



April 01, 2020

Via Electronic Mail

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

Reference: 0499738

Subject: Quarter 4, 2019 Groundwater Source Control Measure Performance Monitoring Report
(October through December 2019)
MMGL / Premier Edible Oils Site

Dear Ms. McDonnell:

ERM-West, Inc. (ERM) is submitting this Quarterly Groundwater Source Control Measure (GW SCM) Performance Monitoring Report (Report) on behalf of Burgard, Series of MMGL Corp. (MMGL) to present the Quarter 4, 2019 groundwater monitoring results at the Premier Edible Oils (PEO) site located at 10400 North Burgard Way in Portland, Oregon (the "site") (See Figure 1).

This report has been prepared pursuant to the Voluntary Agreement for Upland Remedial Investigation (RI)/Feasibility Study (FS) and Source Control Measures issued by the Oregon Department of Environmental Quality (ODEQ) and signed 6 March 2001 (ODEQ ECDVC-NWR-01-06) (Voluntary Agreement).

Quarter 4, 2019 (October through December) Monitoring

Quarterly groundwater monitoring included collecting groundwater elevations, groundwater field parameters, laboratory analytical samples, and air sparge remediation observations from the monitoring wells as shown in Figure 2 and summarized in Table 1.

Air Sparge Oxygenation/Biobarrier Monitoring

During the quarter, the air sparge system was operating at 80% of target flow rates. Residual work with system programming has been ongoing.

The air sparge system was shut down between 5 December and 16 December while conducting the monthly water level monitoring and quarterly groundwater monitoring.

Groundwater Elevation Monitoring

The groundwater elevations are manually measured on a monthly basis in 29 groundwater monitoring wells. Transducers are installed in 15 select monitoring wells, as summarized in Table 1. The monitoring wells with transducers are manually gauged approximately monthly for calibration and data downloaded. Groundwater elevations measured manually during each monthly calibration event and quarterly site wide events for October, November, and December 2019 are presented in

Tables 2 through 4, respectively. Monthly transducer calibration offsets are presented in Table 5. Interpreted potentiometric surfaces for the water level monitoring events in October, November, and December 2019 are presented in Figures 3 through 5, respectively. Figures 3 through 5 show dashed lines where the groundwater elevations are inferred. The potentiometric surfaces observed in October, November, and December 2019 were consistent with previous monitoring events.

All historical data collected on site since the baseline monitoring event in May 2017 of the GW SCM are presented in Attachment C.

Groundwater at the site generally flows to the west and southwest, towards the Willamette River. The influence of the groundwater barrier wall is observed as flattened gradients and some mounding directly upland of the barrier wall. During low groundwater and low river stages periods, such as July through September, the mounding is more pronounced, but is limited to areas immediately adjacent to the barrier wall. This mounding occurs as a response lag as river stage and groundwater levels outside of the wall change seasonally.

Fifteen monitoring wells have pressure transducers installed (see Table 1). The transducers record water levels every hour. The recorded data are downloaded and calibrated on a monthly basis. The transducer data is used to compare water levels in monitoring wells at the upgradient site boundary and upland from and riverward of the barrier wall.

The locations of monitoring wells within each hydrograph cluster are shown in Figure 1 in Attachment A. Groundwater levels at the site are tidally influenced by the water levels in the Willamette River. In accordance with PMP, the transducer data and the Willamette River gage data were filtered using the Serfes averaging method in order to filter out tidal effects. The Serfes averaged hydrographs of select groups of monitoring wells (i.e., clusters) and the Willamette River elevations are presented in Attachment A.

Over this quarter, water levels across the site are generally increasing. This is likely due to seasonal increase in rainfall and rising river levels over the quarter. Shallow groundwater elevations inside the barrier wall are generally equal to or lower than shallow levels outside the wall. The average gradient was calculated from the upland shallow wells to the riverward shallow wells using the manual water level measurements from each monthly event. Well pairs used in the calculations were MW-30 to MW-31, MW-30 to MW-18, MW-34 to MW-36, MW-38 to MW-39, MW-29 to MW-43, MW-41 to MW-42A. The average monthly gradient increased from 0.01 ft/ft in October to 0.09 ft/ft in December. The shallow wells inside the barrier wall also have small response lags when water levels changes occur, due to the effects of the barrier wall and hydrogeological conditions that include a thin layer of lower permeability silt at several monitoring well locations.

Deep groundwater elevations are generally consistent and similar on the inside and outside of the barrier. The average gradient was calculated from the upland deep wells to the riverward deep wells using the manual water level measurements from each monthly event, well pairs used in the calculations were MW-32 to MW-33, MW-35 to MW-27, MW-37 to MW-27, MW-37 to MW-26, MW-40 to MW-42. The average monthly gradient decreased from 0.007 ft/ft in October to -0.009 ft/ft in December, indicating a groundwater flow potential from the upland monitoring wells towards the Willamette River in the beginning of the quarter and the reverse flow potential at the end of the quarter. The groundwater elevation response in wells inside barrier is similar to the changes in elevations in outside wells.

The groundwater elevation in shallow wells inside the wall is generally higher than or equal to the elevation in the deep wells inside the wall. This indicates a slight downward gradient, as anticipated due to the effects of the barrier wall, hydrogeological conditions, and air sparging operations resulting in subsequent groundwater mounding. During Q4 2019, there were no periods when the vertical gradient is upward.

Consistent with previous dry season water elevation patterns, there is generally higher groundwater elevations on the east side of the site due to perched water on top of a silt layer that decrease towards the GWBW. The three months of groundwater elevations from Q4 2019 are continuing to show increased mounding in the inner southwest corner of the GWBW (especially MW-34) than previous years, likely due to the operation of the air sparging system. This can be seen on the hydrograph for Cluster 1 in Appendix A. The water level of MW-34 and MW-11 are consistently higher throughout Q4 and drop during the December 2019 sampling event when the air sparge system was shut off. It appears that during higher site groundwater levels the air sparge system causes additional mounding of groundwater that then remains trapped above the thin silt layer until air sparging operations are stopped for at least 12 hours to allow the mounded groundwater to dissipate.

MW-07 was included in this quarter's monitoring events but the well was dry and no water level or sample was collected. Biofouling was observed at MW-29 in Q4 thus the water levels at this location are considered approximations and not used in contouring. During the December water level event, MW-24A was dry and no water level was collected.

Light Non-Aqueous Phase Liquids

Light Non-Aqueous Phase Liquid (LNAPL) observations are intermittent and can vary on a daily basis. The groundwater elevation contour maps presented in Figures 3-5 include LNAPL observations that occurred during the water level monitoring events. The analytical contour maps presented in Figures 6-11 include LNAPL observations that occurred during the groundwater sampling event, which occurred separately from the monthly water level events.

LNAPL was observed in several monitoring wells during the monthly water level measurement events, ranging from 0.00 ft (sheen) to 0.30 ft. LNAPL occurrence is sporadic and typically limited to minor thicknesses. All measurements for October, November, and December water level events are presented in Tables 2, 3, and 4, respectively and well locations are indicated on Figures 3-5. All historical data measurements are presented in Attachment C.

During the December 2019 groundwater monitoring event, LNAPL was observed in two wells detailed in Table 6. Well locations for LNAPL observations during the monitoring event are shown on Figures 6-11. Due to the presence of LNAPL at these two wells, no water quality samples were collected.

Due to minimal observed thickness, LNAPL was not recovered this quarter (Table 7). All historical data measurements and LNAPL recovery volumes are presented in Attachment C.

These intermittent LNAPL observations are indicative of LNAPL presence as a residual in the formation. The results of the May 2018 LNAPL recovery test and LNAPL removal volumes observed to date indicate that potential LNAPL recovery is limited. Future LNAPL recovery will be performed

when recoverable LNAPL is observed during water level monitoring events. The volume of LNAPL recovered during these events is anticipated to continue to be small.

Groundwater Sampling

Groundwater samples are scheduled to be collected quarterly from 29 wells at the site, as summarized in Table 1. For Quarter 4 of 2019, samples were collected on 9 to 16 December 2019. During the December sampling event, MW-24A and MW-29 were observed to be dry and blocked (i.e., potential biofouling blockage inside the well), respectively, and no samples were able to be collected from these locations.

Groundwater samples were collected using standard low flow sampling techniques with disposable sampling equipment and a stainless steel submersible pump. All groundwater samples were collected in accordance with the ODEQ approved PMP. Samples were analyzed at Pace Analytical Laboratories in Minneapolis, MN and Fremont Analytical Laboratories in Seattle, WA. Laboratory data and validation reports are included as Attachment B.

Field parameter values measured immediately prior to sample collection are presented in Table 8. Laboratory analytical results are presented in Tables 9 through 11. Figures 6 through 11 summarize the results of the primary site contaminants of concern (i.e., benzene, total petroleum hydrocarbons, C10-C12 aliphatics, arsenic, and manganese). Figures 6 through 11 have dashed lines are used to indicate inferred concentration boundaries.

Benzene results (Figure 6) ranged from non-detect to 65.5 micrograms per liter ($\mu\text{g/L}$), which are consistent with historical results. Concentrations of benzene in monitoring wells located at the ends of the barrier wall were non-detect or at least an order of magnitude below the performance criteria. This indicates that these contaminants have not migrated laterally from the source area around the ends of the barrier wall.

TPH as diesel (TPH-Dx) results (Figure 7) ranged from non-detect to 216,000 $\mu\text{g/L}$. The highest TPH-Dx result was observed in well MW-34 (216,000 $\mu\text{g/L}$) which appears to have LNAPL globules in the sample based on a solubility of approximately 3,900 $\mu\text{g/L}$ for diesel (API, 2000 – Non-Aqueous Phase Liquid (NAPL) Mobility Limits in Soil). Historically, high TPH-Dx concentrations have been observed near the central area of the barrier wall. Consistent with historical observations, a portion of the central wells were not sampled this quarter due to LNAPL observations in this area. The results observed in well MW-06 for TPH-Dx was 1400 $\mu\text{g/L}$, an increase relative to Q3 2019. Concentrations in this well are considered to be impacted by the upgradient Time Oil plume.

TPH as gasoline (TPH-Gx) results (Figure 8) ranged from non-detect to 8,150 $\mu\text{g/L}$. The highest TPH-Gx results were observed in MW-38 located inland of the barrier wall. Historically, high TPH-Gx concentrations have been observed near the central area of the barrier wall. Consistent with historical observations, a portion of the central wells were not sampled this quarter due to LNAPL observations in this area. Shallow well concentrations on the ends of the barrier wall were lower than the performance criteria. The results observed in well MW-06 for TPH-Gx was 3,940 $\mu\text{g/L}$, an increase relative to Q3 2019.

The results for C10-C12 aliphatics are presented in Figure 9. Two methods, NWTPH-EPH and NWTPH-VPH, were used to analyze the concentration of the C10-C12 aliphatic range in the

samples. Table 9 presents the results of both methods. Figure 9 also presents the results of both methods and the concentration contour lines were generated based on the higher of the two method results. The C10-C12 aliphatics concentrations measured with the EPH method ranged from non-detect to 10,300 µg/L at MW-38. The C10-C12 aliphatics concentrations measured with the VPH method ranged from non-detect to 4,490 µg/L at MW-34. Consistent to historical observations, the highest concentrations were observed in monitoring wells located in the center of the barrier wall. Monitoring wells located at the ends of the barrier wall had non-detect concentrations of C10-C12 aliphatics, indicating that these contaminants have not migrated laterally to the ends of the barrier wall. The results observed in well MW-06 for NWVPH was 604 µg/L, and is comparable to historical concentrations observed at MW-06.

Arsenic results are summarized in Figure 10. Concentrations ranged from non-detect to 85.1 µg/L at MW-34, which is consistent with Q3 2019 concentrations. Arsenic concentrations at the remaining monitoring wells were consistent with historical concentrations. The highest concentrations were observed in the area in the center of the barrier wall on the inland side. Concentrations at the ends of the barrier wall were slightly above the performance criteria but are comparable to historical concentrations, therefore providing no indication that arsenic has migrated laterally towards the ends of the barrier wall. The results observed in well MW-06 for arsenic was 8.8 µg/L, consistent with results historically observed at MW-06. At MW-03, arsenic was 18.3 µg/L, an increase from historical results observed at MW-03, which could be attributed to the shift towards anaerobic (dissolved oxygen less than or equal to 1 mg/L) conditions and increased turbidity observed at this well since Q1 2019. Manganese concentrations increased at MW-06 during the same period. Additionally, as noted above, concentrations in wells MW-06 and MW-03 are considered to be impacted by the upgradient Time Oil plume.

Manganese results are summarized in Figure 11. Concentrations ranged from non-detect to 4,540 µg/L, consistent with historical results. The highest concentrations were observed in the center of the barrier wall on both the inland and river sides. Concentrations at the ends of the barrier wall were either below the performance criteria or are comparable to historical results, indicating that manganese has not migrated laterally to the ends of the barrier wall.

Annual Trend Analysis

Included in Attachment D of this report are additional figures and graphs to support the annual trend analysis summarized below. A statistical trend analysis of the analytical data is planned for the 2020 annual report once sufficient analytical data have been collected as required to perform the statistical evaluations. Figures 1 through 7 present the following key analytical parameters:

- Benzene (ug/L)
- TPH – Diesel Range Organics (ug/L)
- TPH – Gasoline Range Organics(ug/L)
- Total Arsenic (ug/L)
- Total Manganese (ug/L)
- Alkalinity, as CaCO₃ (ug/L)

- Dissolved Oxygen (mg/L)

These parameters are presented for the following quarters to compare results over time:

- May 2017 - Baseline event detailed in the Baseline Monitoring Report
- December 2018 – last full sampling event prior to start of air sparging. Note that air sparging was started in March 2019 with air injection flows at approximately 40% of total design flow.
- June 2019 – sampling after 4 months of air sparging with flows up to 80% of total design flow
- December 2019 – sampling after 10 months of air sparging with flows at approximately 80% of total design flows

A visual analysis of these figures was used to select monitoring wells from each of the three hydrograph cluster locations for presentation of temporal variations of concentrations for the above list of parameters at these monitoring wells. The visual analysis is presented in Figures 8 through 13 in Attachment D.

The well groupings provided include:

- Group 1A: Inside Barrier Wall: MW-34S and MW-35D (Figure 8), MW-37D and MW-38S (Figure 9)
- Group 1B: Inside and Outside Barrier Wall: MW-26D and MW-37D (Figure 10), MW-27D and MW-35D (Figure 11)
- Group 2: Southern Edge of Barrier Wall: MW-40D and MW-42D (Figure 12)
- Group 3: Northern Edge of Barrier Wall: MW-30S and MW-32D (Figure 13)

The Group 1A monitoring wells are located within the main hydrocarbon plume area. All four of these wells show decreasing benzene concentrations. The two deeper wells (MW-35D and MW-37D) also show decreasing TPH-GRO and alkalinity that correspond with the air sparge operating period.

The Group 1B monitoring wells provides a comparison of deep monitoring wells inside and outside the Barrier Wall. The deep wells outside the Barrier Wall are also showing decreasing concentrations of benzene and alkalinity similar to the wells inside the Barrier Wall. MW-26D is also showing decreasing TPH-GRO, TPH-DRO, arsenic, and manganese concentrations.

The Group 2 monitoring well MW-42D showed a temporary spike in TPH-DRO and TPH-GRO during the March event that then returned to typical levels.

The Group 3 monitoring wells show declining alkalinity concentrations but as benzene and TPH-GRO levels are historically low, no changes have been observed. The TPH-DRO levels in MW-30S have increased in recent events and will be monitored to see if this trend continues.

Recommendations

Quarterly groundwater monitoring events will continue in accordance with the ODEQ-approved PMP. Groundwater samples will be collected from the 29 monitoring wells on site. LNAPL recovery will be performed when LNAPL is observed in monitoring wells, and recovery is feasible.

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

Yours sincerely,



Rita Cooper
Project Manager



Brendan Robinson, PE
Partner in Charge

cc: Tom Graf, GrafCon
Eva DeMaria, USEPA

Figures

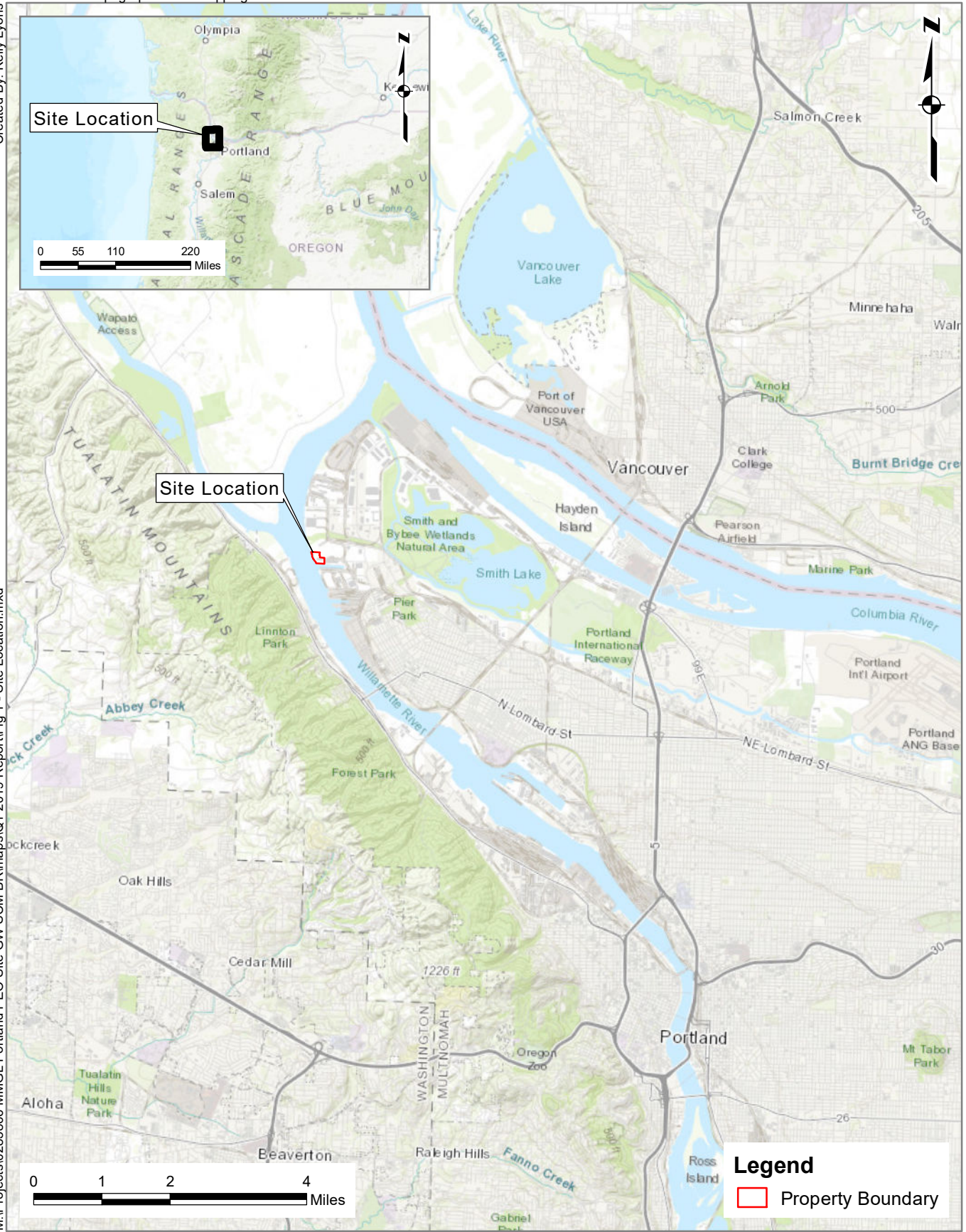
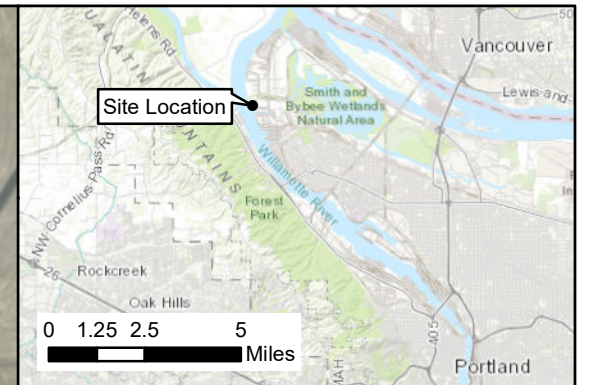


Figure 1
Site Location
Southern PEO Site
Portland, Oregon



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Transducer Installed
- Top of Bank
- Ordinary High Water (20.1 ft)
- Barrier Wall Alignment
- Property Boundary
- Parcels

Notes:
 Aerial Imagery: City of Portland, Summer 2016.
 † = Indicates Performance Monitoring Well.
 * = Indicates Compliance Monitoring Well.

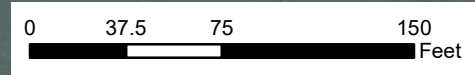
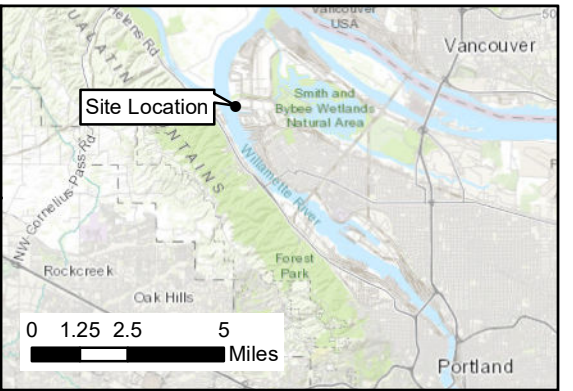
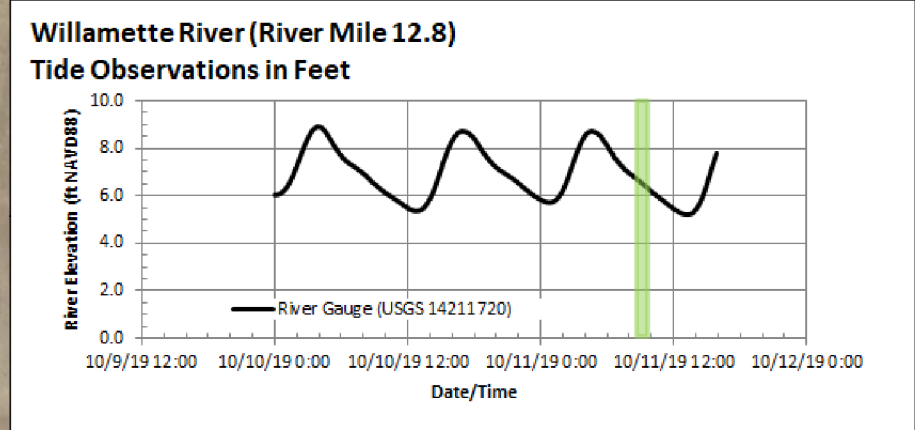
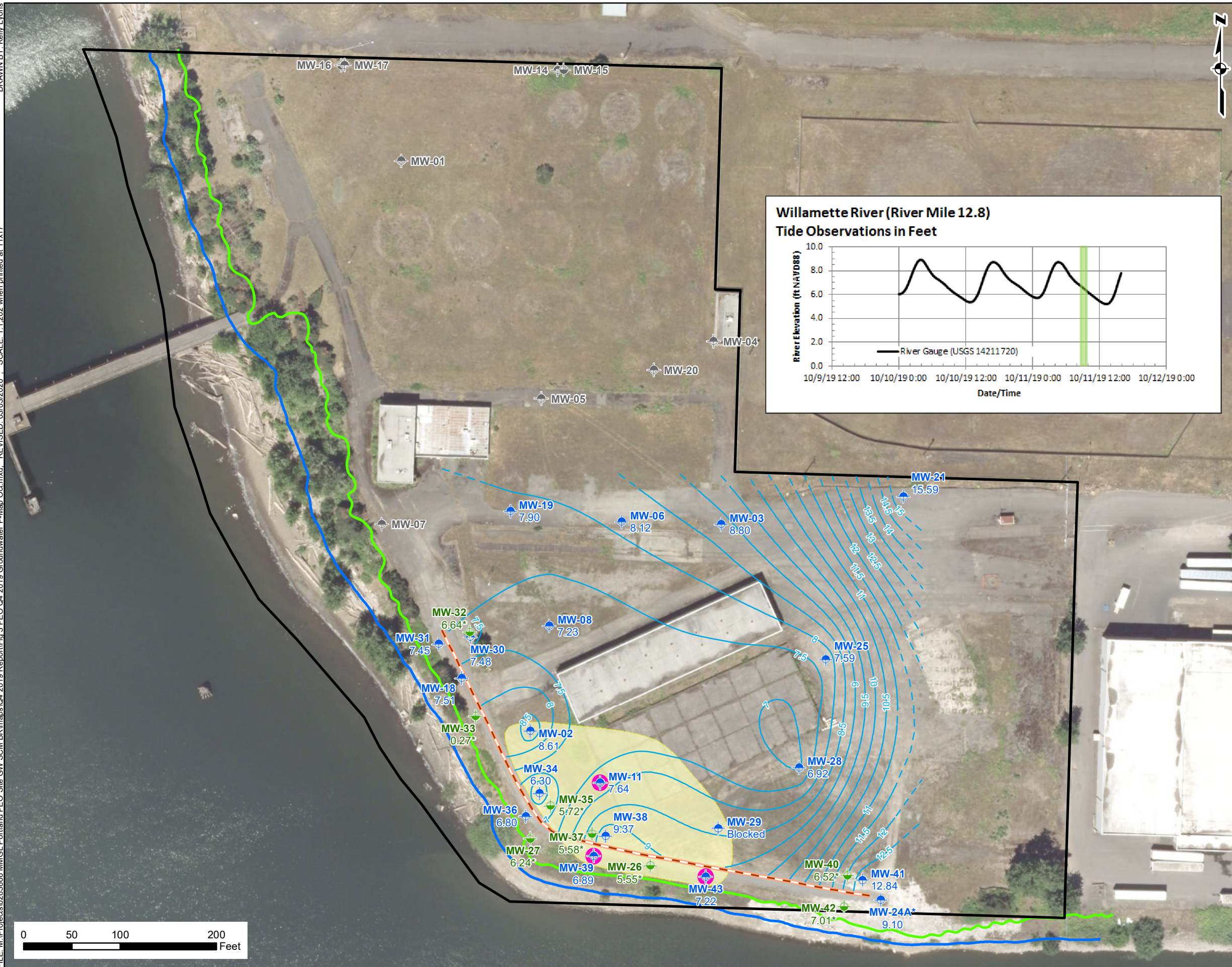


Figure 2
Monitoring Well Locations
 PEO Site
 Portland, Oregon



- #### Legend
- Shallow Monitoring Well
 - Deep Monitoring Well
 - Shallow Monitoring Well NM
 - Deep Monitoring Well NM
 - LNAPL Observed
 - Shallow Zone Groundwater Contours (ft NAVD88) Dashed where Inferred
 - Ordinary High Water (20.1 ft)
 - Top of Bank
 - Barrier Wall Alignment
 - Property Boundary
 - Approximate Maximum LNAPL Extent Observed

Notes:
 * Value not used for contouring.
 Water levels collected October 11, 2019.
 LNAPL extent represents all observed occurrences during monitoring since May 2017.
 Aerial Imagery: City of Portland, Summer 2017.

ft NAVD88: feet North American Vertical Datum of 1988.
 NM: Not measured.

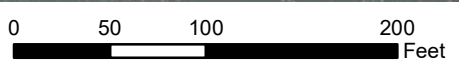
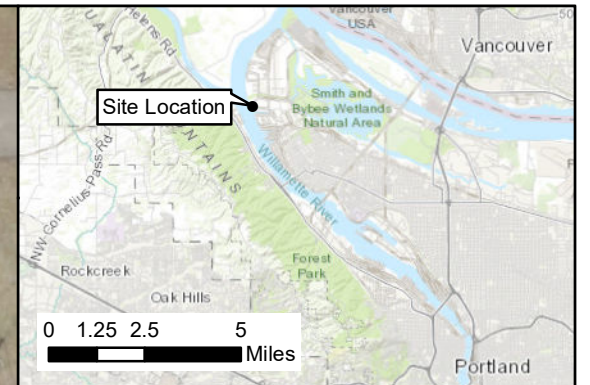
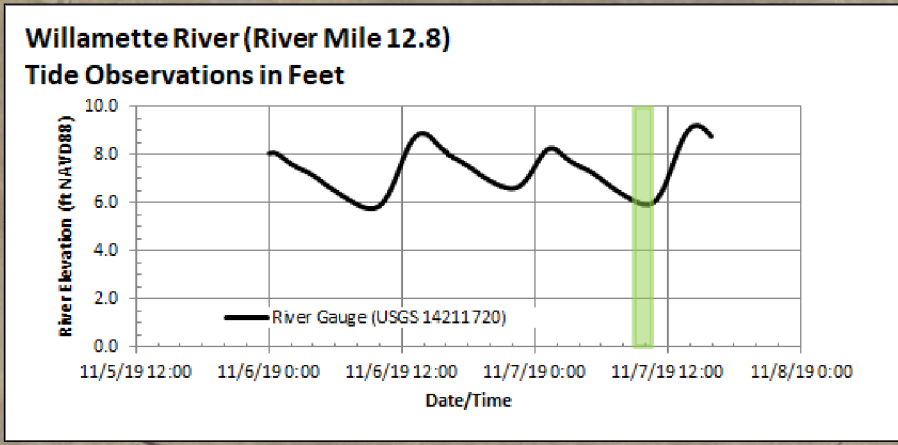
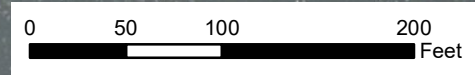
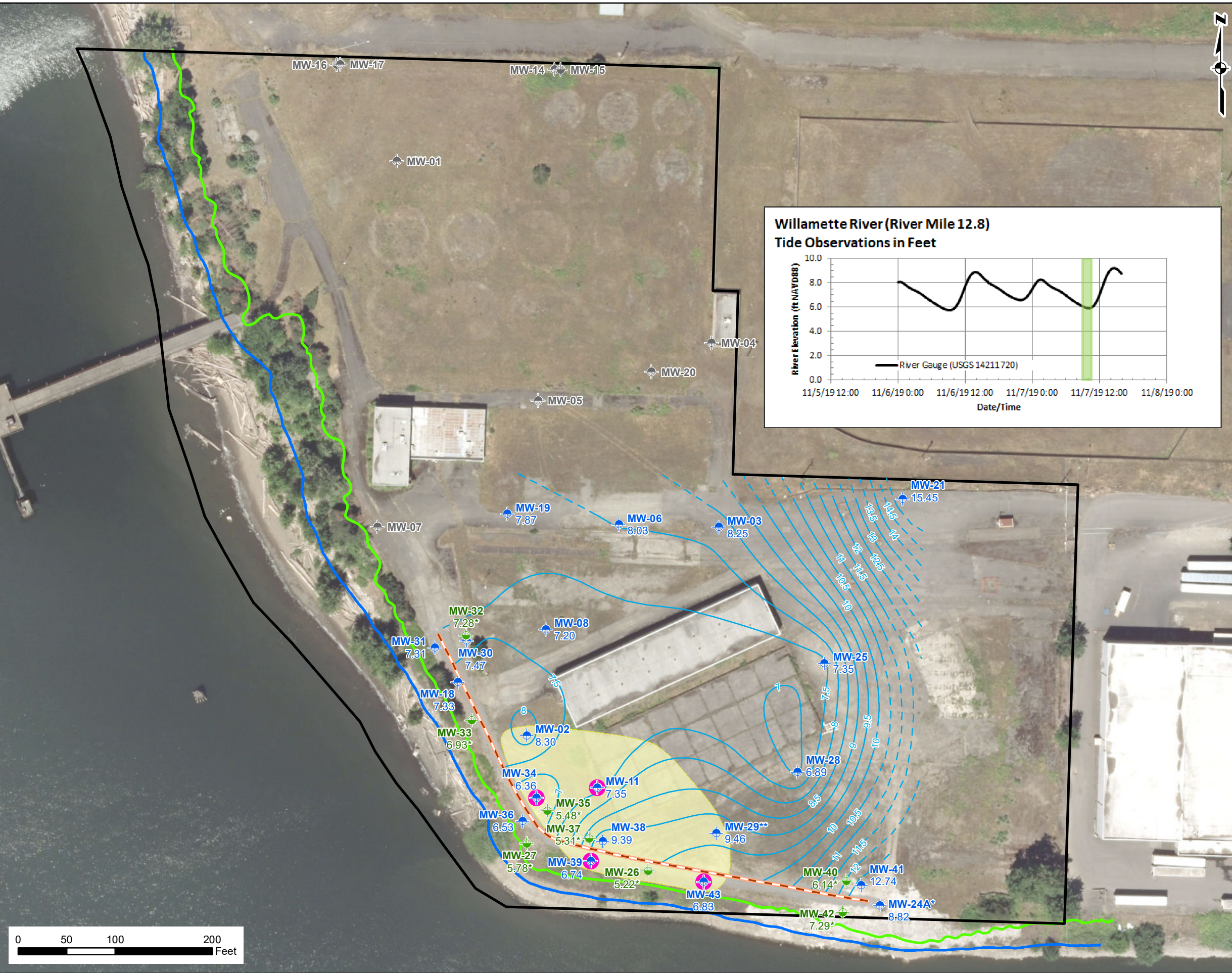


Figure 3
October 2019 Shallow Zone
Groundwater Potentiometric Surface
 PEO Site
 Portland, Oregon



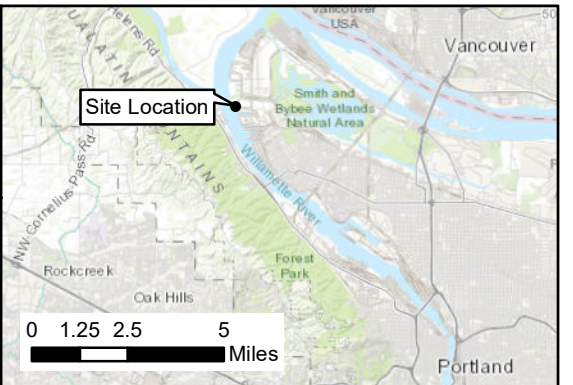
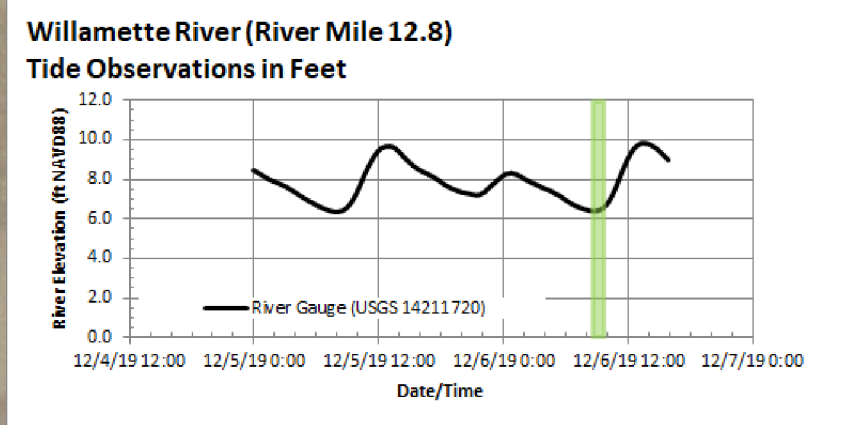
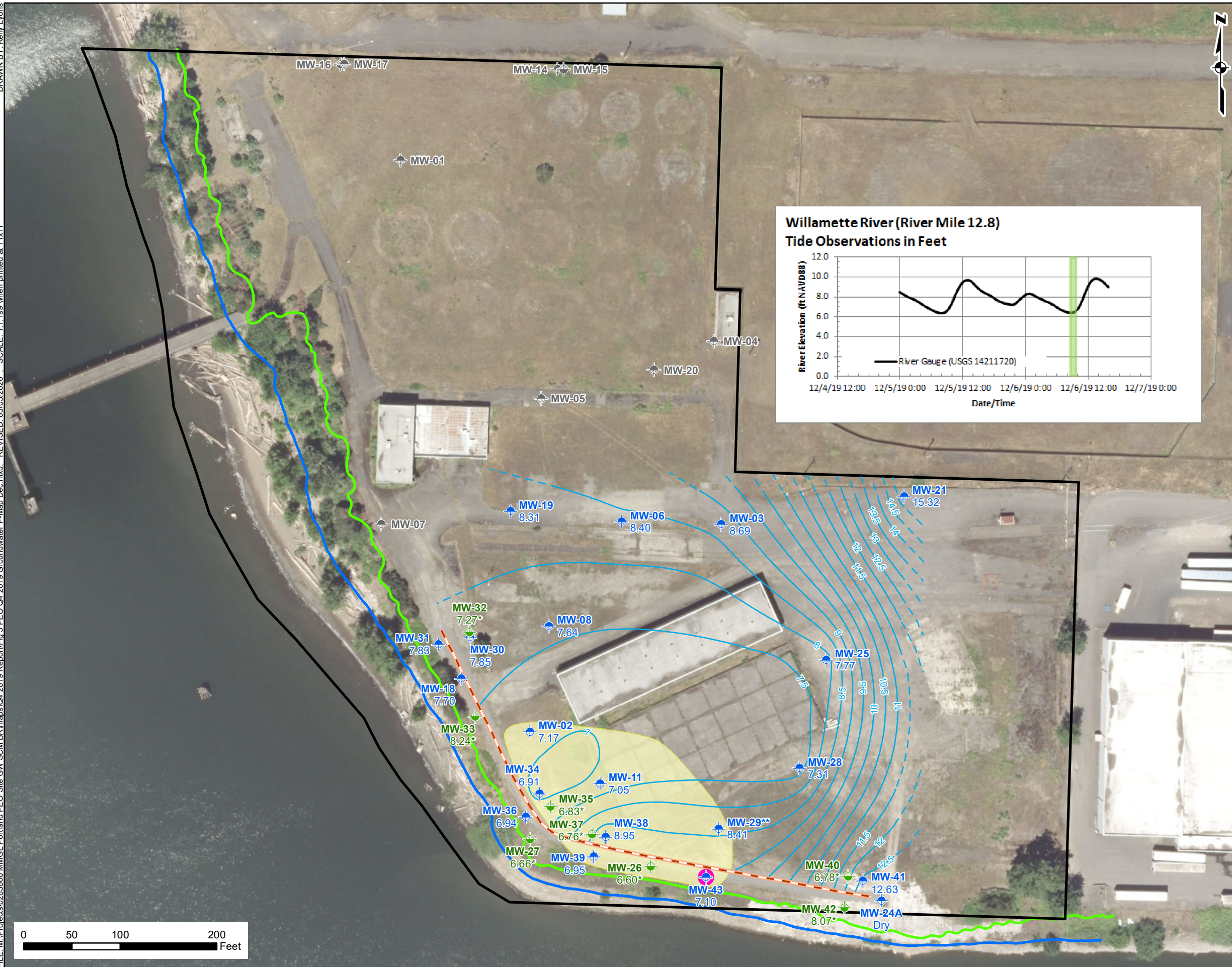
- #### Legend
- Shallow Monitoring Well
 - Deep Monitoring Well
 - Shallow Monitoring Well NM
 - Deep Monitoring Well NM
 - LNAPL Observed
 - Shallow Zone Groundwater Contours (ft NAVD88) Dashed where Inferred
 - Ordinary High Water (20.1 ft)
 - Top of Bank
 - Barrier Wall Alignment
 - Property Boundary
 - Approximate Maximum LNAPL Extent Observed

Notes:
 * Value not used for contouring.
 ** Potential biofouling at MW-29, value not used for contouring.
 Water levels collected 7 November, 2019.
 LNAPL extent represents all observed occurrences during monitoring since May 2017.
 Aerial Imagery: City of Portland, Summer 2017.

ft NAVD88: feet North American Vertical Datum of 1988.
 NM: Not measured.

Figure 4
November 2019 Shallow Zone
Groundwater Potentiometric Surface
 PEO Site
 Portland, Oregon

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MMGL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Fig 5 PEO Q4 2019 Groundwater P-Map Dec.mxd, REVISED: 03/03/2020, SCALE: 1:1,199 when printed at 11x17



- #### Legend
- ◆ Shallow Monitoring Well
 - ◆ Deep Monitoring Well
 - ◆ Shallow Monitoring Well NM
 - ◆ Deep Monitoring Well NM
 - LNAPL Observed
 - Shallow Zone Groundwater Contours (ft NAVD88) Dashed where Inferred
 - Ordinary High Water (20.1 ft)
 - Top of Bank
 - - - Barrier Wall Alignment
 - Property Boundary
 - Approximate Maximum LNAPL Extent Observed

Notes:
 * Value not used for contouring.
 ** Potential biofouling at MW-29, value not used for contouring.
 Water levels collected 6 December, 2019.
 LNAPL extent represents all observed occurrences during monitoring since May 2017.
 Aerial Imagery: City of Portland, Summer 2017.

ft NAVD88: feet North American Vertical Datum of 1988.
 NM: Not measured.

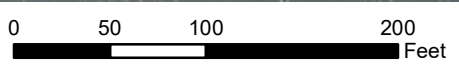
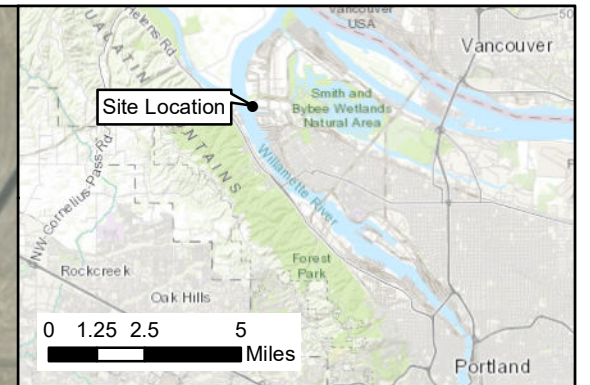


Figure 5
December 2019 Shallow Zone
Groundwater Potentiometric Surface
 PEO Site
 Portland, Oregon

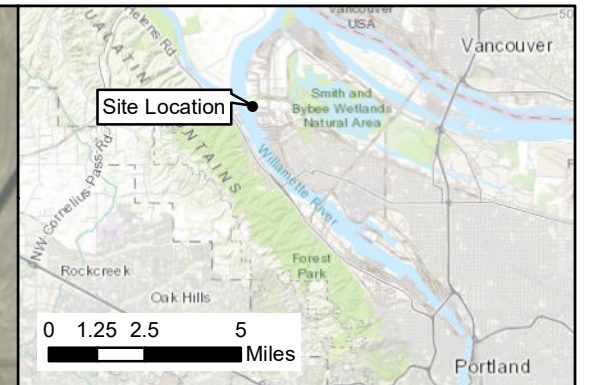


Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Not Sampled
- LNAPL Observed - December Groundwater Monitoring Event
- Benzene Isocontour (Dashed where Inferred)
- Ordinary High Water (20.1 ft)
- Top of Bank
- Barrier Wall Alignment
- ▭ Property Boundary
- ▭ Approximate Maximum LNAPL Extent Observed

Notes:
 All results in µg/L (micrograms per liter).
 Benzene Performance Criteria = 1.4 µg/L.
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.
 * Not sampled due to presence of LNAPL.
 ** Not sampled due to well being blocked. See progress report for more details.
 † Dry. Not sampled.
 Samples collected 9-16 December, 2019.
 Aerial Imagery: City of Portland, Summer 2016.
 LNAPL extent shown is the extent of all LNAPL occurrences observed during performance monitoring since May 2017.
 Shallow screened wells used for iso-concentration contouring.

Figure 6
Benzene
Concentrations in Groundwater
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon



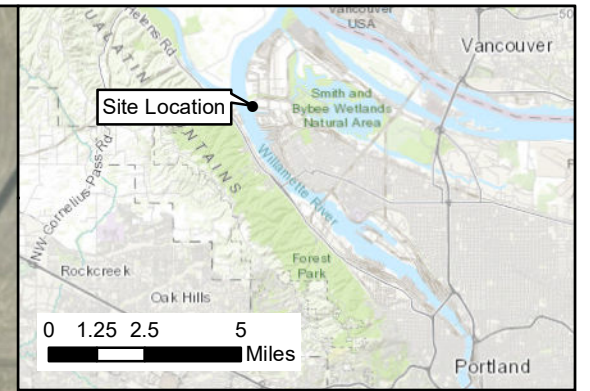
Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Not Sampled
- LNAPL Observed - December Groundwater Monitoring Event
- TPH-Dx Isocontour (Dashed where inferred)
- Ordinary High Water (20.1 ft)
- Top of Bank
- Barrier Wall Alignment
- Property Boundary
- Approximate Maximum LNAPL Extent Observed.

