	ug/L	1	0.79	0.74	79	74	42-125	5	20	
Benzo(a)anthracene	ug/L	1	0.80	0.74	80	74	46-125	9	20	
Benzo(a)pyrene	ug/L	1	0.81	0.75	81	75	57-125	9	20	
Benzo(b)fluoranthene	ug/L	1	0.81	0.77	81	77	58-125	6	20	
Benzo(g,h,i)perylene	ug/L	1	0.98	0.88	98	88	55-125	10	20	
Benzo(k)fluoranthene	ug/L	1	0.87	0.78	87	78	55-125	12	20	
Chrysene	ug/L	1	0.86	0.79	86	79	56-125	9	20	
Dibenz(a,h)anthracene	ug/L	1	0.93	0.86	93	86	40-125	8	20	
Fluoranthene	ug/L	1	0.81	0.68	81	68	64-125	18	20	
Fluorene	ug/L	1	0.76	0.73	76	73	43-125	4	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.95	0.82	95	82	57-125	14	20	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

LABORATORY CONTROL SAMPLE & LCSD:		3953972		3954187							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Naphthalene	ug/L	1	0.61	0.58	61	58	30-125	5	20		
Phenanthrene	ug/L	1	0.76	0.70	76	70	47-125	9	20		
Pyrene	ug/L	1	0.81	0.74	81	74	46-125	9	20		
2-Fluorobiphenyl (S)	%.				69	65	51-125				
p-Terphenyl-d14 (S)	%.				91	80	70-125				

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 742617	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

METHOD BLANK: 3960585 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	0.088	05/18/21 17:05	
Motor Oil Range SG	mg/L	ND	0.40	0.12	05/18/21 17:05	
n-Triacontane (S)	%	56	50-150		05/18/21 17:05	
o-Terphenyl (S)	%	52	50-150		05/18/21 17:05	

LABORATORY CONTROL SAMPLE & LCSD: 3960586

Parameter	Units	3960587						RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits			
Diesel Fuel Range SG	mg/L	2	1.4	1.5	72	73	50-150	1	20	
Motor Oil Range SG	mg/L	2	1.5	1.5	73	75	50-150	2	20	
n-Triacontane (S)	%				69	69	50-150			
o-Terphenyl (S)	%				67	67	50-150			

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

QC Batch: 743995      Analysis Method: SM 2320B  
QC Batch Method: SM 2320B      Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

METHOD BLANK: 3968409      Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	2.0	05/24/21 09:53	

LABORATORY CONTROL SAMPLE & LCSD: 3968410      3968411

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	43.3	43.2	108	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3968412      3968413

Parameter	Units	10559667001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	149	40	40	196	197	116	118	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3968414      3968415

Parameter	Units	10560082006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	167	40	40	206	205	98	95	80-120	1	20	

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**QUALITY CONTROL DATA**

Project: 583831  
Pace Project No.: 10559667

QC Batch: 742040 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Minneapolis  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

METHOD BLANK: 3957186 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	0.34	05/15/21 17:39	

LABORATORY CONTROL SAMPLE: 3957187

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	46.7	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957188 3957189

Parameter	Units	10559159001		10559159002		10559159003		10559159004		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Sulfate	mg/L	3.7	50	50	50	51.7	52.7	96	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3957190 3957191

Parameter	Units	10559159002		10559159003		10559159004		10559159005		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Sulfate	mg/L	64.4	50	50	50	106	107	83	85	80-120	1	20 E	

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### QUALITY CONTROL DATA

Project: 583831  
Pace Project No.: 10559667

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QC Batch: 741510	Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2	Analysis Description: 353.2 Nitrate + Nitrite, preserved
	Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

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METHOD BLANK: 3954197 Matrix: Water  
Associated Lab Samples: 10559667001, 10559667002, 10559667003, 10559667004, 10559667005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	0.018	05/12/21 12:18	FS

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## QUALIFIERS

Project: 583831  
Pace Project No.: 10559667

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### 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.  
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.  
TNI - The NELAC Institute.

### SAMPLE QUALIFIERS

Sample: 10559667001  
[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Surrogate failure due to matrix interference  
Sample: 10559667004  
[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Lowest possible dilution due to sample matrix.  
Sample: 10559667005  
[1] Volatile Organic Compounds (GC/MS) by Method 8260D - Lowest possible dilution due to sample foaming.

### BATCH QUALIFIERS

Batch: 741797  
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.  
Batch: 744631  
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.  
Batch: 744695  
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

### ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.  
E Analyte concentration exceeded the calibration range. The reported result is estimated.  
FS The sample was filtered in the laboratory prior to analysis.

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 583831  
Pace Project No.: 10559667

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### ANALYTE QUALIFIERS

- G+ Late peaks present outside the GRO window.
- G- Early peaks present outside the GRO window.
- J Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.
- P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
- S5 Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).
- ST Surrogate recovery was above laboratory control limits. Results may be biased high.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831  
Pace Project No.: 10559667