Notes:
 All results in µg/L (micrograms per liter).
 TPH-D Performance Criteria = 1,000 µg/L.
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 * Not sampled due to presence of LNAPL.
 ** Not sampled due to well being blocked. See progress report for more details.
 † Dry. Not sampled.
 Samples collected 9-16 December, 2019.
 Aerial Imagery: City of Portland, Summer 2016.
 LNAPL extent shown is the extent of all LNAPL occurrences observed during performance monitoring since May 2017.
 Shallow screened wells used for iso-concentration contouring.



Figure 7
TPH-DRO
Concentrations in Groundwater
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon



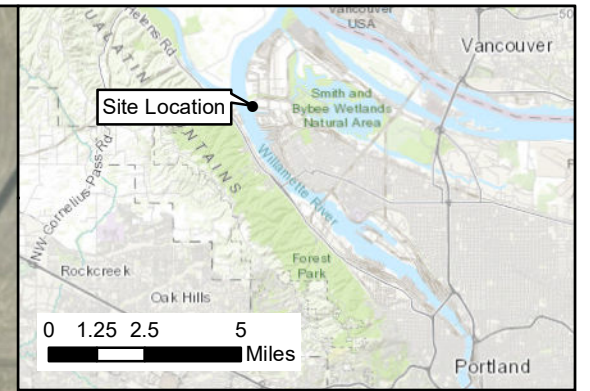
Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Not Sampled
- LNAPL Observed - December Groundwater Monitoring Event
- TPH-Gx Isocontour (Dashed where inferred)
- Ordinary High Water (20.1 ft)
- Top of Bank
- Barrier Wall Alignment
- Property Boundary
- Approximate Maximum LNAPL Extent Observed

Notes:
 All results in µg/L (micrograms per liter).
 TPH-G Performance Criteria = 1,000 µg/L.
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.
 NJ = Evidence of the compound at an estimated quantity.
 * Not sampled due to presence of LNAPL.
 ** Not sampled due to well being blocked. See progress report for more details.
 † Dry. Not sampled.
 Samples collected 9-16 December, 2019.
 Aerial Imagery: City of Portland, Summer 2016.
 LNAPL extent shown is the extent of all LNAPL occurrences observed during performance monitoring since May 2017.
 Shallow screened wells used for iso-concentration contouring.

Figure 8
TPH-Gx
Concentrations in Groundwater
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Environmental Resources Management
 www.erm.com



- Legend**
- Shallow Monitoring Well
 - Deep Monitoring Well
 - Not Sampled
 - LNAPL Observed - December Groundwater Monitoring Event
 - Aliphatics Isocontour (Dashed where Inferred)
 - Ordinary High Water (20.1 ft)
 - Top of Bank
 - Barrier Wall Alignment
 - Property Boundary
 - Approximate Maximum LNAPL Extent Observed

Notes:
 All results in µg/L (micrograms per liter).
 C10-C12 Aliphatics Performance Criteria: 2.6 µg/L.
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 J = Estimated detected result.
 J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.
 33.1 / 41.8: NWEPH / NWVPH.
 Concentration contours based on the larger result of the NWEPH or NWVPH analysis method.
 * Not sampled due to presence of LNAPL.
 ** Not sampled due to well being blocked. See progress report for more details.
 † Dry. Not sampled.
 Samples collected 9-16 December, 2019.
 Aerial Imagery: City of Portland, Summer 2016.
 LNAPL extent shown is the extent of all LNAPL occurrences observed during performance monitoring since May 2017.
 Shallow screened wells used for iso-concentration contouring.

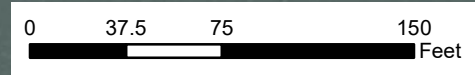
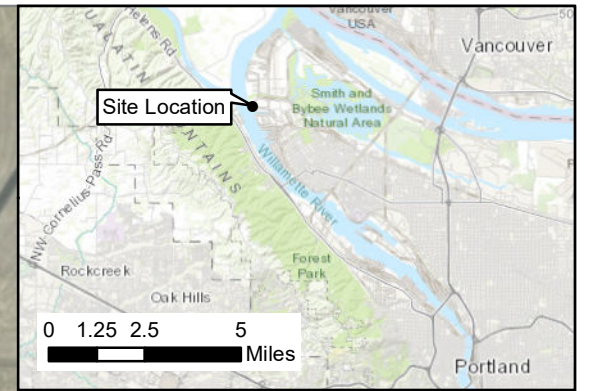
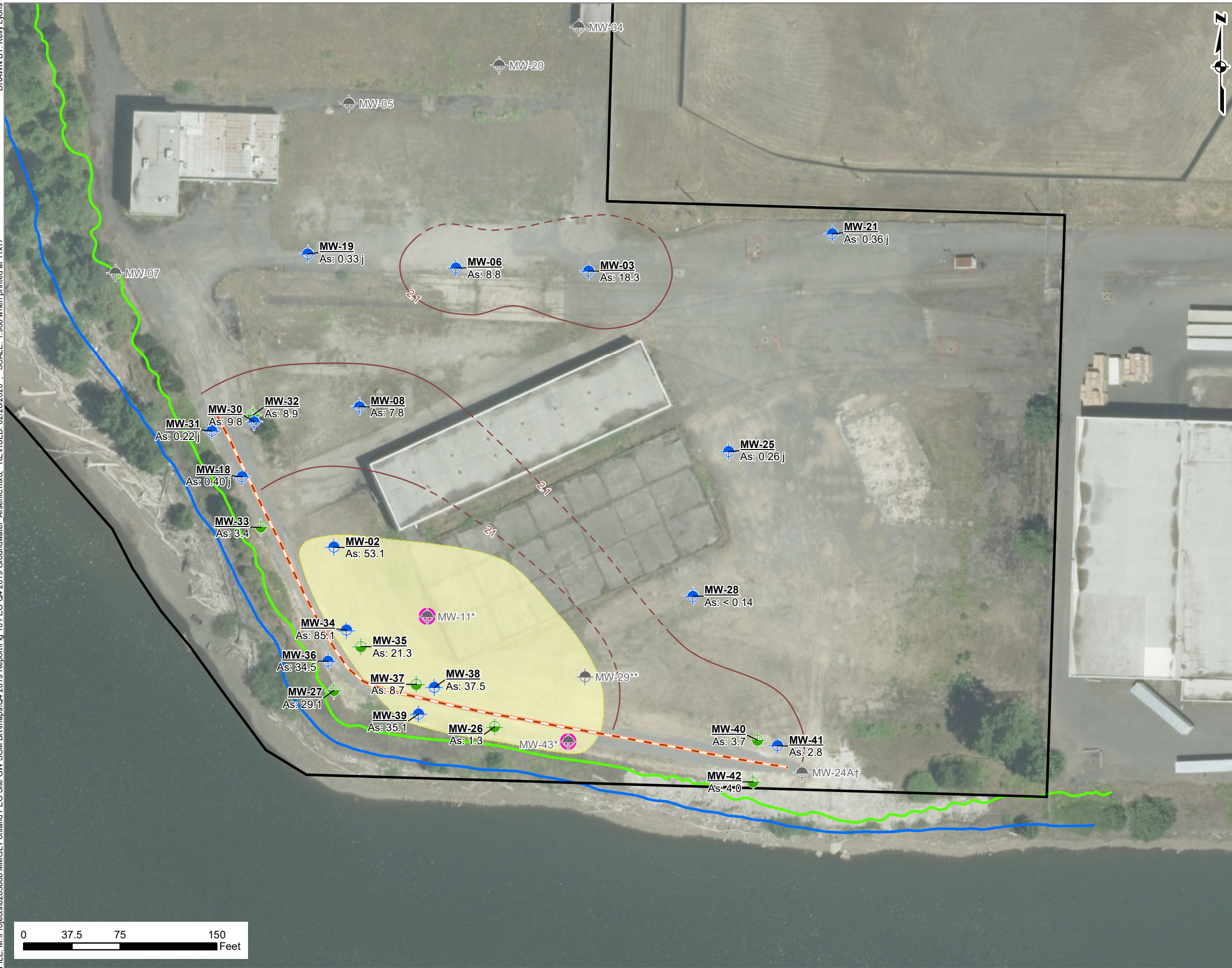


Figure 9
C10-C12 Aliphatics
Concentrations in Groundwater
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

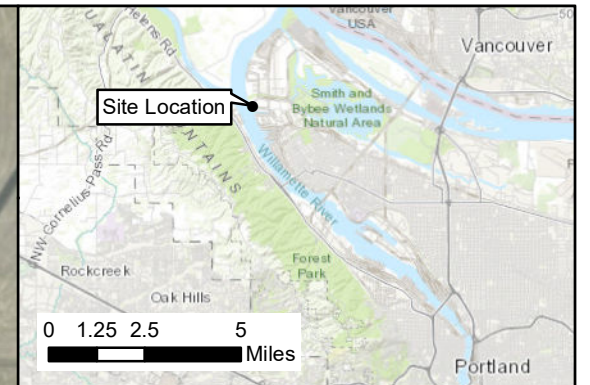


Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Not Sampled
- LNAPL Observed - December Groundwater Monitoring Event
- Arsenic Isocontour (Dashed where Inferred)
- Ordinary High Water (20.1 ft)
- Top of Bank
- Barrier Wall Alignment
- Property Boundary
- Approximate Maximum LNAPL Extent Observed

Notes:
 All results in µg/L (micrograms per liter).
 As: Arsenic.
 Arsenic Performance Criteria = 2.1 µg/L.
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 * Not sampled due to presence of LNAPL.
 ** Not sampled due to well being blocked. See progress report for more details.
 † Dry. Not sampled.
 Samples collected 9-16 December, 2019.
 Aerial Imagery: City of Portland, Summer 2016.
 LNAPL extent shown is the extent of all LNAPL occurrences observed during performance monitoring since May 2017.
 Shallow screened wells used for iso-concentration contouring.

Figure 10
Arsenic
Concentrations in Groundwater
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon



Legend

- Shallow Monitoring Well
- Deep Monitoring Well
- Not Sampled
- LNAPL Observed - December Groundwater Monitoring Event
- Manganese Isocontour (Dashed where Inferred)
- Ordinary High Water (20.1 ft)
- Top of Bank
- Barrier Wall
- Property Boundary
- Approximate Maximum LNAPL Extent Observed

Notes:
 All results in µg/L (micrograms per liter).
 Mn: Manganese.
 Manganese Performance Criteria = 1,925 µg/L.
 * Not sampled due to presence of LNAPL.
 ** Not sampled due to well being blocked. See progress report for more details.
 † Dry. Not sampled.
 Samples collected 9-16 December, 2019.
 Aerial Imagery: City of Portland, Summer 2016.
 LNAPL extent shown is the extent of all LNAPL occurrences observed during performance monitoring since May 2017.
 Shallow screened wells used for iso-concentration contouring.

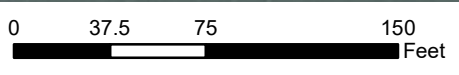


Figure 11
Manganese Concentrations in Groundwater
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Tables

Table 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 ¹	Transducer Installed	Quarterly Monitoring ²
				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	Active	27	Shallow	12	27	30.31	X	X		X
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	25	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	25	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

Notes:

- = not applicable

¹ = Manual water level measurement collected monthly

² = Groundwater analytical samples

NAVD88 = North America Vertical Datum 1988

Table 2
Groundwater Elevations - October 2019
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Time	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	10/11/2019	09:38	22.57	-	ND	-	8.61
MW-03	Shallow	31.67	10/11/2019	08:34	22.87	-	ND	-	8.80
MW-06	Shallow	31.23	10/11/2019	08:36	23.11	-	ND	-	8.12
MW-07	Shallow	30.31	10/11/2019					Dry	
MW-08	Shallow	30.93	10/11/2019	09:27	23.70	-	ND	-	7.23
MW-11	Shallow	31.06	10/11/2019	09:41	23.43	23.42	0.01	0.00	7.64
MW-18	Shallow	30.87	10/11/2019	08:44	23.36	-	ND	-	7.51
MW-19	Shallow	31.70	10/11/2019	08:38	23.80	-	ND	-	7.90
MW-21	Shallow	31.36	10/11/2019	08:28	15.77	-	ND	-	15.59
MW-24A	Shallow	32.35	10/11/2019	09:09	23.25	-	ND	-	9.10
MW-25	Shallow	31.78	10/11/2019	08:31	24.19	-	ND	-	7.59
MW-26	Deep	31.89	10/11/2019	08:54	26.34	-	ND	-	5.55
MW-27	Deep	31.46	10/11/2019	08:49	25.22	-	ND	-	6.24
MW-28	Shallow	31.26	10/11/2019	09:16	24.34	-	ND	-	6.92
MW-29	Shallow	31.90	10/11/2019					Blocked. Potentially biofouled.	
MW-30	Shallow	31.05	10/11/2019	09:24	23.57	-	ND	-	7.48
MW-31	Shallow	30.77	10/11/2019	08:42	23.32	-	ND	-	7.45
MW-32	Deep	31.08	10/11/2019	09:23	24.44	-	ND	-	6.64
MW-33	Deep	30.88	10/11/2019	08:45	30.61	-	ND	-	0.27
MW-34	Shallow	30.72	10/11/2019	09:46	24.42	-	ND	-	6.30
MW-35	Deep	30.83	10/11/2019	09:37	25.11	-	ND	-	5.72
MW-36	Shallow	30.16	10/11/2019	08:47	23.36	-	ND	-	6.80
MW-37	Deep	31.27	10/11/2019	09:33	25.69	-	ND	-	5.58
MW-38	Shallow	31.54	10/11/2019	09:30	22.17	-	ND	-	9.37
MW-39	Shallow	31.08	10/11/2019	08:51	24.19	24.19	Sheen	-	6.89
MW-40	Deep	31.71	10/11/2019	09:14	25.19	-	ND	-	6.52
MW-41	Shallow	31.32	10/11/2019	09:11	18.48	-	ND	-	12.84
MW-42	Deep	31.94	10/11/2019	09:06	24.93	-	ND	-	7.01
MW-43	Shallow	31.39	10/11/2019	08:57	24.22	24.16	0.06	0.01	7.22

Notes:

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table 3
Groundwater Elevations - November 2019
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Time	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	11/07/2019	10:22	22.88	-	ND	-	8.30
MW-03	Shallow	31.67	11/07/2019	09:10	23.42	-	ND	-	8.25
MW-06	Shallow	31.23	11/07/2019	09:13	23.20	-	ND	-	8.03
MW-07	Shallow	30.31	11/07/2019				Dry		
MW-08	Shallow	30.93	11/07/2019	10:04	23.73	-	ND	-	7.20
MW-11	Shallow	31.06	11/07/2019	10:25	23.74	23.70	0.04	0.01	7.35
MW-18	Shallow	30.87	11/07/2019	09:19	23.54	-	ND	-	7.33
MW-19	Shallow	31.70	11/07/2019	09:15	23.83	-	ND	-	7.87
MW-21	Shallow	31.36	11/07/2019	09:08	15.91	-	ND	-	15.45
MW-24A	Shallow	32.35	11/07/2019	09:44	23.53	-	ND	-	8.82
MW-25	Shallow	31.78	11/07/2019	09:04	24.43	-	ND	-	7.35
MW-26	Deep	31.89	11/07/2019	09:33	26.67	-	ND	-	5.22
MW-27	Deep	31.46	11/07/2019	09:25	25.68	-	ND	-	5.78
MW-28	Shallow	31.26	11/07/2019	09:52	24.37	-	ND	-	6.89
MW-29*	Shallow	31.90	11/07/2019	09:54	22.44	-	ND	-	9.46
MW-30	Shallow	31.05	11/07/2019	10:00	23.58	-	ND	-	7.47
MW-31	Shallow	30.77	11/07/2019	09:17	23.46	-	ND	-	7.31
MW-32	Deep	31.08	11/07/2019	09:58	23.80	-	ND	-	7.28
MW-33	Deep	30.88	11/07/2019	09:21	23.95	-	ND	-	6.93
MW-34	Shallow	30.72	11/07/2019	10:31	24.37	24.36	0.01	0.00	6.36
MW-35	Deep	30.83	11/07/2019	10:15	25.35	-	ND	-	5.48
MW-36	Shallow	30.16	11/07/2019	09:23	23.63	-	ND	-	6.53
MW-37	Deep	31.27	11/07/2019	10:12	25.96	-	ND	-	5.31
MW-38	Shallow	31.54	11/07/2019	10:09	22.15	-	ND	-	9.39
MW-39	Shallow	31.08	11/07/2019	09:28	24.35	24.34	0.01	0.00	6.74
MW-40	Deep	31.71	11/07/2019	09:49	25.57	-	ND	-	6.14
MW-41	Shallow	31.32	11/07/2019	09:47	18.58	-	ND	-	12.74
MW-42	Deep	31.94	11/07/2019	09:43	24.65	-	ND	-	7.29
MW-43	Shallow	31.39	11/07/2019	09:36	24.80	24.50	0.30	0.05	6.83

Notes:

* = Potential biofouling at MW-29, value is considered an approximation.

- = 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 4
Groundwater Elevations - December 2019
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point (Top of Casing) ft-NAVD88	Date	Time	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	12/06/2019	09:43	24.01	-	ND	-	7.17
MW-03	Shallow	31.67	12/06/2019	08:30	22.98	-	ND	-	8.69
MW-06	Shallow	31.23	12/06/2019	08:32	22.83	-	ND	-	8.40
MW-07	Shallow	30.31	12/06/2019				Dry		
MW-08	Shallow	30.93	12/06/2019	09:27	23.29	-	ND	-	7.64
MW-11	Shallow	31.06	12/06/2019	09:40	24.01	-	ND	-	7.05
MW-18	Shallow	30.87	12/06/2019	08:39	23.17	-	ND	-	7.70
MW-19	Shallow	31.70	12/06/2019	08:35	23.39	-	ND	-	8.31
MW-21	Shallow	31.36	12/06/2019	08:28	16.04	-	ND	-	15.32
MW-24A	Shallow	32.35	12/06/2019				Dry		
MW-25	Shallow	31.78	12/06/2019	08:25	24.01	-	ND	-	7.77
MW-26	Deep	31.89	12/06/2019	08:58	25.29	-	ND	-	6.60
MW-27	Deep	31.46	12/06/2019	08:50	24.80	-	ND	-	6.66
MW-28	Shallow	31.26	12/06/2019	09:16	23.95	-	ND	-	7.31
MW-29*	Shallow	31.90	12/06/2019	09:19	23.49	-	ND	-	8.41
MW-30	Shallow	31.05	12/06/2019	09:25	23.20	-	ND	-	7.85
MW-31	Shallow	30.77	12/06/2019	08:37	22.94	-	ND	-	7.83
MW-32	Deep	31.08	12/06/2019	09:24	23.81	-	ND	-	7.27
MW-33	Deep	30.88	12/06/2019	08:42	22.64	-	ND	-	8.24
MW-34	Shallow	30.72	12/06/2019	09:46	23.81	-	ND	-	6.91
MW-35	Deep	30.83	12/06/2019	09:37	24.00	-	ND	-	6.83
MW-36	Shallow	30.16	12/06/2019	08:47	23.22	-	ND	-	6.94
MW-37	Deep	31.27	12/06/2019	09:34	24.51	-	ND	-	6.76
MW-38	Shallow	31.54	12/06/2019	09:31	22.59	-	ND	-	8.95
MW-39	Shallow	31.08	12/06/2019	08:54	24.13	-	ND	-	6.95
MW-40	Deep	31.71	12/06/2019	09:13	24.93	-	ND	-	6.78
MW-41	Shallow	31.32	12/06/2019	09:11	18.69	-	ND	-	12.63
MW-42	Deep	31.94	12/06/2019	09:05	23.87	-	ND	-	8.07
MW-43	Shallow	31.39	12/06/2019	09:01	24.35	24.28	0.07	0.01	7.10

Notes:

* = Potential biofouling at MW-29, value is considered an approximation.

- = not applicable

NAVD88 = North America Vertical Datum 1988

ND = Non-detect

Corrected groundwater water elevation (GWE) calculated as: $GWE_{corr} = GWE + (NAPL_{thickness} * SG)$

Specific Gravity (SG) of light nonaqueous phase liquid (LNAPL) assumed to be 0.8 based on analysis of LNAPL

Table 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	27.00	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
10/11/2019	DTW measured (ft BTOC)	23.70	23.42	23.36	15.57	25.22	24.34	23.57	24.44	30.61	24.42	25.11	23.36	25.19	16.48	24.93
	DTW calculated (ft BTOC)	23.68	24.16	23.48	15.84	25.41	24.35	23.78	24.85	30.70	24.23	25.30	23.27	25.56	18.67	25.35
	Calibration Offset	-0.02	0.74	0.12	0.27	0.19	0.01	0.21	0.41	0.09	-0.19	0.19	-0.09	0.37	2.19	0.42
11/7/2019	DTW measured (ft BTOC)	23.73	23.74	23.54	15.91	25.68	24.37	23.58	23.80	23.95	24.37	25.35	23.63	25.57	16.58	24.65
	DTW calculated (ft BTOC)	23.68	24.68	23.66	15.98	25.73	24.30	23.82	24.12	24.14	24.50	25.58	23.70	25.82	18.76	25.04
	Calibration Offset	-0.05	0.94	0.12	0.07	0.05	-0.07	0.24	0.32	0.19	0.13	0.23	0.07	0.25	2.18	0.39
12/6/2019	DTW measured (ft BTOC)	23.29	24.01	23.17	16.04	24.80	23.95	23.20	23.81	22.64	23.81	24.00	23.22	24.93	16.69	23.87
	DTW calculated (ft BTOC)	23.25	25.19	23.28	16.10	24.92	24.08	23.44	24.23	22.97	24.10	24.40	23.29	25.13	18.89	24.33
	Calibration Offset	-0.04	1.18	0.11	0.06	0.12	0.13	0.24	0.42	0.33	0.29	0.40	0.07	0.20	2.20	0.46

Notes:

NAVD88 = North America Vertical Datum 1988

DTW = Depth to Water

BTOC = Below Top of Casing

* = Pressure Transducer stopped recording on 8/15/18 for a period of 30 days. Measurements started again on 9/13/18.

Table 6
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	12/16/2019	22.41	-	ND	-	8.77	
MW-03	Shallow	31.67	12/10/2019	22.99	-	ND	-	8.68	
MW-06	Shallow	31.23	12/10/2019	22.82	-	ND	-	8.41	
MW-07	Shallow	30.31	12/6/2019	Dry					
MW-08	Shallow	30.93	12/11/2019	22.62	-	ND	-	8.31	
MW-11	Shallow	31.06	12/16/2019	22.17	22.14	0.03	0.00	8.91	
MW-18	Shallow	30.87	12/11/2019	22.76	-	ND	-	8.11	
MW-19	Shallow	31.70	12/10/2019	23.37	-	ND	-	8.33	
MW-21	Shallow	31.36	12/10/2019	16.06	-	ND	-	15.30	
MW-24A	Shallow	32.35	12/9/2019	Dry					
MW-25	Shallow	31.78	12/10/2019	23.25	-	ND	-	8.53	
MW-26	Deep	31.89	12/12/2019	23.89	-	ND	-	8.00	
MW-27	Deep	31.46	12/13/2019	22.29	-	ND	-	9.17	
MW-28	Shallow	31.26	12/12/2019	22.87	-	ND	-	8.39	
MW-29	Shallow	31.90	12/12/2019	Potentially biofouled at 24.50 ft bgs.					
MW-30	Shallow	31.05	12/11/2019	22.80	-	ND	-	8.25	
MW-31	Shallow	30.77	12/11/2019	22.57	-	ND	-	8.20	
MW-32	Deep	31.08	12/9/2019	23.33	-	ND	-	7.75	
MW-33	Deep	30.88	12/9/2019	22.72	-	ND	-	8.16	
MW-34	Shallow	30.72	12/16/2019	22.00	-	ND	-	8.72	
MW-35	Deep	30.83	12/16/2019	22.27	-	ND	-	8.56	
MW-36	Shallow	30.16	12/13/2019	20.70	-	ND	-	9.46	
MW-37	Deep	31.27	12/13/2019	22.93	-	ND	-	8.34	
MW-38	Shallow	31.54	12/13/2019	21.43	-	ND	-	10.11	
MW-39	Shallow	31.08	12/13/2019	22.24	-	ND	-	8.84	
MW-40	Deep	31.71	12/12/2019	22.88	-	ND	-	8.83	
MW-41	Shallow	31.32	12/12/2019	18.77	-	ND	-	12.55	
MW-42	Deep	31.94	12/9/2019	23.79	-	ND	-	8.15	
MW-43	Shallow	31.39	12/9/2019	22.85	22.83	0.02	0.00	8.56	

Notes:

- = 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 7
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 2019	3/15/2019	1.0*	0.04	0.06	0.02	0.02	0.03	1.18
Q2 2019	6/13/2019	-	-	-	-	-	-	0.00
Q3 2019	9/18/2019	-	-	-	-	-	-	0.00
Q4 2019	12/9/2019	-	-	-	-	-	-	0.00
Total Recovered		0.00	0.04	0.06	0.02	0.02	0.03	1.18

Notes:

- = not applicable

* = approximate value

Table 8
Groundwater Field Parameters - December 2019
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	12/16/2019	6.51	927	26.48	21.9	0.21	81.6	
MW-03	12/10/2019	6.11	198	14.42	100.4	1.03	316	
MW-06	12/10/2019	6.36	208	15.00	4.0	0.24	7.45	
MW-07	12/6/2019	Dry						
MW-08	12/11/2019	6.12	342	21.30	69.0	0.31	2.5	
MW-11	12/16/2019	Not collected due to presence of LNAPL						
MW-18	12/11/2019	6.30	229	16.09	51.5	0.36	3.54	
MW-19	12/10/2019	6.53	203	14.27	60.8	0.31	6.7	
MW-21	12/10/2019	6.31	95	16.03	103.2	1.73	2.65	
MW-24A	12/9/2019	Dry						
MW-25	12/10/2019	6.24	134	13.73	130.7	3.64	5.46	
MW-26	12/12/2019	6.48	108	17.50	62.4	0.57	3.06	
MW-27	12/13/2019	6.46	287	19.28	-32.2	0.20	-	
MW-28	12/12/2019	6.50	114	17.45	51.8	6.28	3.49	
MW-29	12/12/2019	Not collected due to potential biofouling at 24.50 ft bgs						
MW-30	12/11/2019	5.97	338	15.47	61.0	0.30	4.66	
MW-31	12/11/2019	6.41	242	15.95	81.9	0.62	1.43	
MW-32	12/9/2019	8.88	103	14.77	59.9	1.31	20.9	
MW-33	12/9/2019	10.94	283	15.78	34.5	0.45	24.2	
MW-34	12/16/2019	6.48	488	24.78	91.5	0.32	>1000	
MW-35	12/16/2019	6.43	140	24.60	61.2	0.31	1.50	
MW-36	12/13/2019	6.52	513	19.95	-33.1	0.30	4.49	
MW-37	12/13/2019	6.82	202	19.72	20.9	0.26	2.07	
MW-38	12/13/2019	6.14	393	21.48	37.8	0.16	28.3	
MW-39	12/13/2019	6.06	497	17.85	49.4	0.32	3.81	
MW-40	12/12/2019	6.70	263	15.95	5.10	0.97	3.73	
MW-41	12/12/2019	6.35	140	16.27	35.4	0.70	4.22	
MW-42	12/9/2019	9.47	156	13.41	51.1	1.25	0.0	
MW-43	12/9/2019	Not collected due to presence of LNAPL						

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

Table 9
Groundwater Analytical Data - Petroleum Related Compounds
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Method	EPA 8620B					NWTPH-Dx, SGT		NWTPH-Gx	NWEPH	NWVPH	
	Analyte	Benzene	Ethylbenzene	m,p-Xylenes	o-Xylene	Toluene	Motor Oil Range Organics (C24-C36)	TPH Diesel Range Organics	TPH-GRO (Gasoline Range Organics)	C10-C12-Aliphatics	C10-C12-Aliphatics
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria	1.4	210	13	13	1,500	NS	1000	1000	2.6	2.6	
Well	Sample Date										
MW-02	16-Dec-19	0.22 j	< 0.14	0.36 j	0.18 j	0.49 j	3,300 j	89,700	1,010 NJ	297 J-	152
MW-03	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 89	100 j	< 100 U	< 5.89 UJ	< 4.07
MW-06	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	0.29 j	88 j	1,400	3,940 NJ	< 5.86	604
MW-08	11-Dec-19	0.12 j	< 0.14	< 0.31	< 0.16	< 0.083	140 j	750	< 100 U	< 20.0	< 20.0
MW-18	11-Dec-19	0.18 j	< 0.14	< 0.31	< 0.16	< 0.083	160 j	680	107 J+	< 19.9	< 20.0
MW-19	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	190 j	< 100 U	< 5.84	< 4.07
MW-21	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 75	< 64	< 38.3	< 5.85	< 4.07
MW-25	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	< 66	< 38.3	< 5.87	< 4.07
MW-26	12-Dec-19	0.11 j	< 0.14	0.33 j	0.49 j	0.43 j	< 80	300 j	188	< 5.91	< 4.07
MW-27	13-Dec-19	2.7	0.40 j	0.46 j	0.20 j	0.55 j	< 85 UJ	740 J-	1,090 NJ	< 5.87	176
MW-27 Dup	13-Dec-19	2.7	0.38 j	0.46 j	0.21 j	0.57 j	< 400 U	1,500	1,310	< 5.85	93.8
MW-28	12-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	71 j	< 38.3	< 5.86	< 4.07
MW-30	11-Dec-19	0.11 j	< 0.14	< 0.31	< 0.16	< 0.083	390 j	8,400	333	< 19.9 UJ	< 20.0
MW-31	11-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	190 j	2,200	70.5 j	< 20.0	< 20.0
MW-32	09-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	0.25 j	190 J-	490	142 J+	< 5.86	< 4.07
MW-33	09-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	170 j	340 j	297 NJ	< 5.87	< 4.07
MW-34	16-Dec-19	< 0.51	< 0.69	< 1.5	< 0.80	0.79 j	6,600 j	216,000	1,790 NJ	10,300 J-	4,490 J
MW-35	16-Dec-19	0.32 j	< 0.14	0.38 j	< 0.16	0.16 j	83 j	620	303	63.5	< 4.07
MW-35 Dup	16-Dec-19	0.32 j	< 0.14	0.33 j	< 0.16	0.14 j	89 j	670	229	< 5.76	54.9 J
MW-36	13-Dec-19	31.1	6.6	30.5	11.7	31.4	210 j	3,600	2,910 NJ	< 5.88	321
MW-37	13-Dec-19	0.23 j	< 0.14	0.41 j	0.30 j	0.38 j	< 89	310 j	294	21.1	< 4.07
MW-38	13-Dec-19	9.2 J+	1.4 J+	9.0 J+	3.7 J+	7.6 J+	590	23,200	8,150 NJ	914	1,180
MW-39	13-Dec-19	65.5	12.2	52.0	16.8	41.6	250 j	5,400	5,260 NJ	7.85 j	536 J+
MW-40	12-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	75 j	68.3 j	< 5.85	< 4.07
MW-41	12-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 80	< 68	< 38.3	< 5.87	< 4.07
MW-42	09-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	200 j	240 j	156 J+	< 5.87	< 4.07

Notes:

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard for GW SCM Performance Evaluation

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

NWTPH-Dx, SGT analyses performed by PACE.

NWTPH-Gx analyses performed by PACE.

NWVPH analyses performed by Fremont.

NWEPH analyses performed by Fremont.

Table 10
Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 6020A		EPA 8270 by SIM				
Analyte	Unit	Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
Selected GW SCM Performance Evaluation Criteria		2.1	1,925	NS	NS	99	NS	4,000
Well	Sample Date							
MW-02	16-Dec-19	53.1	4,540	0.63 J-	0.57 J-	< 0.0032 UJ	< 0.0046 UJ	< 0.0062 UJ
MW-03	10-Dec-19	18.3	1,360	0.019 j	< 0.0058	< 0.0036	< 0.0051	< 0.0069
MW-06	10-Dec-19	6.8	608	7.1	6.9	1.3	0.47	0.16
MW-08	11-Dec-19	7.8	1,850	< 0.0053	< 0.0050	0.068	< 0.0045	< 0.0059
MW-18	11-Dec-19	0.40 j	772	< 0.0054	< 0.0051	0.16	0.027 j	< 0.0060
MW-19	10-Dec-19	0.33 j	627	0.013 j	0.011 j	< 0.0031	< 0.0045	< 0.0059
MW-21	10-Dec-19	0.36 j	57.7	< 0.0054	< 0.0051	< 0.0031	< 0.0045	< 0.0060
MW-25	10-Dec-19	0.26 j	39.7	< 0.0054	< 0.0051	< 0.0031	< 0.0045	< 0.0060
MW-26	12-Dec-19	1.3	194	0.040	0.0071 j	0.12	0.0060 j	< 0.0059
MW-27	13-Dec-19	28.4	1,750	0.60	0.042	0.75	0.20	0.091
MW-27 Dup	13-Dec-19	29.1	1,760	0.60	0.045	0.77	0.20	0.094
MW-28	12-Dec-19	< 0.14	5.3	0.0058 j	0.011 j	< 0.0030	< 0.0043	< 0.0058
MW-30	11-Dec-19	9.8	2,220	< 0.0053	0.091	0.18	0.099	< 0.0059
MW-31	11-Dec-19	0.22 j	368	0.14	< 0.0051	< 0.0031	0.066	< 0.0060
MW-32	09-Dec-19	6.9	6.9	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0062
MW-33	09-Dec-19	3.4	3.5	0.039 j	0.018 j	0.082	< 0.0046	< 0.0062
MW-34	16-Dec-19	85.1	4,070	0.60	< 0.0053	< 0.0033	1.5	< 0.0063
MW-35	16-Dec-19	21.3	668	0.048	0.012 j	0.068	0.023 j	0.12
MW-35 Dup	16-Dec-19	20.9	665	0.061	< 0.0051	0.067	0.022 j	0.12
MW-36	13-Dec-19	34.5	2,430	0.79 J-	0.20 J-	1.2 J-	0.11 J-	< 0.0060 UJ
MW-37	13-Dec-19	8.7	766	0.040	0.0077 j	0.068	0.0067 j	< 0.0060
MW-38	13-Dec-19	37.5	2,000	2.5	0.78	1.7	3.5	0.62
MW-39	13-Dec-19	35.1	3,150	5.2	0.23	1.3	0.18	< 0.0059
MW-40	12-Dec-19	3.7	1,240	< 0.0053	< 0.0050	< 0.0031	< 0.0045	0.014 j
MW-41	12-Dec-19	2.8	349	< 0.0053	< 0.0050	< 0.0031	< 0.0045	< 0.0059
MW-42	09-Dec-19	4.0	15.1	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0062

Notes:
 < = Compound not detected. Reportable detection limit shown.
 -- = not analyzed
 µg/L = micrograms per liter
 GW SCM = Groundwater Source Control Measure
 NS = No Standard for GW SCM Performance Evaluation
 Dup = Field Duplicate Sample
 Bolded values indicate concentrations above the Reportable Detection Limit.
 Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits
 J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits
 NJ = Evidence of the compound at an estimated quantity.
 UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
 U = Analyte was analyzed for, but not detected.
 EPA 6020A analyses performed by PACE.
 EPA 8270 BY SIM analyses performed by PACE.

Table 10
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 827				
Analyte	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	
Selected GW SCM Performance Evaluation Criteria	0.0018	0.0018	0.0018	0.0018	0.0018	
Well	Sample Date					
MW-02	16-Dec-19	< 0.0039 UJ	0.042 J-	< 0.013 UJ	0.028 J-	< 0.010 UJ
MW-03	10-Dec-19	< 0.0043	< 0.0045	< 0.014	< 0.011	< 0.012
MW-06	10-Dec-19	< 0.0039	0.0057 J	< 0.013	< 0.0098	< 0.010
MW-08	11-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0094	< 0.010
MW-18	11-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010
MW-19	10-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0094	< 0.010
MW-21	10-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0096	< 0.010
MW-25	10-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0096	< 0.010
MW-26	12-Dec-19	< 0.0037	< 0.0038	< 0.012	< 0.0094	< 0.0099
MW-27	13-Dec-19	< 0.0037	< 0.0038	< 0.012	< 0.0094	< 0.0099
MW-27 Dup	13-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010
MW-28	12-Dec-19	< 0.0037	< 0.0038	< 0.012	< 0.0092	< 0.0098
MW-30	11-Dec-19	< 0.0037	< 0.0038	< 0.012	< 0.0094	< 0.0099
MW-31	11-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010
MW-32	09-Dec-19	< 0.0039	< 0.0040	< 0.013	< 0.0098	< 0.010
MW-33	09-Dec-19	< 0.0039	< 0.0040	< 0.013	< 0.0098	< 0.010
MW-34	16-Dec-19	0.11	0.13	0.13	0.072	0.045
MW-35	16-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010
MW-35 Dup	16-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0096	< 0.010
MW-36	13-Dec-19	0.011 J-	< 0.0039 UJ	< 0.012 UJ	< 0.0095 UJ	< 0.010 UJ
MW-37	13-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010
MW-38	13-Dec-19	0.13	0.070	0.075	0.041	0.025 J
MW-39	13-Dec-19	0.017 J	0.0070 J	< 0.012	< 0.0094	< 0.0099
MW-40	12-Dec-19	< 0.0038	0.012 J	0.017 J	0.018 J	0.023 J
MW-41	12-Dec-19	< 0.0038	< 0.0039	< 0.012	< 0.0094	< 0.010
MW-42	09-Dec-19	< 0.0039	< 0.0040	< 0.013	< 0.0098	< 0.010

Notes:
 < = Compound not detected. Reportable detection limit shown.
 -- = not analyzed
 µg/L = micrograms per liter
 GW SCM = Groundwater Source Control Measure
 NS = No Standard for GW SCM Performance Evaluation
 Dup = Field Duplicate Sample
 Bolded values indicate concentrations above the Reportable Detection Limit
 Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria

Qualifiers - Organics
 j = The result is an estimated concentration, detected between:
 J+ = The concentration of the sample is considered to be biased high
 J- = The concentration of the sample is considered to be biased low
 NJ = Evidence of the compound at an estimated quantity.
 UJ = Analyte was analyzed for, but not detected. The detection limit was not reached.
 U = Analyte was analyzed for, but not detected.
 EPA 6020A analyses performed by PACE.
 EPA 8270 BY SIM analyses performed by PACE.

Table 10
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method 0 by SIM						
Analyte	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	
Selected GW SCM Performance Evaluation Criteria	0.0018	0.0018	14	530	0.0018	
Well	Sample Date					
MW-02	16-Dec-19	< 0.0092 UJ	< 0.0092 UJ	< 0.018 UJ	< 0.0059 UJ	0.022 J-
MW-03	10-Dec-19	< 0.010	< 0.010	< 0.020	< 0.0066	< 0.015
MW-06	10-Dec-19	0.016 j	< 0.0092	0.045	3.5	< 0.013
MW-08	11-Dec-19	< 0.0088	< 0.0088	< 0.018	0.031 j	< 0.013
MW-18	11-Dec-19	< 0.0089	< 0.0089	< 0.018	0.14	< 0.013
MW-19	10-Dec-19	< 0.0088	< 0.0088	< 0.018	< 0.0057	< 0.013
MW-21	10-Dec-19	< 0.0090	< 0.0090	< 0.018	< 0.0058	< 0.013
MW-25	10-Dec-19	< 0.0090	< 0.0090	< 0.018	< 0.0058	< 0.013
MW-26	12-Dec-19	< 0.0087	< 0.0087	< 0.017	0.10	< 0.013
MW-27	13-Dec-19	< 0.0087	< 0.0087	0.036 j	0.91	< 0.013
MW-27 Dup	13-Dec-19	< 0.0089	< 0.0089	0.034 j	0.91	< 0.013
MW-28	12-Dec-19	< 0.0086	< 0.0086	< 0.017	< 0.0056	< 0.012
MW-30	11-Dec-19	< 0.0087	< 0.0087	< 0.017	0.088	< 0.013
MW-31	11-Dec-19	< 0.0089	< 0.0089	< 0.018	0.041	< 0.013
MW-32	09-Dec-19	< 0.0092	< 0.0092	< 0.018	< 0.0059	< 0.013
MW-33	09-Dec-19	0.0097 j	< 0.0092	< 0.018	< 0.0059	< 0.013
MW-34	16-Dec-19	0.14	< 0.0094	< 0.019	< 0.0061	0.061
MW-35	16-Dec-19	0.011 j	< 0.0089	0.18	0.064	< 0.013
MW-35 Dup	16-Dec-19	< 0.0090	< 0.0090	0.085	0.065	< 0.013
MW-36	13-Dec-19	< 0.0089 UJ	< 0.0089 UJ	0.030 J-	1.2 J-	< 0.013 UJ
MW-37	13-Dec-19	< 0.0089	< 0.0089	< 0.018	0.033 j	< 0.013
MW-38	13-Dec-19	0.19	< 0.0087	0.43	3.2	0.030 j
MW-39	13-Dec-19	0.014 j	< 0.0087	0.079	1.9	< 0.013
MW-40	12-Dec-19	0.023 j	0.018 j	0.026 j	< 0.0057	0.019 j
MW-41	12-Dec-19	< 0.0088	< 0.0088	< 0.018	< 0.0057	< 0.013
MW-42	09-Dec-19	< 0.0092	< 0.0092	< 0.018	< 0.0059	< 0.013

Notes:
 < = Compound not detected. Reportable detection limit shown.
 -- = not analyzed
 µg/L = micrograms per liter
 GW SCM = Groundwater Source Control Measure
 NS = No Standard for GW SCM Performance Evaluation
 Dup = Field Duplicate Sample
 Bolded values indicate concentrations above the Reportable Detection Limit
 Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria

Qualifiers - Organics
 j = The result is an estimated concentration, detected between:
 J+ = The concentration of the sample is considered to be biased high
 J- = The concentration of the sample is considered to be biased low
 NJ = Evidence of the compound at an estimated quantity.
 UJ = Analyte was analyzed for, but not detected. The detection limit was not reached.
 U = Analyte was analyzed for, but not detected.
 EPA 6020A analyses performed by PACE.
 EPA 8270 BY SIM analyses performed by PACE.

Table 10
Groundwater Analytical Data - Semi-volatile
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 8270 by SIM			Calculated
Analyte	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene	TEQ (ND=0)
Unit	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria	12	NS	400		0.0018
Well	Sample Date				
MW-02	16-Dec-19	1.7 J-	< 0.010 UJ	< 0.015 UJ	0.044
MW-03	10-Dec-19	0.011 j	< 0.012	< 0.016	< 0.015 U
MW-06	10-Dec-19	1.5	1.9	0.047	0.0067
MW-08	11-Dec-19	< 0.0065	< 0.010	0.092	< 0.013 U
MW-18	11-Dec-19	< 0.0066	< 0.010	0.019 j	< 0.013 U
MW-19	10-Dec-19	0.0091 j	< 0.010	0.014 j	< 0.013 U
MW-21	10-Dec-19	< 0.0067	< 0.010	< 0.014	< 0.013 U
MW-25	10-Dec-19	< 0.0067	< 0.010	< 0.014	< 0.013 U
MW-26	12-Dec-19	0.042	< 0.010	< 0.014	< 0.013 U
MW-27	13-Dec-19	0.37	< 0.010	0.025 j	< 0.013 U
MW-27 Dup	13-Dec-19	0.45	< 0.010	0.026 j	< 0.013 U
MW-28	12-Dec-19	< 0.0064	< 0.0099	< 0.014	< 0.012 U
MW-30	11-Dec-19	1.2	< 0.010	0.053	< 0.013 U
MW-31	11-Dec-19	0.20	< 0.010	< 0.014	< 0.013 U
MW-32	09-Dec-19	0.044	< 0.010	< 0.015	< 0.013 U
MW-33	09-Dec-19	0.19	< 0.010	< 0.015	0.0000097
MW-34	16-Dec-19	0.91	0.30	0.62	0.16
MW-35	16-Dec-19	0.064	0.20	0.13	0.000011
MW-35 Dup	16-Dec-19	0.069	0.070	0.079	< 0.013 U
MW-36	13-Dec-19	0.57 J-	0.14 J-	< 0.014 UJ	0.0011
MW-37	13-Dec-19	0.043	0.025 j	< 0.014	< 0.013 U
MW-38	13-Dec-19	6.6	4.2	0.47	0.094
MW-39	13-Dec-19	2.2	0.28	0.083	0.0087
MW-40	12-Dec-19	< 0.0065	0.019 j	0.025 j	0.034
MW-41	12-Dec-19	< 0.0065	< 0.010	< 0.014	< 0.013 U
MW-42	09-Dec-19	< 0.0068	< 0.010	< 0.015	< 0.013 U

Notes:
 < = Compound not detected. Reportable detection limit shown.
 -- = not analyzed
 µg/L = micrograms per liter
 GW SCM = Groundwater Source Control Measure
 NS = No Standard for GW SCM Performance Evaluation
 Dup = Field Duplicate Sample
 Bolded values indicate concentrations above the Reportable Detection Limit
 Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria

Qualifiers - Organics
 j = The result is an estimated concentration, detected between j and j+
 j+ = The concentration of the sample is considered to be biased
 J- = The concentration of the sample is considered to be biased
 NJ = Evidence of the compound at an estimated quantity.
 UJ = Analyte was analyzed for, but not detected. The detection limit is shown.
 U = Analyte was analyzed for, but not detected.
 EPA 6020A analyses performed by PACE.
 EPA 8270 BY SIM analyses performed by PACE.

Table 11
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		EPA 353.2	EPA 300.0	SM2320B	SM2340B
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO ₃	Hardness as CaCO ₃
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-02	16-Dec-19	< 18	28,000	325,000	239,000
MW-03	10-Dec-19	43 j	12,400	139,000	108,000
MW-06	10-Dec-19	< 18	1,300 J+	122,000	33,800
MW-08	11-Dec-19	< 18	125,000	41,300	90,200
MW-18	11-Dec-19	< 18	63,600	75,000	61,600
MW-19	10-Dec-19	18 j	10,200	124,000	84,100
MW-21	10-Dec-19	160	6,100	49,400	37,800
MW-25	10-Dec-19	48 j	10,100	74,800	59,100
MW-26	12-Dec-19	240	20,800 J-	40,300	36,300
MW-27	13-Dec-19	< 18 UJ	74,700	72,900	88,800
MW-27 Dup	13-Dec-19	< 18 UJ	74,200	75,400	89,600
MW-28	12-Dec-19	970	7,400 J-	51,700	45,300
MW-30	11-Dec-19	< 18	79,800	91,200	102,000
MW-31	11-Dec-19	< 18	71,500	76,800	104,000
MW-32	09-Dec-19	< 18	6,700	60,900	20,600
MW-33	09-Dec-19	< 18	14,800	72,000	37,400
MW-34	16-Dec-19	< 18	14,600	337,000	174,000
MW-35	16-Dec-19	< 18	24,200	44,100	34,200
MW-35 Dup	16-Dec-19	< 18	23,800	44,900	34,800
MW-36	13-Dec-19	< 18 UJ	< 1,200 U	226,000	160,000
MW-37	13-Dec-19	< 18 UJ	32,100	89,100	79,700
MW-38	13-Dec-19	< 18 UJ	< 1,200 U	143,000	113,000
MW-39	13-Dec-19	< 18 UJ	< 1,200 U	279,000	180,000
MW-40	12-Dec-19	< 18	38,800 J-	112,000	103,000
MW-41	12-Dec-19	< 18	1,300 J+	78,600	37,500
MW-42	09-Dec-19	42 j	8,400	96,300	70,700

Notes:

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard for GW SCM Performance Evaluation

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

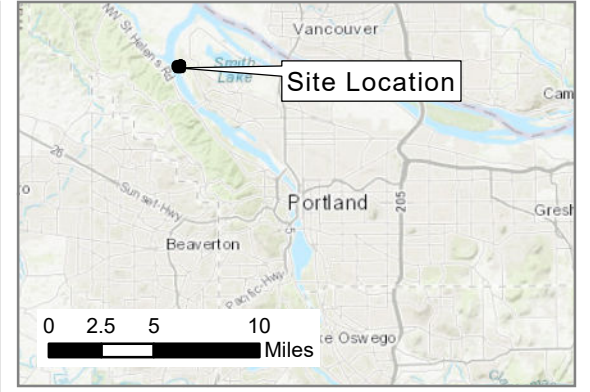
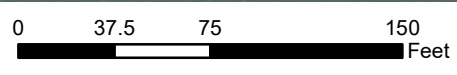
EPA 300.0 analyses performed by PACE.

EPA 353.2 analyses performed by PACE.

SM2320B analyses performed by PACE.

SM2340B analyses performed by PACE.

Attachment A – Clustered Hydrographs



Legend

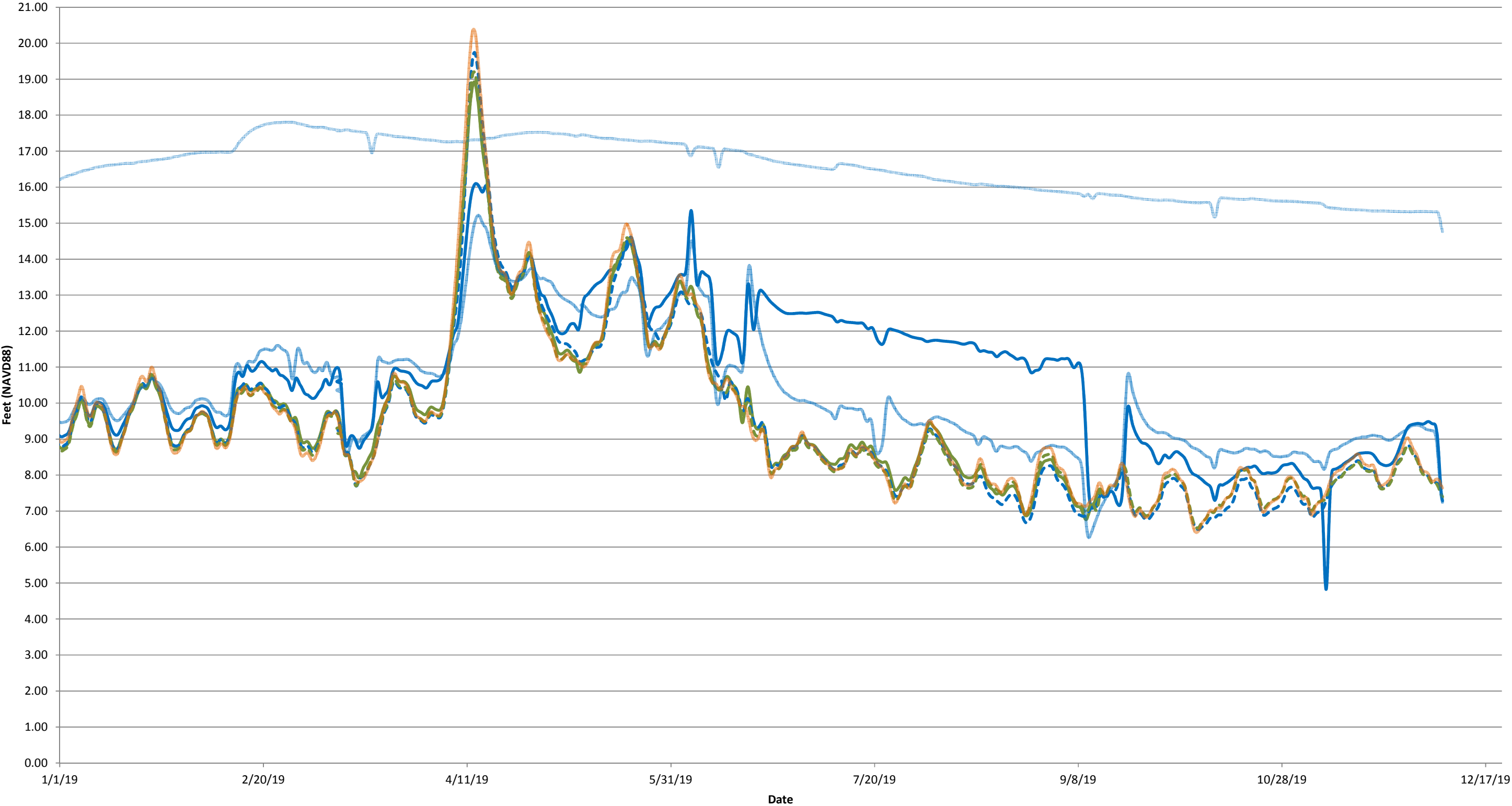
- Shallow Monitoring Well
- Deep Monitoring Well
- Barrier Wall Alignment
- Top of Bank
- Ordinary High Water (20.1 ft)
- Property Boundary
- Parcels
- Clustered Hydrograph
- Individual Hydrograph

Notes:
Aerial Imagery: City of Portland, Summer 2016.

Figure 1
*Monitoring Well Locations
PEO Site
Portland, Oregon*

Water Elevations - Cluster 1

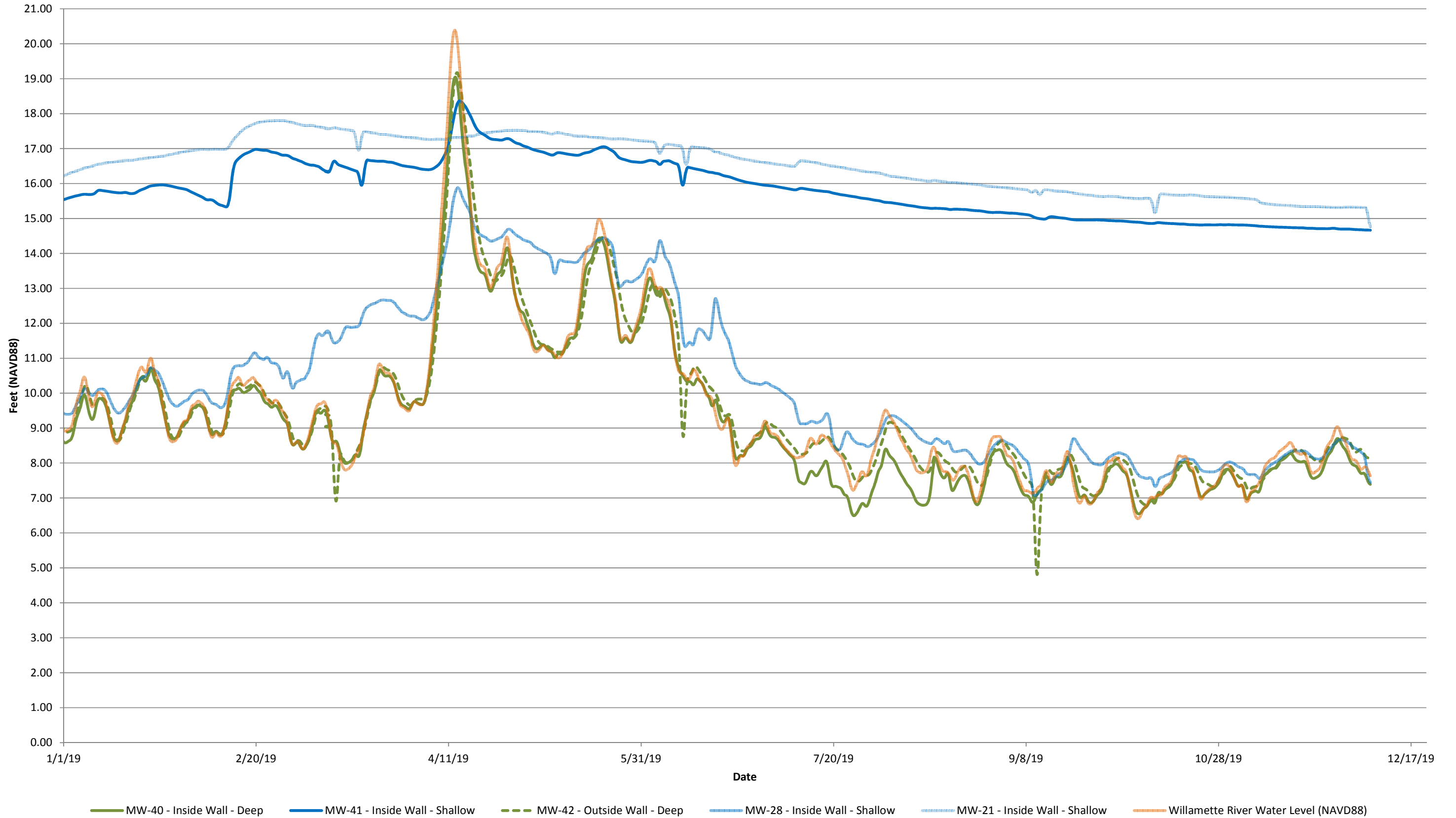
MW-34, MW-35, MW-36, & MW-27, MW-11



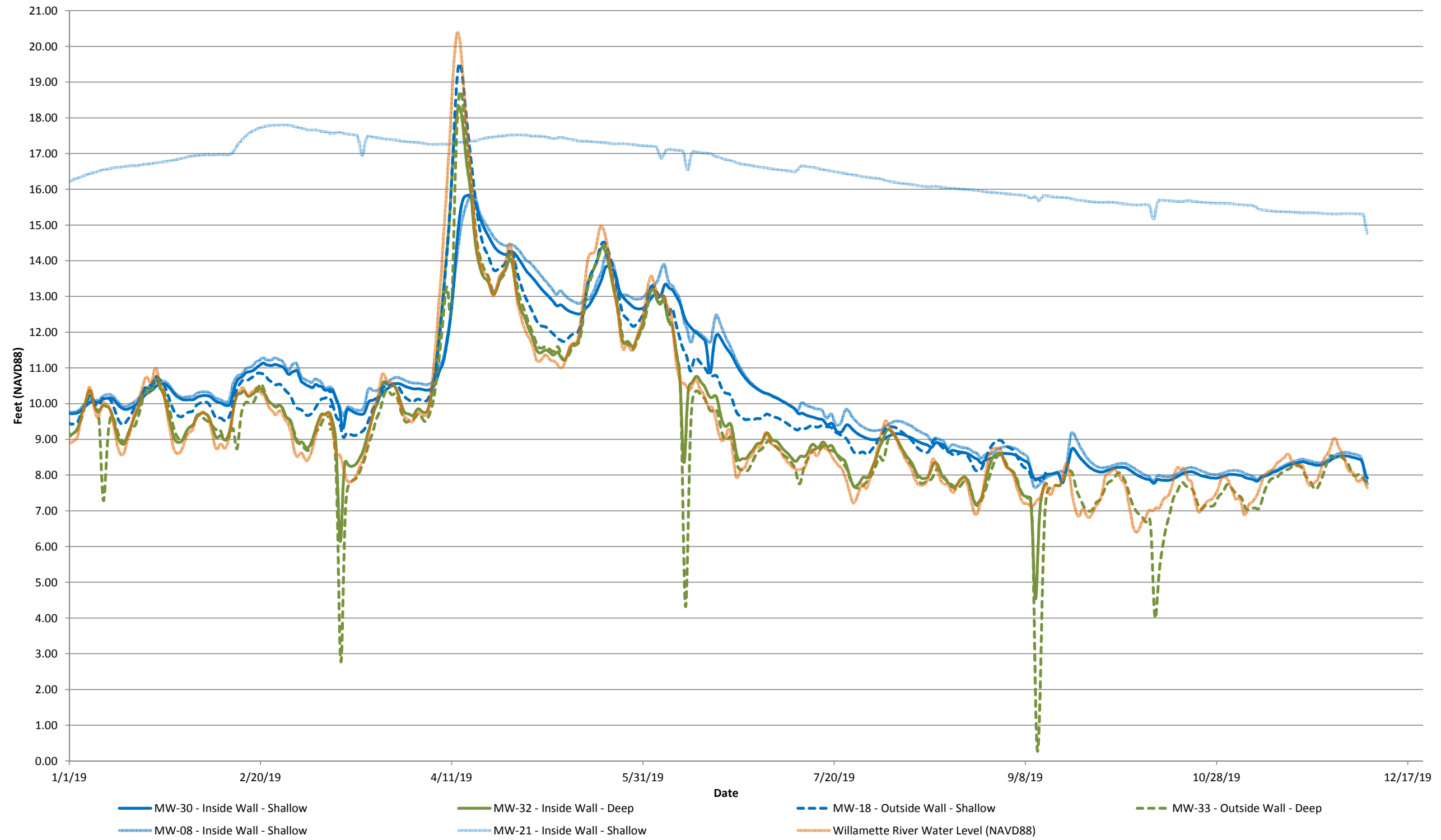
MW-34 - Inside Wall - Shallow MW-35 - Inside Wall - Deep MW-36 - Outside Wall - Shallow MW-27 - Outside Wall - Deep MW-11 - Inside Wall - Shallow MW-21 - Inside Wall - Shallow Willamette River Water Level (NAVD88)

Water Elevations - Cluster 2

MW-40, MW-41, MW-42, & MW-28



Water Elevations - Cluster 3 MW-18, MW-30, MW-32, MW-33, & MW-08



*Attachment B – Analytical Data and
Validation*

**Memorandum**

To	Rita Cooper
From	Jack James
Date	21 January 2020
Reference	0499738
Subject	Revised Data Review of PEO Groundwater Sampling, Third Quarter 2019: Pace Analytical Services, LLC Data Packages 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807.

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.

CHAIN-OF-CUSTODY DISCREPANCIES

The subcontracted laboratory (Fremont Analytical) logged sample Trip Blank in report 10501956 with the incorrect date of 10/28/19 as opposed to the data provided on the chain-of-custody (COC). The laboratory was contacted and the correction made.

All sample containers for sulfate analysis had the incorrect sample identification listed for report 10502275. The laboratory used the time and date collected from the container and the COC to correctly identify the samples. No qualifications were necessary.

The inter-laboratory COC for report 10502807 indicated NWEPH analysis for sample TRIP BLANK; however, the trip blank sample should not be analyzed for NWEPH and no sample volume was received at the subcontracted laboratory (Fremont Analytical) for NWEPH. Additionally, the COC did not request NWEPH for sample PEO-MW-Z2-201912; however, sample volume was received for the parameter and Fremont Analytical analyzed the sample for NWEPH. Also the field sample identifications started with "POE" and not "PEO". The subcontracted laboratory made the correction and proceeded with analysis. Finally, the COC had the incorrect collection date of 12/15/19 instead of the correct collection date of 12/16/19. The laboratory was contacted and the corrections made.

HOLDING TIME AND PRESERVATION EVALUATION

The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. The samples were prepared and analyzed within the method-prescribed time period from the date of collection, with several exceptions. Nitrate was analyzed for samples PEO-MW-36-201912, PEO-MW-27-201912, PEO-MW-39-201912, PEO-MW-38-201912, PEO-MW-37-201912, and PEO-MW-Z1-201912 in report 10502651 from 71-75 hours beyond the recommended holding time of 48 hours. Nitrate was not detected in the samples and the results were qualified as estimated non-detects (UJ) and not rejected as the non-detected results were comparable with recent historical data. Samples with exceeded holding times and qualifications are presented in Table 1.

BLANK EVALUATION

The method blank results were non-detected for each of the target analytes with several exceptions. Associated sample results within five times the blank concentrations for organics (or ten times for inorganics) and less than the reporting limits were qualified as non-detect (U) at the reporting limit. Associated sample results within five times the blank concentrations for organics (or ten times for inorganics) and greater than the reporting limits were qualified as estimates with a high bias (J+).

The trip blank results were non-detected for each of the volatile target analytes, with one exception. Total petroleum hydrocarbon as gasoline was detected in TRIP BLANK from report 105020971; however, the trip blank and the associated sample results were qualified due to method blank contamination and no additional qualifications were necessary.

No trip blanks were included with the NWVPH samples subcontracted to Fremont Analytical in lab reports 10502419 and 10502651. It is not possible to assess whether the detected NWVPH Aromatic Hydrocarbon (C10-C12) results in samples PEO-MW-36-201912, PEO-MW-27-201912, PEO-MW-39-201912, PEO-MW-38-201912, and PEO-MW-Z1-201912 were potentially influenced by cross-contamination during shipment, handling, and storage.

The blank detections and associated qualified data are presented in Table 2.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with exceptions noted in Table 3. No data were qualified if the outlier can be verified by an in-control result or based on RPDs if both the LCS and LCSD recoveries were within laboratory limits. No qualifications were necessary.

MATRIX SPIKE EVALUATION

The laboratory prepared several non-project samples for MS and 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.

The MS and MSD recoveries and RPDs were within laboratory limits of acceptance for samples prepared from project samples, with several exceptions. No data were qualified if the sample result is greater than four times the spike concentration. All remaining samples of a similar matrix were qualified as estimated with a low or high bias (J- or J+) due to low or high MS/MSD recoveries. The outliers and associated qualifications can be found in Table 3.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits with several exceptions. Data were not qualified if the dilution factor was 10 times or greater. Additionally, data were not qualified for surrogates recovered out of acceptance criteria in the laboratory duplicate. This sample was instead assessed based on the duplicate precision criterion. Remaining sample results associated with low surrogate recoveries were qualified as estimates with a low bias (J-/UJ) and results associated with high surrogate recoveries as estimates with a high bias (J+). Surrogate spikes outside control limits and associated qualified sample data are provided in Table 4.

CALIBRATION RANGE EXCEEDANCES

The m&p-xylene results for a batch MS/MSD sample and the dissolved manganese results for MS/MSD samples prepared from sample PEO-MW-30-201909 exceeded the instrument calibration range as noted in Table 5. Since the parent sample results were within the calibration range, no qualifications were applied. Additionally, the sample result for NWVPH in PEO-MW-34-201912 exceeded the calibration range and the result was qualified as estimated with no bias (J).

LABORATORY DUPLICATE EVALUATION

The laboratories prepared several project and non-project samples as laboratory duplicates. The RPDs for detected analytes were within laboratory control limits, with one exception noted in Table 6. The RPD for Aliphatic Hydrocarbon (C10-C12) in the laboratory duplicate for sample PEO-MW-Z2-201912 was greater than the laboratory control limit. Consequently, the sample result was qualified as estimated with no bias (J).

FIELD DUPLICATE EVALUATION

Two samples collected and submitted had duplicate samples taken in the field. ERM calculated the RPD between the duplicate with detected results. National Functional Guidelines has not established control criteria for field duplicate samples; therefore, sample data are not qualified on the basis of field duplicate imprecision. A list of the field duplicate detections and the calculated RPDs is provided in Table 7.

TPH EVALUATION

The laboratory noted early and/or late peaks outside the gasoline range organics window for several samples. ERM qualified the affected results as tentatively identified and estimated (NJ), with the exception of the TPH as Gas results for sample PEO-MW-32-201912 which was qualified as estimated with a high bias (J+) due to additional method blank contamination. The qualified results are presented in Table 8.

OVERALL ASSESSMENT

None of the data required rejection. 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 Holding Times
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Method	Extraction Holding Time	Time Exceeded	Analysis Holding Time	Time Exceeded	ERM Qualifier
10502651	PEO-MW-36-201912	353.2	--	--	48 hours	75 hours	UJ
	PEO-MW-27-201912	353.2	--	--	48 hours	74 hours	UJ
	PEO-MW-39-201912	353.2	--	--	48 hours	73 hours	UJ
	PEO-MW-38-201912	353.2	--	--	48 hours	72 hours	UJ
	PEO-MW-37-201912	353.2	--	--	48 hours	71 hours	UJ
	PEO-MW-Z1-201912	353.2	--	--	48 hours	74 hours	UJ

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

UJ = Nondetected, estimated report limit

Table 2
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Blank ID	Detected Compound	Reported Blank Concentration	Blank Report Limit	Associated Sample	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
10501956	MB 3491934	TPH as Gas	44.2	100	PEO-MW-42-201912	156	100	µg/L	J+
	MB 3492423	TPH as Gas	38.6	100	PEO-MW-32-201912	142	100	µg/L	J+
	MB 3491577	Alkalinity, Total as CaCO3	2.3	5.0	None for qualification	--	--	mg/L	--
	MB 3494093	Sulfate	0.55	1.2	None for qualification	--	--	mg/L	--
10502097	MB 3492423	TPH as Gas	38.6	100	PEO-MW-03-201912	45.3	100	µg/L	100 U
					PEO-MW-19-201912	68.5	100	µg/L	100 U
					TRIP BLANK	65.2	100	µg/L	100 U
	MB 3494093	Sulfate	0.55	1.2	PEO-MW-06-201912	1.3	1.2	mg/L	J+
	TRIP BLANK	TPH as Gas	65.2	100	None for qualification	--	--	µg/L	--
10502275	MB 3493831	TPH as Gas	39.1	100	PEO-MW-08-201912	91.2	100	µg/L	100 U
					PEO-MW-18-201912	107	100	µg/L	J+
	MB 3493759	Alkalinity, Total as CaCO3	2.3	5.0	None for qualification	--	--	mg/L	--
	MB 3494093	Sulfate	0.55	1.2	None for qualification	--	--	mg/L	--
10502419	MB 3494804	Sulfate	0.49	1.2	PEO-MW-41-201912	1.3	1.2	mg/L	J+
10502651	MB 3496481	Diesel Fuel Range SG	0.077	0.40	None for qualification	--	--	mg/L	--
	MB 3496481	Motor Oil Range SG	0.17	0.40	PEO-MW-Z1-201912	0.23	0.40	mg/L	0.40 U
	MB 3497480	Alkalinity, Total as CaCO3	2.5	5.0	None for qualification	--	--	mg/L	--
	MB 3494804	Sulfate	0.49	1.2	PEO-MW-36-201912	0.61	1.2	mg/L	1.2 U
					PEO-MW-39-201912	0.63	1.2	mg/L	1.2 U
					PEO-MW-38-201912	0.73	1.2	mg/L	1.2 U

Table 2
Blank and Associated Suspect Sample Detections
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Blank ID	Detected Compound	Reported Blank Concentration	Blank Report Limit	Associated Sample	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
1052807	MB 3497480	Alkalinity, Total as CaCO3	2.5	5.0	None for qualification	--	--	mg/L	--

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

MB = Method blank

mg/L = Milligrams per liter

J+ = Detected results are estimated with a high bias

SG = Silica gel

TPH = Total petroleum hydrocarbons

U = Nondetected

µg/L = Micrograms per liter

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
10502651	LCS/LCSD 3496482/3496483	None for qualification	Diesel Fuel Range SG	54/37	50-150	36	20	--	--	--
			Motor Oil Range SG	67/43	50-150	43	20	--	--	--
10502807	LCS/LCSD 3497540/3497541	None for qualification	Fluoranthene	85/114	64-125	29	20	--	--	--
			Pyrene	82/107	61-125	26	20	--	--	--
MS/MSD										
10501956 10502097 10502275	PEO-MW-30-201912 MS/MSD	None for qualification	Sulfate	81.7/81.1	90-110	1	20	4X	mg/L	--
1052275	PEO-MW-30-201912 MS/MSD	None for qualification	Manganese, Dissolved	207/201	75-125	0	20	4X	µg/L	--
			Diesel Fuel Range SG	34/115	50-150	16	30	4X	mg/L	--
10502419	PEO-MW-40-201912 MS/MSD	PEO-MW-40-201912	Sulfate	66/69	90-110	1	20	38.8	mg/L	J-
	PEO-MW-41-201912 MS/MSD	PEO-MW-41-201912	Sulfate	114/114	90-110	0	20	1.3	mg/L	J+
		PEO-MW-28-201912						7.4	mg/L	J-
		PEO-MW-26-201912						20.8	mg/L	J-

Table 3
Spike Recoveries Outside of Acceptable Limits
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
10502807	PEO-MW-35-201912 MS/MSD	PEO-MW-35-201912	Manganese, Dissolved	119/163	75-125	6	20	4X	µg/L	--

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

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

J+ = Detected results are estimated with a high bias

J- = Estimated detection with low bias

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

mg/L = Milligrams per liter

MS/MSD - Matrix spike/matrix spike duplicate

RPD = Relative percent difference

SG = Silica gel

µg/L = Micrograms per liter

Table 4
Surrogate Recovery Results out of Acceptable Limits
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Compound	Dilution Factor	ERM Qualifier
10501956	PEO-MW-32-201912	NWTPH-Dx	n-Triacontane	45	50-150	Motor Oil Range SG	1	J-
10502097	Lab Duplicate PEO-MW-19-201912	NWTPH-Dx	o-Terphenyl	49	50-150	Diesel Fuel Range SG	NR	--
	n-Triacontane		42	50-150	Motor Oil Range SG	NR	--	
	PEO-MW-03-201912	NWEPH	1-Chlorooctadecane	57.9	60-140	EPH Aliphatic Hydrocarbon (C10-C12)	1	UJ
10502275	PEO-MW-30-201912	NWEPH	1-Chlorooctadecane	55.7	60-140	EPH Aliphatic Hydrocarbon (C10-C12)	1	UJ
10502651	PEO-MW-36-201912	8270 SIM	p-Terphenyl-d14	54	62-125	All	1	J-/UJ
	PEO-MW-27-201912	NWTPH-Dx	o-Terphenyl	38	50-150	Diesel Fuel Range SG	1	J-
			n-Triacontane	47	50-150	Motor Oil Range SG	1	UJ
	PEO-MW-38-201912	8260B	4-Bromofluorobenzene	137	75-125	Benzene Ethylbenzene Toluene m&p-Xylene o-Xylene	1	J+
	PEO-MW-39-201912	NWVPH	1,4-Difluorobenzene	169	60-140	Aliphatic Hydrocarbon (C10-C12)	1	J+

Table 4
Surrogate Recovery Results out of Acceptable Limits
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Compound	Dilution Factor	ERM Qualifier
10502807	PEO-MW-34-201912	NWEPH	1-Chlorooctadecane	58.9	60-140	Aliphatic Hydrocarbon (C10-C12)	1	J-
		NWTPH-Dx	p-Terphenyl-d14	0	62-125	Diesel Fuel Range SG	20	--
			o-Terphenyl	0	50-150	Motor Oil Range SG	20	--
	PEO-MW-02-201912	NWEPH	1-Chlorooctadecane	50.2	60-140	Aliphatic Hydrocarbon (C10-C12)	1	J-
		NWTPH-Dx	p-Terphenyl-d14	0	62-125	Diesel Fuel Range SG	10	--
			o-Terphenyl	0	50-150	Motor Oil Range SG	10	--
			8270 SIM	p-Terphenyl-d14	34	62-125	All	1

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

EPH = Extractable Petroleum Hydrocarbons

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

LCS = Laboratory control sample

NR = Not reported

SG = Silica gel

SIM = Selected ion monitoring

TPH = Total Petroleum Hydrocarbons

UJ = Nondetected, estimated report limit

VPH = Volatile Petroleum Hydrocarbons

Table 5
Calibration Range Exceedances
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	ERM Qualifier
10502275	PEO-MW-30-201912 MS/MSD	Manganese, Dissolved	2430/2420	µg/L	--
10502651	Batch MS/MSD	m&p-Xylene	491/528	µg/L	--
10502807	PEO-MW-34-201912	NWVPH, Aliphatic Hydrocarbon (C10-C12)	4490	µg/L	J

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

MS/MSD = Matrix spike/matrix spike duplicate

µg/L = Micrograms per liter

J = Estimated detected result

Table 6
Lab Duplicate Results and Calculated Relative Percent Differences
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Compound	Concentration		Report Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate					
10502419 10502651 10502807	PEO-MW-Z2- 201912 Lab Duplicate	Aliphatic Hydrocarbon (C10-C12)	288.9	182	20.0	µg/L	45.3	25	J

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

Batch = Duplicate sample was prepared using non-client sample

J = Estimated detected result

µg/L = Micrograms per liter

Table 7
Field Duplicate Results and Calculated Relative Percent Differences
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Compound	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
10502651	PEO-MW-27-201912/ PEO-MW-Z1-201912	Diesel Fuel Range SG	0.74	1.5	0.43	0.40	mg/L	68
		Motor Oil Range SG	ND	0.23	0.43	0.40	mg/L	NC
		TPH as Gas	1090	1310	200	500	µg/L	NC
		Total Hardness, dissolved	88800	89600	3300	3300	µg/L	0.90
		Arsenic, dissolved	28.4	29.1	0.50	0.50	µg/L	2.4
		Manganese, dissolved	1750	1760	5.0	5.0	µg/L	0.57
		Acenaphthene	0.75	0.77	0.038	0.039	µg/L	2.6
		Acenaphthylene	0.20	0.20	0.038	0.039	µg/L	0.0
		Anthracene	0.091	0.094	0.038	0.039	µg/L	3.2
		Fluoranthene	0.036	0.034	0.038	0.039	µg/L	5.7
		Fluorene	0.91	0.91	0.038	0.039	µg/L	0.0
		1-Methylnaphthalene	0.60	0.60	0.038	0.039	µg/L	0.0
		2-Methylnaphthalene	0.042	0.045	0.038	0.039	µg/L	6.9
		Naphthalene	0.37	0.45	0.038	0.039	µg/L	20
		Pyrene	0.025	0.026	0.038	0.039	µg/L	3.9
		Benzene	2.7	2.7	1.0	1.0	µg/L	0.0
		Ethylbenzene	0.40	0.38	1.0	1.0	µg/L	5.1
		Toluene	0.55	0.57	1.0	1.0	µg/L	3.6
		m&p-Xylene	0.46	0.46	2.0	2.0	µg/L	0.0
o-Xylene	0.20	0.21	1.0	1.0	µg/L	4.9		
Alkalinity, Total as CaCO3	72.9	75.4	5.0	5.0	mg/L	3.4		
Sulfate	74.7	74.2	1.2	1.2	mg/L	0.67		

Table 7
Field Duplicate Results and Calculated Relative Percent Differences
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Compound	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
10502807	PEO-MW-35-201912/ PEO-MW-Z2-201912	Diesel Fuel Range SG	0.62	0.67	0.40	0.40	mg/L	7.8
		Motor Oil Range SG	0.083	0.089	0.40	0.40	mg/L	7.0
		TPH as Gas	303	229	100	100	µg/L	28
		Total Hardness, dissolved	34200	34800	3300	3300	µg/L	1.7
		Arsenic, dissolved	21.3	20.9	0.50	0.50	µg/L	1.9
		Manganese, dissolved	668	665	10.0	10.0	µg/L	0.5
		Acenaphthene	0.068	0.067	0.039	0.039	µg/L	1.5
		Acenaphthylene	0.023	0.022	0.039	0.039	µg/L	4.4
		Anthracene	0.12	0.12	0.039	0.039	µg/L	0.0
		Chrysene	0.011	ND	0.039	0.039	µg/L	NC
		Fluoranthene	0.18	0.085	0.039	0.039	µg/L	72
		Fluorene	0.064	0.065	0.039	0.039	µg/L	1.6
		1-Methylnaphthalene	0.048	0.061	0.039	0.039	µg/L	24
		2-Methylnaphthalene	0.012	ND	0.039	0.039	µg/L	NC
		Naphthalene	0.064	0.069	0.039	0.039	µg/L	7.5
		Phenanthrene	0.20	0.070	0.039	0.039	µg/L	96
		Pyrene	0.13	0.079	0.039	0.039	µg/L	49
		Benzene	0.32	0.32	1.0	1.0	µg/L	0.0
		Toluene	0.16	0.14	1.0	1.0	µg/L	13
m&p-Xylene	0.38	0.33	2.0	2.0	µg/L	14		
Alkalinity, Total as CaCO3	44.1	44.9	5.0	5.0	mg/L	1.8		
Sulfate	24.2	23.8	1.2	1.2	mg/L	1.7		

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

EPH = Extractable Petroleum Hydrocarbons
mg/L = Milligrams per liter
ND = Not detected
NC = Not calculated, one result 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
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	Comment	ERM Qualifier
10501956	PEO-MW-32-201912	TPH as Gas	142	µg/L	Early peaks present outside the GRO window.	J+ ¹
	PEO-MW-33-201912		297	µg/L		NJ
	PEO-MW-33-201912 Lab Duplicate		278	µg/L		--
	Batch Lab Duplicate 3492432		1140	µg/L		--
10502097	PEO-MW-33-201912 Lab Duplicate	TPH as Gas	278	µg/L	Early peaks present outside the GRO window.	--
	Batch Lab Duplicate 3492432		1140	µg/L		--
	PEO-MW-06-201912	TPH as Gas	3940	µg/L	Late and early peaks present outside the GRO window.	NJ
10502651	PEO-MW-36-201912	TPH as Gas	2910	µg/L	Late and early peaks present outside the GRO window.	NJ
	PEO-MW-39-201912		5260	µg/L		NJ
	PEO-MW-38-201912		8150	µg/L		NJ
	PEO-MW-27-201912		1090	µg/L	Late peaks present outside the GRO window.	NJ

Table 8
Suspect TPH Results
PEO Groundwater Sampling
Fourth Quarter 2019
Portland, Oregon

Lab Package	Sample ID	Compound	Reported Concentration	Units	Comment	ERM Qualifier
10502807	PEO-MW-34-201912	TPH as Gas	1790	µg/L	Late peaks present outside the GRO window.	NJ
	PEO-MW-02-201912	TPH as Gas	1010	µg/L	Late and early peaks present outside the GRO window.	NJ

Lab packages reviewed: 10501956, 10502097, 10502275, 10502419, 10502651, and 10502807

Notes:

1 = Qualified J+ due to additional method blank contamination

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

J+ = Detected results are estimated with a high bias

January 20, 2020

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

RE: Project: 499738-Revised Report
Pace Project No.: 10501956

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This report was revised on January 10, 2020 to add total hardness.

This report was further revised on January 20, 2020, to update the trip blank collection date on the subcontract report.