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10559667001	PEO-MW-43-202105	EPA Mod. 3510C	742617	NWTPH-Dx	742927
10559667002	PEO-MW-35-202105	EPA Mod. 3510C	742617	NWTPH-Dx	742927
10559667003	PEO-MW-34-202105	EPA Mod. 3510C	742617	NWTPH-Dx	742927
10559667004	PEO-MW-02-202105	EPA Mod. 3510C	742617	NWTPH-Dx	742927
10559667005	PEO-MW-11-202105	EPA Mod. 3510C	742617	NWTPH-Dx	742927
10559667001	PEO-MW-43-202105	NWTPH-Gx	742499		
10559667002	PEO-MW-35-202105	NWTPH-Gx	742499		
10559667003	PEO-MW-34-202105	NWTPH-Gx	742499		
10559667004	PEO-MW-02-202105	NWTPH-Gx	742499		
10559667005	PEO-MW-11-202105	NWTPH-Gx	742499		
10559667006	Trip Blank-20210511	NWTPH-Gx	742499		
10559667001	PEO-MW-43-202105	EPA 3010A	742320	EPA 6010D	743014
10559667002	PEO-MW-35-202105	EPA 3010A	742320	EPA 6010D	743014
10559667003	PEO-MW-34-202105	EPA 3010A	744443	EPA 6010D	744631
10559667004	PEO-MW-02-202105	EPA 3010A	744443	EPA 6010D	744631
10559667005	PEO-MW-11-202105	EPA 3010A	744443	EPA 6010D	744631
10559667001	PEO-MW-43-202105	EPA 3020A	742321	EPA 6020A	743011
10559667002	PEO-MW-35-202105	EPA 3020A	742321	EPA 6020A	743011
10559667003	PEO-MW-34-202105	EPA 3020A	744395	EPA 6020A	744695
10559667004	PEO-MW-02-202105	EPA 3020A	744395	EPA 6020A	744695
10559667005	PEO-MW-11-202105	EPA 3020A	744395	EPA 6020A	744695
10559667001	PEO-MW-43-202105	EPA Mod. 3510C	741474	EPA 8270 by SIM	741797
10559667002	PEO-MW-35-202105	EPA Mod. 3510C	741474	EPA 8270 by SIM	741797
10559667003	PEO-MW-34-202105	EPA Mod. 3510C	741474	EPA 8270 by SIM	741797
10559667004	PEO-MW-02-202105	EPA Mod. 3510C	741474	EPA 8270 by SIM	741797
10559667005	PEO-MW-11-202105	EPA Mod. 3510C	741474	EPA 8270 by SIM	741797
10559667001	PEO-MW-43-202105	8260D	1673801	EPA 8260D	1673801
10559667002	PEO-MW-35-202105	8260D	1672747	EPA 8260D	1672747
10559667003	PEO-MW-34-202105	8260D	1673139	EPA 8260D	1673139
10559667004	PEO-MW-02-202105	8260D	1674746	EPA 8260D	1674746
10559667005	PEO-MW-11-202105	8260D	1673101	EPA 8260D	1673101
10559667006	Trip Blank-20210511	8260D	1673101	EPA 8260D	1673101
10559667001	PEO-MW-43-202105	SM 2320B	743995		
10559667002	PEO-MW-35-202105	SM 2320B	743995		
10559667003	PEO-MW-34-202105	SM 2320B	743995		
10559667004	PEO-MW-02-202105	SM 2320B	743995		
10559667005	PEO-MW-11-202105	SM 2320B	743995		
10559667001	PEO-MW-43-202105	EPA 300.0	742040		
10559667002	PEO-MW-35-202105	EPA 300.0	742040		
10559667003	PEO-MW-34-202105	EPA 300.0	742040		
10559667004	PEO-MW-02-202105	EPA 300.0	742040		
10559667005	PEO-MW-11-202105	EPA 300.0	742040		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 583831  
Pace Project No.: 10559667

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10559667001	PEO-MW-43-202105	EPA 353.2	741510		
10559667002	PEO-MW-35-202105	EPA 353.2	741510		
10559667003	PEO-MW-34-202105	EPA 353.2	741510		
10559667004	PEO-MW-02-202105	EPA 353.2	741510		
10559667005	PEO-MW-11-202105	EPA 353.2	741510		

### REPORT OF LABORATORY ANALYSIS

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**Sample Condition Upon Receipt** Client Name: ERM Project #: **WO# : 10559667**  
 Courier:  Fed Ex  UPS  USPS  Client  
 Pace  SpeedDee  Commercial  
 Tracking Number: \_\_\_\_\_ 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)  OS418-LS Type of ice:  Wet  Blue  None  Dry  Melted  
 T4(0254)  T5(0489)  160285052

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: 2.8, 2.0, 0.2, 0.2 °C Average Corrected Temp (no temp blank only): \_\_\_\_\_ °C  
 Correction Factor: true Cooler Temp Corrected w/temp blank: 2.8, 2.0, 0.2, 0.2 °C

USDA Regulated Soil:  N/A, water sample/Other: \_\_\_\_\_ Date/Initials of Person Examining Contents: ED 5/12/21  
 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 (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out?	1. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Chain of Custody Relinquished?	2. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sampler Name and/or Signature on COC?	3. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples Arrived within Hold Time?	4. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	5. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	6. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sufficient Volume?	7. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Correct Containers Used?	8. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Containers Intact?	9. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Field Filtered Volume Received for Dissolved Tests?	10. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Is sufficient information available to reconcile the samples to the COC?	11. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/> ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked?	12. Sample # <u>001-005</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO <sub>3</sub> <input checked="" type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate <u>1/1</u> <u>1/1</u>
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, <u>DRO</u> 8015 (water) and Dioxin/PFAS	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No pH Paper Lot# _____ See Exception <input checked="" type="checkbox"/> ENV-FRM-MIN4-0142 Res. Chlorine 0-6 Roll <u>221419</u> 0-6 Strip _____ 0-14 Strip _____
Extra labels present on soil VOA or WIDRO containers?	13. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A See Exception <input type="checkbox"/> ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Trip Blank Present?	14. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Pace Trip Blank Lot # (if purchased): <u>300663 (6)</u>

**CLIENT NOTIFICATION/RESOLUTION** Field Data Required?  Yes  No  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/Resolution: contacted about pH of MW-11 being out of compliance.

Project Manager Review: Julie Bauer Date: 5/12/21

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).







**Pace Analytical Minnesota**

Julie Bowser  
1700 Elm Street, Ste. 200  
Minneapolis, MN 55414

**RE: 583831**

**Work Order Number: 2105198**

May 25, 2021

**Attention Julie Bowser:**

Fremont Analytical, Inc. received 6 sample(s) on 5/13/2021 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***

***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: 05/25/2021

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831  
**Work Order:** 2105198

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2105198-001	PEO-MW-43-202105	05/11/2021 8:25 AM	05/13/2021 9:16 AM
2105198-002	PEO-MW-35-202105	05/11/2021 9:25 AM	05/13/2021 9:16 AM
2105198-003	PEO-MW-34-202105	05/11/2021 10:20 AM	05/13/2021 9:16 AM
2105198-004	PEO-MW-02-202105	05/11/2021 11:35 AM	05/13/2021 9:16 AM
2105198-005	PEO-MW-11-202105	05/11/2021 1:25 PM	05/13/2021 9:16 AM
2105198-006	Trip Blank-20210511	05/11/2021 8:00 AM	05/13/2021 9:16 AM

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

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Original

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**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

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**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.