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



REPORT OF LABORATORY ANALYSIS

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January 20, 2020
Page 2

Enclosures

cc: Rita Cooper, ERM Portland
ERM Global EDD Mailbox, ERM
Emily Ponaski, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 499738-Revised Report
Pace Project No.: 10501956

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #:74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 499738-Revised Report

Pace Project No.: 10501956

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10501956001	PEO-MW-32-201912	Water	12/09/19 09:15	12/10/19 08:45
10501956002	PEO-MW-33-201912	Water	12/09/19 11:15	12/10/19 08:45
10501956003	PEO-MW-42-201912	Water	12/09/19 13:15	12/10/19 08:45
10501956004	Trip Blank	Water	12/09/19 08:00	12/10/19 08:45

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report

Pace Project No.: 10501956

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10501956001	PEO-MW-32-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10501956002	PEO-MW-33-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10501956003	PEO-MW-42-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10501956004	Trip Blank	NWTPH-Gx	MJD	2	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: PEO-MW-32-201912	Lab ID: 10501956001	Collected: 12/09/19 09:15	Received: 12/10/19 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.49	mg/L	0.42	1	12/10/19 14:31	12/11/19 16:26	68334-30-5	
Motor Oil Range SG	0.19J	mg/L	0.42	1	12/10/19 14:31	12/11/19 16:26	64742-65-0	
Surrogates								
o-Terphenyl (S)	67	%	50-150	1	12/10/19 14:31	12/11/19 16:26	84-15-1	
n-Triacontane (S)	45	%	50-150	1	12/10/19 14:31	12/11/19 16:26	638-68-6	P2,S0
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	142	ug/L	100	1		12/11/19 14:16		B,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	99	%	50-150	1		12/11/19 14:16	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	20600	ug/L	3300	1	01/07/20 08:15	01/07/20 13:41		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	8.9	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:10	7440-38-2	
Manganese, Dissolved	6.9	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:10	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	208-96-8	
Anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	207-08-9	
Chrysene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	206-44-0	
Fluorene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	91-57-6	
Naphthalene	0.044	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	85-01-8	
Pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 12:49	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	63	%	47-125	1	12/10/19 17:03	12/11/19 12:49	321-60-8	
p-Terphenyl-d14 (S)	64	%	62-125	1	12/10/19 17:03	12/11/19 12:49	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 21:14	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 21:14	100-41-4	
Toluene	0.25J	ug/L	1.0	1		12/13/19 21:14	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 21:14	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: PEO-MW-32-201912		Lab ID: 10501956001		Collected: 12/09/19 09:15	Received: 12/10/19 08:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/13/19 21:14	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/13/19 21:14	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		12/13/19 21:14	2037-26-5	
4-Bromofluorobenzene (S)	109	%.	75-125	1		12/13/19 21:14	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	60.9	mg/L	5.0	1		12/10/19 14:17		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	6.7	mg/L	1.2	1		12/12/19 21:10	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/10/19 17:18	14797-55-8	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: PEO-MW-33-201912	Lab ID: 10501956002	Collected: 12/09/19 11:15	Received: 12/10/19 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.34J	mg/L	0.42	1	12/10/19 14:31	12/11/19 16:49	68334-30-5	
Motor Oil Range SG	0.17J	mg/L	0.42	1	12/10/19 14:31	12/11/19 16:49	64742-65-0	
Surrogates								
o-Terphenyl (S)	71	%.	50-150	1	12/10/19 14:31	12/11/19 16:49	84-15-1	
n-Triacontane (S)	67	%.	50-150	1	12/10/19 14:31	12/11/19 16:49	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	297	ug/L	100	1		12/11/19 16:32		B, G-
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%.	50-150	1		12/11/19 16:32	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	37400	ug/L	3300	1	01/07/20 08:15	01/07/20 13:49		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	3.4	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:34	7440-38-2	
Manganese, Dissolved	3.5	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:34	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.082	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	208-96-8	
Anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	207-08-9	
Chrysene	0.0097J	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	206-44-0	
Fluorene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	193-39-5	
1-Methylnaphthalene	0.039J	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	90-12-0	
2-Methylnaphthalene	0.018J	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	91-57-6	
Naphthalene	0.19	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	85-01-8	
Pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:10	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	65	%.	47-125	1	12/10/19 17:03	12/11/19 13:10	321-60-8	
p-Terphenyl-d14 (S)	64	%.	62-125	1	12/10/19 17:03	12/11/19 13:10	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 21:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 21:32	100-41-4	
Toluene	ND	ug/L	1.0	1		12/13/19 21:32	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 21:32	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: PEO-MW-33-201912		Lab ID: 10501956002	Collected: 12/09/19 11:15	Received: 12/10/19 08:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/13/19 21:32	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-125	1		12/13/19 21:32	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		12/13/19 21:32	2037-26-5	
4-Bromofluorobenzene (S)	110	%.	75-125	1		12/13/19 21:32	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	72.0	mg/L	5.0	1		12/10/19 14:22		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	14.8	mg/L	1.2	1		12/13/19 02:34	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/10/19 17:19	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: PEO-MW-42-201912	Lab ID: 10501956003	Collected: 12/09/19 13:15	Received: 12/10/19 08:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.24J	mg/L	0.42	1	12/10/19 14:31	12/11/19 17:00	68334-30-5	
Motor Oil Range SG	0.20J	mg/L	0.42	1	12/10/19 14:31	12/11/19 17:00	64742-65-0	
Surrogates								
o-Terphenyl (S)	69	%	50-150	1	12/10/19 14:31	12/11/19 17:00	84-15-1	
n-Triacontane (S)	66	%	50-150	1	12/10/19 14:31	12/11/19 17:00	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	156	ug/L	100	1		12/10/19 18:41		B
Surrogates								
a,a,a-Trifluorotoluene (S)	102	%	50-150	1		12/10/19 18:41	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	70700	ug/L	3300	1	01/07/20 08:15	01/07/20 13:51		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	4.0	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:39	7440-38-2	
Manganese, Dissolved	15.1	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:39	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	208-96-8	
Anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	207-08-9	
Chrysene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	206-44-0	
Fluorene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	91-57-6	
Naphthalene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	85-01-8	
Pyrene	ND	ug/L	0.040	1	12/10/19 17:03	12/11/19 13:31	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	58	%	47-125	1	12/10/19 17:03	12/11/19 13:31	321-60-8	
p-Terphenyl-d14 (S)	64	%	62-125	1	12/10/19 17:03	12/11/19 13:31	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 22:07	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 22:07	100-41-4	
Toluene	ND	ug/L	1.0	1		12/13/19 22:07	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 22:07	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: PEO-MW-42-201912		Lab ID: 10501956003		Collected: 12/09/19 13:15	Received: 12/10/19 08:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/13/19 22:07	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-125	1		12/13/19 22:07	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		12/13/19 22:07	2037-26-5	
4-Bromofluorobenzene (S)	108	%.	75-125	1		12/13/19 22:07	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	96.3	mg/L	5.0	1		12/10/19 14:25		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	8.4	mg/L	1.2	1		12/13/19 05:27	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	0.042J	mg/L	0.10	1		12/10/19 17:23	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10501956

Sample: Trip Blank		Lab ID: 10501956004	Collected: 12/09/19 08:00	Received: 12/10/19 08:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		12/11/19 15:24		
Surrogates								
a,a,a-Trifluorotoluene (S)	99	%.	50-150	1		12/11/19 15:24	98-08-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10501956

QC Batch: 649211

Analysis Method: NWTPH-Gx

QC Batch Method: NWTPH-Gx

Analysis Description: NWTPH-Gx Water

Associated Lab Samples: 10501956003

METHOD BLANK: 3491934

Matrix: Water

Associated Lab Samples: 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	44.2J	100	12/10/19 18:23	
a,a,a-Trifluorotoluene (S)	%.	103	50-150	12/10/19 18:23	

LABORATORY CONTROL SAMPLE & LCSD: 3491936

3491937

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1070	1020	107	102	75-125	5	20	
a,a,a-Trifluorotoluene (S)	%.				114	107	50-150			

SAMPLE DUPLICATE: 3491997

Parameter	Units	10501956003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	156	150	4	30	
a,a,a-Trifluorotoluene (S)	%.	102	101			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10501956

QC Batch: 649338 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10501956001, 10501956002, 10501956004

METHOD BLANK: 3492422 Matrix: Water
Associated Lab Samples: 10501956001, 10501956002, 10501956004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/11/19 13:08	
a,a,a-Trifluorotoluene (S)	%.	100	50-150	12/11/19 13:08	

METHOD BLANK: 3492423 Matrix: Water
Associated Lab Samples: 10501956001, 10501956002, 10501956004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	38.6J	100	12/11/19 16:15	
a,a,a-Trifluorotoluene (S)	%.	98	50-150	12/11/19 16:15	

LABORATORY CONTROL SAMPLE & LCSD: 3492424 3492425

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1070	1040	107	104	75-125	3	20	
a,a,a-Trifluorotoluene (S)	%.				110	108	50-150			

SAMPLE DUPLICATE: 3492432

Parameter	Units	10501038001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1110	1140		2	30 G-
a,a,a-Trifluorotoluene (S)	%.	117	116			

SAMPLE DUPLICATE: 3492433

Parameter	Units	10501956002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	297	278		7	30 G-
a,a,a-Trifluorotoluene (S)	%.	91	101			

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10501956

QC Batch: 649504 Analysis Method: EPA 6020A
 QC Batch Method: EPA 3020A Analysis Description: 6020A Water Dissolved UPD4
 Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3493229 Matrix: Water

Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/12/19 23:01	
Manganese, Dissolved	ug/L	ND	0.50	12/12/19 23:01	

LABORATORY CONTROL SAMPLE: 3493230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	92.6	93	80-120	
Manganese, Dissolved	ug/L	100	96.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3493231 3493232

Parameter	Units	10501956001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	8.9	100	100	104	102	96	93	75-125	2	20	
Manganese, Dissolved	ug/L	6.9	100	100	108	104	101	98	75-125	3	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10501956

QC Batch: 650017 Analysis Method: EPA 8260B
 QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
 Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3495799 Matrix: Water

Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/13/19 20:39	
Ethylbenzene	ug/L	ND	1.0	12/13/19 20:39	
m&p-Xylene	ug/L	ND	2.0	12/13/19 20:39	
o-Xylene	ug/L	ND	1.0	12/13/19 20:39	
Toluene	ug/L	ND	1.0	12/13/19 20:39	
1,2-Dichloroethane-d4 (S)	%	110	75-125	12/13/19 20:39	
4-Bromofluorobenzene (S)	%	110	75-125	12/13/19 20:39	
Toluene-d8 (S)	%	97	75-125	12/13/19 20:39	

LABORATORY CONTROL SAMPLE: 3495800

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.3	92	75-125	
Ethylbenzene	ug/L	20	21.6	108	75-125	
m&p-Xylene	ug/L	40	42.7	107	75-125	
o-Xylene	ug/L	20	20.8	104	75-125	
Toluene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane-d4 (S)	%			109	75-125	
4-Bromofluorobenzene (S)	%			105	75-125	
Toluene-d8 (S)	%			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3495801 3495802

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502275002 Result	Spike Conc.	Spike Conc.	Result								
Benzene	ug/L	0.11J	20	20	18.4	17.8	91	89	30-150	3	30		
Ethylbenzene	ug/L	ND	20	20	20.8	20.6	104	103	30-150	1	30		
m&p-Xylene	ug/L	ND	40	40	41.4	40.9	103	102	30-150	1	30		
o-Xylene	ug/L	ND	20	20	19.9	19.7	99	99	30-150	1	30		
Toluene	ug/L	ND	20	20	19.7	19.3	98	96	30-150	2	30		
1,2-Dichloroethane-d4 (S)	%						107	109	75-125				
4-Bromofluorobenzene (S)	%						110	110	75-125				
Toluene-d8 (S)	%						100	100	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10501956

QC Batch: 649098 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3491465 Matrix: Water
Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	12/11/19 11:04	
2-Methylnaphthalene	ug/L	ND	0.040	12/11/19 11:04	
Acenaphthene	ug/L	ND	0.040	12/11/19 11:04	
Acenaphthylene	ug/L	ND	0.040	12/11/19 11:04	
Anthracene	ug/L	ND	0.040	12/11/19 11:04	
Benzo(a)anthracene	ug/L	ND	0.040	12/11/19 11:04	
Benzo(a)pyrene	ug/L	ND	0.040	12/11/19 11:04	
Benzo(b)fluoranthene	ug/L	ND	0.040	12/11/19 11:04	
Benzo(g,h,i)perylene	ug/L	ND	0.040	12/11/19 11:04	
Benzo(k)fluoranthene	ug/L	ND	0.040	12/11/19 11:04	
Chrysene	ug/L	ND	0.040	12/11/19 11:04	
Dibenz(a,h)anthracene	ug/L	ND	0.040	12/11/19 11:04	
Fluoranthene	ug/L	ND	0.040	12/11/19 11:04	
Fluorene	ug/L	ND	0.040	12/11/19 11:04	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	12/11/19 11:04	
Naphthalene	ug/L	ND	0.040	12/11/19 11:04	
Phenanthrene	ug/L	ND	0.040	12/11/19 11:04	
Pyrene	ug/L	ND	0.040	12/11/19 11:04	
2-Fluorobiphenyl (S)	%	72	47-125	12/11/19 11:04	
p-Terphenyl-d14 (S)	%	80	62-125	12/11/19 11:04	

LABORATORY CONTROL SAMPLE & LCSD: 3491466

Parameter	Units	Spike Conc.	3491467		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
1-Methylnaphthalene	ug/L	1	0.81	0.70	81	70	31-125	14	20	
2-Methylnaphthalene	ug/L	1	0.76	0.67	76	67	43-125	12	20	
Acenaphthene	ug/L	1	0.73	0.68	73	68	50-125	8	20	
Acenaphthylene	ug/L	1	0.75	0.66	75	66	46-125	13	20	
Anthracene	ug/L	1	0.80	0.75	80	75	59-125	7	20	
Benzo(a)anthracene	ug/L	1	0.72	0.70	72	70	55-125	2	20	
Benzo(a)pyrene	ug/L	1	0.77	0.74	77	74	66-125	4	20	
Benzo(b)fluoranthene	ug/L	1	0.74	0.70	74	70	64-125	5	20	
Benzo(g,h,i)perylene	ug/L	1	0.77	0.75	77	75	58-125	3	20	
Benzo(k)fluoranthene	ug/L	1	0.85	0.81	85	81	60-125	5	20	
Chrysene	ug/L	1	0.83	0.82	83	82	62-125	2	20	
Dibenz(a,h)anthracene	ug/L	1	0.75	0.73	75	73	51-125	2	20	
Fluoranthene	ug/L	1	0.81	0.75	81	75	64-125	7	20	
Fluorene	ug/L	1	0.76	0.69	76	69	55-125	10	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.78	0.77	78	77	61-125	2	20	
Naphthalene	ug/L	1	0.74	0.67	74	67	48-125	10	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10501956

Parameter	Units	3491466		3491467			% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec				
Phenanthrene	ug/L	1	0.73	0.66	73	66	63-125	11	20	
Pyrene	ug/L	1	0.76	0.75	76	75	61-125	1	20	
2-Fluorobiphenyl (S)	%.				75	71	47-125			
p-Terphenyl-d14 (S)	%.				79	78	62-125			

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10501956

QC Batch: 649099 Analysis Method: NWTPH-Dx
 QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
 Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3491470 Matrix: Water

Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/11/19 15:51	
Motor Oil Range SG	mg/L	ND	0.40	12/11/19 15:51	
n-Triacontane (S)	%.	85	50-150	12/11/19 15:51	
o-Terphenyl (S)	%.	76	50-150	12/11/19 15:51	

LABORATORY CONTROL SAMPLE & LCSD: 3491471

Parameter	Units	3491472							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	1.6	79	81	50-150	2	20		
Motor Oil Range SG	mg/L	2	1.6	1.6	80	82	50-150	2	20		
n-Triacontane (S)	%.				78	77	50-150				
o-Terphenyl (S)	%.				73	73	50-150				

SAMPLE DUPLICATE: 3491473

Parameter	Units	10501956001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Diesel Fuel Range SG	mg/L	0.49	0.47	4	30	
Motor Oil Range SG	mg/L	0.19J	0.16J		30	
n-Triacontane (S)	%.	45	56			
o-Terphenyl (S)	%.	67	66			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10501956

QC Batch: 649140 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3491577 Matrix: Water
Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	2.3J	5.0	12/10/19 13:15	

LABORATORY CONTROL SAMPLE & LCSD: 3491578 3491579

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.2	42.3	105	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3491580 3491581

Parameter	Units	10501930001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	36.8	40	40	77.0	77.3	101	101	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3491582 3491583

Parameter	Units	10501930002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	37.1	40	40	77.8	77.4	102	101	80-120	0	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10501956

QC Batch: 649725 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3494093 Matrix: Water
Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	0.55J	1.2	12/12/19 19:15	

LABORATORY CONTROL SAMPLE: 3494094

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	12.5	12.1	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494095 3494096

Parameter	Units	10501956001		10501956002		10501956003		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Sulfate	mg/L	6.7	12.5	12.5	12.5	19.7	20.0	104	106	90-110	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494097 3494098

Parameter	Units	10502275002		10502275003		10502275004		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Sulfate	mg/L	79.8	12.5	12.5	12.5	81.7	81.1	15	11	90-110	1	20 M1

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: 499738-Revised Report

Pace Project No.: 10501956

QC Batch: 649224

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10501956001, 10501956002, 10501956003

METHOD BLANK: 3491983

Matrix: Water

Associated Lab Samples: 10501956001, 10501956002, 10501956003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	12/10/19 17:24	

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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QUALIFIERS

Project: 499738-Revised Report

Pace Project No.: 10501956

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.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 649306

[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.

G- Early peaks present outside the GRO window.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738-Revised Report
Pace Project No.: 10501956

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10501956001	PEO-MW-32-201912	EPA Mod. 3510C	649099	NWTPH-Dx	649436
10501956002	PEO-MW-33-201912	EPA Mod. 3510C	649099	NWTPH-Dx	649436
10501956003	PEO-MW-42-201912	EPA Mod. 3510C	649099	NWTPH-Dx	649436
10501956001	PEO-MW-32-201912	NWTPH-Gx	649338		
10501956002	PEO-MW-33-201912	NWTPH-Gx	649338		
10501956003	PEO-MW-42-201912	NWTPH-Gx	649211		
10501956004	Trip Blank	NWTPH-Gx	649338		
10501956001	PEO-MW-32-201912	EPA 3010A	653202	EPA 6010D	653331
10501956002	PEO-MW-33-201912	EPA 3010A	653202	EPA 6010D	653331
10501956003	PEO-MW-42-201912	EPA 3010A	653202	EPA 6010D	653331
10501956001	PEO-MW-32-201912	EPA 3020A	649504	EPA 6020A	649674
10501956002	PEO-MW-33-201912	EPA 3020A	649504	EPA 6020A	649674
10501956003	PEO-MW-42-201912	EPA 3020A	649504	EPA 6020A	649674
10501956001	PEO-MW-32-201912	EPA Mod. 3510C	649098	EPA 8270 by SIM	649306
10501956002	PEO-MW-33-201912	EPA Mod. 3510C	649098	EPA 8270 by SIM	649306
10501956003	PEO-MW-42-201912	EPA Mod. 3510C	649098	EPA 8270 by SIM	649306
10501956001	PEO-MW-32-201912	EPA 8260B	650017		
10501956002	PEO-MW-33-201912	EPA 8260B	650017		
10501956003	PEO-MW-42-201912	EPA 8260B	650017		
10501956001	PEO-MW-32-201912	SM 2320B	649140		
10501956002	PEO-MW-33-201912	SM 2320B	649140		
10501956003	PEO-MW-42-201912	SM 2320B	649140		
10501956001	PEO-MW-32-201912	EPA 300.0	649725		
10501956002	PEO-MW-33-201912	EPA 300.0	649725		
10501956003	PEO-MW-42-201912	EPA 300.0	649725		
10501956001	PEO-MW-32-201912	EPA 353.2	649224		
10501956002	PEO-MW-33-201912	EPA 353.2	649224		
10501956003	PEO-MW-42-201912	EPA 353.2	649224		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY
The Chain-of-Custody is a LEGAL DOCUMENT

NO# : 10501956



Section A
Required Client Information:
Company: **ERM**
Address: **1050 SW 6th Ave, Suite 1650**
Email To: **rita.cooper@erm.com**
Phone: **207-329-6320**
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: **499738**

Section C
Invoice Information:
Attention:
Company Name:
Address:
Purchase Order Reference:
Pace Project Manager:
Pace Profile #:
REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
Site Location _____ OR _____
STATE: _____

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB				
1		PEO-MW-32-201912	GW	G	DATE	TIME	DATE	TIME		
2		PEO-MW-33-201912	GW	G	12/9/19	9:15	12/9/19	11:15		001
3		PEO-MW-42-201912	GW	G	12/9/19	13:15	12/9/19	13:15		002
4		Trip Blank	GW	G	12/9/12	8:00				003
5										004
6										
7										
8										
9										
10										
11										
12										

ADDITIONAL COMMENTS
RELINQUISHED BY / AFFILIATION: **Joe Casey / ERM** DATE: **12/9/19** TIME: **15:30**
ACCEPTED BY / AFFILIATION: **MA RACE** DATE: **12/19/19** TIME: **8:05**
SAMPLE CONDITIONS: **Y Y Y Y**

Temp in °C: _____
Received on Ice (Y/N): _____
Custody Sealed Cooler (Y/N): _____
Samples Intact (Y/N): _____

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: **Joe Casey** DATE Signed (MM/DD/YY): **12/9/19**
SIGNATURE of SAMPLER: _____

Sample Condition Upon Receipt	Client Name: ERM	Project #: WO#: 10501956
	Courier: <input checked="" 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 <input type="checkbox"/> See Exceptions	PM: JMT Due Date: 12/17/19 CLIENT: ERM-Oregon
Tracking Number: 74759400 (7569/7870)		

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No
 Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: 1.2, 0.1 °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/> See Exceptions
Correction Factor: true	Cooler Temp Corrected w/temp blank: 1.2, 0.1 °C	<input type="checkbox"/> 1 Container

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: **12/10/19**
 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 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
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 # 1-3: 1/1 1/1 <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 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
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/BO15 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/> See Exception
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Res. Chlorine 0-6 Roll 763619 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. 4+5's
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): 236154

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____

Project Manager Review: Julie Pan Date: 12/10/19
 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: 499738

Work Order Number: 1912184

January 20, 2020

Attention Julie Bowser:

Fremont Analytical, Inc. received 4 sample(s) on 12/11/2019 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



CLIENT: Pace Analytical Minnesota
Project: 499738
Work Order: 1912184

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912184-001	PEO-MW-32-201912	12/09/2019 9:15 AM	12/11/2019 9:27 AM
1912184-002	PEO-MW-33-201912	12/09/2019 11:15 AM	12/11/2019 9:27 AM
1912184-003	PEO-MW-42-201912	12/09/2019 1:15 PM	12/11/2019 9:27 AM
1912184-004	Trip Blank	12/09/2019 8:00 AM	12/11/2019 9:27 AM

CLIENT: Pace Analytical Minnesota
Project: 499738

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.

1/20/2020: Revision 1 includes a corrected collection date for the Trip Blank.

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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912184-001

Collection Date: 12/9/2019 9:15:00 AM

Client Sample ID: PEO-MW-32-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.86		µg/L	1	12/18/2019 7:31:00 PM
Surr: 1-Chlorooctadecane	79.4	60 - 140		%Rec	1	12/18/2019 7:31:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 8:57:24 PM
Surr: 1,4-Difluorobenzene	96.0	65 - 140		%Rec	1	12/16/2019 8:57:24 PM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	12/16/2019 8:57:24 PM

Lab ID: 1912184-002

Collection Date: 12/9/2019 11:15:00 AM

Client Sample ID: PEO-MW-33-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.87		µg/L	1	12/18/2019 8:58:00 PM
Surr: 1-Chlorooctadecane	61.6	60 - 140		%Rec	1	12/18/2019 8:58:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 10:19:36 PM
Surr: 1,4-Difluorobenzene	100	65 - 140		%Rec	1	12/16/2019 10:19:36 PM
Surr: Bromofluorobenzene	107	65 - 140		%Rec	1	12/16/2019 10:19:36 PM



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912184-003

Collection Date: 12/9/2019 1:15:00 PM

Client Sample ID: PEO-MW-42-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.87		µg/L	1	12/18/2019 11:09:00 PM
Surr: 1-Chlorooctadecane	75.7	60 - 140		%Rec	1	12/18/2019 11:09:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 5:51:54 AM
Surr: 1,4-Difluorobenzene	97.6	65 - 140		%Rec	1	12/17/2019 5:51:54 AM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	12/17/2019 5:51:54 AM

Lab ID: 1912184-004

Collection Date: 12/9/2019 8:00:00 AM

Client Sample ID: Trip Blank

Matrix: Water

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

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 6:53:45 PM
Surr: 1,4-Difluorobenzene	94.5	65 - 140		%Rec	1	12/16/2019 6:53:45 PM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	12/16/2019 6:53:45 PM

Work Order: 1912184
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-26838	SampType: MBLK	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: MBLKW	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117725							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.9		0	0						
Surr: 1-Chlorooctadecane	1,660		1,993		83.2	60	140				

Sample ID: LCS-26838	SampType: LCS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: LCSW	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117724							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,850	20.0	2,495	0	74.1	70	130				
Surr: 1-Chlorooctadecane	1,660		1,996		83.3	60	140				

Sample ID: 1912184-001BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: PEO-MW-32-201912	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117723							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.9		0	0			0	0	25	
Surr: 1-Chlorooctadecane	1,580		1,991		79.5	60	140		0		

Sample ID: 1912184-002BMS	SampType: MS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: PEO-MW-33-201912	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117726							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	2,060	19.9	2,487	0	82.8	70	130				
Surr: 1-Chlorooctadecane	1,840		1,990		92.5	60	140				

Sample ID: 1912184-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: PEO-MW-33-201912	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117727							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,840	19.9	2,488	0	74.0	70	130	2,059	11.2	30	
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Work Order: 1912184
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: 1912184-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: PEO-MW-33-201912	Batch ID: 26838	Analysis Date: 12/18/2019	SeqNo: 1117727								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	1,600		1,990		80.6	60	140		0		

Work Order: 1912184
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-26831	SampType: LCS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: LCSW	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116377							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	206	20.0	200.0	0	103	70	130				
Surr: 1,4-Difluorobenzene	46.0		50.00		92.1	65	140				
Surr: Bromofluorobenzene	48.6		50.00		97.3	65	140				

Sample ID: LCS-D-26831	SampType: LCS-D	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: LCSW02	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116378							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	216	20.0	200.0	0	108	70	130	205.6	4.78	20	
Surr: 1,4-Difluorobenzene	47.7		50.00		95.3	65	140		0		
Surr: Bromofluorobenzene	49.7		50.00		99.5	65	140		0		

Sample ID: MB-26831	SampType: MBLK	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: MBLKW	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116379							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Surr: 1,4-Difluorobenzene	45.0		50.00		89.9	65	140				
Surr: Bromofluorobenzene	49.7		50.00		99.4	65	140				

Sample ID: 1912184-001ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: PEO-MW-32-201912	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116342							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	49.3		50.00		98.6	65	140		0		
Surr: Bromofluorobenzene	53.2		50.00		106	65	140		0		

Work Order: 1912184
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 1912229-002BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: BATCH	Batch ID: 26831		Analysis Date: 12/17/2019	SeqNo: 1116359							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	50.8		50.00		102	65	140		0		
Surr: Bromofluorobenzene	54.5		50.00		109	65	140		0		

Client Name: PACEMINN	Work Order Number: 1912184
Logged by: Carissa True	Date Received: 12/11/2019 9:27:00 AM

Chain of Custody

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

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 Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°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="12/12/2019"/>
By Whom:	<input type="text" value="Carissa True"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Confirm TAT"/>		
Client Instructions:	<input type="text" value="STD ok"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler 1	3.1
Sample 1	0.5
Temp Blank 1	2.1

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

Chain of Custody

PASI Minnesota Laboratory

Workorder: 10501956

Workorder Name: 499738

Results Requested By: 12/17/2019

Report / Invoice To

Subcontract To

Julie Bowser

Pace Analytical Minnesota

1700 Elm Street

Suite 200

Minneapolis, MN 55414

Phone 612-607-6390

Email: julie.bowser@pacelabs.com

P.O. 10501956

Fremont Analytical

3600 Fremont Ave. N

Seattle, WA 98103

State of Sample Origin: OR

Preserved Containers

NWTPH VPH

NWTPH EPH

Requested Analysis

www.pacelabs.com

Pace Analytical

1912184

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	HCL Vials	Unpreserved Vials	NWTPH VPH	NWTPH EPH	LAB USE ONLY
1	PEO-MW-32-201912	12/9/2019 09:15	10501956001	Water	3	2	X	X	
2	PEO-MW-33-201912	12/9/2019 11:15	10501956002	Water	3	2	X	X	
3	PEO-MW-42-201912	12/9/2019 13:15	10501956003	Water	3	2	X	X	
4	Trip Blank	12/9/2019 08:00	10501956004	Water	2		X		
5									

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	MDL and only aliphatic carbon ranges C10-C12 are needed.	Samples Intact
1	Julie Bowser	12/10/19 14:45	Julie Bowser	12/11/19 09:27	Y		Y
2							
3							

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

January 10, 2020

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

RE: Project: 499738-Revised Report
Pace Project No.: 10502097

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This report was revised on January 10, 2020 to add total hardness.

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

Emily Ponaski, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 499738-Revised Report

Pace Project No.: 10502097

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #:74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 499738-Revised Report
Pace Project No.: 10502097

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10502097001	PEO-MW-21-201912	Water	12/10/19 08:30	12/11/19 08:50
10502097002	PEO-MW-25-201912	Water	12/10/19 09:40	12/11/19 08:50
10502097003	PEO-MW-03-201912	Water	12/10/19 11:05	12/11/19 08:50
10502097004	PEO-MW-06-201912	Water	12/10/19 12:35	12/11/19 08:50
10502097005	PEO-MW-19-201912	Water	12/10/19 13:45	12/11/19 08:50
10502097006	TRIP BLANK	Water	12/10/19 08:00	12/11/19 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report

Pace Project No.: 10502097

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10502097001	PEO-MW-21-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502097002	PEO-MW-25-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502097003	PEO-MW-03-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502097004	PEO-MW-06-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502097005	PEO-MW-19-201912	NWTPH-Dx	EC2	4	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report

Pace Project No.: 10502097

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502097006	TRIP BLANK	NWTPH-Gx	MJD	2	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-21-201912	Lab ID: 10502097001	Collected: 12/10/19 08:30	Received: 12/11/19 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	ND	mg/L	0.38	1	12/11/19 13:32	12/12/19 10:49	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.38	1	12/11/19 13:32	12/12/19 10:49	64742-65-0	
Surrogates								
o-Terphenyl (S)	58	%	50-150	1	12/11/19 13:32	12/12/19 10:49	84-15-1	
n-Triacontane (S)	100	%	50-150	1	12/11/19 13:32	12/12/19 10:49	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	ND	ug/L	100	1		12/11/19 14:34		
Surrogates								
a,a,a-Trifluorotoluene (S)	98	%	50-150	1		12/11/19 14:34	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	37800	ug/L	3300	1	01/07/20 08:15	01/07/20 13:52		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	0.36J	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:43	7440-38-2	
Manganese, Dissolved	57.7	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:43	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	83-32-9	
Acenaphthylene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	208-96-8	
Anthracene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	53-70-3	
Fluoranthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	206-44-0	
Fluorene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	91-57-6	
Naphthalene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	91-20-3	
Phenanthrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	85-01-8	
Pyrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 14:47	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	47-125	1	12/13/19 14:39	12/16/19 14:47	321-60-8	
p-Terphenyl-d14 (S)	91	%	62-125	1	12/13/19 14:39	12/16/19 14:47	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 22:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 22:25	100-41-4	
Toluene	ND	ug/L	1.0	1		12/13/19 22:25	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 22:25	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: PEO-MW-21-201912 Lab ID: 10502097001 Collected: 12/10/19 08:30 Received: 12/11/19 08:50 Matrix: Water								
8260B MSV UST Analytical Method: EPA 8260B								
o-Xylene	ND	ug/L	1.0	1		12/13/19 22:25	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	75-125	1		12/13/19 22:25	17060-07-0	
Toluene-d8 (S)	97	%	75-125	1		12/13/19 22:25	2037-26-5	
4-Bromofluorobenzene (S)	109	%	75-125	1		12/13/19 22:25	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	49.4	mg/L	5.0	1		12/11/19 13:15		
300.0 IC Anions Analytical Method: EPA 300.0								
Sulfate	6.1	mg/L	1.2	1		12/13/19 05:46	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2								
Nitrate as N	0.16	mg/L	0.10	1		12/11/19 14:49	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-25-201912	Lab ID: 10502097002	Collected: 12/10/19 09:40	Received: 12/11/19 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	ND	mg/L	0.40	1	12/11/19 13:32	12/12/19 11:00	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	12/11/19 13:32	12/12/19 11:00	64742-65-0	
Surrogates								
o-Terphenyl (S)	70	%	50-150	1	12/11/19 13:32	12/12/19 11:00	84-15-1	
n-Triacontane (S)	71	%	50-150	1	12/11/19 13:32	12/12/19 11:00	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	ND	ug/L	100	1		12/11/19 14:51		
Surrogates								
a,a,a-Trifluorotoluene (S)	96	%	50-150	1		12/11/19 14:51	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	59100	ug/L	3300	1	01/07/20 08:15	01/07/20 13:57		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	0.26J	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:56	7440-38-2	
Manganese, Dissolved	39.7	ug/L	0.50	1	12/12/19 06:38	12/12/19 23:56	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	83-32-9	
Acenaphthylene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	208-96-8	
Anthracene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	53-70-3	
Fluoranthene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	206-44-0	
Fluorene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	91-57-6	
Naphthalene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	91-20-3	
Phenanthrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	85-01-8	
Pyrene	ND	ug/L	0.039	1	12/13/19 14:39	12/16/19 15:08	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	73	%	47-125	1	12/13/19 14:39	12/16/19 15:08	321-60-8	
p-Terphenyl-d14 (S)	83	%	62-125	1	12/13/19 14:39	12/16/19 15:08	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 22:43	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 22:43	100-41-4	
Toluene	ND	ug/L	1.0	1		12/13/19 22:43	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 22:43	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-25-201912		Lab ID: 10502097002		Collected: 12/10/19 09:40	Received: 12/11/19 08:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/13/19 22:43	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/13/19 22:43	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		12/13/19 22:43	2037-26-5	
4-Bromofluorobenzene (S)	109	%.	75-125	1		12/13/19 22:43	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	74.8	mg/L	5.0	1		12/11/19 13:29		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	10.1	mg/L	1.2	1		12/13/19 06:05	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	0.048J	mg/L	0.10	1		12/11/19 14:53	14797-55-8	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-03-201912	Lab ID: 10502097003	Collected: 12/10/19 11:05	Received: 12/11/19 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.10J	mg/L	0.45	1	12/11/19 13:32	12/12/19 11:12	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.45	1	12/11/19 13:32	12/12/19 11:12	64742-65-0	
Surrogates								
o-Terphenyl (S)	67	%	50-150	1	12/11/19 13:32	12/12/19 11:12	84-15-1	
n-Triacontane (S)	69	%	50-150	1	12/11/19 13:32	12/12/19 11:12	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	45.3J	ug/L	100	1		12/11/19 17:05		B
Surrogates								
a,a,a-Trifluorotoluene (S)	106	%	50-150	1		12/11/19 17:05	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	108000	ug/L	3300	1	01/07/20 08:15	01/07/20 13:59		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	18.3	ug/L	0.50	1	12/12/19 06:38	12/13/19 00:00	7440-38-2	
Manganese, Dissolved	1360	ug/L	5.0	10	12/12/19 06:38	12/13/19 14:10	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	83-32-9	
Acenaphthylene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	208-96-8	
Anthracene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	207-08-9	
Chrysene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	53-70-3	
Fluoranthene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	206-44-0	
Fluorene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	193-39-5	
1-Methylnaphthalene	0.019J	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	91-57-6	
Naphthalene	0.011J	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	91-20-3	
Phenanthrene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	85-01-8	
Pyrene	ND	ug/L	0.044	1	12/13/19 14:39	12/16/19 15:29	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	63	%	47-125	1	12/13/19 14:39	12/16/19 15:29	321-60-8	
p-Terphenyl-d14 (S)	70	%	62-125	1	12/13/19 14:39	12/16/19 15:29	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/14/19 01:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/14/19 01:40	100-41-4	
Toluene	ND	ug/L	1.0	1		12/14/19 01:40	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/14/19 01:40	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-03-201912		Lab ID: 10502097003	Collected: 12/10/19 11:05	Received: 12/11/19 08:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/14/19 01:40	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-125	1		12/14/19 01:40	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		12/14/19 01:40	2037-26-5	
4-Bromofluorobenzene (S)	109	%.	75-125	1		12/14/19 01:40	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	139	mg/L	5.0	1		12/11/19 13:54		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	12.4	mg/L	1.2	1		12/13/19 06:24	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	0.043J	mg/L	0.10	1		12/11/19 14:54	14797-55-8	FS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-06-201912	Lab ID: 10502097004	Collected: 12/10/19 12:35	Received: 12/11/19 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	1.4	mg/L	0.40	1	12/13/19 13:20	12/16/19 13:15	68334-30-5	
Motor Oil Range SG	0.088J	mg/L	0.40	1	12/13/19 13:20	12/16/19 13:15	64742-65-0	
Surrogates								
o-Terphenyl (S)	80	%	50-150	1	12/13/19 13:20	12/16/19 13:15	84-15-1	
n-Triacontane (S)	92	%	50-150	1	12/13/19 13:20	12/16/19 13:15	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	3940	ug/L	200	2		12/11/19 17:56		G+,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	114	%	50-150	2		12/11/19 17:56	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	33800	ug/L	3300	1	01/07/20 08:15	01/07/20 14:01		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	8.8	ug/L	0.50	1	12/12/19 06:38	12/13/19 00:04	7440-38-2	
Manganese, Dissolved	608	ug/L	0.50	1	12/12/19 06:38	12/13/19 00:04	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	1.3	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	83-32-9	
Acenaphthylene	0.47	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	208-96-8	
Anthracene	0.16	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	56-55-3	
Benzo(a)pyrene	0.0057J	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	207-08-9	
Chrysene	0.016J	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	53-70-3	
Fluoranthene	0.045	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	206-44-0	
Fluorene	3.5	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	193-39-5	
1-Methylnaphthalene	7.1	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	90-12-0	
2-Methylnaphthalene	6.9	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	91-57-6	
Naphthalene	1.5	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	91-20-3	
Phenanthrene	1.9	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	85-01-8	
Pyrene	0.047	ug/L	0.040	1	12/13/19 14:39	12/16/19 15:50	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	66	%	47-125	1	12/13/19 14:39	12/16/19 15:50	321-60-8	
p-Terphenyl-d14 (S)	66	%	62-125	1	12/13/19 14:39	12/16/19 15:50	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 23:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 23:00	100-41-4	
Toluene	0.29J	ug/L	1.0	1		12/13/19 23:00	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 23:00	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-06-201912		Lab ID: 10502097004		Collected: 12/10/19 12:35	Received: 12/11/19 08:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/13/19 23:00	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/13/19 23:00	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		12/13/19 23:00	2037-26-5	
4-Bromofluorobenzene (S)	108	%.	75-125	1		12/13/19 23:00	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	122	mg/L	5.0	1		12/11/19 14:01		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	1.3	mg/L	1.2	1		12/13/19 09:16	14808-79-8	B
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/11/19 15:06	14797-55-8	

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ANALYTICAL RESULTS

Project: 499738-Revised Report
Pace Project No.: 10502097

Sample: PEO-MW-19-201912	Lab ID: 10502097005	Collected: 12/10/19 13:45	Received: 12/11/19 08:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.19J	mg/L	0.40	1	12/11/19 13:32	12/12/19 11:35	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	12/11/19 13:32	12/12/19 11:35	64742-65-0	
Surrogates								
o-Terphenyl (S)	79	%	50-150	1	12/11/19 13:32	12/12/19 11:35	84-15-1	
n-Triacontane (S)	85	%	50-150	1	12/11/19 13:32	12/12/19 11:35	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	68.5J	ug/L	100	1		12/11/19 17:22		B
Surrogates								
a,a,a-Trifluorotoluene (S)	96	%	50-150	1		12/11/19 17:22	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	84100	ug/L	3300	1	01/07/20 08:15	01/07/20 14:02		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	0.33J	ug/L	0.50	1	12/12/19 06:38	12/13/19 00:08	7440-38-2	
Manganese, Dissolved	627	ug/L	0.50	1	12/12/19 06:38	12/13/19 00:08	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	83-32-9	
Acenaphthylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	53-70-3	
Fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	206-44-0	
Fluorene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	193-39-5	
1-Methylnaphthalene	0.013J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	90-12-0	
2-Methylnaphthalene	0.011J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	91-57-6	
Naphthalene	0.0091J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	85-01-8	
Pyrene	0.014J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:11	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%	47-125	1	12/13/19 14:39	12/16/19 16:11	321-60-8	
p-Terphenyl-d14 (S)	82	%	62-125	1	12/13/19 14:39	12/16/19 16:11	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/13/19 23:18	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 23:18	100-41-4	
Toluene	ND	ug/L	1.0	1		12/13/19 23:18	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 23:18	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: PEO-MW-19-201912		Lab ID: 10502097005		Collected: 12/10/19 13:45		Received: 12/11/19 08:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260B MSV UST		Analytical Method: EPA 8260B							
o-Xylene	ND	ug/L	1.0	1		12/13/19 23:18	95-47-6		
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/13/19 23:18	17060-07-0		
Toluene-d8 (S)	98	%.	75-125	1		12/13/19 23:18	2037-26-5		
4-Bromofluorobenzene (S)	105	%.	75-125	1		12/13/19 23:18	460-00-4		
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	124	mg/L	5.0	1		12/11/19 14:06			
300.0 IC Anions		Analytical Method: EPA 300.0							
Sulfate	10.2	mg/L	1.2	1		12/13/19 09:36	14808-79-8		
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrate as N	0.018J	mg/L	0.10	1		12/11/19 14:56	14797-55-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502097

Sample: TRIP BLANK		Lab ID: 10502097006	Collected: 12/10/19 08:00	Received: 12/11/19 08:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV		Analytical Method: NWTPH-Gx						
TPH as Gas	65.2J	ug/L	100	1		12/11/19 18:30		B
Surrogates								
a,a,a-Trifluorotoluene (S)	96	%.	50-150	1		12/11/19 18:30	98-08-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502097

QC Batch: 649338 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005, 10502097006

METHOD BLANK: 3492422 Matrix: Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005, 10502097006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/11/19 13:08	
a,a,a-Trifluorotoluene (S)	%.	100	50-150	12/11/19 13:08	

METHOD BLANK: 3492423 Matrix: Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005, 10502097006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	38.6J	100	12/11/19 16:15	
a,a,a-Trifluorotoluene (S)	%.	98	50-150	12/11/19 16:15	

LABORATORY CONTROL SAMPLE & LCSD: 3492424 3492425

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1070	1040	107	104	75-125	3	20	
a,a,a-Trifluorotoluene (S)	%.				110	108	50-150			

SAMPLE DUPLICATE: 3492432

Parameter	Units	10501038001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1110	1140	2	30	G-
a,a,a-Trifluorotoluene (S)	%.	117	116			

SAMPLE DUPLICATE: 3492433

Parameter	Units	10501956002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	297	278	7	30	G-
a,a,a-Trifluorotoluene (S)	%.	91	101			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502097

QC Batch: 649504 Analysis Method: EPA 6020A
 QC Batch Method: EPA 3020 Analysis Description: 6020A Water Dissolved UPD4
 Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

METHOD BLANK: 3493229 Matrix: Water
 Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/12/19 23:01	
Manganese, Dissolved	ug/L	ND	0.50	12/12/19 23:01	

LABORATORY CONTROL SAMPLE: 3493230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	92.6	93	80-120	
Manganese, Dissolved	ug/L	100	96.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3493231 3493232

Parameter	Units	10501956001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	8.9	100	100	104	102	96	93	75-125	2	20	
Manganese, Dissolved	ug/L	6.9	100	100	108	104	101	98	75-125	3	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502097

QC Batch: 650017 Analysis Method: EPA 8260B
 QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
 Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

METHOD BLANK: 3495799 Matrix: Water
 Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/13/19 20:39	
Ethylbenzene	ug/L	ND	1.0	12/13/19 20:39	
m&p-Xylene	ug/L	ND	2.0	12/13/19 20:39	
o-Xylene	ug/L	ND	1.0	12/13/19 20:39	
Toluene	ug/L	ND	1.0	12/13/19 20:39	
1,2-Dichloroethane-d4 (S)	%	110	75-125	12/13/19 20:39	
4-Bromofluorobenzene (S)	%	110	75-125	12/13/19 20:39	
Toluene-d8 (S)	%	97	75-125	12/13/19 20:39	

LABORATORY CONTROL SAMPLE: 3495800

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.3	92	75-125	
Ethylbenzene	ug/L	20	21.6	108	75-125	
m&p-Xylene	ug/L	40	42.7	107	75-125	
o-Xylene	ug/L	20	20.8	104	75-125	
Toluene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane-d4 (S)	%			109	75-125	
4-Bromofluorobenzene (S)	%			105	75-125	
Toluene-d8 (S)	%			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3495801 3495802

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502275002 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	0.11J	20	20	18.4	17.8	91	89	30-150	3	30		
Ethylbenzene	ug/L	ND	20	20	20.8	20.6	104	103	30-150	1	30		
m&p-Xylene	ug/L	ND	40	40	41.4	40.9	103	102	30-150	1	30		
o-Xylene	ug/L	ND	20	20	19.9	19.7	99	99	30-150	1	30		
Toluene	ug/L	ND	20	20	19.7	19.3	98	96	30-150	2	30		
1,2-Dichloroethane-d4 (S)	%						107	109	75-125				
4-Bromofluorobenzene (S)	%						110	110	75-125				
Toluene-d8 (S)	%						100	100	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502097

QC Batch: 649911 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

METHOD BLANK: 3494884 Matrix: Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	12/16/19 09:53	
2-Methylnaphthalene	ug/L	ND	0.040	12/16/19 09:53	
Acenaphthene	ug/L	ND	0.040	12/16/19 09:53	
Acenaphthylene	ug/L	ND	0.040	12/16/19 09:53	
Anthracene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(a)anthracene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(a)pyrene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(b)fluoranthene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(g,h,i)perylene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(k)fluoranthene	ug/L	ND	0.040	12/16/19 09:53	
Chrysene	ug/L	ND	0.040	12/16/19 09:53	
Dibenz(a,h)anthracene	ug/L	ND	0.040	12/16/19 09:53	
Fluoranthene	ug/L	ND	0.040	12/16/19 09:53	
Fluorene	ug/L	ND	0.040	12/16/19 09:53	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	12/16/19 09:53	
Naphthalene	ug/L	ND	0.040	12/16/19 09:53	
Phenanthrene	ug/L	ND	0.040	12/16/19 09:53	
Pyrene	ug/L	ND	0.040	12/16/19 09:53	
2-Fluorobiphenyl (S)	%	63	47-125	12/16/19 09:53	
p-Terphenyl-d14 (S)	%	66	62-125	12/16/19 09:53	

LABORATORY CONTROL SAMPLE & LCSD: 3494885

Parameter	Units	Spike Conc.	3494886		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
1-Methylnaphthalene	ug/L	1	0.67	0.75	67	75	31-125	12	20	
2-Methylnaphthalene	ug/L	1	0.64	0.73	64	73	43-125	14	20	
Acenaphthene	ug/L	1	0.68	0.76	68	76	50-125	11	20	
Acenaphthylene	ug/L	1	0.67	0.75	67	75	46-125	11	20	
Anthracene	ug/L	1	0.81	0.80	81	80	59-125	2	20	
Benzo(a)anthracene	ug/L	1	0.69	0.69	69	69	55-125	0	20	
Benzo(a)pyrene	ug/L	1	0.75	0.77	75	77	66-125	2	20	
Benzo(b)fluoranthene	ug/L	1	0.78	0.81	78	81	64-125	3	20	
Benzo(g,h,i)perylene	ug/L	1	0.76	0.78	76	78	58-125	3	20	
Benzo(k)fluoranthene	ug/L	1	0.73	0.73	73	73	60-125	1	20	
Chrysene	ug/L	1	0.79	0.79	79	79	62-125	1	20	
Dibenz(a,h)anthracene	ug/L	1	0.77	0.78	77	78	51-125	2	20	
Fluoranthene	ug/L	1	0.78	0.77	78	77	64-125	1	20	
Fluorene	ug/L	1	0.70	0.76	70	76	55-125	8	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.77	0.78	77	78	61-125	2	20	
Naphthalene	ug/L	1	0.66	0.75	66	75	48-125	13	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502097

LABORATORY CONTROL SAMPLE & LCSD:		3494885	3494886								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Phenanthrene	ug/L	1	0.79	0.81	79	81	63-125	2	20		
Pyrene	ug/L	1	0.75	0.76	75	76	61-125	1	20		
2-Fluorobiphenyl (S)	%.				78	84	47-125				
p-Terphenyl-d14 (S)	%.				86	83	62-125				

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502097

QC Batch:	649378	Analysis Method:	NWTPH-Dx
QC Batch Method:	EPA Mod. 3510C	Analysis Description:	NWTPH-Dx GCS LV SG
Associated Lab Samples:	10502097001, 10502097002, 10502097003, 10502097005		

METHOD BLANK: 3492562 Matrix: Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/12/19 10:14	
Motor Oil Range SG	mg/L	ND	0.40	12/12/19 10:14	
n-Triacontane (S)	%.	83	50-150	12/12/19 10:14	
o-Terphenyl (S)	%.	75	50-150	12/12/19 10:14	

LABORATORY CONTROL SAMPLE & LCSD: 3492563 3492564

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	1.7	1.6	86	82	50-150	5	20	
Motor Oil Range SG	mg/L	2	1.8	1.7	89	87	50-150	3	20	
n-Triacontane (S)	%.				85	82	50-150			
o-Terphenyl (S)	%.				83	77	50-150			

SAMPLE DUPLICATE: 3492583

Parameter	Units	10502097005 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	0.19J	0.15J		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%.	85	42			S0
o-Terphenyl (S)	%.	79	49			P2,S0

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502097

QC Batch: 649913	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10502097004	

METHOD BLANK: 3494891 Matrix: Water
Associated Lab Samples: 10502097004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/16/19 11:43	
Motor Oil Range SG	mg/L	ND	0.40	12/16/19 11:43	
n-Triacontane (S)	%.	97	50-150	12/16/19 11:43	
o-Terphenyl (S)	%.	91	50-150	12/16/19 11:43	

LABORATORY CONTROL SAMPLE & LCSD: 3494892

Parameter	Units	3494893				% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	% Rec						
Diesel Fuel Range SG	mg/L	2	1.8	1.8	90	90	50-150	0	20		
Motor Oil Range SG	mg/L	2	1.9	1.9	96	95	50-150	1	20		
n-Triacontane (S)	%.				97	84	50-150				
o-Terphenyl (S)	%.				91	90	50-150				

SAMPLE DUPLICATE: 3494894

Parameter	Units	10502419001	Dup	RPD	Max RPD	Qualifiers
		Result	Result			
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%.	89	95			
o-Terphenyl (S)	%.	81	86			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502097

QC Batch: 649388 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

METHOD BLANK: 3492618 Matrix: Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	12/11/19 12:51	

LABORATORY CONTROL SAMPLE & LCSD: 3492619 3492620

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.5	42.5	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3492621 3492622

Parameter	Units	10502089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	38.6	40	40	79.3	78.4	102	100	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3492623 3492624

Parameter	Units	10502097001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	49.4	40	40	90.0	90.8	101	103	80-120	1	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502097

QC Batch: 649725 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

METHOD BLANK: 3494093 Matrix: Water
Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	0.55J	1.2	12/12/19 19:15	

LABORATORY CONTROL SAMPLE: 3494094

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	12.5	12.1	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494095 3494096

Parameter	Units	10501956001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Sulfate	mg/L	6.7	12.5	12.5	19.7	20.0	104	106	90-110	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494097 3494098

Parameter	Units	10502275002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Sulfate	mg/L	79.8	12.5	12.5	81.7	81.1	15	11	90-110	1	20	M1	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502097

QC Batch: 649366

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

METHOD BLANK: 3492524

Matrix: Water

Associated Lab Samples: 10502097001, 10502097002, 10502097003, 10502097004, 10502097005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	12/11/19 14:57	FS

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 499738-Revised Report

Pace Project No.: 10502097

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.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 650119

[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.