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### 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



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105198-001

**Collection Date:** 5/11/2021 8:25:00 AM

**Client Sample ID:** PEO-MW-43-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	326	20.5		µg/L	1	5/21/2021 11:48:02 PM
Surr: 1-Chlorooctadecane	79.2	60 - 140		%Rec	1	5/21/2021 11:48:02 PM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	304	122	D	µg/L	10	5/20/2021 7:23:25 PM
Surr: 1,4-Difluorobenzene	89.8	65 - 140	D	%Rec	10	5/20/2021 7:23:25 PM
Surr: Bromofluorobenzene	100	65 - 140	D	%Rec	10	5/20/2021 7:23:25 PM

**Lab ID:** 2105198-002

**Collection Date:** 5/11/2021 9:25:00 AM

**Client Sample ID:** PEO-MW-35-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	22.1	20.4	J	µg/L	1	5/22/2021 12:40:58 AM
Surr: 1-Chlorooctadecane	91.1	60 - 140		%Rec	1	5/22/2021 12:40:58 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 8:02:34 PM
Surr: 1,4-Difluorobenzene	89.5	65 - 140		%Rec	1	5/20/2021 8:02:34 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	5/20/2021 8:02:34 PM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105198-003

**Collection Date:** 5/11/2021 10:20:00 AM

**Client Sample ID:** PEO-MW-34-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	372	20.6		µg/L	1	5/22/2021 1:33:39 AM
Surr: 1-Chlorooctadecane	75.1	60 - 140		%Rec	1	5/22/2021 1:33:39 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	95.8	12.2		µg/L	1	5/24/2021 10:03:02 PM
Surr: 1,4-Difluorobenzene	91.4	65 - 140		%Rec	1	5/24/2021 10:03:02 PM
Surr: Bromofluorobenzene	106	65 - 140		%Rec	1	5/24/2021 10:03:02 PM

**Lab ID:** 2105198-004

**Collection Date:** 5/11/2021 11:35:00 AM

**Client Sample ID:** PEO-MW-02-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	323	20.5		µg/L	1	5/22/2021 2:26:29 AM
Surr: 1-Chlorooctadecane	79.1	60 - 140		%Rec	1	5/22/2021 2:26:29 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/21/2021 2:33:41 AM
Surr: 1,4-Difluorobenzene	90.2	65 - 140		%Rec	1	5/21/2021 2:33:41 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	5/21/2021 2:33:41 AM



**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**Lab ID:** 2105198-005

**Collection Date:** 5/11/2021 1:25:00 PM

**Client Sample ID:** PEO-MW-11-202105

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Extractable Petroleum Hydrocarbons by NWEPH**

Batch ID: 32319 Analyst: MM

Aliphatic Hydrocarbon (C10-C12)	6,760	20.3		µg/L	1	5/22/2021 3:19:07 AM
Surr: 1-Chlorooctadecane	115	60 - 140		%Rec	1	5/22/2021 3:19:07 AM

**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	142	12.2		µg/L	1	5/21/2021 3:12:42 AM
Surr: 1,4-Difluorobenzene	93.1	65 - 140		%Rec	1	5/21/2021 3:12:42 AM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	5/21/2021 3:12:42 AM

**Lab ID:** 2105198-006

**Collection Date:** 5/11/2021 8:00:00 AM

**Client Sample ID:** Trip Blank-20210511

**Matrix:** Water

Analyses	Result	MDL	Qual	Units	DF	Date Analyzed
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**Volatile Petroleum Hydrocarbons by NWVPH**

Batch ID: 32366 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	12.2		µg/L	1	5/20/2021 2:10:06 PM
Surr: 1,4-Difluorobenzene	86.2	65 - 140		%Rec	1	5/20/2021 2:10:06 PM
Surr: Bromofluorobenzene	98.4	65 - 140		%Rec	1	5/20/2021 2:10:06 PM

**Work Order:** 2105198  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-32319</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>MBLKW</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360235</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	39.7		0	0						
Surr: 1-Chlorooctadecane	371		396.7		93.6	60	140				

Sample ID: <b>LCS-32319</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360236</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	396	39.6	495.0	0	79.9	70	130				
Surr: 1-Chlorooctadecane	395		396.0		99.6	60	140				

Sample ID: <b>LCSD-32319</b>	SampType: <b>LCSD</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>LCSW02</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360237</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	380	39.6	494.6	0	76.9	70	130	395.5	3.91	20	
Surr: 1-Chlorooctadecane	402		395.6		102	60	140		0		

Sample ID: <b>2105199-001BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>32319</b>					Analysis Date: <b>5/22/2021</b>	SeqNo: <b>1360334</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	868	39.9	499.0	145.1	145	70	130				S
Surr: 1-Chlorooctadecane	344		399.2		86.1	60	140				

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

**Work Order:** 2105198  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>2105199-001BMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>5/14/2021</b>	RunNo: <b>67455</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32319</b>		Analysis Date: <b>5/22/2021</b>	SeqNo: <b>1360335</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	512	40.0	499.7	145.1	73.3	70	130	868.3	51.7	30	R
Surr: 1-Chlorooctadecane	306		399.8		76.6	60	140		0		

**NOTES:**

R - High RPD observed, spike recovery is within range.

Work Order: 2105198  
 CLIENT: Pace Analytical Minnesota  
 Project: 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCS-32366</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>			Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>32366</b>				Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360055</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	207	25.0	200.0	0	104	70	130				
Surr: 1,4-Difluorobenzene	52.0		50.00		104	65	140				
Surr: Bromofluorobenzene	52.5		50.00		105	65	140				

Sample ID: <b>MB-32366</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>			Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>32366</b>				Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360054</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0						
Surr: 1,4-Difluorobenzene	43.4		50.00		86.7	65	140				
Surr: Bromofluorobenzene	50.2		50.00		100	65	140				

Sample ID: <b>2105153-005BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>			Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>				Analysis Date: <b>5/20/2021</b>	SeqNo: <b>1360034</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	25.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	44.3		50.00		88.6	65	140		0		
Surr: Bromofluorobenzene	50.1		50.00		100	65	140		0		