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.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738-Revised Report

Pace Project No.: 10502097

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502097001	PEO-MW-21-201912	EPA Mod. 3510C	649378	NWTPH-Dx	649601
10502097002	PEO-MW-25-201912	EPA Mod. 3510C	649378	NWTPH-Dx	649601
10502097003	PEO-MW-03-201912	EPA Mod. 3510C	649378	NWTPH-Dx	649601
10502097004	PEO-MW-06-201912	EPA Mod. 3510C	649913	NWTPH-Dx	650209
10502097005	PEO-MW-19-201912	EPA Mod. 3510C	649378	NWTPH-Dx	649601
10502097001	PEO-MW-21-201912	NWTPH-Gx	649338		
10502097002	PEO-MW-25-201912	NWTPH-Gx	649338		
10502097003	PEO-MW-03-201912	NWTPH-Gx	649338		
10502097004	PEO-MW-06-201912	NWTPH-Gx	649338		
10502097005	PEO-MW-19-201912	NWTPH-Gx	649338		
10502097006	TRIP BLANK	NWTPH-Gx	649338		
10502097001	PEO-MW-21-201912	EPA 3010	653202	EPA 6010D	653331
10502097002	PEO-MW-25-201912	EPA 3010	653202	EPA 6010D	653331
10502097003	PEO-MW-03-201912	EPA 3010	653202	EPA 6010D	653331
10502097004	PEO-MW-06-201912	EPA 3010	653202	EPA 6010D	653331
10502097005	PEO-MW-19-201912	EPA 3010	653202	EPA 6010D	653331
10502097001	PEO-MW-21-201912	EPA 3020	649504	EPA 6020A	649674
10502097002	PEO-MW-25-201912	EPA 3020	649504	EPA 6020A	649674
10502097003	PEO-MW-03-201912	EPA 3020	649504	EPA 6020A	649674
10502097004	PEO-MW-06-201912	EPA 3020	649504	EPA 6020A	649674
10502097005	PEO-MW-19-201912	EPA 3020	649504	EPA 6020A	649674
10502097001	PEO-MW-21-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502097002	PEO-MW-25-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502097003	PEO-MW-03-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502097004	PEO-MW-06-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502097005	PEO-MW-19-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502097001	PEO-MW-21-201912	EPA 8260B	650017		
10502097002	PEO-MW-25-201912	EPA 8260B	650017		
10502097003	PEO-MW-03-201912	EPA 8260B	650017		
10502097004	PEO-MW-06-201912	EPA 8260B	650017		
10502097005	PEO-MW-19-201912	EPA 8260B	650017		
10502097001	PEO-MW-21-201912	SM 2320B	649388		
10502097002	PEO-MW-25-201912	SM 2320B	649388		
10502097003	PEO-MW-03-201912	SM 2320B	649388		
10502097004	PEO-MW-06-201912	SM 2320B	649388		
10502097005	PEO-MW-19-201912	SM 2320B	649388		
10502097001	PEO-MW-21-201912	EPA 300.0	649725		
10502097002	PEO-MW-25-201912	EPA 300.0	649725		
10502097003	PEO-MW-03-201912	EPA 300.0	649725		
10502097004	PEO-MW-06-201912	EPA 300.0	649725		
10502097005	PEO-MW-19-201912	EPA 300.0	649725		
10502097001	PEO-MW-21-201912	EPA 353.2	649366		
10502097002	PEO-MW-25-201912	EPA 353.2	649366		
10502097003	PEO-MW-03-201912	EPA 353.2	649366		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738-Revised Report

Pace Project No.: 10502097

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502097004	PEO-MW-06-201912	EPA 353.2	649366		
10502097005	PEO-MW-19-201912	EPA 353.2	649366		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY
The Chain-of-Custody is a LEGAL DOCUMENT

WO#: 10502097

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
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: 499738

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 WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WIP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives										Analysis Test ↑ Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.			
					COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	GRO (NW/TPH-GX)					BTEX (SW/260C/SW/8260C SIM)	VPH (NW/TPH-VPH)	DRO (NW/TPH-DX)
1	PEO-MW-21-201912		GW	G	12/10/19	8:30		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001
2	PEO-MW-25-201912		GW	G	12/10/19	9:40		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	002
3	PEO-MW-03-201912		GW	G	12/10/19	11:05		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	003
4	PEO-MW-06-201912		GW	G	12/10/19	12:35		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	004
5	PEO-MW-19-201912		GW	G	12/10/19	13:45		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	005
6	TRIP BLANK		GW	G	12/10/19	8:00		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	006

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION: JOE CASEY / ERM
DATE: 12/10/19
TIME: 15:45

ACCEPTED BY / AFFILIATION: *JOE CASEY*
DATE: 12/10/19
TIME: 8:50

SAMPLE CONDITIONS
Received on Ice (Y/N): Y
Custody Sealed (Y/N): Y
Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE: _____
PRINT Name of SAMPLER: JOE CASEY
SIGNATURE of SAMPLER: _____
DATE Signed (MM/DD/YY): 12/10/19

Sample Condition Upon Receipt	Client Name: ERM	Project #: WO#: 10502097
	Courier: <input checked="" 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 <input type="checkbox"/> See Exceptions	PM: JMT Due Date: 12/18/19 CLIENT: ERM-Oregon

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.1, 0.2, 0.2, 0.4</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/> See Exceptions
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: <u>0.0, 0.1, 0.1, 0.3</u> °C	<input type="checkbox"/> 1 Container

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: 12.11.19

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? ^{12/11/19 JMB}	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
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: 1/1 1/1</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes See Exception Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
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>203619</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. See Exception <input type="checkbox"/>
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. <u>4TB's</u>
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>236154</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Julie P... **Date:** 12/11/19

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).



During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

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.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Other Issues		
Issue Type:	Container Type	# of Containers
Sample ID		

Tracking Number/Temperature	
7475 9400 7606	0.0
7617	0.1
7591	0.1
7580	0.3

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								<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	



Pace Analytical Minnesota

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

RE: 499738

Work Order Number: 1912229

December 27, 2019

Attention Julie Bowser:

Fremont Analytical, Inc. received 6 sample(s) on 12/13/2019 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

CLIENT: Pace Analytical Minnesota
Project: 499738
Work Order: 1912229

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912229-001	PEO-MW-21-201912	12/10/2019 8:30 AM	12/13/2019 9:00 AM
1912229-002	PEO-MW-25-201912	12/10/2019 9:40 AM	12/13/2019 9:00 AM
1912229-003	PEO-MW-03-201912	12/10/2019 11:05 AM	12/13/2019 9:00 AM
1912229-004	PEO-MW-06-201912	12/10/2019 12:35 PM	12/13/2019 9:00 AM
1912229-005	PEO-MW-19-201912	12/10/2019 1:45 PM	12/13/2019 9:00 AM
1912229-006	Trip Blank	12/10/2019 8:00 AM	12/13/2019 9:00 AM

CLIENT: Pace Analytical Minnesota

Project: 499738

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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: Pace Analytical Minnesota

Project: 499738

Lab ID: 1912229-001

Collection Date: 12/10/2019 8:30:00 AM

Client Sample ID: PEO-MW-21-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.85		µg/L	1	12/19/2019 1:19:00 AM
Surr: 1-Chlorooctadecane	78.5	60 - 140		%Rec	1	12/19/2019 1:19:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 11:00:41 PM
Surr: 1,4-Difluorobenzene	101	65 - 140		%Rec	1	12/16/2019 11:00:41 PM
Surr: Bromofluorobenzene	109	65 - 140		%Rec	1	12/16/2019 11:00:41 PM

Lab ID: 1912229-002

Collection Date: 12/10/2019 9:40:00 AM

Client Sample ID: PEO-MW-25-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.87		µg/L	1	12/19/2019 2:03:00 AM
Surr: 1-Chlorooctadecane	85.4	60 - 140		%Rec	1	12/19/2019 2:03:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 11:41:48 PM
Surr: 1,4-Difluorobenzene	101	65 - 140		%Rec	1	12/16/2019 11:41:48 PM
Surr: Bromofluorobenzene	107	65 - 140		%Rec	1	12/16/2019 11:41:48 PM



CLIENT: Pace Analytical Minnesota

Project: 499738

Lab ID: 1912229-003

Collection Date: 12/10/2019 11:05:00 AM

Client Sample ID: PEO-MW-03-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.89		µg/L	1	12/19/2019 2:46:00 AM
Surr: 1-Chlorooctadecane	57.9	60 - 140	S	%Rec	1	12/19/2019 2:46:00 AM

NOTES:

S - Outlying surrogate recovery(ies) observed.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 2:26:04 AM
Surr: 1,4-Difluorobenzene	99.3	65 - 140		%Rec	1	12/17/2019 2:26:04 AM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	12/17/2019 2:26:04 AM

Lab ID: 1912229-004

Collection Date: 12/10/2019 12:35:00 PM

Client Sample ID: PEO-MW-06-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.86		µg/L	1	12/19/2019 3:30:00 AM
Surr: 1-Chlorooctadecane	97.3	60 - 140		%Rec	1	12/19/2019 3:30:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	604	4.07		µg/L	1	12/17/2019 7:14:14 AM
Surr: 1,4-Difluorobenzene	104	65 - 140		%Rec	1	12/17/2019 7:14:14 AM
Surr: Bromofluorobenzene	108	65 - 140		%Rec	1	12/17/2019 7:14:14 AM



CLIENT: Pace Analytical Minnesota

Project: 499738

Lab ID: 1912229-005

Collection Date: 12/10/2019 1:45:00 PM

Client Sample ID: PEO-MW-19-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.84		µg/L	1	12/20/2019 4:08:00 PM
Surr: 1-Chlorooctadecane	79.9	60 - 140		%Rec	1	12/20/2019 4:08:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 3:07:16 AM
Surr: 1,4-Difluorobenzene	99.0	65 - 140		%Rec	1	12/17/2019 3:07:16 AM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	12/17/2019 3:07:16 AM

Lab ID: 1912229-006

Collection Date: 12/10/2019 8:00:00 AM

Client Sample ID: Trip Blank

Matrix: Water

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

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 7:35:00 PM
Surr: 1,4-Difluorobenzene	98.1	65 - 140		%Rec	1	12/16/2019 7:35:00 PM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	12/16/2019 7:35:00 PM

Work Order: 1912229
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-26838	SampType: MBLK	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: MBLKW	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117725							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.9		0	0						
Surr: 1-Chlorooctadecane	1,660		1,993		83.2	60	140				

Sample ID: LCS-26838	SampType: LCS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: LCSW	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117724							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,850	20.0	2,495	0	74.1	70	130				
Surr: 1-Chlorooctadecane	1,660		1,996		83.3	60	140				

Sample ID: 1912184-001BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117723							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.9		0	0			0	0	25	
Surr: 1-Chlorooctadecane	1,580		1,991		79.5	60	140		0		

Sample ID: 1912184-002BMS	SampType: MS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117726							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	2,060	19.9	2,487	0	82.8	70	130				
Surr: 1-Chlorooctadecane	1,840		1,990		92.5	60	140				

Sample ID: 1912184-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117727							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,840	19.9	2,488	0	74.0	70	130	2,059	11.2	30	
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Work Order: 1912229
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: 1912184-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117727							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	1,600		1,990		80.6	60	140			0	

Work Order: 1912229
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-26831	SampType: LCS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: LCSW	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116377							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	206	20.0	200.0	0	103	70	130				
Surr: 1,4-Difluorobenzene	46.0		50.00		92.1	65	140				
Surr: Bromofluorobenzene	48.6		50.00		97.3	65	140				

Sample ID: LCS-D-26831	SampType: LCS-D	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: LCSW02	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116378							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	216	20.0	200.0	0	108	70	130	205.6	4.78	20	
Surr: 1,4-Difluorobenzene	47.7		50.00		95.3	65	140		0		
Surr: Bromofluorobenzene	49.7		50.00		99.5	65	140		0		

Sample ID: MB-26831	SampType: MBLK	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: MBLKW	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116379							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Surr: 1,4-Difluorobenzene	45.0		50.00		89.9	65	140				
Surr: Bromofluorobenzene	49.7		50.00		99.4	65	140				

Sample ID: 1912184-001ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56058							
Client ID: BATCH	Batch ID: 26831		Analysis Date: 12/16/2019	SeqNo: 1116342							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	49.3		50.00		98.6	65	140		0		
Surr: Bromofluorobenzene	53.2		50.00		106	65	140		0		



Work Order: 1912229
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 1912229-002BDUP	SampType: DUP	Units: µg/L		Prep Date: 12/16/2019	RunNo: 56058						
Client ID: PEO-MW-25-201912	Batch ID: 26831			Analysis Date: 12/17/2019	SeqNo: 1116359						
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	50.8		50.00		102	65	140		0		
Surr: Bromofluorobenzene	54.5		50.00		109	65	140		0		

Client Name: **PACEMINN**

 Work Order Number: **1912229**

 Logged by: **Matt Langston**

 Date Received: **12/13/2019 9:00:00 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 Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°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
Cooler	2.0
Sample	3.3
Temp Blank	0.2

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

Chain of Custody

PASI Minnesota Laboratory

Workorder: 10502097

Workorder Name: 499738

Results Requested By: 12/18/2019

1912229



Report / Invoice To
 Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Suite 200
 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. 10502097

Requested Analysis

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		NWTPH EPH	NWTPH VPH	LAB USE ONLY
					HCL VG9H	Unpreserved AG1U			
1	PEO-MW-21-201912	12/10/2019 08:30	10502097001	Water	3	2	X	X	
2	PEO-MW-25-201912	12/10/2019 09:40	10502097002	Water	3	2	X	X	
3	PEO-MW-03-201912	12/10/2019 11:05	10502097003	Water	3	2	X	X	
4	PEO-MW-06-201912	12/10/2019 12:35	10502097004	Water	3	2	X	X	
5	PEO-MW-19-201912	12/10/2019 13:45	10502097005	Water	3	2	X	X	
6	TRIP BLANK	12/10/2019 08:00	10502097006	Water	2		X		
Comments									
Transfers		Released By	Date/Time	Received By	Date/Time				
1		Julie Pace	12/18/19 14:10	[Signature]	12/18/19 09:00				
2									
3									
Cooler Temperature on Receipt		°C	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N	

December 30, 2019

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

RE: Project: 499738
Pace Project No.: 10502275

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

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
Emily Ponaski, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 499738
Pace Project No.: 10502275

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #:74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 499738
Pace Project No.: 10502275

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10502275001	PEO-MW-08-201912	Water	12/11/19 08:25	12/12/19 09:10
10502275002	PEO-MW-30-201912	Water	12/11/19 09:45	12/12/19 09:10
10502275003	PEO-MW-31-201912	Water	12/11/19 12:10	12/12/19 09:10
10502275004	PEO-MW-18-201912	Water	12/11/19 13:15	12/12/19 09:10
10502275005	Trip Blank	Water	12/11/19 08:00	12/12/19 09:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 499738
Pace Project No.: 10502275

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10502275001	PEO-MW-08-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502275002	PEO-MW-30-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502275003	PEO-MW-31-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502275004	PEO-MW-18-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	IP	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	DS2	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502275005	Trip Blank	NWTPH-Gx	MJD	2	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-08-201912	Lab ID: 10502275001	Collected: 12/11/19 08:25	Received: 12/12/19 09:10	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.75	mg/L	0.40	1	12/12/19 17:09	12/14/19 14:03	68334-30-5	
Motor Oil Range SG	0.14J	mg/L	0.40	1	12/12/19 17:09	12/14/19 14:03	64742-65-0	
Surrogates								
o-Terphenyl (S)	130	%	50-150	1	12/12/19 17:09	12/14/19 14:03	84-15-1	
n-Triacontane (S)	116	%	50-150	1	12/12/19 17:09	12/14/19 14:03	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	91.2J	ug/L	100	1		12/12/19 18:41		B
Surrogates								
a,a,a-Trifluorotoluene (S)	99	%	50-150	1		12/12/19 18:41	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	90200	ug/L	3300	1	12/13/19 06:44	12/15/19 15:44		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	7.8	ug/L	0.50	1	12/13/19 06:44	12/16/19 16:04	7440-38-2	
Manganese, Dissolved	1850	ug/L	10.0	20	12/13/19 06:44	12/16/19 16:07	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.068	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	83-32-9	
Acenaphthylene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	53-70-3	
Fluoranthene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	206-44-0	
Fluorene	0.031J	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	91-57-6	
Naphthalene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	85-01-8	
Pyrene	0.092	ug/L	0.038	1	12/12/19 13:45	12/13/19 13:56	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	60	%	47-125	1	12/12/19 13:45	12/13/19 13:56	321-60-8	
p-Terphenyl-d14 (S)	72	%	62-125	1	12/12/19 13:45	12/13/19 13:56	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.12J	ug/L	1.0	1		12/14/19 00:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/14/19 00:46	100-41-4	
Toluene	ND	ug/L	1.0	1		12/14/19 00:46	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/14/19 00:46	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-08-201912		Lab ID: 10502275001	Collected: 12/11/19 08:25	Received: 12/12/19 09:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/14/19 00:46	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-125	1		12/14/19 00:46	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		12/14/19 00:46	2037-26-5	
4-Bromofluorobenzene (S)	108	%.	75-125	1		12/14/19 00:46	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO ₃	41.3	mg/L	5.0	1		12/12/19 14:33		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	125	mg/L	6.0	5		12/13/19 14:06	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/12/19 12:44	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-30-201912	Lab ID: 10502275002	Collected: 12/11/19 09:45	Received: 12/12/19 09:10	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	8.4	mg/L	0.40	1	12/12/19 17:09	12/14/19 14:14	68334-30-5	M1
Motor Oil Range SG	0.39J	mg/L	0.40	1	12/12/19 17:09	12/14/19 14:14	64742-65-0	
Surrogates								
o-Terphenyl (S)	87	%.	50-150	1	12/12/19 17:09	12/14/19 14:14	84-15-1	
n-Triacontane (S)	52	%.	50-150	1	12/12/19 17:09	12/14/19 14:14	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	333	ug/L	100	1		12/12/19 17:34		B
Surrogates								
a,a,a-Trifluorotoluene (S)	95	%.	50-150	1		12/12/19 17:34	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	102000	ug/L	3300	1	12/13/19 06:44	12/15/19 15:47		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	9.8	ug/L	0.50	1	12/13/19 06:44	12/16/19 16:10	7440-38-2	
Manganese, Dissolved	2220	ug/L	10.0	20	12/13/19 06:44	12/16/19 16:32	7439-96-5	M1
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.18	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	83-32-9	
Acenaphthylene	0.099	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	53-70-3	
Fluoranthene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	206-44-0	
Fluorene	0.088	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	90-12-0	
2-Methylnaphthalene	0.091	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	91-57-6	
Naphthalene	1.2	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	85-01-8	
Pyrene	0.053	ug/L	0.038	1	12/12/19 13:45	12/13/19 14:17	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	55	%.	47-125	1	12/12/19 13:45	12/13/19 14:17	321-60-8	
p-Terphenyl-d14 (S)	72	%.	62-125	1	12/12/19 13:45	12/13/19 14:17	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.11J	ug/L	1.0	1		12/13/19 21:50	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/13/19 21:50	100-41-4	
Toluene	ND	ug/L	1.0	1		12/13/19 21:50	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/13/19 21:50	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-30-201912		Lab ID: 10502275002		Collected: 12/11/19 09:45	Received: 12/12/19 09:10	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/13/19 21:50	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/13/19 21:50	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		12/13/19 21:50	2037-26-5	
4-Bromofluorobenzene (S)	109	%.	75-125	1		12/13/19 21:50	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	91.2	mg/L	5.0	1		12/12/19 14:38		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	79.8	mg/L	1.2	1		12/13/19 01:18	14808-79-8	M1
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/12/19 12:45	14797-55-8	FS

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-31-201912	Lab ID: 10502275003	Collected: 12/11/19 12:10	Received: 12/12/19 09:10	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	2.2	mg/L	0.40	1	12/12/19 17:09	12/14/19 14:49	68334-30-5	
Motor Oil Range SG	0.19J	mg/L	0.40	1	12/12/19 17:09	12/14/19 14:49	64742-65-0	
Surrogates								
o-Terphenyl (S)	90	%	50-150	1	12/12/19 17:09	12/14/19 14:49	84-15-1	
n-Triacontane (S)	67	%	50-150	1	12/12/19 17:09	12/14/19 14:49	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	70.5J	ug/L	100	1		12/17/19 16:23		
Surrogates								
a,a,a-Trifluorotoluene (S)	101	%	50-150	1		12/17/19 16:23	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	104000	ug/L	3300	1	12/13/19 06:44	12/15/19 16:01		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	0.22J	ug/L	0.50	1	12/13/19 06:44	12/16/19 16:42	7440-38-2	
Manganese, Dissolved	368	ug/L	0.50	1	12/13/19 06:44	12/16/19 16:42	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	83-32-9	
Acenaphthylene	0.066	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	208-96-8	
Anthracene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	53-70-3	
Fluoranthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	206-44-0	
Fluorene	0.041	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	193-39-5	
1-Methylnaphthalene	0.14	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	91-57-6	
Naphthalene	0.20	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	91-20-3	
Phenanthrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	85-01-8	
Pyrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:22	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	61	%	47-125	1	12/12/19 13:45	12/13/19 15:22	321-60-8	
p-Terphenyl-d14 (S)	72	%	62-125	1	12/12/19 13:45	12/13/19 15:22	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/14/19 01:04	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/14/19 01:04	100-41-4	
Toluene	ND	ug/L	1.0	1		12/14/19 01:04	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/14/19 01:04	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-31-201912		Lab ID: 10502275003		Collected: 12/11/19 12:10	Received: 12/12/19 09:10	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/14/19 01:04	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-125	1		12/14/19 01:04	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		12/14/19 01:04	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125	1		12/14/19 01:04	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	76.8	mg/L	5.0	1		12/12/19 14:54		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	71.5	mg/L	1.2	1		12/13/19 10:14	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/12/19 12:48	14797-55-8	

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-18-201912	Lab ID: 10502275004	Collected: 12/11/19 13:15	Received: 12/12/19 09:10	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.68	mg/L	0.40	1	12/12/19 17:09	12/14/19 15:00	68334-30-5	
Motor Oil Range SG	0.16J	mg/L	0.40	1	12/12/19 17:09	12/14/19 15:00	64742-65-0	
Surrogates								
o-Terphenyl (S)	85	%	50-150	1	12/12/19 17:09	12/14/19 15:00	84-15-1	
n-Triacontane (S)	79	%	50-150	1	12/12/19 17:09	12/14/19 15:00	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	107	ug/L	100	1		12/13/19 00:21		B
Surrogates								
a,a,a-Trifluorotoluene (S)	99	%	50-150	1		12/13/19 00:21	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	61600	ug/L	3300	1	12/13/19 06:44	12/15/19 16:10		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	0.40J	ug/L	0.50	1	12/13/19 06:44	12/16/19 16:48	7440-38-2	
Manganese, Dissolved	772	ug/L	10.0	20	12/13/19 06:44	12/16/19 16:51	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.16	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	83-32-9	
Acenaphthylene	0.027J	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	208-96-8	
Anthracene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	53-70-3	
Fluoranthene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	206-44-0	
Fluorene	0.14	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	91-57-6	
Naphthalene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	91-20-3	
Phenanthrene	ND	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	85-01-8	
Pyrene	0.019J	ug/L	0.039	1	12/12/19 13:45	12/13/19 15:43	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	58	%	47-125	1	12/12/19 13:45	12/13/19 15:43	321-60-8	
p-Terphenyl-d14 (S)	75	%	62-125	1	12/12/19 13:45	12/13/19 15:43	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.18J	ug/L	1.0	1		12/14/19 01:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/14/19 01:22	100-41-4	
Toluene	ND	ug/L	1.0	1		12/14/19 01:22	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/14/19 01:22	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: PEO-MW-18-201912		Lab ID: 10502275004	Collected: 12/11/19 13:15	Received: 12/12/19 09:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/14/19 01:22	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/14/19 01:22	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		12/14/19 01:22	2037-26-5	
4-Bromofluorobenzene (S)	109	%.	75-125	1		12/14/19 01:22	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	75.0	mg/L	5.0	1		12/12/19 15:08		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	63.6	mg/L	1.2	1		12/13/19 12:49	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/12/19 12:49	14797-55-8	

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ANALYTICAL RESULTS

Project: 499738
Pace Project No.: 10502275

Sample: Trip Blank		Lab ID: 10502275005	Collected: 12/11/19 08:00	Received: 12/12/19 09:10	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		12/12/19 19:33		
Surrogates								
a,a,a-Trifluorotoluene (S)	99	%.	50-150	1		12/12/19 19:33	98-08-8	

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 649678 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502275001, 10502275002, 10502275004, 10502275005

METHOD BLANK: 3493830 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275004, 10502275005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/12/19 17:17	
a,a,a-Trifluorotoluene (S)	%	108	50-150	12/12/19 17:17	

METHOD BLANK: 3493831 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275004, 10502275005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	39.1J	100	12/12/19 20:07	
a,a,a-Trifluorotoluene (S)	%	96	50-150	12/12/19 20:07	

LABORATORY CONTROL SAMPLE & LCSD: 3493832 3493833

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1090	1000	109	100	75-125	9	20	
a,a,a-Trifluorotoluene (S)	%				115	113	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3493834 3493835

Parameter	Units	10502275002 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	333	1000	1000	1340	1330	101	100	75-125	1	30	
a,a,a-Trifluorotoluene (S)	%						110	110	50-150			

SAMPLE DUPLICATE: 3494264

Parameter	Units	10502298002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	52.0J	ND		30	
a,a,a-Trifluorotoluene (S)	%	106	97			

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

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 650404 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502275003

METHOD BLANK: 3497375 Matrix: Water
Associated Lab Samples: 10502275003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/17/19 16:06	
a,a,a-Trifluorotoluene (S)	%.	103	50-150	12/17/19 16:06	

METHOD BLANK: 3497376 Matrix: Water
Associated Lab Samples: 10502275003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/17/19 19:13	
a,a,a-Trifluorotoluene (S)	%.	99	50-150	12/17/19 19:13	

LABORATORY CONTROL SAMPLE & LCSD: 3497377 3497378

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1100	984	110	98	75-125	11	20	
a,a,a-Trifluorotoluene (S)	%.				113	105	50-150			

SAMPLE DUPLICATE: 3497764

Parameter	Units	10502275003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	70.5J	69.2J		30	
a,a,a-Trifluorotoluene (S)	%.	101	102			

SAMPLE DUPLICATE: 3497765

Parameter	Units	10502306005 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	82.2J	72.0J		30	
a,a,a-Trifluorotoluene (S)	%.	101	98			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 649796 Analysis Method: EPA 6020A
QC Batch Method: EPA 3020 Analysis Description: 6020A Water Dissolved UPD4
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

METHOD BLANK: 3494500 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/16/19 15:57	
Manganese, Dissolved	ug/L	ND	0.50	12/16/19 15:57	

LABORATORY CONTROL SAMPLE: 3494501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	98.9	99	80-120	
Manganese, Dissolved	ug/L	100	105	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494502 3494503

Parameter	Units	10502275002 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	9.8	100	100	108	110	98	100	75-125	1	20	
Manganese, Dissolved	ug/L	2220	100	100	2430	2420	207	201	75-125	0	20	E,M1

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 650017 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

METHOD BLANK: 3495799 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/13/19 20:39	
Ethylbenzene	ug/L	ND	1.0	12/13/19 20:39	
m&p-Xylene	ug/L	ND	2.0	12/13/19 20:39	
o-Xylene	ug/L	ND	1.0	12/13/19 20:39	
Toluene	ug/L	ND	1.0	12/13/19 20:39	
1,2-Dichloroethane-d4 (S)	%	110	75-125	12/13/19 20:39	
4-Bromofluorobenzene (S)	%	110	75-125	12/13/19 20:39	
Toluene-d8 (S)	%	97	75-125	12/13/19 20:39	

LABORATORY CONTROL SAMPLE: 3495800

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.3	92	75-125	
Ethylbenzene	ug/L	20	21.6	108	75-125	
m&p-Xylene	ug/L	40	42.7	107	75-125	
o-Xylene	ug/L	20	20.8	104	75-125	
Toluene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane-d4 (S)	%			109	75-125	
4-Bromofluorobenzene (S)	%			105	75-125	
Toluene-d8 (S)	%			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3495801 3495802

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502275002 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	0.11J	20	20	20	18.4	17.8	91	89	30-150	3	30	
Ethylbenzene	ug/L	ND	20	20	20	20.8	20.6	104	103	30-150	1	30	
m&p-Xylene	ug/L	ND	40	40	40	41.4	40.9	103	102	30-150	1	30	
o-Xylene	ug/L	ND	20	20	20	19.9	19.7	99	99	30-150	1	30	
Toluene	ug/L	ND	20	20	20	19.7	19.3	98	96	30-150	2	30	
1,2-Dichloroethane-d4 (S)	%							107	109	75-125			
4-Bromofluorobenzene (S)	%							110	110	75-125			
Toluene-d8 (S)	%							100	100	75-125			

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 649648 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

METHOD BLANK: 3493674 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	12/13/19 12:52	
2-Methylnaphthalene	ug/L	ND	0.040	12/13/19 12:52	
Acenaphthene	ug/L	ND	0.040	12/13/19 12:52	
Acenaphthylene	ug/L	ND	0.040	12/13/19 12:52	
Anthracene	ug/L	ND	0.040	12/13/19 12:52	
Benzo(a)anthracene	ug/L	ND	0.040	12/13/19 12:52	
Benzo(a)pyrene	ug/L	ND	0.040	12/13/19 12:52	
Benzo(b)fluoranthene	ug/L	ND	0.040	12/13/19 12:52	
Benzo(g,h,i)perylene	ug/L	ND	0.040	12/13/19 12:52	
Benzo(k)fluoranthene	ug/L	ND	0.040	12/13/19 12:52	
Chrysene	ug/L	ND	0.040	12/13/19 12:52	
Dibenz(a,h)anthracene	ug/L	ND	0.040	12/13/19 12:52	
Fluoranthene	ug/L	ND	0.040	12/13/19 12:52	
Fluorene	ug/L	ND	0.040	12/13/19 12:52	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	12/13/19 12:52	
Naphthalene	ug/L	ND	0.040	12/13/19 12:52	
Phenanthrene	ug/L	ND	0.040	12/13/19 12:52	
Pyrene	ug/L	ND	0.040	12/13/19 12:52	
2-Fluorobiphenyl (S)	%	57	47-125	12/13/19 12:52	
p-Terphenyl-d14 (S)	%	80	62-125	12/13/19 12:52	

LABORATORY CONTROL SAMPLE: 3493675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	1	0.64	64	31-125	
2-Methylnaphthalene	ug/L	1	0.62	62	43-125	
Acenaphthene	ug/L	1	0.65	65	50-125	
Acenaphthylene	ug/L	1	0.64	64	46-125	
Anthracene	ug/L	1	0.74	74	59-125	
Benzo(a)anthracene	ug/L	1	0.65	65	55-125	
Benzo(a)pyrene	ug/L	1	0.71	71	66-125	
Benzo(b)fluoranthene	ug/L	1	0.75	75	64-125	
Benzo(g,h,i)perylene	ug/L	1	0.70	70	58-125	
Benzo(k)fluoranthene	ug/L	1	0.68	68	60-125	
Chrysene	ug/L	1	0.72	72	62-125	
Dibenz(a,h)anthracene	ug/L	1	0.69	69	51-125	
Fluoranthene	ug/L	1	0.71	71	64-125	
Fluorene	ug/L	1	0.69	69	55-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.73	73	61-125	
Naphthalene	ug/L	1	0.63	63	48-125	

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

LABORATORY CONTROL SAMPLE: 3493675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	1	0.74	74	63-125	
Pyrene	ug/L	1	0.70	70	61-125	
2-Fluorobiphenyl (S)	%			63	47-125	
p-Terphenyl-d14 (S)	%			80	62-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3493676 3493677

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10502275002 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1-Methylnaphthalene	ug/L	ND	0.95	1	1.1	0.99	111	99	30-125	7	30	
2-Methylnaphthalene	ug/L	0.091	0.95	1	0.76	0.73	70	64	42-125	4	30	
Acenaphthene	ug/L	0.18	0.95	1	0.98	0.97	84	80	46-125	1	30	
Acenaphthylene	ug/L	0.099	0.95	1	0.72	0.75	65	65	48-125	5	30	
Anthracene	ug/L	ND	0.95	1	0.71	0.71	74	71	59-125	0	30	
Benzo(a)anthracene	ug/L	ND	0.95	1	0.74	0.75	78	75	56-125	1	30	
Benzo(a)pyrene	ug/L	ND	0.95	1	0.64	0.63	67	63	58-125	1	30	
Benzo(b)fluoranthene	ug/L	ND	0.95	1	0.64	0.63	67	63	51-125	0	30	
Benzo(g,h,i)perylene	ug/L	ND	0.95	1	0.56	0.56	58	56	50-125	1	30	
Benzo(k)fluoranthene	ug/L	ND	0.95	1	0.63	0.63	67	63	52-125	0	30	
Chrysene	ug/L	ND	0.95	1	0.65	0.66	68	66	58-125	1	30	
Dibenz(a,h)anthracene	ug/L	ND	0.95	1	0.52	0.55	55	55	45-125	5	30	
Fluoranthene	ug/L	ND	0.95	1	0.72	0.72	75	72	60-125	0	30	
Fluorene	ug/L	0.088	0.95	1	0.70	0.71	64	62	47-125	1	30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.95	1	0.55	0.55	58	55	48-125	1	30	
Naphthalene	ug/L	1.2	0.95	1	1.9	1.7	71	50	38-125	10	30	
Phenanthrene	ug/L	ND	0.95	1	0.68	0.69	71	69	60-125	2	30	
Pyrene	ug/L	0.053	0.95	1	0.78	0.78	76	73	62-125	1	30	
2-Fluorobiphenyl (S)	%						63	60	47-125			
p-Terphenyl-d14 (S)	%						79	71	62-125			

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 649649 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

METHOD BLANK: 3493679 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/14/19 13:40	
Motor Oil Range SG	mg/L	ND	0.40	12/14/19 13:40	
n-Triacontane (S)	%	77	50-150	12/14/19 13:40	
o-Terphenyl (S)	%	70	50-150	12/14/19 13:40	

LABORATORY CONTROL SAMPLE: 3493680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.8	92	50-150	
Motor Oil Range SG	mg/L	2	1.9	97	50-150	
n-Triacontane (S)	%			91	50-150	
o-Terphenyl (S)	%			94	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3493681 3493682

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502275002	Result	Spike Conc.	Spike Conc.								
Diesel Fuel Range SG	mg/L	8.4	2	2	9.1	10.7	34	115	50-150	16	30	M1	
Motor Oil Range SG	mg/L	0.39J	2	2	1.6	1.8	61	73	50-150	14	30		
n-Triacontane (S)	%						62	58	50-150				
o-Terphenyl (S)	%						83	98	50-150				

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 649667 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

METHOD BLANK: 3493759 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	2.3J	5.0	12/12/19 13:38	

LABORATORY CONTROL SAMPLE & LCSD: 3493760 3493761

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	42.3	42.4	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3493762 3493763

Parameter	Units	10502275002 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	91.2	40	40	125	127	84	90	80-120	2	20	

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QUALITY CONTROL DATA

Project: 499738
Pace Project No.: 10502275

QC Batch: 649725 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

METHOD BLANK: 3494093 Matrix: Water
Associated Lab Samples: 10502275001, 10502275002, 10502275003, 10502275004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	0.55J	1.2	12/12/19 19:15	

LABORATORY CONTROL SAMPLE: 3494094

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	12.5	12.1	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494095 3494096

Parameter	Units	10501956001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Sulfate	mg/L	6.7	12.5	12.5	19.7	20.0	104	106	90-110	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494097 3494098

Parameter	Units	10502275002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Sulfate	mg/L	79.8	12.5	12.5	81.7	81.1	15	11	90-110	1	20	M1	

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QUALIFIERS

Project: 499738
Pace Project No.: 10502275

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.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

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.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738
Pace Project No.: 10502275

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502275001	PEO-MW-08-201912	EPA Mod. 3510C	649649	NWTPH-Dx	650028
10502275002	PEO-MW-30-201912	EPA Mod. 3510C	649649	NWTPH-Dx	650028
10502275003	PEO-MW-31-201912	EPA Mod. 3510C	649649	NWTPH-Dx	650028
10502275004	PEO-MW-18-201912	EPA Mod. 3510C	649649	NWTPH-Dx	650028
10502275001	PEO-MW-08-201912	NWTPH-Gx	649678		
10502275002	PEO-MW-30-201912	NWTPH-Gx	649678		
10502275003	PEO-MW-31-201912	NWTPH-Gx	650404		
10502275004	PEO-MW-18-201912	NWTPH-Gx	649678		
10502275005	Trip Blank	NWTPH-Gx	649678		
10502275001	PEO-MW-08-201912	EPA 3010	649786	EPA 6010D	650054
10502275002	PEO-MW-30-201912	EPA 3010	649786	EPA 6010D	650054
10502275003	PEO-MW-31-201912	EPA 3010	649786	EPA 6010D	650054
10502275004	PEO-MW-18-201912	EPA 3010	649786	EPA 6010D	650054
10502275001	PEO-MW-08-201912	EPA 3020	649796	EPA 6020A	650183
10502275002	PEO-MW-30-201912	EPA 3020	649796	EPA 6020A	650183
10502275003	PEO-MW-31-201912	EPA 3020	649796	EPA 6020A	650183
10502275004	PEO-MW-18-201912	EPA 3020	649796	EPA 6020A	650183
10502275001	PEO-MW-08-201912	EPA Mod. 3510C	649648	EPA 8270 by SIM	649891
10502275002	PEO-MW-30-201912	EPA Mod. 3510C	649648	EPA 8270 by SIM	649891
10502275003	PEO-MW-31-201912	EPA Mod. 3510C	649648	EPA 8270 by SIM	649891
10502275004	PEO-MW-18-201912	EPA Mod. 3510C	649648	EPA 8270 by SIM	649891
10502275001	PEO-MW-08-201912	EPA 8260B	650017		
10502275002	PEO-MW-30-201912	EPA 8260B	650017		
10502275003	PEO-MW-31-201912	EPA 8260B	650017		
10502275004	PEO-MW-18-201912	EPA 8260B	650017		
10502275001	PEO-MW-08-201912	SM 2320B	649667		
10502275002	PEO-MW-30-201912	SM 2320B	649667		
10502275003	PEO-MW-31-201912	SM 2320B	649667		
10502275004	PEO-MW-18-201912	SM 2320B	649667		
10502275001	PEO-MW-08-201912	EPA 300.0	649725		
10502275002	PEO-MW-30-201912	EPA 300.0	649725		
10502275003	PEO-MW-31-201912	EPA 300.0	649725		
10502275004	PEO-MW-18-201912	EPA 300.0	649725		
10502275001	PEO-MW-08-201912	EPA 353.2	649627		
10502275002	PEO-MW-30-201912	EPA 353.2	649627		
10502275003	PEO-MW-31-201912	EPA 353.2	649627		
10502275004	PEO-MW-18-201912	EPA 353.2	649627		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name:
ERM

Project #:

WO# : 10502275

PM: **JMT**

Due Date: **12/19/19**

CLIENT: **ERM-Oregon**

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exceptions

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.3, 0.3, 0.4, 0.5, 0.1</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/> See Exceptions <input type="checkbox"/> 1 Container
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: <u>0.2, 0.2, 0.3, 0.4, 0.0</u> °C	

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: 12/12/19

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 <input type="checkbox"/>
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, 2, 3</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <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 pH Paper Lot# _____
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 <u>0-6 Roll 203619</u> 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 <input type="checkbox"/>
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.
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>236154</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____
Comments/Resolution: _____

Field Data Required? Yes No
Date/Time: _____

Project Manager Review: Julie P...