Sample ID: <b>2105198-003ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>			Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>					
Client ID: <b>PEO-MW-34-202105</b>	Batch ID: <b>32366</b>				Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360042</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	250		0	0			0	0	25	D
Surr: 1,4-Difluorobenzene	453		500.0		90.6	65	140		0		D
Surr: Bromofluorobenzene	512		500.0		102	65	140		0		D

**Work Order:** 2105198  
**CLIENT:** Pace Analytical Minnesota  
**Project:** 583831

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>2105199-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360044</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	194	25.0	200.0	43.43	75.4	70	130				
Surr: 1,4-Difluorobenzene	55.4		50.00		111	65	140				
Surr: Bromofluorobenzene	50.2		50.00		100	65	140				

Sample ID: <b>2105199-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>5/20/2021</b>	RunNo: <b>67448</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>32366</b>		Analysis Date: <b>5/21/2021</b>	SeqNo: <b>1360045</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	256	25.0	200.0	43.43	106	70	130	194.2	27.4	30	
Surr: 1,4-Difluorobenzene	55.7		50.00		111	65	140		0		
Surr: Bromofluorobenzene	51.3		50.00		103	65	140		0		

Client Name: **PACEMI**

 Work Order Number: **2105198**

 Logged by: **Gabrielle Coeuille**

 Date Received: **5/13/2021 9:16:00 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:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Sample 1	1.0

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

# Chain of Custody

PASI Minnesota Laboratory



Workorder: 10559667

Workorder Name: 583831

Results Requested By: 5/26/2021

205198



Report / Invoice To  
 Julie Bowser  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Minneapolis, MN 55414  
 Phone 612-607-6390  
 Email: julie.bowser@paceclabs.com

Subcontract To  
 Fremont Analytical  
 3600 Fremont Ave N  
 Seattle, WA 98103

P.O. 10559667

Requested Analysis

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY
					HCL VG9H +AG1H		
1	PEO-MW-43-202105	5/11/2021 08:25	10559667001	Water	5		X
2	PEO-MW-35-202105	5/11/2021 09:25	10559667002	Water	5		X
3	PEO-MW-34-202105	5/11/2021 10:20	10559667003	Water	5		X
4	PEO-MW-02-202105	5/11/2021 11:35	10559667004	Water	5		X
5	PEO-MW-11-202105	5/11/2021 13:25	10559667005	Water	5		X
6	Trip Blank-20210511	5/11/2021 08:00	10559667006	Water	2		X

Comments

Transfers	Released By	Date/Time	Received By	Date/Time	report to MDL, EQUIS EDD
1	<i>Julie Bowser</i>	5/12/21 15:00	<i>Julie Bowser</i>	5/13/21 09:16	
2					
3					

Cooler Temperature on Receipt 10 °C Custody Seal  Y or  N Received on Ice  Y or  N Samples Intact  Y or  N

*Attachment B – Q1 2021 GW SCM  
Groundwater Tables*

**Table Q4-1**  
**Monitoring Well Summary**  
**Premier Edible Oils**  
**Portland, Oregon**

Well Identification	Status	Well Depth (ft)	Screen Zone	Screen Interval (ft bgs)		Measuring Point (Top of Casing) ft-NAVD88	Sitewide Monitoring Point	Water Level Monitoring Point <sup>1</sup>	Transducer Installed	Quarterly Monitoring <sup>2</sup>
				Top	Bottom					
MW-02	Active	26	Shallow	11	26	31.18	X	X		X
MW-03	Active	26	Shallow	11	26	31.67	X	X		X
MW-04	Active	26	Shallow	11	26	31.37				
MW-05	Active	26	Shallow	11	26	31.27				
MW-06	Active	27	Shallow	12	27	31.23	X	X		X
MW-07	Decommissioned 1/14/2021									
MW-08	Active	27	Shallow	12	27	30.93	X	X	X	X
MW-11	Active	27	Shallow	12	27	31.06	X	X	X	X
MW-18	Active	27	Shallow	12	27	30.87	X	X	X	X
MW-19	Active	27	Shallow	12	27	31.7	X	X		X
MW-21	Active	27	Shallow	12	27	31.36	X	X	X	X
MW-24A	Active	27	Shallow	12	27	32.35	X	X		X
MW-25	Active	-	Shallow	-	-	31.78	X	X		X
MW-26	Active	39	Deep	34	39	31.89	X	X		X
MW-27	Active	40	Deep	35	40	31.46	X	X	X	X
MW-28	Active	28	Shallow	13	28	31.26	X	X	X	X
MW-29	Active	30	Shallow	13	28	31.9	X	X		X
MW-30	Active	28	Shallow	13	28	31.05	X	X	X	X
MW-31	Active	28	Shallow	13	28	30.77	X	X		X
MW-32	Active	40	Deep	35	40	31.08	X	X	X	X
MW-33	Active	40	Deep	35	40	30.88	X	X	X	X
MW-34	Active	28	Shallow	13	28	30.72	X	X	X	X
MW-35	Active	40	Deep	35	40	30.83	X	X	X	X
MW-36	Active	30	Shallow	15	30	30.16	X	X	X	X
MW-37	Active	40	Deep	35	40	31.27	X	X		X
MW-38	Active	27	Shallow	13	27	31.54	X	X		X
MW-39	Active	30	Shallow	15	30	31.08	X	X		X
MW-40	Active	40	Deep	35	40	31.71	X	X	X	X
MW-41	Active	27	Shallow	13	27	31.32	X	X	X	X
MW-42	Active	40	Deep	35	40	31.94	X	X	X	X
MW-43	Active	30	Shallow	15	30	31.39	X	X		X
MW-44	Active	25	Shallow	10	25	30.98	X	X		X
MW-45	Active	30	Shallow	15	30	31.70	X	X		X

Notes:

\* = Not Surveyed

- = not applicable

<sup>1</sup> = Manual water level measurement collected monthly

<sup>2</sup> = Groundwater analytical samples

NAVD88 = North America Vertical Datum 1988

**Table Q2-2**  
**Groundwater Elevations - April 2021**  
**Premier Edible Oils**  
**Portland, Oregon**

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	4/13/2021	20.34	-	ND	-	10.84
MW-03	Shallow	31.67	4/13/2021	20.22	-	ND	-	11.45
MW-06	Shallow	31.23	4/13/2021	20.88	-	ND	-	10.35
MW-07	Decommissioned 1/14/2021							
MW-08	Shallow	30.93	4/13/2021	21.81	-	ND	-	9.12
MW-11	Shallow	31.06	4/13/2021	20.38	-	ND	-	10.68
MW-18	Shallow	30.87	4/13/2021	21.38	-	ND	-	9.49
MW-19	Shallow	31.70	4/13/2021	21.79	-	ND	-	9.91
MW-21	Shallow	31.36	4/13/2021	13.91	-	ND	-	17.45
MW-24A	Shallow	32.35	4/13/2021	18.26	-	ND	-	14.09
MW-25	Shallow	31.78	4/13/2021	21.40	-	ND	-	10.38
MW-26	Deep	31.89	4/13/2021	24.12	-	ND	-	7.77
MW-27	Deep	31.46	4/13/2021	23.18	-	ND	-	8.28
MW-28	Shallow	31.26	4/13/2021	21.62	-	ND	-	9.64
MW-29	Shallow	31.90	4/13/2021	21.45	-	ND	-	10.45
MW-30	Shallow	31.05	4/13/2021	21.52	-	ND	-	9.53
MW-31	Shallow	30.77	4/13/2021	21.35	-	ND	-	9.42
MW-32	Deep	31.08	4/13/2021	21.78	-	ND	-	9.30
MW-33	Deep	30.88	4/13/2021	22.33	-	ND	-	8.55
MW-34	Shallow	30.72	4/13/2021	18.73	-	ND	-	11.99
MW-35	Deep	30.83	4/13/2021	23.03	-	ND	-	7.80
MW-36	Shallow	30.16	4/13/2021	21.34	-	ND	-	8.82
MW-37	Deep	31.27	4/13/2021	23.52	-	ND	-	7.75
MW-38	Shallow	31.54	4/13/2021	19.20	19.01	0.19	0.03	12.49
MW-39	Shallow	31.08	4/13/2021	22.85	22.28	0.57	0.09	8.69
MW-40	Deep	31.71	4/13/2021	23.21	-	ND	-	8.50
MW-41	Shallow	31.32	4/13/2021	16.68	-	ND	-	14.64
MW-42	Deep	31.94	4/13/2021	23.43	-	ND	-	8.51
MW-43	Shallow	31.39	4/13/2021	22.42	-	ND	-	8.97
MW-44	Shallow	30.98	4/13/2021	21.37	-	ND	-	9.61
MW-45	Shallow	31.70	4/13/2021	22.82	-	ND	-	8.88

Notes:

\* = Not Surveyed

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as:  $GWE_{corr} = GWE + (LNAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

**Table Q2-3**  
**Groundwater Elevations - May 2021**  
**Premier Edible Oils**  
**Portland, Oregon**

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	5/3/2021	21.01	-	ND	-	10.17
MW-03	Shallow	31.67	5/3/2021	20.45	-	ND	-	11.22
MW-06	Shallow	31.23	5/3/2021	20.93	-	ND	-	10.30
MW-07	Shallow	Decommissioned 1/14/2021						
MW-08	Shallow	30.93	5/3/2021	21.11	-	ND	-	9.82
MW-11	Shallow	31.06	5/3/2021	21.06	-	ND	-	10.00
MW-18	Shallow	30.87	5/3/2021	20.84	-	ND	-	10.03
MW-19	Shallow	31.70	5/3/2021	21.68	-	ND	-	10.02
MW-21	Shallow	31.36	5/3/2021	14.22	-	ND	-	17.14
MW-24A	Shallow	32.35	5/3/2021	18.56	-	ND	-	13.79
MW-25	Shallow	31.78	5/3/2021	21.61	-	ND	-	10.17
MW-26	Deep	31.89	5/3/2021	22.61	-	ND	-	9.28
MW-27	Deep	31.46	5/3/2021	21.97	-	ND	-	9.49
MW-28	Shallow	31.26	5/3/2021	21.46	-	ND	-	9.80
MW-29	Shallow	31.90	5/3/2021	21.46	-	ND	-	10.44
MW-30	Shallow	31.05	5/3/2021	21.22	-	ND	-	9.83
MW-31	Shallow	30.77	5/3/2021	20.93	-	ND	-	9.84
MW-32	Deep	31.08	5/3/2021	21.94	-	ND	-	9.14
MW-33	Deep	30.88	5/3/2021	21.38	-	ND	-	9.50
MW-34	Shallow	30.72	5/3/2021	19.93	-	ND	-	10.79
MW-35	Deep	30.83	5/3/2021	21.14	-	ND	-	9.69
MW-36	Shallow	30.16	5/3/2021	20.84	-	ND	-	9.32
MW-37	Deep	31.27	5/3/2021	21.84	21.84	0.00	0.00	9.43
MW-38	Shallow	31.54	5/3/2021	19.76	19.54	0.22	0.04	11.96
MW-39	Shallow	31.08	5/3/2021	21.84	-	ND	-	9.24
MW-40	Deep	31.71	5/3/2021	22.21	-	ND	-	9.50
MW-41	Shallow	31.32	5/3/2021	17.04	-	ND	-	14.28
MW-42	Deep	31.94	5/3/2021	22.51	-	ND	-	9.43
MW-43	Shallow	31.39	5/3/2021	22.20	-	ND	-	9.19
MW-44	Shallow	30.98	5/3/2021	21.11	-	ND	-	9.87
MW-45	Shallow	31.70	5/3/2021	22.45	-	ND	-	9.25

Notes:

\* = Not Surveyed

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as:  $GWE_{corr} = GWE + (LNAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