Date: 12/12/19

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: RL (2)



Document Name:
SCUR Exception Form – Coolers Above 6°C

Document Revised: 08Apr2019
Page 1 of 1

Document No.:
F-MN-C-298-Rev.02

Issuing Authority:
Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

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			
7475 9400	7640		0.2
7475 9400	7639		0.2
	7661		0.3
	7650		0.4
	7028		0.0

Other Issues		
Issue Type: <u>Wrong ID on Sample ID</u>	Container Type	# of Containers
<u>Wrong ID on Samples</u>		
<u>All Substances Sample ID's say</u>		
<u>PEO-MW-02-201912</u>		
<u>But belong in activity</u>		
<u>Named samples 1-4.</u>		
<u>Based on time + date collected</u>		

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	



Pace Analytical Minnesota

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

RE: 499738

Work Order Number: 1912231

December 27, 2019

Attention Julie Bowser:

Fremont Analytical, Inc. received 5 sample(s) on 12/13/2019 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

CLIENT: Pace Analytical Minnesota
Project: 499738
Work Order: 1912231

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912231-001	PEO-MW-08-201912	12/11/2019 8:25 AM	12/13/2019 9:03 AM
1912231-002	PEO-MW-30-201912	12/11/2019 9:45 AM	12/13/2019 9:03 AM
1912231-003	PEO-MW-31-201912	12/11/2019 12:10 PM	12/13/2019 9:03 AM
1912231-004	PEO-MW-18-201912	12/11/2019 1:15 PM	12/13/2019 9:03 AM
1912231-005	Trip Blank	12/11/2019 8:00 AM	12/13/2019 9:03 AM

CLIENT: Pace Analytical Minnesota

Project: 499738

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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: Pace Analytical Minnesota

Project: 499738

Lab ID: 1912231-001

Collection Date: 12/11/2019 8:25:00 AM

Client Sample ID: PEO-MW-08-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.89		µg/L	1	12/20/2019 4:52:00 PM
Surr: 1-Chlorooctadecane	72.4	60 - 140		%Rec	1	12/20/2019 4:52:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 6:33:01 AM
Surr: 1,4-Difluorobenzene	99.1	65 - 140		%Rec	1	12/17/2019 6:33:01 AM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	12/17/2019 6:33:01 AM

Lab ID: 1912231-002

Collection Date: 12/11/2019 9:45:00 AM

Client Sample ID: PEO-MW-30-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.85		µg/L	1	12/20/2019 5:36:00 PM
Surr: 1-Chlorooctadecane	55.7	60 - 140	S	%Rec	1	12/20/2019 5:36:00 PM

NOTES:

S - Outlying surrogate recovery(ies) observed.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 3:48:31 AM
Surr: 1,4-Difluorobenzene	98.8	65 - 140		%Rec	1	12/17/2019 3:48:31 AM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	12/17/2019 3:48:31 AM



CLIENT: Pace Analytical Minnesota

Project: 499738

Lab ID: 1912231-003

Collection Date: 12/11/2019 12:10:00 PM

Client Sample ID: PEO-MW-31-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.88		µg/L	1	12/20/2019 6:20:00 PM
Surr: 1-Chlorooctadecane	78.0	60 - 140		%Rec	1	12/20/2019 6:20:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 4:29:47 AM
Surr: 1,4-Difluorobenzene	99.3	65 - 140		%Rec	1	12/17/2019 4:29:47 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	12/17/2019 4:29:47 AM

Lab ID: 1912231-004

Collection Date: 12/11/2019 1:15:00 PM

Client Sample ID: PEO-MW-18-201912

Matrix: Water

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

Batch ID: 26838

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.85		µg/L	1	12/20/2019 7:04:00 PM
Surr: 1-Chlorooctadecane	71.2	60 - 140		%Rec	1	12/20/2019 7:04:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/17/2019 5:10:49 AM
Surr: 1,4-Difluorobenzene	98.0	65 - 140		%Rec	1	12/17/2019 5:10:49 AM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	12/17/2019 5:10:49 AM



CLIENT: Pace Analytical Minnesota

Project: 499738

Lab ID: 1912231-005

Collection Date: 12/11/2019 8:00:00 AM

Client Sample ID: Trip Blank

Matrix: Water

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

Batch ID: 26831

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/16/2019 8:16:11 PM
Surr: 1,4-Difluorobenzene	98.3	65 - 140		%Rec	1	12/16/2019 8:16:11 PM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	12/16/2019 8:16:11 PM

Work Order: 1912231
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-26838	SampType: MBLK	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: MBLKW	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117725							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.9		0	0						
Surr: 1-Chlorooctadecane	1,660		1,993		83.2	60	140				

Sample ID: LCS-26838	SampType: LCS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: LCSW	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117724							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,850	20.0	2,495	0	74.1	70	130				
Surr: 1-Chlorooctadecane	1,660		1,996		83.3	60	140				

Sample ID: 1912184-001BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117723							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.9		0	0			0	0	25	
Surr: 1-Chlorooctadecane	1,580		1,991		79.5	60	140		0		

Sample ID: 1912184-002BMS	SampType: MS	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117726							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	2,060	19.9	2,487	0	82.8	70	130				
Surr: 1-Chlorooctadecane	1,840		1,990		92.5	60	140				

Sample ID: 1912184-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838		Analysis Date: 12/18/2019	SeqNo: 1117727							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,840	19.9	2,488	0	74.0	70	130	2,059	11.2	30	
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Work Order: 1912231
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: 1912184-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/16/2019	RunNo: 56114							
Client ID: BATCH	Batch ID: 26838	Analysis Date: 12/18/2019	SeqNo: 1117727								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	1,600		1,990		80.6	60	140		0		

Work Order: 1912231
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-26831	SampType: LCS	Units: µg/L			Prep Date: 12/16/2019	RunNo: 56058					
Client ID: LCSW	Batch ID: 26831				Analysis Date: 12/16/2019	SeqNo: 1116377					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	206	20.0	200.0	0	103	70	130				
Surr: 1,4-Difluorobenzene	46.0		50.00		92.1	65	140				
Surr: Bromofluorobenzene	48.6		50.00		97.3	65	140				

Sample ID: LCSD-26831	SampType: LCSD	Units: µg/L			Prep Date: 12/16/2019	RunNo: 56058					
Client ID: LCSW02	Batch ID: 26831				Analysis Date: 12/16/2019	SeqNo: 1116378					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	216	20.0	200.0	0	108	70	130	205.6	4.78	20	
Surr: 1,4-Difluorobenzene	47.7		50.00		95.3	65	140		0		
Surr: Bromofluorobenzene	49.7		50.00		99.5	65	140		0		

Sample ID: MB-26831	SampType: MBLK	Units: µg/L			Prep Date: 12/16/2019	RunNo: 56058					
Client ID: MBLKW	Batch ID: 26831				Analysis Date: 12/16/2019	SeqNo: 1116379					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Surr: 1,4-Difluorobenzene	45.0		50.00		89.9	65	140				
Surr: Bromofluorobenzene	49.7		50.00		99.4	65	140				

Sample ID: 1912184-001ADUP	SampType: DUP	Units: µg/L			Prep Date: 12/16/2019	RunNo: 56058					
Client ID: BATCH	Batch ID: 26831				Analysis Date: 12/16/2019	SeqNo: 1116342					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	49.3		50.00		98.6	65	140		0		
Surr: Bromofluorobenzene	53.2		50.00		106	65	140		0		



Work Order: 1912231
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 1912229-002BDUP	SampType: DUP	Units: µg/L			Prep Date: 12/16/2019	RunNo: 56058					
Client ID: BATCH	Batch ID: 26831				Analysis Date: 12/17/2019	SeqNo: 1116359					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	50.8		50.00		102	65	140		0		
Surr: Bromofluorobenzene	54.5		50.00		109	65	140		0		

Client Name: **PACEMINN**

 Work Order Number: **1912231**

 Logged by: **Matt Langston**

 Date Received: **12/13/2019 9:03:00 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 Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°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
Cooler	2.9
Sample	5.1
Temp Blank	1.0

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

Chain of Custody



Workorder: 10502275 Workorder Name: 499738

Results Requested By: 12/19/2019

1912231

Report / Invoice To
 Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Suite 200
 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. 10502275

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
					HCL VG9H	Unpreserved AG1U		
1	PEO-MMW-08-201912	12/11/2019 08:25	10502275001	Water	3	2	12/19/2019 08:00	
2	PEO-MMW-30-201912	12/11/2019 09:45	10502275002	Water	3	2	12/19/2019 08:00	
3	PEO-MMW-31-201912	12/11/2019 12:10	10502275003	Water	3	2	12/19/2019 08:00	
4	PEO-MMW-18-201912	12/11/2019 13:15	10502275004	Water	3	2	12/19/2019 08:00	
5	Trip Blank	12/11/2019 08:00	10502275005	Water	2	2	12/19/2019 08:00	

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	<i>Julie Bowser</i>	12/19/2019 14:00	<i>Julie Bowser</i>	12/19/2019 08:00				
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 and only aliphatic carbon ranges C10-C12 are needed. Ask for EQUIS EDD as well.

January 10, 2020

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

RE: Project: 499738-Revised Report
Pace Project No.: 10502419

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This report was revised on January 10, 2020 to add total hardness.

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

Emily Ponaski, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 499738-Revised Report
Pace Project No.: 10502419

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #:74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 499738-Revised Report

Pace Project No.: 10502419

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10502419001	PEO-MW-41-201912	Water	12/12/19 08:25	12/13/19 09:00
10502419002	PEO-MW-40-201912	Water	12/12/19 09:30	12/13/19 09:00
10502419003	PEO-MW-28-201912	Water	12/12/19 11:10	12/13/19 09:00
10502419004	PEO-MW-26-201912	Water	12/12/19 12:40	12/13/19 09:00
10502419005	Trip Blank	Water	12/12/19 08:00	12/13/19 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report
Pace Project No.: 10502419

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10502419001	PEO-MW-41-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502419002	PEO-MW-40-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502419003	PEO-MW-28-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502419004	PEO-MW-26-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502419005	Trip Blank	NWTPH-Gx	MJD	2	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-41-201912	Lab ID: 10502419001	Collected: 12/12/19 08:25	Received: 12/13/19 09:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	ND	mg/L	0.41	1	12/13/19 13:20	12/16/19 12:18	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.41	1	12/13/19 13:20	12/16/19 12:18	64742-65-0	
Surrogates								
o-Terphenyl (S)	81	%	50-150	1	12/13/19 13:20	12/16/19 12:18	84-15-1	
n-Triacontane (S)	89	%	50-150	1	12/13/19 13:20	12/16/19 12:18	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	ND	ug/L	100	1		12/17/19 20:38		
Surrogates								
a,a,a-Trifluorotoluene (S)	97	%	50-150	1		12/17/19 20:38	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	37500	ug/L	3300	1	01/07/20 08:15	01/07/20 14:04		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	2.8	ug/L	0.50	1	12/16/19 06:16	12/17/19 11:15	7440-38-2	
Manganese, Dissolved	349	ug/L	0.50	1	12/16/19 06:16	12/17/19 11:15	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	83-32-9	
Acenaphthylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	53-70-3	
Fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	206-44-0	
Fluorene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	91-57-6	
Naphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	85-01-8	
Pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%	47-125	1	12/13/19 14:39	12/16/19 16:32	321-60-8	
p-Terphenyl-d14 (S)	85	%	62-125	1	12/13/19 14:39	12/16/19 16:32	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/22/19 19:24	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 19:24	100-41-4	
Toluene	ND	ug/L	1.0	1		12/22/19 19:24	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/22/19 19:24	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-41-201912		Lab ID: 10502419001	Collected: 12/12/19 08:25	Received: 12/13/19 09:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/22/19 19:24	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%.	75-125	1		12/22/19 19:24	17060-07-0	
Toluene-d8 (S)	105	%.	75-125	1		12/22/19 19:24	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		12/22/19 19:24	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	78.6	mg/L	5.0	1		12/13/19 14:06		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	1.3	mg/L	1.2	1		12/14/19 06:40	14808-79-8	B,M1
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/13/19 12:43	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-40-201912	Lab ID: 10502419002	Collected: 12/12/19 09:30	Received: 12/13/19 09:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.075J	mg/L	0.40	1	12/13/19 13:20	12/16/19 12:41	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	12/13/19 13:20	12/16/19 12:41	64742-65-0	
Surrogates								
o-Terphenyl (S)	78	%	50-150	1	12/13/19 13:20	12/16/19 12:41	84-15-1	
n-Triacontane (S)	94	%	50-150	1	12/13/19 13:20	12/16/19 12:41	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	68.3J	ug/L	100	1		12/17/19 20:55		
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%	50-150	1		12/17/19 20:55	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	103000	ug/L	3300	1	01/07/20 08:15	01/07/20 14:06		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	3.7	ug/L	0.50	1	12/16/19 06:16	12/18/19 09:30	7440-38-2	
Manganese, Dissolved	1240	ug/L	5.0	10	12/16/19 06:16	12/18/19 09:38	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	83-32-9	
Acenaphthylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	208-96-8	
Anthracene	0.014J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	56-55-3	
Benzo(a)pyrene	0.012J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	50-32-8	
Benzo(b)fluoranthene	0.017J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	205-99-2	
Benzo(g,h,i)perylene	0.018J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	191-24-2	
Benzo(k)fluoranthene	0.023J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	207-08-9	
Chrysene	0.023J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	218-01-9	
Dibenz(a,h)anthracene	0.018J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	53-70-3	
Fluoranthene	0.026J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	206-44-0	
Fluorene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	86-73-7	
Indeno(1,2,3-cd)pyrene	0.019J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	193-39-5	
1-Methylnaphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	91-57-6	
Naphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	91-20-3	
Phenanthrene	0.019J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	85-01-8	
Pyrene	0.025J	ug/L	0.038	1	12/13/19 14:39	12/16/19 16:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%	47-125	1	12/13/19 14:39	12/16/19 16:53	321-60-8	
p-Terphenyl-d14 (S)	73	%	62-125	1	12/13/19 14:39	12/16/19 16:53	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/22/19 19:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 19:41	100-41-4	
Toluene	ND	ug/L	1.0	1		12/22/19 19:41	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/22/19 19:41	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-40-201912		Lab ID: 10502419002		Collected: 12/12/19 09:30	Received: 12/13/19 09:00	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/22/19 19:41	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%.	75-125	1		12/22/19 19:41	17060-07-0	
Toluene-d8 (S)	105	%.	75-125	1		12/22/19 19:41	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1		12/22/19 19:41	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	112	mg/L	5.0	1		12/13/19 14:21		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	38.8	mg/L	1.2	1		12/14/19 09:51	14808-79-8	M1
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/13/19 12:44	14797-55-8	FS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-28-201912	Lab ID: 10502419003	Collected: 12/12/19 11:10	Received: 12/13/19 09:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.071J	mg/L	0.40	1	12/13/19 13:20	12/16/19 12:52	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	12/13/19 13:20	12/16/19 12:52	64742-65-0	
Surrogates								
o-Terphenyl (S)	75	%	50-150	1	12/13/19 13:20	12/16/19 12:52	84-15-1	
n-Triacontane (S)	92	%	50-150	1	12/13/19 13:20	12/16/19 12:52	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	ND	ug/L	100	1		12/17/19 21:12		
Surrogates								
a,a,a-Trifluorotoluene (S)	96	%	50-150	1		12/17/19 21:12	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	45300	ug/L	3300	1	01/07/20 08:15	01/07/20 14:07		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	ND	ug/L	0.50	1	12/16/19 06:16	12/18/19 09:34	7440-38-2	
Manganese, Dissolved	5.3	ug/L	0.50	1	12/16/19 06:16	12/18/19 09:34	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	83-32-9	
Acenaphthylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	53-70-3	
Fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	206-44-0	
Fluorene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	193-39-5	
1-Methylnaphthalene	0.0058J	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	90-12-0	
2-Methylnaphthalene	0.011J	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	91-57-6	
Naphthalene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	85-01-8	
Pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	69	%	47-125	1	12/13/19 14:39	12/16/19 17:14	321-60-8	
p-Terphenyl-d14 (S)	78	%	62-125	1	12/13/19 14:39	12/16/19 17:14	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	1.0	1		12/22/19 19:58	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 19:58	100-41-4	
Toluene	ND	ug/L	1.0	1		12/22/19 19:58	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		12/22/19 19:58	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-28-201912		Lab ID: 10502419003	Collected: 12/12/19 11:10	Received: 12/13/19 09:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/22/19 19:58	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	75-125	1		12/22/19 19:58	17060-07-0	
Toluene-d8 (S)	107	%	75-125	1		12/22/19 19:58	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		12/22/19 19:58	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	51.7	mg/L	5.0	1		12/13/19 14:50		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	7.4	mg/L	1.2	1		12/14/19 14:20	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	0.97	mg/L	0.10	1		12/13/19 12:45	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: PEO-MW-26-201912	Lab ID: 10502419004	Collected: 12/12/19 12:40	Received: 12/13/19 09:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.30J	mg/L	0.41	1	12/13/19 13:20	12/16/19 13:04	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.41	1	12/13/19 13:20	12/16/19 13:04	64742-65-0	
Surrogates								
o-Terphenyl (S)	85	%	50-150	1	12/13/19 13:20	12/16/19 13:04	84-15-1	
n-Triacontane (S)	100	%	50-150	1	12/13/19 13:20	12/16/19 13:04	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	188	ug/L	100	1		12/17/19 21:28		
Surrogates								
a,a,a-Trifluorotoluene (S)	102	%	50-150	1		12/17/19 21:28	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	36300	ug/L	3300	1	01/07/20 08:15	01/07/20 14:09		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	1.3	ug/L	0.50	1	12/16/19 06:16	12/17/19 11:59	7440-38-2	
Manganese, Dissolved	194	ug/L	0.50	1	12/16/19 06:16	12/17/19 11:59	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.12	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	83-32-9	
Acenaphthylene	0.0060J	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	53-70-3	
Fluoranthene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	206-44-0	
Fluorene	0.10	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	193-39-5	
1-Methylnaphthalene	0.040	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	90-12-0	
2-Methylnaphthalene	0.0071J	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	91-57-6	
Naphthalene	0.042	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	85-01-8	
Pyrene	ND	ug/L	0.038	1	12/13/19 14:39	12/16/19 17:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%	47-125	1	12/13/19 14:39	12/16/19 17:35	321-60-8	
p-Terphenyl-d14 (S)	79	%	62-125	1	12/13/19 14:39	12/16/19 17:35	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.11J	ug/L	1.0	1		12/22/19 20:15	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 20:15	100-41-4	
Toluene	0.43J	ug/L	1.0	1		12/22/19 20:15	108-88-3	
m&p-Xylene	0.33J	ug/L	2.0	1		12/22/19 20:15	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: PEO-MW-26-201912								
Lab ID: 10502419004								
Collected: 12/12/19 12:40								
Received: 12/13/19 09:00								
Matrix: Water								
8260B MSV UST								
Analytical Method: EPA 8260B								
o-Xylene	0.49J	ug/L	1.0	1		12/22/19 20:15	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%.	75-125	1		12/22/19 20:15	17060-07-0	
Toluene-d8 (S)	107	%.	75-125	1		12/22/19 20:15	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		12/22/19 20:15	460-00-4	
2320B Alkalinity								
Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	40.3	mg/L	5.0	1		12/13/19 14:55		
300.0 IC Anions								
Analytical Method: EPA 300.0								
Sulfate	20.8	mg/L	1.2	1		12/14/19 19:45	14808-79-8	
353.2 Nitrate + Nitrite								
Analytical Method: EPA 353.2								
Nitrate as N	0.24	mg/L	0.10	1		12/13/19 12:46	14797-55-8	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502419

Sample: Trip Blank		Lab ID: 10502419005	Collected: 12/12/19 08:00	Received: 12/13/19 09:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
NWTPH-Gx GCV		Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		12/20/19 02:56			
Surrogates									
a,a,a-Trifluorotoluene (S)	92	%.	50-150	1		12/20/19 02:56	98-08-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502419

QC Batch: 650404 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3497375 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/17/19 16:06	
a,a,a-Trifluorotoluene (S)	%.	103	50-150	12/17/19 16:06	

METHOD BLANK: 3497376 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/17/19 19:13	
a,a,a-Trifluorotoluene (S)	%.	99	50-150	12/17/19 19:13	

LABORATORY CONTROL SAMPLE & LCSD: 3497377 3497378

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1100	984	110	98	75-125	11	20	
a,a,a-Trifluorotoluene (S)	%.				113	105	50-150			

SAMPLE DUPLICATE: 3497764

Parameter	Units	10502275003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	70.5J	69.2J		30	
a,a,a-Trifluorotoluene (S)	%.	101	102			

SAMPLE DUPLICATE: 3497765

Parameter	Units	10502306005 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	82.2J	72.0J		30	
a,a,a-Trifluorotoluene (S)	%.	101	98			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502419

QC Batch: 651015 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502419005

METHOD BLANK: 3500851 Matrix: Water
Associated Lab Samples: 10502419005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/19/19 19:02	
a,a,a-Trifluorotoluene (S)	%.	97	50-150	12/19/19 19:02	

METHOD BLANK: 3500852 Matrix: Water
Associated Lab Samples: 10502419005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/19/19 22:08	
a,a,a-Trifluorotoluene (S)	%.	88	50-150	12/19/19 22:08	

LABORATORY CONTROL SAMPLE & LCSD: 3500853 3500854

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1150	1010	115	101	75-125	13	20	
a,a,a-Trifluorotoluene (S)	%.				110	101	50-150			

SAMPLE DUPLICATE: 3500863

Parameter	Units	10502911003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	53.5J		30	
a,a,a-Trifluorotoluene (S)	%.	93	97			

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502419

QC Batch: 650076 Analysis Method: EPA 6020A
 QC Batch Method: EPA 3020 Analysis Description: 6020A Water Dissolved UPD4
 Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3496308 Matrix: Water
 Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/17/19 11:06	
Manganese, Dissolved	ug/L	ND	0.50	12/17/19 11:06	

LABORATORY CONTROL SAMPLE: 3496309

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.3	93	80-120	
Manganese, Dissolved	ug/L	100	95.6	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3496310 3496311

Parameter	Units	10502419001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	2.8	100	100	95.2	96.9	92	94	75-125	2	20	
Manganese, Dissolved	ug/L	349	100	100	434	430	86	82	75-125	1	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502419

QC Batch: 651363 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3503040 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/22/19 16:01	
Ethylbenzene	ug/L	ND	1.0	12/22/19 16:01	
m&p-Xylene	ug/L	ND	2.0	12/22/19 16:01	
o-Xylene	ug/L	ND	1.0	12/22/19 16:01	
Toluene	ug/L	ND	1.0	12/22/19 16:01	
1,2-Dichloroethane-d4 (S)	%	92	75-125	12/22/19 16:01	
4-Bromofluorobenzene (S)	%	102	75-125	12/22/19 16:01	
Toluene-d8 (S)	%	105	75-125	12/22/19 16:01	

LABORATORY CONTROL SAMPLE: 3503041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.4	82	75-125	
Ethylbenzene	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	40.1	100	75-125	
o-Xylene	ug/L	20	21.2	106	75-125	
Toluene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-125	
4-Bromofluorobenzene (S)	%			105	75-125	
Toluene-d8 (S)	%			105	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503206 3503207

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502651001 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	31.1	20	20	20	48.3	46.4	86	76	30-150	4	30	
Ethylbenzene	ug/L	6.6	20	20	20	28.3	27.6	109	105	30-150	3	30	
m&p-Xylene	ug/L	30.5	40	40	40	72.9	70.6	106	100	30-150	3	30	
o-Xylene	ug/L	11.7	20	20	20	33.9	32.9	111	106	30-150	3	30	
Toluene	ug/L	31.4	20	20	20	51.7	48.7	101	87	30-150	6	30	
1,2-Dichloroethane-d4 (S)	%							105	103	75-125			
4-Bromofluorobenzene (S)	%							103	108	75-125			
Toluene-d8 (S)	%							107	106	75-125			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502419

QC Batch: 649911 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3494884 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	12/16/19 09:53	
2-Methylnaphthalene	ug/L	ND	0.040	12/16/19 09:53	
Acenaphthene	ug/L	ND	0.040	12/16/19 09:53	
Acenaphthylene	ug/L	ND	0.040	12/16/19 09:53	
Anthracene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(a)anthracene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(a)pyrene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(b)fluoranthene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(g,h,i)perylene	ug/L	ND	0.040	12/16/19 09:53	
Benzo(k)fluoranthene	ug/L	ND	0.040	12/16/19 09:53	
Chrysene	ug/L	ND	0.040	12/16/19 09:53	
Dibenz(a,h)anthracene	ug/L	ND	0.040	12/16/19 09:53	
Fluoranthene	ug/L	ND	0.040	12/16/19 09:53	
Fluorene	ug/L	ND	0.040	12/16/19 09:53	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	12/16/19 09:53	
Naphthalene	ug/L	ND	0.040	12/16/19 09:53	
Phenanthrene	ug/L	ND	0.040	12/16/19 09:53	
Pyrene	ug/L	ND	0.040	12/16/19 09:53	
2-Fluorobiphenyl (S)	%	63	47-125	12/16/19 09:53	
p-Terphenyl-d14 (S)	%	66	62-125	12/16/19 09:53	

LABORATORY CONTROL SAMPLE & LCSD: 3494885

Parameter	Units	Spike Conc.	3494886		3494886		% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result	LCS % Rec	LCSD % Rec				
1-Methylnaphthalene	ug/L	1	0.67	0.75	67	75	31-125	12	20	
2-Methylnaphthalene	ug/L	1	0.64	0.73	64	73	43-125	14	20	
Acenaphthene	ug/L	1	0.68	0.76	68	76	50-125	11	20	
Acenaphthylene	ug/L	1	0.67	0.75	67	75	46-125	11	20	
Anthracene	ug/L	1	0.81	0.80	81	80	59-125	2	20	
Benzo(a)anthracene	ug/L	1	0.69	0.69	69	69	55-125	0	20	
Benzo(a)pyrene	ug/L	1	0.75	0.77	75	77	66-125	2	20	
Benzo(b)fluoranthene	ug/L	1	0.78	0.81	78	81	64-125	3	20	
Benzo(g,h,i)perylene	ug/L	1	0.76	0.78	76	78	58-125	3	20	
Benzo(k)fluoranthene	ug/L	1	0.73	0.73	73	73	60-125	1	20	
Chrysene	ug/L	1	0.79	0.79	79	79	62-125	1	20	
Dibenz(a,h)anthracene	ug/L	1	0.77	0.78	77	78	51-125	2	20	
Fluoranthene	ug/L	1	0.78	0.77	78	77	64-125	1	20	
Fluorene	ug/L	1	0.70	0.76	70	76	55-125	8	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.77	0.78	77	78	61-125	2	20	
Naphthalene	ug/L	1	0.66	0.75	66	75	48-125	13	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502419

LABORATORY CONTROL SAMPLE & LCSD:		3494885	3494886								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Phenanthrene	ug/L	1	0.79	0.81	79	81	63-125	2	20		
Pyrene	ug/L	1	0.75	0.76	75	76	61-125	1	20		
2-Fluorobiphenyl (S)	%.				78	84	47-125				
p-Terphenyl-d14 (S)	%.				86	83	62-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502419

QC Batch: 649913 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3494891 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/16/19 11:43	
Motor Oil Range SG	mg/L	ND	0.40	12/16/19 11:43	
n-Triacontane (S)	%.	97	50-150	12/16/19 11:43	
o-Terphenyl (S)	%.	91	50-150	12/16/19 11:43	

LABORATORY CONTROL SAMPLE & LCSD: 3494892

Parameter	Units	3494893								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.8	1.8	90	90	50-150	0	20	
Motor Oil Range SG	mg/L	2	1.9	1.9	96	95	50-150	1	20	
n-Triacontane (S)	%.				97	84	50-150			
o-Terphenyl (S)	%.				91	90	50-150			

SAMPLE DUPLICATE: 3494894

Parameter	Units	10502419001				
		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)	%.	89	95			
o-Terphenyl (S)	%.	81	86			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502419

QC Batch: 649944 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3495013 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	12/13/19 13:41	

LABORATORY CONTROL SAMPLE & LCSD: 3495014 3495015

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.5	42.6	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3495016 3495017

Parameter	Units	10502415001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	37.3	40	40	64.0	65.6	67	71	80-120	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3495018 3495019

Parameter	Units	10502419001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	78.6	40	40	112	112	84	83	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502419

QC Batch: 649893 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3494804 Matrix: Water
Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	0.49J	1.2	12/14/19 08:35	

LABORATORY CONTROL SAMPLE: 3494805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	12.5	11.5	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494806 3494807

Parameter	Units	10502419001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	1.3	12.5	12.5	15.6	15.6	114	114	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3494808 3494809

Parameter	Units	10502419002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	38.8	12.5	12.5	47.0	47.4	66	69	90-110	1	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502419

QC Batch: 649887

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

METHOD BLANK: 3494777

Matrix: Water

Associated Lab Samples: 10502419001, 10502419002, 10502419003, 10502419004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	12/13/19 12:49	FS

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 499738-Revised Report

Pace Project No.: 10502419

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.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 650119

[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.

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

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

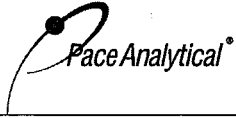
Project: 499738-Revised Report

Pace Project No.: 10502419

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502419001	PEO-MW-41-201912	EPA Mod. 3510C	649913	NWTPH-Dx	650209
10502419002	PEO-MW-40-201912	EPA Mod. 3510C	649913	NWTPH-Dx	650209
10502419003	PEO-MW-28-201912	EPA Mod. 3510C	649913	NWTPH-Dx	650209
10502419004	PEO-MW-26-201912	EPA Mod. 3510C	649913	NWTPH-Dx	650209
10502419001	PEO-MW-41-201912	NWTPH-Gx	650404		
10502419002	PEO-MW-40-201912	NWTPH-Gx	650404		
10502419003	PEO-MW-28-201912	NWTPH-Gx	650404		
10502419004	PEO-MW-26-201912	NWTPH-Gx	650404		
10502419005	Trip Blank	NWTPH-Gx	651015		
10502419001	PEO-MW-41-201912	EPA 3010	653202	EPA 6010D	653331
10502419002	PEO-MW-40-201912	EPA 3010	653202	EPA 6010D	653331
10502419003	PEO-MW-28-201912	EPA 3010	653202	EPA 6010D	653331
10502419004	PEO-MW-26-201912	EPA 3010	653202	EPA 6010D	653331
10502419001	PEO-MW-41-201912	EPA 3020	650076	EPA 6020A	650262
10502419002	PEO-MW-40-201912	EPA 3020	650076	EPA 6020A	650262
10502419003	PEO-MW-28-201912	EPA 3020	650076	EPA 6020A	650262
10502419004	PEO-MW-26-201912	EPA 3020	650076	EPA 6020A	650262
10502419001	PEO-MW-41-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502419002	PEO-MW-40-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502419003	PEO-MW-28-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502419004	PEO-MW-26-201912	EPA Mod. 3510C	649911	EPA 8270 by SIM	650119
10502419001	PEO-MW-41-201912	EPA 8260B	651363		
10502419002	PEO-MW-40-201912	EPA 8260B	651363		
10502419003	PEO-MW-28-201912	EPA 8260B	651363		
10502419004	PEO-MW-26-201912	EPA 8260B	651363		
10502419001	PEO-MW-41-201912	SM 2320B	649944		
10502419002	PEO-MW-40-201912	SM 2320B	649944		
10502419003	PEO-MW-28-201912	SM 2320B	649944		
10502419004	PEO-MW-26-201912	SM 2320B	649944		
10502419001	PEO-MW-41-201912	EPA 300.0	649893		
10502419002	PEO-MW-40-201912	EPA 300.0	649893		
10502419003	PEO-MW-28-201912	EPA 300.0	649893		
10502419004	PEO-MW-26-201912	EPA 300.0	649893		
10502419001	PEO-MW-41-201912	EPA 353.2	649887		
10502419002	PEO-MW-40-201912	EPA 353.2	649887		
10502419003	PEO-MW-28-201912	EPA 353.2	649887		
10502419004	PEO-MW-26-201912	EPA 353.2	649887		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Sample Condition Upon Receipt Form	Document Revised: 14Nov2019 Page 1 of 1
	Document No.: F-MN-L-213-rev.30	Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt **Client Name:** ERM **Project #:** **WO# : 10502419**

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exceptions

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 1.3, 0.4, 1.3 °C **Average Corrected Temp**
Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:** 1.2, 0.3, 1.2 °C (no temp blank only): See Exceptions
 1 Container

USDA Regulated Soil: N/A, water sample/Other: _____ **Date/Initials of Person Examining Contents:** 12/13/19

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? ^{MB 12/13/19}	<input checked="" 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: See Exception <input type="checkbox"/>
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>1-4: 1/1 1/1</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes See Exception Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/B015 (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>203619</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. See Exception <input type="checkbox"/>
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.
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>236154</u>

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Julie B... **Date:** 12/13/19

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: 499738

Work Order Number: 1912280

January 02, 2020

Attention Julie Bowser:

Fremont Analytical, Inc. received 5 sample(s) on 12/17/2019 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

CLIENT: Pace Analytical Minnesota
Project: 499738
Work Order: 1912280

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912280-001	PEO-MW-41-201912	12/12/2019 8:25 AM	12/17/2019 9:44 AM
1912280-002	PEO-MW-40-201912	12/12/2019 9:30 AM	12/17/2019 9:44 AM
1912280-003	PEO-MW-28-201912	12/12/2019 11:10 AM	12/17/2019 9:44 AM
1912280-004	PEO-MW-26-201912	12/12/2019 12:40 PM	12/17/2019 9:44 AM
1912280-005	Trip Blank	12/12/2019 8:00 AM	12/17/2019 9:44 AM

CLIENT: Pace Analytical Minnesota

Project: 499738

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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912280-001

Collection Date: 12/12/2019 8:25:00 AM

Client Sample ID: PEO-MW-41-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.87		µg/L	1	12/30/2019 1:40:00 PM
Surr: 1-Chlorooctadecane	68.7	60 - 140		%Rec	1	12/30/2019 1:40:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 4:44:21 PM
Surr: 1,4-Difluorobenzene	96.7	65 - 140		%Rec	1	12/19/2019 4:44:21 PM
Surr: Bromofluorobenzene	96.5	65 - 140		%Rec	1	12/19/2019 4:44:21 PM

Lab ID: 1912280-002

Collection Date: 12/12/2019 9:30:00 AM

Client Sample ID: PEO-MW-40-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.85		µg/L	1	12/30/2019 3:08:00 PM
Surr: 1-Chlorooctadecane	72.7	60 - 140		%Rec	1	12/30/2019 3:08:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 5:25:31 PM
Surr: 1,4-Difluorobenzene	101	65 - 140		%Rec	1	12/19/2019 5:25:31 PM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	12/19/2019 5:25:31 PM



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912280-003

Collection Date: 12/12/2019 11:10:00 AM

Client Sample ID: PEO-MW-28-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.86		µg/L	1	12/30/2019 5:19:00 PM
Surr: 1-Chlorooctadecane	71.6	60 - 140		%Rec	1	12/30/2019 5:19:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 6:06:49 PM
Surr: 1,4-Difluorobenzene	101	65 - 140		%Rec	1	12/19/2019 6:06:49 PM
Surr: Bromofluorobenzene	102	65 - 140		%Rec	1	12/19/2019 6:06:49 PM

Lab ID: 1912280-004

Collection Date: 12/12/2019 12:40:00 PM

Client Sample ID: PEO-MW-26-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.91		µg/L	1	12/30/2019 6:03:00 PM
Surr: 1-Chlorooctadecane	77.1	60 - 140		%Rec	1	12/30/2019 6:03:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 6:48:08 PM
Surr: 1,4-Difluorobenzene	96.0	65 - 140		%Rec	1	12/19/2019 6:48:08 PM
Surr: Bromofluorobenzene	96.6	65 - 140		%Rec	1	12/19/2019 6:48:08 PM

Work Order: 1912280
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-26903	SampType: MBLK	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: MBLKW	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122011							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.8		0	0						
Surr: 1-Chlorooctadecane	1,490		1,983		75.3	60	140				

Sample ID: LCS-26903	SampType: LCS	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: LCSW	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122010							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	2,020	19.8	2,476	0	81.6	70	130				
Surr: 1-Chlorooctadecane	1,700		1,981		85.6	60	140				

Sample ID: 1912280-001BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: PEO-MW-41-201912	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122009							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.1		0	0			8.160	200	25	
Surr: 1-Chlorooctadecane	1,290		2,013		64.1	60	140		0		

Sample ID: 1912280-002BMS	SampType: MS	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: PEO-MW-40-201912	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122015							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,970	20.0	2,498	0	78.9	70	130				
Surr: 1-Chlorooctadecane	1,670		1,998		83.8	60	140				

Sample ID: 1912280-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: PEO-MW-40-201912	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122016							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,800	19.5	2,441	0	73.7	70	130	1,972	9.20	30	
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Work Order: 1912280
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: 1912280-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: PEO-MW-40-201912	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122016							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	1,520		1,952		77.7	60	140			0	

Work Order: 1912280
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-26888	SampType: LCS	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: LCSW	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121042							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	202	20.0	200.0	0	101	70	130				
Surr: 1,4-Difluorobenzene	52.0		50.00		104	65	140				
Surr: Bromofluorobenzene	48.7		50.00		97.4	65	140				

Sample ID: LCSD-26888	SampType: LCSD	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: LCSW02	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121043							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	207	20.0	200.0	0	104	70	130	201.8	2.60	20	
Surr: 1,4-Difluorobenzene	51.8		50.00		104	65	140		0		
Surr: Bromofluorobenzene	48.2		50.00		96.3	65	140		0		

Sample ID: MB-26888	SampType: MBLK	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: MBLKW	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121044							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Surr: 1,4-Difluorobenzene	47.7		50.00		95.3	65	140				
Surr: Bromofluorobenzene	47.8		50.00		95.6	65	140				

Sample ID: 1912282-005ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: BATCH	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121017							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	51.2		50.00		102	65	140		0		
Surr: Bromofluorobenzene	49.2		50.00		98.4	65	140		0		

Work Order: 1912280
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 1912316-004ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: BATCH	Batch ID: 26888		Analysis Date: 12/20/2019	SeqNo: 1121030							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	182	20.0		0	0			288.9	45.3	25	R
Surr: 1,4-Difluorobenzene	49.3		50.00		98.6	65	140		0		
Surr: Bromofluorobenzene	49.3		50.00		98.7	65	140		0		

NOTES:

R - High RPD observed. The method is in control as indicated by the LCS.

Client Name: **PACEMINN**

 Work Order Number: **1912280**

 Logged by: **Clare Griggs**

 Date Received: **12/17/2019 9:44:00 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 Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°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="12/18/2019"/>
By Whom:	<input type="text" value="Clare Griggs"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Did not receive Trip Blank sample per the COC."/>		
Client Instructions:	<input type="text" value="Disregard Trip Blanks"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler 1	2.1
Cooler 2	3.2
Sample 1	1.8
Sample 2	2.1

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

Chain of Custody

PASI Minnesota Laboratory

19122480



Workorder: 10502419 Workorder Name: 499738

Results Requested By: Standard TAT

Report / Invoice To
 Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Suite 200
 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. 10502419

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N	Comments	
					HCL VG9H	Unpreserved AG1U									
1	PEO-MW-41-201912	12/12/2019 08:25	10502419001	Water	3	2				X					
2	PEO-MW-40-201912	12/12/2019 09:30	10502419002	Water	3	2				X					
3	PEO-MW-28-201912	12/12/2019 11:10	10502419003	Water	3	2				X					
4	PEO-MW-26-201912	12/12/2019 12:40	10502419004	Water	3	2				X					
5	Trip Blank	12/12/2019 08:00	10502419005	Water	2	2				X					

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	J. Bowser	12/16/19 16:53	[Signature]	12/17/19 08:44				
2								
3								

Report to MDL and only aliphatic carbon ranges C10-C12 are needed. Need EQUIS EDD as well.

January 10, 2020

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

RE: Project: 499738-Revised Report
Pace Project No.: 10502651

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This report was revised on January 10, 2020 to add total hardness.