**Table Q2-4**  
**Groundwater Elevations - June 2021**  
**Premier Edible Oils**  
**Portland, Oregon**

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	6/14/2021	20.43	-	ND	-	10.75
MW-03	Shallow	31.67	6/14/2021	19.86	-	ND	-	11.81
MW-06	Shallow	31.23	6/14/2021	20.00	-	ND	-	11.23
MW-07	Decommissioned 1/14/2021							
MW-08	Shallow	30.93	6/14/2021	20.46	-	ND	-	10.47
MW-11	Shallow	31.06	6/14/2021	19.96	-	ND	-	11.10
MW-18	Shallow	30.87	6/14/2021	20.08	-	ND	-	10.79
MW-19	Shallow	31.70	6/14/2021	20.70	-	ND	-	11.00
MW-21	Shallow	31.36	6/14/2021	14.75	-	ND	-	16.61
MW-24A	Shallow	32.35	6/14/2021	18.92	-	ND	-	13.43
MW-25	Shallow	31.78	6/14/2021	20.32	-	ND	-	11.46
MW-26	Deep	31.89	6/14/2021	22.73	-	ND	-	9.16
MW-27	Deep	31.46	6/14/2021	21.47	-	ND	-	9.99
MW-28	Shallow	31.26	6/14/2021	20.23	-	ND	-	11.03
MW-29	Shallow	31.90	6/14/2021	20.22	-	ND	-	11.68
MW-30	Shallow	31.05	6/14/2021	20.32	-	ND	-	10.73
MW-31	Shallow	30.77	6/14/2021	20.04	-	ND	-	10.73
MW-32	Deep	31.08	6/14/2021	20.96	-	ND	-	10.12
MW-33	Deep	30.88	6/14/2021	20.71	-	ND	-	10.17
MW-34	Shallow	30.72	6/14/2021	19.71	-	ND	-	11.01
MW-35	Deep	30.83	6/14/2021	21.14	-	ND	-	9.69
MW-36	Shallow	30.16	6/14/2021	19.68	-	ND	-	10.48
MW-37	Deep	31.27	6/14/2021	21.74	-	ND	-	9.53
MW-38	Shallow	31.54	6/14/2021	19.73	19.72	0.01	0.00	11.82
MW-39	Shallow	31.08	6/14/2021	20.83	-	ND	-	10.25
MW-40	Deep	31.71	6/14/2021	21.53	-	ND	-	10.18
MW-41	Shallow	31.32	6/14/2021	17.57	-	ND	-	13.75
MW-42	Deep	31.94	6/14/2021	21.88	-	ND	-	10.06
MW-43	Shallow	31.39	6/14/2021	20.66	-	ND	-	10.73
MW-44	Shallow	30.98	6/14/2021	20.14	-	ND	-	10.84
MW-45	Shallow	31.70	6/14/2021	20.20	-	ND	-	11.50

Notes:

\* = Not Surveyed

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as:  $GWE_{corr} = GWE + (LNAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

**Table Q2-5**  
**Transducer Calibration Offsets**  
**Premier Edible Oils**  
**Portland, Oregon**

Calibration Event	Measurement	MW-08	MW-11	MW-18	MW-21	MW-27	MW-28	MW-30	MW-32	MW-33	MW-34	MW-35	MW-36	MW-40	MW-41	MW-42
Transducer Position	TOC Elev Adj. (ft above NAVD88)	30.93	31.06	30.87	31.36	31.46	31.26	31.05	31.08	30.88	30.72	30.83	30.16	31.71	31.32	31.94
	Datalogger depth (ft BTOC)	26.91	26.25 <sup>1</sup>	27.00	18.05	39.87	28.12	28.00	38.14	39.31	27.90	39.83	29.92	39.84	27.35	39.04
1/18/2021	DTW measured (ft BTOC)	16.93	16.66	17.07	13.06	19.79	17.28	16.45	17.27	19.02	18.15	19.94	16.39	19.76	13.48	19.95
	DTW calculated (ft BTOC)	16.56	17.56	17.19	13.10	20.01	18.11	16.87	18.52	19.33	18.33	20.00	16.59	20.23	15.69	20.46
	Calibration Offset	-0.37	0.90	0.12	0.04	0.22	0.83	0.42	1.25	0.31	0.18	0.06	0.20	0.47	2.21	0.51
2/4/2021	DTW measured (ft BTOC)	19.32	18.59	19.21	13.38	20.04	20.31	18.91	19.88	19.40	18.35	19.52	18.39	20.26	13.89	20.83
	DTW calculated (ft BTOC)	19.29	19.47	19.26	13.41	20.22	20.43	19.26	20.15	19.76	18.29	20.05	18.87	20.74	16.04	20.88
	Calibration Offset	-0.03	0.88	0.05	0.03	0.18	0.12	0.35	0.27	0.36	-0.06	0.53	0.48	0.48	2.15	0.05
3/9/2021	DTW measured (ft BTOC)	20.10	18.21	20.31	13.23	23.23	20.65	19.52	21.39	22.28	17.25	22.73	20.92	23.33	13.89	23.86
	DTW calculated (ft BTOC)	20.05	19.13	20.49	13.35	23.18	20.59	19.92	21.79	22.44	17.67	23.28	21.09	23.77	16.16	24.34
	Calibration Offset	-0.05	0.92	0.18	0.12	-0.05	-0.06	0.40	0.40	0.16	0.42	0.55	0.17	0.44	2.27	0.48
4/13/2021	DTW measured (ft BTOC)	21.81	19.63	21.38	13.91	23.18	21.62	21.52	21.78	22.33	18.73	23.03	21.34	23.21	14.68	23.43
	DTW calculated (ft BTOC)	21.70	20.48	21.49	13.95	23.32	21.63	21.81	22.16	22.27	19.00	23.35	21.51	23.52	16.88	23.77
	Calibration Offset	-0.11	0.85	0.11	0.04	0.14	0.01	0.29	0.38	-0.06	0.27	0.32	0.17	0.31	2.20	0.34
5/3/2021	DTW measured (ft BTOC)	21.11	20.31	20.84	14.22	21.97	21.46	21.22	21.94	21.38	19.93	21.14	20.84	22.21	15.04	22.51
	DTW calculated (ft BTOC)	21.10	21.12	20.93	14.23	21.87	21.52	21.53	22.34	21.42	20.30	21.61	20.84	22.46	17.20	22.74
	Calibration Offset	-0.01	0.81	0.09	0.01	-0.10	0.06	0.31	0.40	0.04	0.37	0.47	0.00	0.25	2.16	0.23
6/14/2021	DTW measured (ft BTOC)	20.46	19.21	20.08	14.75	21.47	20.23	20.32	20.96	20.71	19.71	21.14	19.68	21.53	15.57	21.88
	DTW calculated (ft BTOC)	20.43	19.93	20.16	14.73	21.42	20.30	20.64	21.43	20.78	20.06	21.57	19.71	21.57	17.74	21.88
	Calibration Offset	-0.03	0.72	0.08	-0.02	-0.05	0.07	0.32	0.47	0.07	0.35	0.43	0.03	0.04	2.17	0.00
6/14/2021	DTW measured (ft BTOC)	21.66	19.92	21.21	15.13	22.44	21.49	21.57	21.28	21.61	20.29	22.25	20.75	22.75	15.96	23.00
	DTW calculated (ft BTOC)	21.62	20.59	21.33	15.11	22.23	21.53	21.88	21.69	21.54	20.52	22.66	20.78	23.10	18.14	23.39
	Calibration Offset	-0.04	0.67	0.12	-0.02	-0.21	0.04	0.31	0.41	-0.07	0.23	0.41	0.03	0.35	2.18	0.39