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

Emily Ponaski, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 499738-Revised Report

Pace Project No.: 10502651

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #:74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 499738-Revised Report
Pace Project No.: 10502651

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10502651001	PEO-MW-36-201912	Water	12/13/19 08:30	12/14/19 10:00
10502651002	PEO-MW-27-201912	Water	12/13/19 09:35	12/14/19 10:00
10502651003	PEO-MW-39-201912	Water	12/13/19 11:05	12/14/19 10:00
10502651004	PEO-MW-38-201912	Water	12/13/19 12:05	12/14/19 10:00
10502651005	PEO-MW-37-201912	Water	12/13/19 13:15	12/14/19 10:00
10502651006	TRIP BLANK	Water	12/13/19 08:00	12/14/19 10:00
10502651007	PEO-MW-Z1-201912	Water	12/13/19 09:40	12/14/19 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report
Pace Project No.: 10502651

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10502651001	PEO-MW-36-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502651002	PEO-MW-27-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502651003	PEO-MW-39-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502651004	PEO-MW-38-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502651005	PEO-MW-37-201912	NWTPH-Dx	EC2	4	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report

Pace Project No.: 10502651

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502651006	TRIP BLANK	NWTPH-Gx	MJD	2	PASI-M
10502651007	PEO-MW-Z1-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	RJS	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-36-201912	Lab ID: 10502651001	Collected: 12/13/19 08:30	Received: 12/14/19 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	3.6	mg/L	0.43	1	12/23/19 13:42	12/27/19 18:44	68334-30-5	
Motor Oil Range SG	0.21J	mg/L	0.43	1	12/23/19 13:42	12/27/19 18:44	64742-65-0	
Surrogates								
o-Terphenyl (S)	52	%	50-150	1	12/23/19 13:42	12/27/19 18:44	84-15-1	
n-Triacontane (S)	57	%	50-150	1	12/23/19 13:42	12/27/19 18:44	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	2910	ug/L	200	2		12/17/19 23:27		G+,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	102	%	50-150	2		12/17/19 23:27	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	160000	ug/L	3300	1	01/07/20 08:15	01/07/20 14:11		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	34.5	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:03	7440-38-2	
Manganese, Dissolved	2430	ug/L	5.0	10	12/16/19 06:16	12/17/19 12:08	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	1.2	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	83-32-9	
Acenaphthylene	0.11	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	208-96-8	
Anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	120-12-7	
Benzo(a)anthracene	0.011J	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	53-70-3	
Fluoranthene	0.030J	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	206-44-0	
Fluorene	1.2	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	193-39-5	
1-Methylnaphthalene	0.79	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	90-12-0	
2-Methylnaphthalene	0.20	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	91-57-6	
Naphthalene	0.57	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	91-20-3	
Phenanthrene	0.14	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	85-01-8	
Pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 11:18	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	55	%	47-125	1	12/16/19 09:04	12/17/19 11:18	321-60-8	
p-Terphenyl-d14 (S)	54	%	62-125	1	12/16/19 09:04	12/17/19 11:18	1718-51-0	1M
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	31.1	ug/L	1.0	1		12/22/19 16:51	71-43-2	
Ethylbenzene	6.6	ug/L	1.0	1		12/22/19 16:51	100-41-4	
Toluene	31.4	ug/L	1.0	1		12/22/19 16:51	108-88-3	
m&p-Xylene	30.5	ug/L	2.0	1		12/22/19 16:51	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-36-201912		Lab ID: 10502651001		Collected: 12/13/19 08:30		Received: 12/14/19 10:00		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260B MSV UST		Analytical Method: EPA 8260B							
o-Xylene	11.7	ug/L	1.0	1		12/22/19 16:51	95-47-6		
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		12/22/19 16:51	17060-07-0		
Toluene-d8 (S)	102	%.	75-125	1		12/22/19 16:51	2037-26-5		
4-Bromofluorobenzene (S)	107	%.	75-125	1		12/22/19 16:51	460-00-4		
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	226	mg/L	5.0	1		12/17/19 13:37			
300.0 IC Anions		Analytical Method: EPA 300.0							
Sulfate	0.61J	mg/L	1.2	1		12/22/19 11:32	14808-79-8	B	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrate as N	ND	mg/L	0.10	1		12/18/19 11:53	14797-55-8	FS,H5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report
Pace Project No.: 10502651

Sample: PEO-MW-27-201912	Lab ID: 10502651002	Collected: 12/13/19 09:35	Received: 12/14/19 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.74	mg/L	0.43	1	12/23/19 13:42	12/27/19 18:56	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.43	1	12/23/19 13:42	12/27/19 18:56	64742-65-0	P2
Surrogates								
o-Terphenyl (S)	38	%	50-150	1	12/23/19 13:42	12/27/19 18:56	84-15-1	S0
n-Triacontane (S)	47	%	50-150	1	12/23/19 13:42	12/27/19 18:56	638-68-6	S0
NWTPH-Gx GCV Analytical Method: NWTPH-Gx								
TPH as Gas	1090	ug/L	200	2		12/17/19 22:36		G+
Surrogates								
a,a,a-Trifluorotoluene (S)	93	%	50-150	2		12/17/19 22:36	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	88800	ug/L	3300	1	01/07/20 08:15	01/07/20 14:12		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	28.4	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:12	7440-38-2	
Manganese, Dissolved	1750	ug/L	5.0	10	12/16/19 06:16	12/17/19 12:16	7439-96-5	
8270 MSSV PAH by SIM Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.75	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	83-32-9	
Acenaphthylene	0.20	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	208-96-8	
Anthracene	0.091	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	207-08-9	
Chrysene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	53-70-3	
Fluoranthene	0.036J	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	206-44-0	
Fluorene	0.91	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	193-39-5	
1-Methylnaphthalene	0.60	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	90-12-0	
2-Methylnaphthalene	0.042	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	91-57-6	
Naphthalene	0.37	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	91-20-3	
Phenanthrene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	85-01-8	
Pyrene	0.025J	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%	47-125	1	12/16/19 09:04	12/17/19 11:39	321-60-8	
p-Terphenyl-d14 (S)	85	%	62-125	1	12/16/19 09:04	12/17/19 11:39	1718-51-0	
8260B MSV UST Analytical Method: EPA 8260B								
Benzene	2.7	ug/L	1.0	1		12/22/19 17:08	71-43-2	
Ethylbenzene	0.40J	ug/L	1.0	1		12/22/19 17:08	100-41-4	
Toluene	0.55J	ug/L	1.0	1		12/22/19 17:08	108-88-3	
m&p-Xylene	0.46J	ug/L	2.0	1		12/22/19 17:08	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: PEO-MW-27-201912								
Lab ID: 10502651002								
Collected: 12/13/19 09:35								
Received: 12/14/19 10:00								
Matrix: Water								
8260B MSV UST								
Analytical Method: EPA 8260B								
o-Xylene	0.20J	ug/L	1.0	1		12/22/19 17:08	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	75-125	1		12/22/19 17:08	17060-07-0	
Toluene-d8 (S)	105	%	75-125	1		12/22/19 17:08	2037-26-5	
4-Bromofluorobenzene (S)	105	%	75-125	1		12/22/19 17:08	460-00-4	
2320B Alkalinity								
Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	72.9	mg/L	5.0	1		12/17/19 13:46		
300.0 IC Anions								
Analytical Method: EPA 300.0								
Sulfate	74.7	mg/L	1.2	1		12/22/19 11:51	14808-79-8	
353.2 Nitrate + Nitrite								
Analytical Method: EPA 353.2								
Nitrate as N	ND	mg/L	0.10	1		12/18/19 11:54	14797-55-8	FS,H5

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-39-201912	Lab ID: 10502651003	Collected: 12/13/19 11:05	Received: 12/14/19 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	5.4	mg/L	0.43	1	12/23/19 13:42	12/27/19 19:07	68334-30-5	
Motor Oil Range SG	0.25J	mg/L	0.43	1	12/23/19 13:42	12/27/19 19:07	64742-65-0	
Surrogates								
o-Terphenyl (S)	60	%	50-150	1	12/23/19 13:42	12/27/19 19:07	84-15-1	
n-Triacontane (S)	69	%	50-150	1	12/23/19 13:42	12/27/19 19:07	638-68-6	
NWTPH-Gx GCV Analytical Method: NWTPH-Gx								
TPH as Gas	5260	ug/L	500	5		12/17/19 23:10		G+,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	103	%	50-150	5		12/17/19 23:10	98-08-8	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	180000	ug/L	3300	1	01/07/20 08:15	01/07/20 14:17		
6020A MET ICPMS, Dissolved Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	35.1	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:20	7440-38-2	
Manganese, Dissolved	3150	ug/L	5.0	10	12/16/19 06:16	12/17/19 12:25	7439-96-5	
8270 MSSV PAH by SIM Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	1.3	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	83-32-9	
Acenaphthylene	0.18	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	208-96-8	
Anthracene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	120-12-7	
Benzo(a)anthracene	0.017J	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	56-55-3	
Benzo(a)pyrene	0.0070J	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	207-08-9	
Chrysene	0.014J	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	53-70-3	
Fluoranthene	0.079	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	206-44-0	
Fluorene	1.9	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	193-39-5	
1-Methylnaphthalene	5.2	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	90-12-0	
2-Methylnaphthalene	0.23	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	91-57-6	
Naphthalene	2.2	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	91-20-3	
Phenanthrene	0.28	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	85-01-8	
Pyrene	0.083	ug/L	0.038	1	12/16/19 09:04	12/17/19 11:59	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	47-125	1	12/16/19 09:04	12/17/19 11:59	321-60-8	
p-Terphenyl-d14 (S)	88	%	62-125	1	12/16/19 09:04	12/17/19 11:59	1718-51-0	
8260B MSV UST Analytical Method: EPA 8260B								
Benzene	65.5	ug/L	1.0	1		12/22/19 17:25	71-43-2	
Ethylbenzene	12.2	ug/L	1.0	1		12/22/19 17:25	100-41-4	
Toluene	41.6	ug/L	1.0	1		12/22/19 17:25	108-88-3	
m&p-Xylene	52.0	ug/L	2.0	1		12/22/19 17:25	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-39-201912		Lab ID: 10502651003	Collected: 12/13/19 11:05	Received: 12/14/19 10:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	16.8	ug/L	1.0	1		12/22/19 17:25	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-125	1		12/22/19 17:25	17060-07-0	
Toluene-d8 (S)	108	%.	75-125	1		12/22/19 17:25	2037-26-5	
4-Bromofluorobenzene (S)	107	%.	75-125	1		12/22/19 17:25	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	279	mg/L	5.0	1		12/17/19 13:50		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	0.63J	mg/L	1.2	1		12/22/19 13:27	14808-79-8	B
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/18/19 11:55	14797-55-8	FS,H5

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-38-201912	Lab ID: 10502651004	Collected: 12/13/19 12:05	Received: 12/14/19 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	23.2	mg/L	2.0	5	12/23/19 13:42	12/27/19 18:33	68334-30-5	
Motor Oil Range SG	0.59	mg/L	0.41	1	12/23/19 13:42	12/27/19 18:21	64742-65-0	
Surrogates								
o-Terphenyl (S)	76	%	50-150	1	12/23/19 13:42	12/27/19 18:21	84-15-1	
n-Triacontane (S)	59	%	50-150	1	12/23/19 13:42	12/27/19 18:21	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	8150	ug/L	500	5		12/17/19 22:53		G+,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	99	%	50-150	5		12/17/19 22:53	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	113000	ug/L	3300	1	01/07/20 08:15	01/07/20 14:19		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	37.5	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:29	7440-38-2	
Manganese, Dissolved	2000	ug/L	5.0	10	12/16/19 06:16	12/17/19 12:33	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	1.7	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	83-32-9	
Acenaphthylene	3.5	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	208-96-8	
Anthracene	0.62	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	120-12-7	
Benzo(a)anthracene	0.13	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	56-55-3	
Benzo(a)pyrene	0.070	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	50-32-8	
Benzo(b)fluoranthene	0.075	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	205-99-2	
Benzo(g,h,i)perylene	0.041	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	191-24-2	
Benzo(k)fluoranthene	0.025J	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	207-08-9	
Chrysene	0.19	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	53-70-3	
Fluoranthene	0.43	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	206-44-0	
Fluorene	3.2	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	86-73-7	
Indeno(1,2,3-cd)pyrene	0.030J	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	193-39-5	
1-Methylnaphthalene	2.5	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	90-12-0	
2-Methylnaphthalene	0.78	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	91-57-6	
Naphthalene	6.6	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	91-20-3	
Phenanthrene	4.2	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	85-01-8	
Pyrene	0.47	ug/L	0.038	1	12/16/19 09:04	12/17/19 12:21	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	56	%	47-125	1	12/16/19 09:04	12/17/19 12:21	321-60-8	
p-Terphenyl-d14 (S)	82	%	62-125	1	12/16/19 09:04	12/17/19 12:21	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	9.2	ug/L	1.0	1		12/23/19 22:15	71-43-2	
Ethylbenzene	1.4	ug/L	1.0	1		12/23/19 22:15	100-41-4	
Toluene	7.6	ug/L	1.0	1		12/23/19 22:15	108-88-3	
m&p-Xylene	9.0	ug/L	2.0	1		12/23/19 22:15	179601-23-1	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-38-201912		Lab ID: 10502651004	Collected: 12/13/19 12:05	Received: 12/14/19 10:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	3.7	ug/L	1.0	1		12/23/19 22:15	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		12/23/19 22:15	17060-07-0	
Toluene-d8 (S)	114	%.	75-125	1		12/23/19 22:15	2037-26-5	
4-Bromofluorobenzene (S)	137	%.	75-125	1		12/23/19 22:15	460-00-4	S2
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	143	mg/L	5.0	1		12/17/19 14:09		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	0.73J	mg/L	1.2	1		12/22/19 13:46	14808-79-8	B
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/18/19 11:56	14797-55-8	FS,H5

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-37-201912	Lab ID: 10502651005	Collected: 12/13/19 13:15	Received: 12/14/19 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.31J	mg/L	0.45	1	12/23/19 13:42	12/27/19 19:19	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.45	1	12/23/19 13:42	12/27/19 19:19	64742-65-0	
Surrogates								
o-Terphenyl (S)	62	%	50-150	1	12/23/19 13:42	12/27/19 19:19	84-15-1	
n-Triacontane (S)	64	%	50-150	1	12/23/19 13:42	12/27/19 19:19	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	294	ug/L	100	1		12/17/19 22:19		
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%	50-150	1		12/17/19 22:19	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	79700	ug/L	3300	1	01/07/20 08:15	01/07/20 14:21		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	8.7	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:46	7440-38-2	
Manganese, Dissolved	756	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:46	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.068	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	83-32-9	
Acenaphthylene	0.0067J	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	208-96-8	
Anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	53-70-3	
Fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	206-44-0	
Fluorene	0.033J	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	193-39-5	
1-Methylnaphthalene	0.040	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	90-12-0	
2-Methylnaphthalene	0.0077J	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	91-57-6	
Naphthalene	0.043	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	91-20-3	
Phenanthrene	0.025J	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	85-01-8	
Pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 12:42	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%	47-125	1	12/16/19 09:04	12/17/19 12:42	321-60-8	
p-Terphenyl-d14 (S)	82	%	62-125	1	12/16/19 09:04	12/17/19 12:42	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.23J	ug/L	1.0	1		12/22/19 18:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 18:00	100-41-4	
Toluene	0.38J	ug/L	1.0	1		12/22/19 18:00	108-88-3	
m&p-Xylene	0.41J	ug/L	2.0	1		12/22/19 18:00	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: PEO-MW-37-201912		Lab ID: 10502651005	Collected: 12/13/19 13:15	Received: 12/14/19 10:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	0.30J	ug/L	1.0	1		12/22/19 18:00	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%.	75-125	1		12/22/19 18:00	17060-07-0	
Toluene-d8 (S)	107	%.	75-125	1		12/22/19 18:00	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		12/22/19 18:00	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	89.1	mg/L	5.0	1		12/17/19 14:17		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	32.1	mg/L	1.2	1		12/22/19 14:05	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/18/19 11:57	14797-55-8	H5

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Sample: TRIP BLANK		Lab ID: 10502651006	Collected: 12/13/19 08:00	Received: 12/14/19 10:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		12/18/19 00:01		
Surrogates								
a,a,a-Trifluorotoluene (S)	93	%.	50-150	1		12/18/19 00:01	98-08-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report
Pace Project No.: 10502651

Sample: PEO-MW-Z1-201912	Lab ID: 10502651007	Collected: 12/13/19 09:40	Received: 12/14/19 10:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	1.5	mg/L	0.40	1	12/16/19 09:01	12/20/19 15:04	68334-30-5	L2
Motor Oil Range SG	0.23J	mg/L	0.40	1	12/16/19 09:01	12/20/19 15:04	64742-65-0	B,L2
Surrogates								
o-Terphenyl (S)	88	%	50-150	1	12/16/19 09:01	12/20/19 15:04	84-15-1	P2
n-Triacontane (S)	94	%	50-150	1	12/16/19 09:01	12/20/19 15:04	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	1310	ug/L	500	5		12/19/19 01:22		
Surrogates								
a,a,a-Trifluorotoluene (S)	92	%	50-150	5		12/19/19 01:22	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010								
Total Hardness by 2340B, Dissolved	89600	ug/L	3300	1	01/07/20 08:15	01/07/20 14:22		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020								
Arsenic, Dissolved	29.1	ug/L	0.50	1	12/16/19 06:16	12/17/19 12:51	7440-38-2	
Manganese, Dissolved	1760	ug/L	5.0	10	12/16/19 06:16	12/17/19 12:55	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.77	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	83-32-9	
Acenaphthylene	0.20	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	208-96-8	
Anthracene	0.094	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	53-70-3	
Fluoranthene	0.034J	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	206-44-0	
Fluorene	0.91	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	193-39-5	
1-Methylnaphthalene	0.60	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	90-12-0	
2-Methylnaphthalene	0.045	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	91-57-6	
Naphthalene	0.45	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	91-20-3	
Phenanthrene	ND	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	85-01-8	
Pyrene	0.026J	ug/L	0.039	1	12/16/19 09:04	12/17/19 13:03	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	83	%	47-125	1	12/16/19 09:04	12/17/19 13:03	321-60-8	
p-Terphenyl-d14 (S)	84	%	62-125	1	12/16/19 09:04	12/17/19 13:03	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	2.7	ug/L	1.0	1		12/22/19 18:17	71-43-2	
Ethylbenzene	0.38J	ug/L	1.0	1		12/22/19 18:17	100-41-4	
Toluene	0.57J	ug/L	1.0	1		12/22/19 18:17	108-88-3	
m&p-Xylene	0.46J	ug/L	2.0	1		12/22/19 18:17	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502651

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: PEO-MW-Z1-201912								
Lab ID: 10502651007								
Collected: 12/13/19 09:40								
Received: 12/14/19 10:00								
Matrix: Water								
8260B MSV UST								
Analytical Method: EPA 8260B								
o-Xylene	0.21J	ug/L	1.0	1		12/22/19 18:17	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	75-125	1		12/22/19 18:17	17060-07-0	
Toluene-d8 (S)	106	%	75-125	1		12/22/19 18:17	2037-26-5	
4-Bromofluorobenzene (S)	104	%	75-125	1		12/22/19 18:17	460-00-4	
2320B Alkalinity								
Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	75.4	mg/L	5.0	1		12/17/19 14:24		
300.0 IC Anions								
Analytical Method: EPA 300.0								
Sulfate	74.2	mg/L	1.2	1		12/22/19 14:24	14808-79-8	
353.2 Nitrate + Nitrite								
Analytical Method: EPA 353.2								
Nitrate as N	ND	mg/L	0.10	1		12/18/19 12:01	14797-55-8	FS,H5

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 650404 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651006

METHOD BLANK: 3497375 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/17/19 16:06	
a,a,a-Trifluorotoluene (S)	%.	103	50-150	12/17/19 16:06	

METHOD BLANK: 3497376 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/17/19 19:13	
a,a,a-Trifluorotoluene (S)	%.	99	50-150	12/17/19 19:13	

LABORATORY CONTROL SAMPLE & LCSD: 3497377 3497378

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1100	984	110	98	75-125	11	20	
a,a,a-Trifluorotoluene (S)	%.				113	105	50-150			

SAMPLE DUPLICATE: 3497764

Parameter	Units	10502275003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	70.5J	69.2J		30	
a,a,a-Trifluorotoluene (S)	%.	101	102			

SAMPLE DUPLICATE: 3497765

Parameter	Units	10502306005 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	82.2J	72.0J		30	
a,a,a-Trifluorotoluene (S)	%.	101	98			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 650742 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502651007

METHOD BLANK: 3499099 Matrix: Water
Associated Lab Samples: 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/18/19 19:07	
a,a,a-Trifluorotoluene (S)	%.	96	50-150	12/18/19 19:07	

METHOD BLANK: 3499100 Matrix: Water
Associated Lab Samples: 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/18/19 22:15	
a,a,a-Trifluorotoluene (S)	%.	99	50-150	12/18/19 22:15	

LABORATORY CONTROL SAMPLE & LCSD: 3499101 3499102

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1020	1000	102	100	75-125	2	20	
a,a,a-Trifluorotoluene (S)	%.				108	102	50-150			

SAMPLE DUPLICATE: 3499133

Parameter	Units	10502651007 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1310	1300	1	30	
a,a,a-Trifluorotoluene (S)	%.	92	94			

SAMPLE DUPLICATE: 3499134

Parameter	Units	10502680001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	66.9J	58.8J		30	
a,a,a-Trifluorotoluene (S)	%.	98	103			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 650076 Analysis Method: EPA 6020A
QC Batch Method: EPA 3020 Analysis Description: 6020A Water Dissolved UPD4
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

METHOD BLANK: 3496308 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/17/19 11:06	
Manganese, Dissolved	ug/L	ND	0.50	12/17/19 11:06	

LABORATORY CONTROL SAMPLE: 3496309

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	93.3	93	80-120	
Manganese, Dissolved	ug/L	100	95.6	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3496310 3496311

Parameter	Units	10502419001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	2.8	100	100	95.2	96.9	92	94	75-125	2	20	
Manganese, Dissolved	ug/L	349	100	100	434	430	86	82	75-125	1	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 651363 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651005, 10502651007

METHOD BLANK: 3503040 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651005, 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/22/19 16:01	
Ethylbenzene	ug/L	ND	1.0	12/22/19 16:01	
m&p-Xylene	ug/L	ND	2.0	12/22/19 16:01	
o-Xylene	ug/L	ND	1.0	12/22/19 16:01	
Toluene	ug/L	ND	1.0	12/22/19 16:01	
1,2-Dichloroethane-d4 (S)	%	92	75-125	12/22/19 16:01	
4-Bromofluorobenzene (S)	%	102	75-125	12/22/19 16:01	
Toluene-d8 (S)	%	105	75-125	12/22/19 16:01	

LABORATORY CONTROL SAMPLE: 3503041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.4	82	75-125	
Ethylbenzene	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	40.1	100	75-125	
o-Xylene	ug/L	20	21.2	106	75-125	
Toluene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-125	
4-Bromofluorobenzene (S)	%			105	75-125	
Toluene-d8 (S)	%			105	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503206 3503207

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502651001 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	31.1	20	20	20	48.3	46.4	86	76	30-150	4	30	
Ethylbenzene	ug/L	6.6	20	20	20	28.3	27.6	109	105	30-150	3	30	
m&p-Xylene	ug/L	30.5	40	40	40	72.9	70.6	106	100	30-150	3	30	
o-Xylene	ug/L	11.7	20	20	20	33.9	32.9	111	106	30-150	3	30	
Toluene	ug/L	31.4	20	20	20	51.7	48.7	101	87	30-150	6	30	
1,2-Dichloroethane-d4 (S)	%							105	103	75-125			
4-Bromofluorobenzene (S)	%							103	108	75-125			
Toluene-d8 (S)	%							107	106	75-125			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 651538 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502651004

METHOD BLANK: 3503888 Matrix: Water
Associated Lab Samples: 10502651004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/23/19 20:48	
Ethylbenzene	ug/L	ND	1.0	12/23/19 20:48	
m&p-Xylene	ug/L	ND	2.0	12/23/19 20:48	
o-Xylene	ug/L	ND	1.0	12/23/19 20:48	
Toluene	ug/L	ND	1.0	12/23/19 20:48	
1,2-Dichloroethane-d4 (S)	%	101	75-125	12/23/19 20:48	
4-Bromofluorobenzene (S)	%	105	75-125	12/23/19 20:48	
Toluene-d8 (S)	%	103	75-125	12/23/19 20:48	

LABORATORY CONTROL SAMPLE: 3503889

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.5	82	75-125	
Ethylbenzene	ug/L	20	17.6	88	75-125	
m&p-Xylene	ug/L	40	34.9	87	75-125	
o-Xylene	ug/L	20	17.8	89	75-125	
Toluene	ug/L	20	17.0	85	75-125	
1,2-Dichloroethane-d4 (S)	%			100	75-125	
4-Bromofluorobenzene (S)	%			103	75-125	
Toluene-d8 (S)	%			104	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503890 3503891

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10503100003 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	160	20	20	20	232	181	362	107	30-150	25	30	M1
Ethylbenzene	ug/L	44.4	20	20	20	65.5	70.1	105	128	30-150	7	30	
m&p-Xylene	ug/L		40	40	40	491	528	188	279	30-150	7	30	E, M1
o-Xylene	ug/L		20	20	20	157	169	139	196	30-150	7	30	M1
Toluene	ug/L	2.0	20	20	20	18.7	19.6	83	88	30-150	5	30	
1,2-Dichloroethane-d4 (S)	%							99	99	75-125			
4-Bromofluorobenzene (S)	%							106	103	75-125			
Toluene-d8 (S)	%							107	104	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502651

Parameter	Units	3503892		3503893		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10503359003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Benzene	ug/L	ND	20	20	16.5	15.9	82	80	30-150	3	30	
Ethylbenzene	ug/L	ND	20	20	18.2	17.5	91	88	30-150	4	30	
m&p-Xylene	ug/L	ND	40	40	36.8	34.9	90	85	30-150	5	30	
o-Xylene	ug/L	ND	20	20	18.2	17.6	89	86	30-150	4	30	
Toluene	ug/L	ND	20	20	16.8	16.8	84	84	30-150	0	30	
1,2-Dichloroethane-d4 (S)	%						101	101	75-125			
4-Bromofluorobenzene (S)	%						104	103	75-125			
Toluene-d8 (S)	%						106	106	75-125			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 650125 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

METHOD BLANK: 3496473 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	12/17/19 09:11	
2-Methylnaphthalene	ug/L	ND	0.040	12/17/19 09:11	
Acenaphthene	ug/L	ND	0.040	12/17/19 09:11	
Acenaphthylene	ug/L	ND	0.040	12/17/19 09:11	
Anthracene	ug/L	ND	0.040	12/17/19 09:11	
Benzo(a)anthracene	ug/L	ND	0.040	12/17/19 09:11	
Benzo(a)pyrene	ug/L	ND	0.040	12/17/19 09:11	
Benzo(b)fluoranthene	ug/L	ND	0.040	12/17/19 09:11	
Benzo(g,h,i)perylene	ug/L	ND	0.040	12/17/19 09:11	
Benzo(k)fluoranthene	ug/L	ND	0.040	12/17/19 09:11	
Chrysene	ug/L	ND	0.040	12/17/19 09:11	
Dibenz(a,h)anthracene	ug/L	ND	0.040	12/17/19 09:11	
Fluoranthene	ug/L	ND	0.040	12/17/19 09:11	
Fluorene	ug/L	ND	0.040	12/17/19 09:11	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	12/17/19 09:11	
Naphthalene	ug/L	ND	0.040	12/17/19 09:11	
Phenanthrene	ug/L	ND	0.040	12/17/19 09:11	
Pyrene	ug/L	ND	0.040	12/17/19 09:11	
2-Fluorobiphenyl (S)	%	82	47-125	12/17/19 09:11	
p-Terphenyl-d14 (S)	%	89	62-125	12/17/19 09:11	

LABORATORY CONTROL SAMPLE & LCSD: 3496474

3496475

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/L	1	0.66	0.73	66	73	31-125	9	20	
2-Methylnaphthalene	ug/L	1	0.65	0.72	65	72	43-125	10	20	
Acenaphthene	ug/L	1	0.71	0.76	71	76	50-125	6	20	
Acenaphthylene	ug/L	1	0.71	0.74	71	74	46-125	5	20	
Anthracene	ug/L	1	0.89	0.87	89	87	59-125	2	20	
Benzo(a)anthracene	ug/L	1	0.77	0.76	77	76	55-125	2	20	
Benzo(a)pyrene	ug/L	1	0.86	0.86	86	86	66-125	0	20	
Benzo(b)fluoranthene	ug/L	1	0.84	0.81	84	81	64-125	3	20	
Benzo(g,h,i)perylene	ug/L	1	0.85	0.85	85	85	58-125	0	20	
Benzo(k)fluoranthene	ug/L	1	0.89	0.89	89	89	60-125	0	20	
Chrysene	ug/L	1	0.87	0.88	87	88	62-125	2	20	
Dibenz(a,h)anthracene	ug/L	1	0.86	0.86	86	86	51-125	1	20	
Fluoranthene	ug/L	1	0.86	0.86	86	86	64-125	0	20	
Fluorene	ug/L	1	0.80	0.79	80	79	55-125	0	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.88	0.88	88	88	61-125	0	20	
Naphthalene	ug/L	1	0.66	0.72	66	72	48-125	7	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502651

LABORATORY CONTROL SAMPLE & LCSD: 3496474		3496475									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Phenanthrene	ug/L	1	0.89	0.89	89	89	63-125	0	20		
Pyrene	ug/L	1	0.81	0.82	81	82	61-125	1	20		
2-Fluorobiphenyl (S)	%.				76	83	47-125				
p-Terphenyl-d14 (S)	%.				89	89	62-125				

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502651

QC Batch: 650128	Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C	Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10502651007	

METHOD BLANK: 3496481 Matrix: Water

Associated Lab Samples: 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	0.077J	0.40	12/20/19 13:32	
Motor Oil Range SG	mg/L	0.17J	0.40	12/20/19 13:32	
n-Triacontane (S)	%.	71	50-150	12/20/19 13:32	
o-Terphenyl (S)	%.	66	50-150	12/20/19 13:32	

LABORATORY CONTROL SAMPLE & LCSD: 3496482

Parameter	Units	3496483		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result						
Diesel Fuel Range SG	mg/L	2	1.1	0.75	54	37	50-150	36	20 L2,R1
Motor Oil Range SG	mg/L	2	1.3	0.86	67	43	50-150	43	20 L2,R1
n-Triacontane (S)	%.				69	53	50-150		
o-Terphenyl (S)	%.				62	50	50-150		

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 651475 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005

METHOD BLANK: 3503502 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/27/19 17:47	
Motor Oil Range SG	mg/L	ND	0.40	12/27/19 17:47	
n-Triacontane (S)	%	68	50-150	12/27/19 17:47	
o-Terphenyl (S)	%	65	50-150	12/27/19 17:47	

LABORATORY CONTROL SAMPLE & LCSD: 3503503

Parameter	Units	3503504								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	2	1.2	1.3	59	66	50-150	11	20	
Motor Oil Range SG	mg/L	2	1.3	1.4	64	71	50-150	12	20	
n-Triacontane (S)	%				64	68	50-150			
o-Terphenyl (S)	%				63	71	50-150			

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502651

QC Batch: 650421 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

METHOD BLANK: 3497480 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	2.5J	5.0	12/17/19 12:10	

LABORATORY CONTROL SAMPLE & LCSD: 3497481 3497482

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	42.7	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497483 3497484

Parameter	Units	10502628001 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	38.1	40	40	78.5	77.9	101	99	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497485 3497486

Parameter	Units	10502781002 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	33.3	40	40	76.7	78.0	108	112	80-120	2	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502651

QC Batch: 650370 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

METHOD BLANK: 3497248 Matrix: Water
Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	0.49J	1.2	12/22/19 01:01	

LABORATORY CONTROL SAMPLE: 3497249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	12.5	12.3	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497250 3497251

Parameter	Units	10501792016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	2.9	12.5	12.5	19.6	19.5	134	133	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497252 3497253

Parameter	Units	10501792017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	6.9	12.5	12.5	22.6	23.1	126	129	90-110	2	20	M1

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502651

QC Batch: 650024

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

METHOD BLANK: 3495994

Matrix: Water

Associated Lab Samples: 10502651001, 10502651002, 10502651003, 10502651004, 10502651005, 10502651007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	12/18/19 12:04	FS

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QUALIFIERS

Project: 499738-Revised Report

Pace Project No.: 10502651

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.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 650352

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

ANALYTE QUALIFIERS

1M Surrogate recovery outside laboratory control limits due to an emulsion forming during extraction.

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.

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

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

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

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QUALIFIERS

Project: 499738-Revised Report

Pace Project No.: 10502651

ANALYTE QUALIFIERS

S2 Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738-Revised Report

Pace Project No.: 10502651

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502651001	PEO-MW-36-201912	EPA Mod. 3510C	651475	NWTPH-Dx	651909
10502651002	PEO-MW-27-201912	EPA Mod. 3510C	651475	NWTPH-Dx	651909
10502651003	PEO-MW-39-201912	EPA Mod. 3510C	651475	NWTPH-Dx	651909
10502651004	PEO-MW-38-201912	EPA Mod. 3510C	651475	NWTPH-Dx	651909
10502651005	PEO-MW-37-201912	EPA Mod. 3510C	651475	NWTPH-Dx	651909
10502651007	PEO-MW-Z1-201912	EPA Mod. 3510C	650128	NWTPH-Dx	650682
10502651001	PEO-MW-36-201912	NWTPH-Gx	650404		
10502651002	PEO-MW-27-201912	NWTPH-Gx	650404		
10502651003	PEO-MW-39-201912	NWTPH-Gx	650404		
10502651004	PEO-MW-38-201912	NWTPH-Gx	650404		
10502651005	PEO-MW-37-201912	NWTPH-Gx	650404		
10502651006	TRIP BLANK	NWTPH-Gx	650404		
10502651007	PEO-MW-Z1-201912	NWTPH-Gx	650742		
10502651001	PEO-MW-36-201912	EPA 3010	653202	EPA 6010D	653331
10502651002	PEO-MW-27-201912	EPA 3010	653202	EPA 6010D	653331
10502651003	PEO-MW-39-201912	EPA 3010	653202	EPA 6010D	653331
10502651004	PEO-MW-38-201912	EPA 3010	653202	EPA 6010D	653331
10502651005	PEO-MW-37-201912	EPA 3010	653202	EPA 6010D	653331
10502651007	PEO-MW-Z1-201912	EPA 3010	653202	EPA 6010D	653331
10502651001	PEO-MW-36-201912	EPA 3020	650076	EPA 6020A	650262
10502651002	PEO-MW-27-201912	EPA 3020	650076	EPA 6020A	650262
10502651003	PEO-MW-39-201912	EPA 3020	650076	EPA 6020A	650262
10502651004	PEO-MW-38-201912	EPA 3020	650076	EPA 6020A	650262
10502651005	PEO-MW-37-201912	EPA 3020	650076	EPA 6020A	650262
10502651007	PEO-MW-Z1-201912	EPA 3020	650076	EPA 6020A	650262
10502651001	PEO-MW-36-201912	EPA Mod. 3510C	650125	EPA 8270 by SIM	650352
10502651002	PEO-MW-27-201912	EPA Mod. 3510C	650125	EPA 8270 by SIM	650352
10502651003	PEO-MW-39-201912	EPA Mod. 3510C	650125	EPA 8270 by SIM	650352
10502651004	PEO-MW-38-201912	EPA Mod. 3510C	650125	EPA 8270 by SIM	650352
10502651005	PEO-MW-37-201912	EPA Mod. 3510C	650125	EPA 8270 by SIM	650352
10502651007	PEO-MW-Z1-201912	EPA Mod. 3510C	650125	EPA 8270 by SIM	650352
10502651001	PEO-MW-36-201912	EPA 8260B	651363		
10502651002	PEO-MW-27-201912	EPA 8260B	651363		
10502651003	PEO-MW-39-201912	EPA 8260B	651363		
10502651004	PEO-MW-38-201912	EPA 8260B	651538		
10502651005	PEO-MW-37-201912	EPA 8260B	651363		
10502651007	PEO-MW-Z1-201912	EPA 8260B	651363		
10502651001	PEO-MW-36-201912	SM 2320B	650421		
10502651002	PEO-MW-27-201912	SM 2320B	650421		
10502651003	PEO-MW-39-201912	SM 2320B	650421		
10502651004	PEO-MW-38-201912	SM 2320B	650421		
10502651005	PEO-MW-37-201912	SM 2320B	650421		
10502651007	PEO-MW-Z1-201912	SM 2320B	650421		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738-Revised Report

Pace Project No.: 10502651

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502651001	PEO-MW-36-201912	EPA 300.0	650370		
10502651002	PEO-MW-27-201912	EPA 300.0	650370		
10502651003	PEO-MW-39-201912	EPA 300.0	650370		
10502651004	PEO-MW-38-201912	EPA 300.0	650370		
10502651005	PEO-MW-37-201912	EPA 300.0	650370		
10502651007	PEO-MW-Z1-201912	EPA 300.0	650370		
10502651001	PEO-MW-36-201912	EPA 353.2	650024		
10502651002	PEO-MW-27-201912	EPA 353.2	650024		
10502651003	PEO-MW-39-201912	EPA 353.2	650024		
10502651004	PEO-MW-38-201912	EPA 353.2	650024		
10502651005	PEO-MW-37-201912	EPA 353.2	650024		
10502651007	PEO-MW-Z1-201912	EPA 353.2	650024		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt **Client Name:** ERM **Project #:** **WO# : 10502651**

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exceptions

Tracking Number: _____

PM: JMT **Due Date:** 12/23/19
CLIENT: ERM-Oregon

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.4, 0.7, 0.2, 3.4, 1.8</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/> See Exceptions <input type="checkbox"/> 1 Container
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: <u>0.3, 1.0, 0.1, 3.3, 1.7</u> °C	°C

USDA Regulated Soil: N/A, water sample/Other: _____ **Date/Initials of Person Examining Contents:** JMT 12/16/19

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 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 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 Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
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, 7/1</u> <u>1-5, 7/1</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 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
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, PFO/PFOA (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
Extra labels present on soil VOA or WIDRO containers? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip <u>203619</u>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
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>236154</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 P **Date:** 12/16/19

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).

	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.02	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

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.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature
7867 0.3
7889 1.0
7856 0.1
7890 3.3
7878 1.7

Other Issues		
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	



Pace Analytical Minnesota

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

RE: 499738

Work Order Number: 1912282

January 02, 2020

Attention Julie Bowser:

Fremont Analytical, Inc. received 6 sample(s) on 12/17/2019 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



CLIENT: Pace Analytical Minnesota
Project: 499738
Work Order: 1912282

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912282-001	PEO-MW-36-201912	12/13/2019 8:30 AM	12/17/2019 9:44 AM
1912282-002	PEO-MW-27-201912	12/13/2019 9:35 AM	12/17/2019 9:44 AM
1912282-003	PEO-MW-39-201912	12/13/2019 11:05 AM	12/17/2019 9:44 AM
1912282-004	PEO-MW-38-201912	12/13/2019 12:05 PM	12/17/2019 9:44 AM
1912282-005	PEO-MW-37-201912	12/13/2019 1:15 PM	12/17/2019 9:44 AM
1912282-006	PEO-MW-Z1-201912	12/13/2019 9:40 AM	12/17/2019 9:44 AM

CLIENT: Pace Analytical Minnesota

Project: 499738

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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912282-001

Collection Date: 12/13/2019 8:30:00 AM

Client Sample ID: PEO-MW-36-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.88		µg/L	1	12/30/2019 8:58:00 PM
Surr: 1-Chlorooctadecane	66.2	60 - 140		%Rec	1	12/30/2019 8:58:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	321	4.07		µg/L	1	12/20/2019 2:19:47 AM
Surr: 1,4-Difluorobenzene	139	65 - 140		%Rec	1	12/20/2019 2:19:47 AM
Surr: Bromofluorobenzene	100	65 - 140		%Rec	1	12/20/2019 2:19:47 AM

Lab ID: 1912282-002

Collection Date: 12/13/2019 9:35:00 AM

Client Sample ID: PEO-MW-27-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.87		µg/L	1	12/30/2019 8:14:00 PM
Surr: 1-Chlorooctadecane	64.0	60 - 140		%Rec	1	12/30/2019 8:14:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	176	4.07		µg/L	1	12/20/2019 3:00:45 AM
Surr: 1,4-Difluorobenzene	100	65 - 140		%Rec	1	12/20/2019 3:00:45 AM
Surr: Bromofluorobenzene	95.9	65 - 140		%Rec	1	12/20/2019 3:00:45 AM



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912282-003 **Collection Date:** 12/13/2019 11:05:00 AM
Client Sample ID: PEO-MW-39-201912 **Matrix:** Water

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

Batch ID: 26903 Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	7.85	5.87	J	µg/L	1	12/30/2019 9:41:00 PM
Surr: 1-Chlorooctadecane	73.5	60 - 140		%Rec	1	12/30/2019 9:41:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	536	4.07		µg/L	1	12/20/2019 4:22:32 AM
Surr: 1,4-Difluorobenzene	169	65 - 140	S	%Rec	1	12/20/2019 4:22:32 AM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	12/20/2019 4:22:32 AM

NOTES:

S - Outlying surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Lab ID: 1912282-004 **Collection Date:** 12/13/2019 12:05:00 PM
Client Sample ID: PEO-MW-38-201912 **Matrix:** Water

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

Batch ID: 26903 Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	914	5.87		µg/L	1	12/30/2019 11:09:00 PM
Surr: 1-Chlorooctadecane	75.5	60 - 140		%Rec	1	12/30/2019 11:09:00 PM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	1,180	40.7	D	µg/L	10	12/20/2019 2:46:10 PM
Surr: 1,4-Difluorobenzene	107	65 - 140	D	%Rec	10	12/20/2019 2:46:10 PM
Surr: Bromofluorobenzene	88.1	65 - 140	D	%Rec	10	12/20/2019 2:46:10 PM



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912282-005

Collection Date: 12/13/2019 1:15:00 PM

Client Sample ID: PEO-MW-37-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	21.1	5.78		µg/L	1	12/31/2019 12:36:00 AM
Surr: 1-Chlorooctadecane	84.4	60 - 140		%Rec	1	12/31/2019 12:36:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 7:29:06 PM
Surr: 1,4-Difluorobenzene	99.4	65 - 140		%Rec	1	12/19/2019 7:29:06 PM
Surr: Bromofluorobenzene	96.6	65 - 140		%Rec	1	12/19/2019 7:29:06 PM

Lab ID: 1912282-006

Collection Date: 12/13/2019 9:40:00 AM

Client Sample ID: PEO-MW-Z1-201912

Matrix: Water

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

Batch ID: 26903

Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.85		µg/L	1	12/31/2019 1:19:00 AM
Surr: 1-Chlorooctadecane	78.7	60 - 140		%Rec	1	12/31/2019 1:19:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	93.8	4.07		µg/L	1	12/19/2019 8:51:13 PM
Surr: 1,4-Difluorobenzene	96.9	65 - 140		%Rec	1	12/19/2019 8:51:13 PM
Surr: Bromofluorobenzene	94.0	65 - 140		%Rec	1	12/19/2019 8:51:13 PM

Work Order: 1912282
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-26903	SampType: MBLK	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: MBLKW	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122011							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.8		0	0						
Surr: 1-Chlorooctadecane	1,490		1,983		75.3	60	140				

Sample ID: LCS-26903	SampType: LCS	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: LCSW	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122010							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	2,020	19.8	2,476	0	81.6	70	130				
Surr: 1-Chlorooctadecane	1,700		1,981		85.6	60	140				

Sample ID: 1912280-001BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122009							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.1		0	0			8.160	200	25	
Surr: 1-Chlorooctadecane	1,290		2,013		64.1	60	140		0		

Sample ID: 1912280-002BMS	SampType: MS	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122015							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,970	20.0	2,498	0	78.9	70	130				
Surr: 1-Chlorooctadecane	1,670		1,998		83.8	60	140				

Sample ID: 1912280-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122016							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,800	19.5	2,441	0	73.7	70	130	1,972	9.20	30	
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Work Order: 1912282
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: 1912280-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122016							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	1,520		1,952		77.7	60	140			0	

Work Order: 1912282
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-26888	SampType: LCS	Units: µg/L			Prep Date: 12/19/2019	RunNo: 56262					
Client ID: LCSW	Batch ID: 26888				Analysis Date: 12/19/2019	SeqNo: 1121042					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	202	20.0	200.0	0	101	70	130				
Surr: 1,4-Difluorobenzene	52.0		50.00		104	65	140				
Surr: Bromofluorobenzene	48.7		50.00		97.4	65	140				

Sample ID: LCS-D-26888	SampType: LCS-D	Units: µg/L			Prep Date: 12/19/2019	RunNo: 56262					
Client ID: LCSW02	Batch ID: 26888				Analysis Date: 12/19/2019	SeqNo: 1121043					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	207	20.0	200.0	0	104	70	130	201.8	2.60	20	
Surr: 1,4-Difluorobenzene	51.8		50.00		104	65	140		0		
Surr: Bromofluorobenzene	48.2		50.00		96.3	65	140		0		

Sample ID: MB-26888	SampType: MBLK	Units: µg/L			Prep Date: 12/19/2019	RunNo: 56262					
Client ID: MBLKW	Batch ID: 26888				Analysis Date: 12/19/2019	SeqNo: 1121044					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Surr: 1,4-Difluorobenzene	47.7		50.00		95.3	65	140				
Surr: Bromofluorobenzene	47.8		50.00		95.6	65	140				

Sample ID: 1912282-005ADUP	SampType: DUP	Units: µg/L			Prep Date: 12/19/2019	RunNo: 56262					
Client ID: PEO-MW-37-201912	Batch ID: 26888				Analysis Date: 12/19/2019	SeqNo: 1121017					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	51.2		50.00		102	65	140		0		
Surr: Bromofluorobenzene	49.2		50.00		98.4	65	140		0		

Work Order: 1912282
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 1912316-004ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: BATCH	Batch ID: 26888		Analysis Date: 12/20/2019	SeqNo: 1121030							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	182	20.0		0	0			288.9	45.3	25	R
Surr: 1,4-Difluorobenzene	49.3		50.00		98.6	65	140		0		
Surr: Bromofluorobenzene	49.3		50.00		98.7	65	140		0		

NOTES:

R - High RPD observed. The method is in control as indicated by the LCS.

Client Name: **PACEMINN**

 Work Order Number: **1912282**

 Logged by: **Clare Griggs**

 Date Received: **12/17/2019 9:44:00 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 Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°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
Cooler 1	2.1
Cooler 2	3.2
Sample 1	1.8
Sample 2	2.1

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

Chain of Custody

PASI Minnesota Laboratory

1912282



Workorder: 10502651 Workorder Name: 499738 Results Requested By: 12/23/2019

Report / Invoice To: Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Suite 200
 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. 10502651

State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
					HCl VG9H	Unpreserved AG1U		
1	PEO-MMW-36-201912	12/13/2019 08:30	10502651001	Water	3	2		
2	PEO-MMW-27-201912	12/13/2019 09:35	10502651002	Water	3	2		
3	PEO-MMW-39-201912	12/13/2019 11:05	10502651003	Water	3	2		
4	PEO-MMW-38-201912	12/13/2019 12:05	10502651004	Water	3	2		
5	PEO-MMW-37-201912	12/13/2019 13:15	10502651005	Water	3	2		
6	PEO-MMW-21-201912	12/13/2019 09:40	10502651007	Water	3	2		

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Samples Intact
1	Julie Bowser	12/16/19	WV	0944	Y	Y
2						
3						

report to MDL and only aliphatic carbon ranges C:10-C:12 are needed.
 Report EQUIS EDD.

January 20, 2020

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

RE: Project: 499738-Revised Report
Pace Project No.: 10502807

Dear Joe Casey:

Enclosed are the analytical results for sample(s) received by the laboratory on December 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This report was revised on January 20, 2020, to update the sample ID's from POE to PEO. Also the date of collection was updated on the subcontract report.