Notes:  
 NAVD88 = North America Vertical Datum 1988  
 DTW = Depth to Water  
 BTOC = Below Top of Casing  
 1 = Datalogger depth adjusted up by 0.75 ft on 4/8/2020  
 2 = Pressure transducer stopped working on 3/9/2020. Replace on 4/8/2020.  
 3 = Pressure transducers were not calibrated in December due to technical connectivity issues. Calibration completed in January 2021.

**Table Q2-6**  
**Horizontal and Vertical Gradients - Barrier Wall**  
**Premier Edible Oils**  
**Portland, Oregon**

Well Identification	Measuring Point (Top of Casing) ft-NAVD88	Screen Interval (ft bgs)		Groundwater Elevation ft-NAVD88			Gradient <sup>1,2</sup> ft/ft		
		Top	Bottom	4/13/2021	5/3/2021	6/14/2021	4/13/2021	5/3/2021	6/14/2021
<b>Shallow Horizontal Gradient</b>									
MW-30	31.05	13.00	28.00	9.53	9.83	10.73	0.0032	-0.0003	0.0000
MW-31	30.77	13.00	28.00	9.42	9.84	10.73			
MW-30	31.05	13.00	28.00	9.53	9.83	10.73	0.0012	-0.0059	-0.0018
MW-18	30.87	12.00	27.00	9.49	10.03	10.79			
MW-34	30.72	13.00	28.00	11.99	10.79	11.01	0.0931	0.0432	0.0156
MW-36	30.16	15.00	30.00	8.82	9.32	10.48			
MW-38	31.54	13.00	27.00	12.49	11.96	11.82	0.1118	0.0798	0.0460
MW-39	31.08	15.00	30.00	8.69	9.24	10.25			
MW-29	31.90	13.00	28.00	10.45	10.44	11.68	0.0435	0.0367	0.0279
MW-43	31.39	15.00	30.00	8.97	9.19	10.73			
MW-41	31.32	13.00	27.00	14.64	14.28	13.75	0.0162	0.0144	0.0094
MW-24A	32.35	12.00	27.00	14.09	13.79	13.43			
<b>Average Shallow Horizontal Gradient</b>							<b>0.0448</b>	<b>0.0280</b>	<b>0.0162</b>
<b>Deep Horizontal Gradient</b>									
MW-32	31.08	35.00	40.00	9.30	9.14	10.12	0.0220	-0.0106	-0.0015
MW-33	30.88	35.00	40.00	8.55	9.50	10.17			
MW-35	30.83	35.00	40.00	7.80	9.69	9.69	-0.0141	0.0059	-0.0088
MW-27	31.46	35.00	40.00	8.28	9.49	9.99			
MW-37	31.27	35.00	40.00	7.75	9.43	9.53	-0.0156	-0.0018	-0.0135
MW-27	31.46	35.00	40.00	8.28	9.49	9.99			
MW-37	31.27	35.00	40.00	7.75	9.43	9.53	-0.0006	0.0044	0.0109
MW-26	31.89	34.00	39.00	7.77	9.28	9.16			
MW-40	31.71	35.00	40.00	8.50	9.50	10.18	-0.0003	0.0021	0.0035
MW-42	31.94	35.00	40.00	8.51	9.43	10.06			
<b>Average Deep Horizontal Gradient</b>							<b>-0.0017</b>	<b>0.0000</b>	<b>-0.0019</b>
<b>Vertical Gradients<sup>3</sup></b>									
MW-32	31.08	35.00	40.00	9.30	9.14	10.12	-0.0329	-0.0986	-0.0871
MW-30	31.05	13.00	28.00	9.53	9.83	10.73			
MW-35	30.83	35.00	40.00	7.80	9.69	9.69	-0.5986	-0.1571	-0.1886
MW-34	30.72	13.00	28.00	11.99	10.79	11.01			
MW-37	31.27	35.00	40.00	7.75	9.43	9.53	-0.5928	-0.3158	-0.2860
MW-38	31.54	13.00	27.00	12.49	11.96	11.82			
MW-40	31.71	35.00	40.00	8.50	9.50	10.18	-0.7675	-0.5975	-0.4463
MW-41	31.32	13.00	27.00	14.64	14.28	13.75			
<b>Average Vertical Gradient</b>							<b>-0.4979</b>	<b>-0.2922</b>	<b>-0.2520</b>

**Notes:**

NAVD88 = North America Vertical Datum 1988

<sup>1</sup> = Positive horizontal gradients indicate flow toward the river; negative horizontal gradients indicate flow away from the river.

<sup>2</sup> = Positive vertical gradients indicate upward flow; negative vertical gradients indicate downward flow.

<sup>3</sup> = Vertical Gradients measured using bottom of upper casing screen to top of lower casing screen elevations.

**Table Q2-7**  
**LNAPL Observations during Groundwater Sampling Event**  
**Premier Edible Oils**  
**Portland, Oregon**

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-02	Shallow	31.18	5/11/2021	20.40	-	ND	-	10.78
MW-03	Shallow	31.67	5/5/2021	20.40	-	ND	-	11.27
MW-06	Shallow	31.23	5/5/2021	20.81	-	ND	-	10.42
MW-07	Shallow	Decommissioned 1/14/2021						
MW-08	Shallow	30.93	5/6/2021	20.86	-	ND	-	10.07
MW-11	Shallow	31.06	5/11/2021	20.00	-	ND	-	11.06
MW-18	Shallow	30.87	5/6/2021	20.86	-	ND	-	10.01
MW-19	Shallow	31.70	5/5/2021	21.58	-	ND	-	10.12
MW-21	Shallow	31.36	5/5/2021	14.24	-	ND	-	17.12
MW-24A	Shallow	32.35	5/4/2021	18.56	-	ND	-	13.79
MW-25	Shallow	31.78	5/5/2021	21.26	-	ND	-	10.52
MW-26	Deep	31.89	5/10/2021	22.00	-	ND	-	9.89
MW-27	Deep	31.46	5/10/2021	20.78	-	ND	-	10.68
MW-28	Shallow	31.26	5/7/2021	20.97	-	ND	-	10.29
MW-29	Shallow	31.90	5/7/2021	20.73	-	ND	-	11.17
MW-30	Shallow	31.05	5/6/2021	21.07	-	ND	-	9.98
MW-31	Shallow	30.77	5/6/2021	20.78	-	ND	-	9.99
MW-32	Deep	31.08	5/4/2021	21.53	-	ND	-	9.55
MW-33	Deep	30.88	5/4/2021	21.17	-	ND	-	9.71
MW-34	Shallow	30.72	5/11/2021	19.50	-	ND	-	11.22
MW-35	Deep	30.83	5/11/2021	19.78	-	ND	-	11.05
MW-36	Shallow	30.16	5/10/2021	19.33	-	ND	-	10.83
MW-37	Deep	31.27	5/10/2021	20.76	-	ND	-	10.51
MW-38	Shallow	31.54	5/4/2021	19.75	19.53	0.22	0.04	11.97
MW-39	Shallow	31.08	5/10/2021	20.81	-	ND	-	10.27
MW-40	Deep	31.71	5/7/2021	21.76	-	ND	-	9.95
MW-41	Shallow	31.32	5/7/2021	17.13	-	ND	-	14.19
MW-42	Deep	31.94	5/4/2021	22.15	-	ND	-	9.79
MW-43	Shallow	31.39	5/11/2021	20.85	-	ND	-	10.54
MW-44	Shallow	30.98	5/6/2021	20.90	-	ND	-	10.08
MW-45	Shallow	31.70	5/7/2021	21.81	-	ND	-	9.89

**Notes:**

\* = Not Surveyed

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as:  $GWE_{corr} = GWE + (LNAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

**Table Q2-8**  
**LNAPL Recovery Volumes**  
**Premier Edible Oils**  
**Portland, Oregon**

Quarter	Date	MW-02 gal	MW-11 gal	MW-34 gal	MW-38 gal	MW-39 gal	MW-43 gal	Total gal
Q1 2021	2/1/2021	-	-	-	-	-	-	0.00
Q2 2021	5/1/2021	-	-	-	-	-	-	0.00
Q3 2021	8/1/2021	-	-	-	-	-	-	0.00
Q4 2021	11/1/2021	-	-	-	-	-	-	0.00
<b>Total Recovered</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Notes:

- = not applicable

\* = approximate value

**Table Q2-9**  
**Groundwater Field Parameters - May 2021**  
**Premier Edible Oils, 10400 N Burgard Way**  
**Portland OR**

Monitoring Well	Date	pH	Specific Conductance $\mu\text{S}/\text{cm}$	Temperature $^{\circ}\text{C}$	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-02	5/11/2021	6.57	986	31.49	-121.5	0.06	24.9
MW-03	5/5/2021	6.41	95	15.92	144.2	1.96	1.03
MW-06	5/5/2021	6.46	140	16.85	-43.5	0.31	1.04
MW-07	Decommissioned 1/14/2021						
MW-08	5/6/2021	4.80	373	21.85	91.2	0.17	5.91
MW-11	5/11/2021	6.53	1015	31.45	-105.9	0.69	>1000
MW-18	5/6/2021	6.26	345	18.29	-31.9	0.26	2.49
MW-19	5/5/2021	6.45	229	17.20	77.2	1.50	4.39
MW-21	5/5/2021	6.48	78	14.75	123.7	1.33	1.55
MW-24A	5/4/2021	6.51	137	17.11	-14.5	0.36	2.18
MW-25	5/5/2021	6.12	110	15.05	226.8	7.06	1.48
MW-26	5/10/2021	6.47	101	22.38	94.2	1.67	16.3
MW-27	5/10/2021	6.67	226	25.97	-105.6	0.21	5.17
MW-28	5/7/2021	6.46	120	16.72	64.2	5.91	9.66
MW-29	5/7/2021	6.40	522	20.18	-99.1	0.30	5.24
MW-30	5/6/2021	6.21	973	22.70	-4.4	0.13	12.6
MW-31	5/6/2021	6.28	393	19.20	78.9	0.20	0.69
MW-32	5/4/2021	10.92	306	18.23	-8.0	0.35	5.68
MW-33	5/4/2021	8.39	242	20.01	-239.3	0.04	0.56
MW-34	5/11/2021	6.24	580	30.86	-84.6	0.16	>1000
MW-35	5/11/2021	6.67	170	28.30	-46.8	0.11	7.37
MW-36	5/10/2021	6.25	365	26.29	-19.2	0.30	17.6
MW-37	5/10/2021	7.45	165	23.40	47.3	0.31	2.51
MW-38	5/4/2021	Not collected due to presence of LNAPL					
MW-39	5/10/2021	6.44	586	23.44	-86.3	0.22	5.32
MW-40	5/7/2021	6.70	216	17.10	-59.4	0.30	2.47
MW-41	5/7/2021	6.20	108	16.10	83.4	0.38	6.16
MW-42	5/4/2021	7.33	222	17.67	-140.2	0.01	0.67
MW-43	5/11/2021	6.39	421	22.70	-33.9	0.36	16.40
MW-44	5/6/2021	6.57	250	16.90	94.8	0.79	1.76
MW-45	5/7/2021	5.30	165	19.64	209.8	4.68	2.33

Notes:

-- = not analyzed

$^{\circ}\text{C}$  = degrees Celsius

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Units

ORP = oxidation reduction potential, measured in millivolts (mV)

pH standard units

$\mu\text{S}/\text{cm}$  = microsiemens per centimeter