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



REPORT OF LABORATORY ANALYSIS

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January 20, 2020
Page 2

cc: Emily Ponaski, ERM Portland



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 499738-Revised Report
Pace Project No.: 10502807

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #:74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 499738-Revised Report
Pace Project No.: 10502807

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10502807001	PEO-MW-35-201912	Water	12/16/19 08:10	12/17/19 08:40
10502807002	PEO-MW-02-201912	Water	12/16/19 09:50	12/17/19 08:40
10502807003	PEO-MW-34-201912	Water	12/16/19 11:50	12/17/19 08:40
10502807004	TRIP BLANK	Water	12/16/19 08:00	12/17/19 08:40
10502807005	PEO-MW-Z2-201912	Water	12/16/19 08:15	12/17/19 08:40

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SAMPLE ANALYTE COUNT

Project: 499738-Revised Report

Pace Project No.: 10502807

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10502807001	PEO-MW-35-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502807002	PEO-MW-02-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	AEZ	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502807003	PEO-MW-34-201912	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	MM3	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M
10502807004	TRIP BLANK	NWTPH-Gx	MJD	2	PASI-M
10502807005	PEO-MW-Z2-201912	NWTPH-Dx	EC2	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		EPA 6020A	PW1	2	PASI-M
		EPA 8270 by SIM	CH3	20	PASI-M
		EPA 8260B	ML4	8	PASI-M
		SM 2320B	SH4	1	PASI-M
		EPA 300.0	KEO	1	PASI-M
		EPA 353.2	JFP	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Sample: PEO-MW-35-201912	Lab ID: 10502807001	Collected: 12/16/19 08:10	Received: 12/17/19 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.62	mg/L	0.40	1	12/17/19 13:36	12/20/19 19:48	68334-30-5	
Motor Oil Range SG	0.083J	mg/L	0.40	1	12/17/19 13:36	12/20/19 19:48	64742-65-0	
Surrogates								
o-Terphenyl (S)	69	%	50-150	1	12/17/19 13:36	12/20/19 19:48	84-15-1	
n-Triacontane (S)	63	%	50-150	1	12/17/19 13:36	12/20/19 19:48	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	303	ug/L	100	1		12/18/19 22:32		
Surrogates								
a,a,a-Trifluorotoluene (S)	92	%	50-150	1		12/18/19 22:32	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	34200	ug/L	3300	1	12/18/19 14:35	12/23/19 16:03		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	21.3	ug/L	0.50	1	12/18/19 14:35	12/19/19 15:09	7440-38-2	
Manganese, Dissolved	668	ug/L	10.0	20	12/18/19 14:35	12/19/19 15:31	7439-96-5	M6
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.068	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	83-32-9	
Acenaphthylene	0.023J	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	208-96-8	
Anthracene	0.12	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	207-08-9	
Chrysene	0.011J	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	53-70-3	
Fluoranthene	0.18	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	206-44-0	
Fluorene	0.064	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	193-39-5	
1-Methylnaphthalene	0.048	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	90-12-0	
2-Methylnaphthalene	0.012J	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	91-57-6	
Naphthalene	0.064	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	91-20-3	
Phenanthrene	0.20	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	85-01-8	
Pyrene	0.13	ug/L	0.039	1	12/17/19 14:50	12/18/19 11:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	69	%	47-125	1	12/17/19 14:50	12/18/19 11:33	321-60-8	
p-Terphenyl-d14 (S)	79	%	62-125	1	12/17/19 14:50	12/18/19 11:33	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.32J	ug/L	1.0	1		12/22/19 20:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 20:32	100-41-4	
Toluene	0.16J	ug/L	1.0	1		12/22/19 20:32	108-88-3	
m&p-Xylene	0.38J	ug/L	2.0	1		12/22/19 20:32	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Sample: PEO-MW-35-201912		Lab ID: 10502807001		Collected: 12/16/19 08:10	Received: 12/17/19 08:40	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/22/19 20:32	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%.	75-125	1		12/22/19 20:32	17060-07-0	
Toluene-d8 (S)	106	%.	75-125	1		12/22/19 20:32	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1		12/22/19 20:32	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO ₃	44.1	mg/L	5.0	1		12/17/19 14:37		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	24.2	mg/L	1.2	1		12/25/19 18:47	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/18/19 07:53	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report
Pace Project No.: 10502807

Sample: PEO-MW-02-201912	Lab ID: 10502807002	Collected: 12/16/19 09:50	Received: 12/17/19 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	89.7	mg/L	5.0	10	12/17/19 13:36	12/21/19 14:07	68334-30-5	
Motor Oil Range SG	3.3J	mg/L	5.0	10	12/17/19 13:36	12/21/19 14:07	64742-65-0	
Surrogates								
o-Terphenyl (S)	0	%	50-150	10	12/17/19 13:36	12/21/19 14:07	84-15-1	S4
n-Triacontane (S)	0	%	50-150	10	12/17/19 13:36	12/21/19 14:07	638-68-6	S4
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	1010	ug/L	100	1		12/18/19 22:49		G+,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	89	%	50-150	1		12/18/19 22:49	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	239000	ug/L	3300	1	12/18/19 14:35	12/23/19 16:05		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	53.1	ug/L	10.0	20	12/18/19 14:35	12/19/19 15:41	7440-38-2	
Manganese, Dissolved	4540	ug/L	10.0	20	12/18/19 14:35	12/19/19 15:41	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	83-32-9	
Acenaphthylene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	208-96-8	
Anthracene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	56-55-3	
Benzo(a)pyrene	0.042	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	205-99-2	
Benzo(g,h,i)perylene	0.028J	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	207-08-9	
Chrysene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	53-70-3	
Fluoranthene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	206-44-0	
Fluorene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	86-73-7	
Indeno(1,2,3-cd)pyrene	0.022J	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	193-39-5	
1-Methylnaphthalene	0.63	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	90-12-0	
2-Methylnaphthalene	0.57	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	91-57-6	
Naphthalene	1.7	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	91-20-3	
Phenanthrene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	85-01-8	
Pyrene	ND	ug/L	0.040	1	12/17/19 14:50	12/18/19 11:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%	47-125	1	12/17/19 14:50	12/18/19 11:54	321-60-8	
p-Terphenyl-d14 (S)	34	%	62-125	1	12/17/19 14:50	12/18/19 11:54	1718-51-0	1M
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.22J	ug/L	1.0	1		12/23/19 15:00	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/23/19 15:00	100-41-4	
Toluene	0.49J	ug/L	1.0	1		12/23/19 15:00	108-88-3	
m&p-Xylene	0.36J	ug/L	2.0	1		12/23/19 15:00	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: PEO-MW-02-201912 Lab ID: 10502807002 Collected: 12/16/19 09:50 Received: 12/17/19 08:40 Matrix: Water								
8260B MSV UST Analytical Method: EPA 8260B								
o-Xylene	0.18J	ug/L	1.0	1		12/23/19 15:00	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	75-125	1		12/23/19 15:00	17060-07-0	
Toluene-d8 (S)	102	%	75-125	1		12/23/19 15:00	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		12/23/19 15:00	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	325	mg/L	5.0	1		12/17/19 14:41		
300.0 IC Anions Analytical Method: EPA 300.0								
Sulfate	28.0	mg/L	1.2	1		12/25/19 19:05	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2								
Nitrate as N	ND	mg/L	0.10	1		12/18/19 07:55	14797-55-8	FS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Sample: PEO-MW-34-201912	Lab ID: 10502807003	Collected: 12/16/19 11:50	Received: 12/17/19 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	216	mg/L	10.0	20	12/17/19 13:36	12/21/19 14:19	68334-30-5	
Motor Oil Range SG	6.6J	mg/L	10.0	20	12/17/19 13:36	12/21/19 14:19	64742-65-0	
Surrogates								
o-Terphenyl (S)	0	%	50-150	20	12/17/19 13:36	12/21/19 14:19	84-15-1	S4
n-Triacontane (S)	0	%	50-150	20	12/17/19 13:36	12/21/19 14:19	638-68-6	S4
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	1790	ug/L	500	5		12/19/19 03:03		G+
Surrogates								
a,a,a-Trifluorotoluene (S)	102	%	50-150	5		12/19/19 03:03	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	174000	ug/L	3300	1	12/18/19 14:35	12/23/19 16:07		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	85.1	ug/L	10.0	20	12/18/19 14:35	12/19/19 15:44	7440-38-2	
Manganese, Dissolved	4070	ug/L	10.0	20	12/18/19 14:35	12/19/19 15:44	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	ND	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	83-32-9	
Acenaphthylene	1.5	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	208-96-8	
Anthracene	ND	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	120-12-7	
Benzo(a)anthracene	0.11	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	56-55-3	
Benzo(a)pyrene	0.13	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	50-32-8	
Benzo(b)fluoranthene	0.13	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	205-99-2	
Benzo(g,h,i)perylene	0.072	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	191-24-2	
Benzo(k)fluoranthene	0.045	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	207-08-9	
Chrysene	0.14	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	53-70-3	
Fluoranthene	ND	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	206-44-0	
Fluorene	ND	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	86-73-7	
Indeno(1,2,3-cd)pyrene	0.061	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	193-39-5	
1-Methylnaphthalene	0.60	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	91-57-6	
Naphthalene	0.91	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	91-20-3	
Phenanthrene	0.30	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	85-01-8	
Pyrene	0.62	ug/L	0.041	1	12/17/19 14:50	12/18/19 12:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	97	%	47-125	1	12/17/19 14:50	12/18/19 12:15	321-60-8	
p-Terphenyl-d14 (S)	62	%	62-125	1	12/17/19 14:50	12/18/19 12:15	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	ND	ug/L	5.0	5		12/22/19 21:23	71-43-2	
Ethylbenzene	ND	ug/L	5.0	5		12/22/19 21:23	100-41-4	
Toluene	0.79J	ug/L	5.0	5		12/22/19 21:23	108-88-3	
m&p-Xylene	ND	ug/L	10.0	5		12/22/19 21:23	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: PEO-MW-34-201912 Lab ID: 10502807003 Collected: 12/16/19 11:50 Received: 12/17/19 08:40 Matrix: Water								
8260B MSV UST Analytical Method: EPA 8260B								
o-Xylene	ND	ug/L	5.0	5		12/22/19 21:23	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%	75-125	5		12/22/19 21:23	17060-07-0	D3
Toluene-d8 (S)	104	%	75-125	5		12/22/19 21:23	2037-26-5	
4-Bromofluorobenzene (S)	107	%	75-125	5		12/22/19 21:23	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	337	mg/L	5.0	1		12/17/19 14:59		
300.0 IC Anions Analytical Method: EPA 300.0								
Sulfate	14.6	mg/L	1.2	1		12/25/19 19:23	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2								
Nitrate as N	ND	mg/L	0.10	1		12/18/19 07:56	14797-55-8	FS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Sample: TRIP BLANK		Lab ID: 10502807004	Collected: 12/16/19 08:00	Received: 12/17/19 08:40	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		12/19/19 00:31		
Surrogates								
a,a,a-Trifluorotoluene (S)	95	%.	50-150	1		12/19/19 00:31	98-08-8	

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Sample: PEO-MW-Z2-201912	Lab ID: 10502807005	Collected: 12/16/19 08:15	Received: 12/17/19 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV								
Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C								
Diesel Fuel Range SG	0.67	mg/L	0.40	1	12/17/19 13:36	12/21/19 13:56	68334-30-5	
Motor Oil Range SG	0.089J	mg/L	0.40	1	12/17/19 13:36	12/21/19 13:56	64742-65-0	
Surrogates								
o-Terphenyl (S)	77	%	50-150	1	12/17/19 13:36	12/21/19 13:56	84-15-1	
n-Triacontane (S)	81	%	50-150	1	12/17/19 13:36	12/21/19 13:56	638-68-6	
NWTPH-Gx GCV								
Analytical Method: NWTPH-Gx								
TPH as Gas	229	ug/L	100	1		12/20/19 02:05		
Surrogates								
a,a,a-Trifluorotoluene (S)	86	%	50-150	1		12/20/19 02:05	98-08-8	
6010D MET ICP, Dissolved								
Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Total Hardness by 2340B, Dissolved	34800	ug/L	3300	1	12/18/19 14:35	12/23/19 16:08		
6020A MET ICPMS, Dissolved								
Analytical Method: EPA 6020A Preparation Method: EPA 3020A								
Arsenic, Dissolved	20.9	ug/L	0.50	1	12/18/19 14:35	12/19/19 15:47	7440-38-2	
Manganese, Dissolved	665	ug/L	10.0	20	12/18/19 14:35	12/19/19 15:50	7439-96-5	
8270 MSSV PAH by SIM								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA Mod. 3510C								
Acenaphthene	0.067	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	83-32-9	
Acenaphthylene	0.022J	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	208-96-8	
Anthracene	0.12	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	207-08-9	
Chrysene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	53-70-3	
Fluoranthene	0.085	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	206-44-0	
Fluorene	0.065	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	193-39-5	
1-Methylnaphthalene	0.061	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	90-12-0	
2-Methylnaphthalene	ND	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	91-57-6	
Naphthalene	0.069	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	91-20-3	
Phenanthrene	0.070	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	85-01-8	
Pyrene	0.079	ug/L	0.039	1	12/17/19 14:50	12/18/19 12:36	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	73	%	47-125	1	12/17/19 14:50	12/18/19 12:36	321-60-8	
p-Terphenyl-d14 (S)	82	%	62-125	1	12/17/19 14:50	12/18/19 12:36	1718-51-0	
8260B MSV UST								
Analytical Method: EPA 8260B								
Benzene	0.32J	ug/L	1.0	1		12/22/19 17:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		12/22/19 17:28	100-41-4	
Toluene	0.14J	ug/L	1.0	1		12/22/19 17:28	108-88-3	
m&p-Xylene	0.33J	ug/L	2.0	1		12/22/19 17:28	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 499738-Revised Report

Pace Project No.: 10502807

Sample: PEO-MW-Z2-201912		Lab ID: 10502807005		Collected: 12/16/19 08:15	Received: 12/17/19 08:40	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST		Analytical Method: EPA 8260B						
o-Xylene	ND	ug/L	1.0	1		12/22/19 17:28	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		12/22/19 17:28	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		12/22/19 17:28	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1		12/22/19 17:28	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B						
Alkalinity, Total as CaCO3	44.9	mg/L	5.0	1		12/17/19 13:24		
300.0 IC Anions		Analytical Method: EPA 300.0						
Sulfate	23.8	mg/L	1.2	1		12/25/19 19:41	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2						
Nitrate as N	ND	mg/L	0.10	1		12/18/19 07:57	14797-55-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 650742 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807004

METHOD BLANK: 3499099 Matrix: Water
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/18/19 19:07	
a,a,a-Trifluorotoluene (S)	%.	96	50-150	12/18/19 19:07	

METHOD BLANK: 3499100 Matrix: Water
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/18/19 22:15	
a,a,a-Trifluorotoluene (S)	%.	99	50-150	12/18/19 22:15	

LABORATORY CONTROL SAMPLE & LCSD: 3499101 3499102

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1020	1000	102	100	75-125	2	20	
a,a,a-Trifluorotoluene (S)	%.				108	102	50-150			

SAMPLE DUPLICATE: 3499133

Parameter	Units	10502651007 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1310	1300		1	30
a,a,a-Trifluorotoluene (S)	%.	92	94			

SAMPLE DUPLICATE: 3499134

Parameter	Units	10502680001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	66.9J	58.8J			30
a,a,a-Trifluorotoluene (S)	%.	98	103			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 651015 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10502807005

METHOD BLANK: 3500851 Matrix: Water
Associated Lab Samples: 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/19/19 19:02	
a,a,a-Trifluorotoluene (S)	%.	97	50-150	12/19/19 19:02	

METHOD BLANK: 3500852 Matrix: Water
Associated Lab Samples: 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	12/19/19 22:08	
a,a,a-Trifluorotoluene (S)	%.	88	50-150	12/19/19 22:08	

LABORATORY CONTROL SAMPLE & LCSD: 3500853 3500854

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1150	1010	115	101	75-125	13	20	
a,a,a-Trifluorotoluene (S)	%.				110	101	50-150			

SAMPLE DUPLICATE: 3500863

Parameter	Units	10502911003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	53.5J		30	
a,a,a-Trifluorotoluene (S)	%.	93	97			

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502807

QC Batch: 650547

Analysis Method: EPA 6020A

QC Batch Method: EPA 3020A

Analysis Description: 6020A Water Dissolved UPD4

Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

METHOD BLANK: 3498376

Matrix: Water

Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	0.50	12/19/19 15:03	
Manganese, Dissolved	ug/L	ND	0.50	12/19/19 15:03	

LABORATORY CONTROL SAMPLE: 3498377

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	100	96.9	97	80-120	
Manganese, Dissolved	ug/L	100	102	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3498378 3498379

Parameter	Units	10502807001 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	21.3	100	100	121	128	100	106	75-125	5	20	
Manganese, Dissolved	ug/L	668	100	100	786	831	119	163	75-125	6	20 M6	

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 651363 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502807001, 10502807003

METHOD BLANK: 3503040 Matrix: Water
Associated Lab Samples: 10502807001, 10502807003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/22/19 16:01	
Ethylbenzene	ug/L	ND	1.0	12/22/19 16:01	
m&p-Xylene	ug/L	ND	2.0	12/22/19 16:01	
o-Xylene	ug/L	ND	1.0	12/22/19 16:01	
Toluene	ug/L	ND	1.0	12/22/19 16:01	
1,2-Dichloroethane-d4 (S)	%	92	75-125	12/22/19 16:01	
4-Bromofluorobenzene (S)	%	102	75-125	12/22/19 16:01	
Toluene-d8 (S)	%	105	75-125	12/22/19 16:01	

LABORATORY CONTROL SAMPLE: 3503041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.4	82	75-125	
Ethylbenzene	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	40.1	100	75-125	
o-Xylene	ug/L	20	21.2	106	75-125	
Toluene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-125	
4-Bromofluorobenzene (S)	%			105	75-125	
Toluene-d8 (S)	%			105	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503206 3503207

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502651001 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	31.1	20	20	20	48.3	46.4	86	76	30-150	4	30	
Ethylbenzene	ug/L	6.6	20	20	20	28.3	27.6	109	105	30-150	3	30	
m&p-Xylene	ug/L	30.5	40	40	40	72.9	70.6	106	100	30-150	3	30	
o-Xylene	ug/L	11.7	20	20	20	33.9	32.9	111	106	30-150	3	30	
Toluene	ug/L	31.4	20	20	20	51.7	48.7	101	87	30-150	6	30	
1,2-Dichloroethane-d4 (S)	%							105	103	75-125			
4-Bromofluorobenzene (S)	%							103	108	75-125			
Toluene-d8 (S)	%							107	106	75-125			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 651365 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502807005

METHOD BLANK: 3503044 Matrix: Water
Associated Lab Samples: 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/22/19 14:35	
Ethylbenzene	ug/L	ND	1.0	12/22/19 14:35	
m&p-Xylene	ug/L	ND	2.0	12/22/19 14:35	
o-Xylene	ug/L	ND	1.0	12/22/19 14:35	
Toluene	ug/L	ND	1.0	12/22/19 14:35	
1,2-Dichloroethane-d4 (S)	%	106	75-125	12/22/19 14:35	
4-Bromofluorobenzene (S)	%	104	75-125	12/22/19 14:35	
Toluene-d8 (S)	%	101	75-125	12/22/19 14:35	

LABORATORY CONTROL SAMPLE: 3503045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.9	95	75-125	
Ethylbenzene	ug/L	20	20.2	101	75-125	
m&p-Xylene	ug/L	40	41.6	104	75-125	
o-Xylene	ug/L	20	20.5	102	75-125	
Toluene	ug/L	20	19.7	98	75-125	
1,2-Dichloroethane-d4 (S)	%			105	75-125	
4-Bromofluorobenzene (S)	%			102	75-125	
Toluene-d8 (S)	%			104	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503832 3503833

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10503678001 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	ND	20	20	17.2	17.1	86	85	30-150	0	30		
Ethylbenzene	ug/L	ND	20	20	18.5	18.3	93	91	30-150	1	30		
m&p-Xylene	ug/L	ND	40	40	37.1	36.6	93	91	30-150	1	30		
o-Xylene	ug/L	ND	20	20	18.8	18.5	94	92	30-150	2	30		
Toluene	ug/L	ND	20	20	17.5	17.8	88	89	30-150	1	30		
1,2-Dichloroethane-d4 (S)	%							106	104	75-125			
4-Bromofluorobenzene (S)	%							103	102	75-125			
Toluene-d8 (S)	%							103	103	75-125			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 651425 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10502807002

METHOD BLANK: 3503263 Matrix: Water
Associated Lab Samples: 10502807002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	12/23/19 11:31	
Ethylbenzene	ug/L	ND	1.0	12/23/19 11:31	
m&p-Xylene	ug/L	ND	2.0	12/23/19 11:31	
o-Xylene	ug/L	ND	1.0	12/23/19 11:31	
Toluene	ug/L	ND	1.0	12/23/19 11:31	
1,2-Dichloroethane-d4 (S)	%	101	75-125	12/23/19 11:31	
4-Bromofluorobenzene (S)	%	105	75-125	12/23/19 11:31	
Toluene-d8 (S)	%	102	75-125	12/23/19 11:31	

LABORATORY CONTROL SAMPLE: 3503264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.8	84	75-125	
Ethylbenzene	ug/L	20	18.6	93	75-125	
m&p-Xylene	ug/L	40	37.6	94	75-125	
o-Xylene	ug/L	20	19.0	95	75-125	
Toluene	ug/L	20	17.7	88	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-125	
4-Bromofluorobenzene (S)	%			102	75-125	
Toluene-d8 (S)	%			106	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3504898 3504899

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10502807002 Result	Spike Conc.	Spike Conc.	Conc.								
Benzene	ug/L	0.22J	20	20	20	16.6	16.0	82	79	30-150	4	30	
Ethylbenzene	ug/L	ND	20	20	20	17.6	16.5	87	82	30-150	7	30	
m&p-Xylene	ug/L	0.36J	40	40	40	34.2	32.5	85	80	30-150	5	30	
o-Xylene	ug/L	0.18J	20	20	20	17.0	16.1	84	80	30-150	6	30	
Toluene	ug/L	0.49J	20	20	20	17.3	16.7	84	81	30-150	4	30	
1,2-Dichloroethane-d4 (S)	%							102	99	75-125			
4-Bromofluorobenzene (S)	%							104	103	75-125			
Toluene-d8 (S)	%							106	105	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 650437 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA Mod. 3510C Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

METHOD BLANK: 3497539 Matrix: Water
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	0.040	12/18/19 09:48	
2-Methylnaphthalene	ug/L	ND	0.040	12/18/19 09:48	
Acenaphthene	ug/L	ND	0.040	12/18/19 09:48	
Acenaphthylene	ug/L	ND	0.040	12/18/19 09:48	
Anthracene	ug/L	ND	0.040	12/18/19 09:48	
Benzo(a)anthracene	ug/L	ND	0.040	12/18/19 09:48	
Benzo(a)pyrene	ug/L	ND	0.040	12/18/19 09:48	
Benzo(b)fluoranthene	ug/L	ND	0.040	12/18/19 09:48	
Benzo(g,h,i)perylene	ug/L	ND	0.040	12/18/19 09:48	
Benzo(k)fluoranthene	ug/L	ND	0.040	12/18/19 09:48	
Chrysene	ug/L	ND	0.040	12/18/19 09:48	
Dibenz(a,h)anthracene	ug/L	ND	0.040	12/18/19 09:48	
Fluoranthene	ug/L	ND	0.040	12/18/19 09:48	
Fluorene	ug/L	ND	0.040	12/18/19 09:48	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.040	12/18/19 09:48	
Naphthalene	ug/L	ND	0.040	12/18/19 09:48	
Phenanthrene	ug/L	ND	0.040	12/18/19 09:48	
Pyrene	ug/L	ND	0.040	12/18/19 09:48	
2-Fluorobiphenyl (S)	%	83	47-125	12/18/19 09:48	
p-Terphenyl-d14 (S)	%	89	62-125	12/18/19 09:48	

LABORATORY CONTROL SAMPLE & LCSD: 3497540

Parameter	Units	Spike Conc.	3497541		3497541		% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result	LCS % Rec	LCSD % Rec				
1-Methylnaphthalene	ug/L	1	0.77	0.67	77	67	31-125	15	20	
2-Methylnaphthalene	ug/L	1	0.79	0.66	79	66	43-125	19	20	
Acenaphthene	ug/L	1	0.83	0.68	83	68	50-125	20	20	
Acenaphthylene	ug/L	1	0.82	0.67	82	67	46-125	20	20	
Anthracene	ug/L	1	0.87	0.88	87	88	59-125	1	20	
Benzo(a)anthracene	ug/L	1	0.76	0.92	76	92	55-125	19	20	
Benzo(a)pyrene	ug/L	1	0.83	0.89	83	89	66-125	7	20	
Benzo(b)fluoranthene	ug/L	1	0.80	0.91	80	91	64-125	13	20	
Benzo(g,h,i)perylene	ug/L	1	0.81	0.82	81	82	58-125	1	20	
Benzo(k)fluoranthene	ug/L	1	0.92	0.95	92	95	60-125	4	20	
Chrysene	ug/L	1	0.87	0.99	87	99	62-125	14	20	
Dibenz(a,h)anthracene	ug/L	1	0.79	0.77	79	77	51-125	2	20	
Fluoranthene	ug/L	1	0.85	1.1	85	114	64-125	29	20	R1
Fluorene	ug/L	1	0.85	0.73	85	73	55-125	16	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.83	0.87	83	87	61-125	5	20	
Naphthalene	ug/L	1	0.77	0.66	77	66	48-125	16	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502807

LABORATORY CONTROL SAMPLE & LCSD: 3497540		3497541									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Phenanthrene	ug/L	1	0.88	0.93	88	93	63-125	6	20		
Pyrene	ug/L	1	0.82	1.1	82	107	61-125	26	20	R1	
2-Fluorobiphenyl (S)	%.				85	69	47-125				
p-Terphenyl-d14 (S)	%.				90	94	62-125				

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502807

QC Batch: 650426 Analysis Method: NWTPH-Dx
 QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
 Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

METHOD BLANK: 3497510 Matrix: Water
 Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	12/20/19 19:14	
Motor Oil Range SG	mg/L	ND	0.40	12/20/19 19:14	
n-Triacontane (S)	%.	91	50-150	12/20/19 19:14	
o-Terphenyl (S)	%.	76	50-150	12/20/19 19:14	

LABORATORY CONTROL SAMPLE & LCSD: 3497511

Parameter	Units	3497516							RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits				
Diesel Fuel Range SG	mg/L	2	1.7	1.9	86	94	50-150	10	20		
Motor Oil Range SG	mg/L	2	1.8	1.9	89	96	50-150	8	20		
n-Triacontane (S)	%.				87	94	50-150				
o-Terphenyl (S)	%.				80	83	50-150				

SAMPLE DUPLICATE: 3497517

Parameter	Units	10502807005		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Diesel Fuel Range SG	mg/L	0.67	0.56	18	30	
Motor Oil Range SG	mg/L	0.089J	0.12J		30	
n-Triacontane (S)	%.	81	85			
o-Terphenyl (S)	%.	77	79			

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 650421 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10502807001, 10502807002, 10502807003

METHOD BLANK: 3497480 Matrix: Water
Associated Lab Samples: 10502807001, 10502807002, 10502807003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	2.5J	5.0	12/17/19 12:10	

LABORATORY CONTROL SAMPLE & LCSD: 3497481 3497482

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.7	42.7	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497483 3497484

Parameter	Units	10502628001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	38.1	40	40	78.5	77.9	101	99	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497485 3497486

Parameter	Units	10502781002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	33.3	40	40	76.7	78.0	108	112	80-120	2	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502807

QC Batch: 650446 Analysis Method: SM 2320B
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
 Associated Lab Samples: 10502807005

METHOD BLANK: 3497574 Matrix: Water

Associated Lab Samples: 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	12/17/19 13:14	

LABORATORY CONTROL SAMPLE & LCSD: 3497575 3497576

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	42.5	42.6	106	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497577 3497578

Parameter	Units	10502807005 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	44.9	40	40	80.2	81.5	88	92	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3497579 3497580

Parameter	Units	10502633004 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	191	40	40	228	233	94	105	80-120	2	20	

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QUALITY CONTROL DATA

Project: 499738-Revised Report
Pace Project No.: 10502807

QC Batch: 651378 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

METHOD BLANK: 3503088 Matrix: Water
Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.2	12/25/19 02:08	

LABORATORY CONTROL SAMPLE: 3503089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	12.5	11.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503090 3503091

Parameter	Units	10502494001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	0.62J	12.5	12.5	17.6	17.7	136	137	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3503092 3503093

Parameter	Units	10502494003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	0.58J	12.5	12.5	18.7	17.7	145	137	90-110	5	20	M1

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QUALITY CONTROL DATA

Project: 499738-Revised Report

Pace Project No.: 10502807

QC Batch: 650576

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

METHOD BLANK: 3498477

Matrix: Water

Associated Lab Samples: 10502807001, 10502807002, 10502807003, 10502807005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.10	12/18/19 08:07	FS

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QUALIFIERS

Project: 499738-Revised Report

Pace Project No.: 10502807

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.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 650601

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

ANALYTE QUALIFIERS

1M Surrogate recovery outside laboratory control limits due to an emulsion forming during extraction..

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R1 RPD value was outside control limits.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 499738-Revised Report

Pace Project No.: 10502807

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10502807001	PEO-MW-35-201912	EPA Mod. 3510C	650426	NWTPH-Dx	651316
10502807002	PEO-MW-02-201912	EPA Mod. 3510C	650426	NWTPH-Dx	651316
10502807003	PEO-MW-34-201912	EPA Mod. 3510C	650426	NWTPH-Dx	651316
10502807005	PEO-MW-Z2-201912	EPA Mod. 3510C	650426	NWTPH-Dx	651316
10502807001	PEO-MW-35-201912	NWTPH-Gx	650742		
10502807002	PEO-MW-02-201912	NWTPH-Gx	650742		
10502807003	PEO-MW-34-201912	NWTPH-Gx	650742		
10502807004	TRIP BLANK	NWTPH-Gx	650742		
10502807005	PEO-MW-Z2-201912	NWTPH-Gx	651015		
10502807001	PEO-MW-35-201912	EPA 3010A	650546	EPA 6010D	650830
10502807002	PEO-MW-02-201912	EPA 3010A	650546	EPA 6010D	650830
10502807003	PEO-MW-34-201912	EPA 3010A	650546	EPA 6010D	650830
10502807005	PEO-MW-Z2-201912	EPA 3010A	650546	EPA 6010D	650830
10502807001	PEO-MW-35-201912	EPA 3020A	650547	EPA 6020A	650980
10502807002	PEO-MW-02-201912	EPA 3020A	650547	EPA 6020A	650980
10502807003	PEO-MW-34-201912	EPA 3020A	650547	EPA 6020A	650980
10502807005	PEO-MW-Z2-201912	EPA 3020A	650547	EPA 6020A	650980
10502807001	PEO-MW-35-201912	EPA Mod. 3510C	650437	EPA 8270 by SIM	650601
10502807002	PEO-MW-02-201912	EPA Mod. 3510C	650437	EPA 8270 by SIM	650601
10502807003	PEO-MW-34-201912	EPA Mod. 3510C	650437	EPA 8270 by SIM	650601
10502807005	PEO-MW-Z2-201912	EPA Mod. 3510C	650437	EPA 8270 by SIM	650601
10502807001	PEO-MW-35-201912	EPA 8260B	651363		
10502807002	PEO-MW-02-201912	EPA 8260B	651425		
10502807003	PEO-MW-34-201912	EPA 8260B	651363		
10502807005	PEO-MW-Z2-201912	EPA 8260B	651365		
10502807001	PEO-MW-35-201912	SM 2320B	650421		
10502807002	PEO-MW-02-201912	SM 2320B	650421		
10502807003	PEO-MW-34-201912	SM 2320B	650421		
10502807005	PEO-MW-Z2-201912	SM 2320B	650446		
10502807001	PEO-MW-35-201912	EPA 300.0	651378		
10502807002	PEO-MW-02-201912	EPA 300.0	651378		
10502807003	PEO-MW-34-201912	EPA 300.0	651378		
10502807005	PEO-MW-Z2-201912	EPA 300.0	651378		
10502807001	PEO-MW-35-201912	EPA 353.2	650576		
10502807002	PEO-MW-02-201912	EPA 353.2	650576		
10502807003	PEO-MW-34-201912	EPA 353.2	650576		
10502807005	PEO-MW-Z2-201912	EPA 353.2	650576		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: ERM	Report To: Rita Cooper	Copy To:	Company Name:	Attention:	
Address: 1050 SW 6th Ave, Suite 1650 Portland, OR 97204	Purchase Order No.:	Project Name: Julie Bowser	Address:	REGULATORY AGENCY:	
Email To: rita.cooper@erm.com	Project Number: 499738	Pace Profile #:	Site Location:	NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
Phone: 207-329-6320	Requested Due Date/TAT: Standard		STATE:	UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>	
				OR	

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)												Pace Project No./ Lab I.D.										
				COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	UNPRESERVED	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	GR0 (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
1	PEO-MW-35-201912	DRINKING WATER	GW	G	12/15/19	8:10	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001	
2	PEO-MW-02-201912	WASTE WATER	GW	G	12/15/19	9:50	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	002	
3	PEO-MW-34-201912	SOIL/SOLID	GW	G	12/15/19	11:50	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	003		
4	TRIP BLANK	WASTE WATER	GW	G	12/15/19	8:00	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	004		
5	PEO-MW-Z2-201912	WASTE WATER	GW	G	12/15/19	8:15	19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	005	
6																																
7																																
8																																
9																																
10																																
11																																
12																																

WO#: 10502807



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS						
	JOE CASEY / ERM	12/15/19	15:30	<i>Joe Casey</i>	12/17/19	8:40	0.3	Y	Y	Y			
							6.5						
							0.5						
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: JOE CASEY SIGNATURE of SAMPLER: <i>Joe Casey</i>										Temp in °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)

Sample Condition Upon Receipt

Client Name:
ERM

Project #:

WO# : 10502807

PM: JMT

Due Date: 12/24/19

CLIENT: ERM-Oregon

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exceptions

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.2, 0.4, 0.2</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/> See Exceptions <input type="checkbox"/> 1 Container
Correction Factor: <u>10.1</u>	Cooler Temp Corrected w/temp blank: <u>0.3, 0.5, 0.3</u> °C	

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/initials of Person Examining Contents: 12/17/19 CMY
 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 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
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>1-5:1/1</u> <u>2-5:1/1</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Positive for Res. Chlorine? <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> See Exception
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/BO15 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	pH Paper Lot# <input type="checkbox"/> Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
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.
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>236154</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No
 Comments/Resolution: _____

Project Manager Review: *Julie P...*

Date: 12/17/19

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: CMY (2) Page 31 of 48



Pace Analytical Minnesota

Julie Bowser

1700 Elm Street, Ste. 200

Minneapolis, MN 55414

RE: 499738

Work Order Number: 1912316

January 20, 2020

Attention Julie Bowser:

Fremont Analytical, Inc. received 5 sample(s) on 12/18/2019 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

CLIENT: Pace Analytical Minnesota
Project: 499738
Work Order: 1912316

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912316-001	PEO-MW-35-201912	12/16/2019 8:10 AM	12/18/2019 10:06 AM
1912316-002	PEO-MW-02-201912	12/16/2019 9:50 AM	12/18/2019 10:06 AM
1912316-003	PEO-MW-34-201912	12/16/2019 11:50 AM	12/18/2019 10:06 AM
1912316-004	PEO-MW-Z2-201912	12/16/2019 8:00 AM	12/18/2019 10:06 AM
1912316-005	Trip Blank	12/16/2019 8:15 AM	12/18/2019 10:06 AM

CLIENT: Pace Analytical Minnesota
Project: 499738

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.

1/20/2020: Revision 1 includes updated sample collection dates.

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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912316-001

Collection Date: 12/16/2019 8:10:00 AM

Client Sample ID: PEO-MW-35-201912

Matrix: Water

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

Batch ID: 26903 Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	53.5	5.86		µg/L	1	12/31/2019 5:41:00 AM
Surr: 1-Chlorooctadecane	85.5	60 - 140		%Rec	1	12/31/2019 5:41:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 10:53:57 PM
Surr: 1,4-Difluorobenzene	96.1	65 - 140		%Rec	1	12/19/2019 10:53:57 PM
Surr: Bromofluorobenzene	88.3	65 - 140		%Rec	1	12/19/2019 10:53:57 PM

Lab ID: 1912316-002

Collection Date: 12/16/2019 9:50:00 AM

Client Sample ID: PEO-MW-02-201912

Matrix: Water

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

Batch ID: 26903 Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	297	5.79		µg/L	1	12/31/2019 7:08:00 AM
Surr: 1-Chlorooctadecane	50.2	60 - 140	S	%Rec	1	12/31/2019 7:08:00 AM

NOTES:

S - Outlying surrogate recovery(ies) observed.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	152	4.07		µg/L	1	12/19/2019 11:35:03 PM
Surr: 1,4-Difluorobenzene	102	65 - 140		%Rec	1	12/19/2019 11:35:03 PM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	12/19/2019 11:35:03 PM



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912316-003 **Collection Date:** 12/16/2019 11:50:00 AM
Client Sample ID: PEO-MW-34-201912 **Matrix:** Water

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

Batch ID: 26903 Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	10,300	5.77		µg/L	1	12/31/2019 8:36:00 AM
Surr: 1-Chlorooctadecane	58.9	60 - 140	S	%Rec	1	12/31/2019 8:36:00 AM

NOTES:

S - Outlying surrogate recovery(ies) observed.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	4,490	4.07	E	µg/L	1	12/20/2019 12:16:16 AM
Surr: 1,4-Difluorobenzene	104	65 - 140		%Rec	1	12/20/2019 12:16:16 AM
Surr: Bromofluorobenzene	131	65 - 140		%Rec	1	12/20/2019 12:16:16 AM

NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.

Lab ID: 1912316-004 **Collection Date:** 12/16/2019 8:00:00 AM
Client Sample ID: PEO-MW-Z2-201912 **Matrix:** Water

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

Batch ID: 26903 Analyst: DW

Aliphatic Hydrocarbon (C10-C12)	ND	5.76		µg/L	1	12/31/2019 6:25:00 AM
Surr: 1-Chlorooctadecane	75.4	60 - 140		%Rec	1	12/31/2019 6:25:00 AM

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26888 Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	54.9	4.07		µg/L	1	12/20/2019 1:23:58 PM
Surr: 1,4-Difluorobenzene	99.7	65 - 140		%Rec	1	12/20/2019 1:23:58 PM
Surr: Bromofluorobenzene	81.1	65 - 140		%Rec	1	12/20/2019 1:23:58 PM



CLIENT: Pace Analytical Minnesota
Project: 499738

Lab ID: 1912316-005

Collection Date: 12/16/2019 8:15:00 AM

Client Sample ID: Trip Blank

Matrix: Water

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

Batch ID: 26888

Analyst: CR

Aliphatic Hydrocarbon (C10-C12)	ND	4.07		µg/L	1	12/19/2019 4:03:17 PM
Surr: 1,4-Difluorobenzene	99.7	65 - 140		%Rec	1	12/19/2019 4:03:17 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	12/19/2019 4:03:17 PM

Work Order: 1912316
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: MB-26903	SampType: MBLK	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: MBLKW	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122011							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	19.8		0	0						
Surr: 1-Chlorooctadecane	1,490		1,983		75.3	60	140				

Sample ID: LCS-26903	SampType: LCS	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: LCSW	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122010							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	2,020	19.8	2,476	0	81.6	70	130				
Surr: 1-Chlorooctadecane	1,700		1,981		85.6	60	140				

Sample ID: 1912280-001BDUP	SampType: DUP	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122009							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.1		0	0			8.160	200	25	
Surr: 1-Chlorooctadecane	1,290		2,013		64.1	60	140		0		

Sample ID: 1912280-002BMS	SampType: MS	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122015							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,970	20.0	2,498	0	78.9	70	130				
Surr: 1-Chlorooctadecane	1,670		1,998		83.8	60	140				

Sample ID: 1912280-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903		Analysis Date: 12/30/2019	SeqNo: 1122016							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	1,800	19.5	2,441	0	73.7	70	130	1,972	9.20	30	
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Work Order: 1912316
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: 1912280-002BMSD	SampType: MSD	Units: µg/L	Prep Date: 12/20/2019	RunNo: 56307							
Client ID: BATCH	Batch ID: 26903	Analysis Date: 12/30/2019	SeqNo: 1122016								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	1,520		1,952		77.7	60	140			0	

Work Order: 1912316
 CLIENT: Pace Analytical Minnesota
 Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: LCS-26888	SampType: LCS	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: LCSW	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121042							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	202	20.0	200.0	0	101	70	130				
Surr: 1,4-Difluorobenzene	52.0		50.00		104	65	140				
Surr: Bromofluorobenzene	48.7		50.00		97.4	65	140				

Sample ID: LCS-D-26888	SampType: LCS-D	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: LCSW02	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121043							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	207	20.0	200.0	0	104	70	130	201.8	2.60	20	
Surr: 1,4-Difluorobenzene	51.8		50.00		104	65	140		0		
Surr: Bromofluorobenzene	48.2		50.00		96.3	65	140		0		

Sample ID: MB-26888	SampType: MBLK	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: MBLKW	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121044							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Surr: 1,4-Difluorobenzene	47.7		50.00		95.3	65	140				
Surr: Bromofluorobenzene	47.8		50.00		95.6	65	140				

Sample ID: 1912282-005ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: BATCH	Batch ID: 26888		Analysis Date: 12/19/2019	SeqNo: 1121017							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0	0	25	
Surr: 1,4-Difluorobenzene	51.2		50.00		102	65	140		0		
Surr: Bromofluorobenzene	49.2		50.00		98.4	65	140		0		

Work Order: 1912316
CLIENT: Pace Analytical Minnesota
Project: 499738

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: 1912316-004ADUP	SampType: DUP	Units: µg/L	Prep Date: 12/19/2019	RunNo: 56262							
Client ID: PEO-MW-Z2-201912	Batch ID: 26888		Analysis Date: 12/20/2019	SeqNo: 1121030							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C10-C12)	182	20.0		0	0			288.9	45.3	25	R
Surr: 1,4-Difluorobenzene	49.3		50.00		98.6	65	140		0		
Surr: Bromofluorobenzene	49.3		50.00		98.7	65	140		0		

NOTES:

R - High RPD observed. The method is in control as indicated by the LCS.

Client Name: **PACEMINN**
 Logged by: **Carissa True**

Work Order Number: **1912316**
 Date Received: **12/18/2019 10:06:00 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 Required
 6. Was an attempt made to cool the samples? Yes No NA
 7. Were all items received at a temperature of >0°C to 10.0°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="12/18/2019"/>
By Whom:	<input type="text" value="Carissa True"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Sample 4 and 5 ID's switched"/>		
Client Instructions:	<input type="text" value="Confirmed"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler 1	5.8
Sample 1	1.8
Temp Blank 1	2.1

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

Chain of Custody

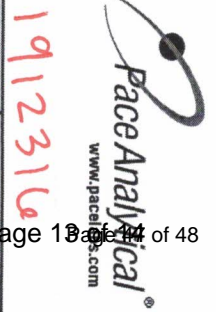
PASI Minnesota Laboratory

Workorder: 10502807
 Report/Invoice To: Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Suite 200
 Minneapolis, MN 55414
 Phone 612-607-6390
 Email: julie.bowser@pacealabs.com

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

P.O. 10502807

Workorder Name: 499738
 Results Requested By: Standard



State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers		NWT PH VPH	NWT PH EPH	Requested Analysis	Comments
					HCL VG9H	Unpreserved AG1U				
1	POE-MMW-35-201912	12/15/2019 08:10	10502807001	Water	3	2	X	X		
2	POE-MMW-02-201912	12/15/2019 09:50	10502807002	Water	3	2	X	X		
3	POE-MMW-34-201912	12/15/2019 11:50	10502807003	Water	3	2	X	X		
4	TRIP BLANK	12/15/2019 08:00	10502807004	Water	3	2	X	X		
5	POE-MMW-Z2-201912	12/15/2019 08:15	10502807005	Water	2		X	X		
Transfers										
1	Released By	Date/Time	Received By	Date/Time	Comments					
2	4 to Pace	12/17/19	MS	12/19/19	report to MDL and only aliphatic carbon ranges C10-C12 are needed. EQUIS EDD					
3					Cooler Temperature on Receipt °C					
					Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N

Chain of Custody

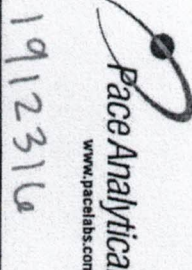
PASI Minnesota Laboratory

Workorder: 10502807
 Report / Invoice To: Julie Bowser
 Pace Analytical Minnesota
 1700 Elm Street
 Suite 200
 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. 10502807

Workorder Name: 499738
 Results Requested By: Standard



State of Sample Origin: OR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers	NWTPH VPH	NWTPH EPH	Requested Analysis	Comments
1	POE-MW-35-201912	12/15/2019 08:10	10502807001	Water	HCL VG9H Unpreserved AGIS	X	X		
2	POE-MM-02-201912	12/15/2019 09:50	10502807002	Water		X	X		
3	POE-MM-34-201912	12/15/2019 11:50	10502807003	Water		X	X		
4	TRIP BLANK	12/15/2019 08:00	10502807004	Water		X	X		
5	POE-MM-Z2-201912	12/15/2019 08:15	10502807005	Water		X	X		
Transfers									
1	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Y or N	Samples Intact	Y or N
2	Julie Bowser	12/17/19 14:15	MW: MW	12/18/19 10:15	X				
3									

report to MDL and only aliphatic carbon ranges C10-C12 are needed. EQUIS EDD All samples collected 12/16/2019 per JB 11/12/2020 mm

Attachment C – Historical Data

Table 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 ¹	Transducer Installed	Quarterly Monitoring ²
				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	Active	27	Shallow	12	27	30.31	X	X		X
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	31.70	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	31.90	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	25	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	25	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

Notes:

- = not applicable

¹ = Manual water level measurement collected monthly

² = Groundwater analytical samples

NAVD88 = North America Vertical Datum 1988

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MP-D-1	Deep	30.76	12/8/2017	09:58	20.85	-	ND	-	9.91
MP-D-2	Deep	30.68	12/8/2017	10:00	27.50	-	ND	-	3.18
MP-D-3	Deep	31.21	12/8/2017	10:02	21.05	-	ND	-	10.16
MP-S-1	Shallow	30.49	12/8/2017	09:56	18.99	-	ND	-	11.50
MP-S-2	Shallow	30.54	12/8/2017	09:55	19.00	-	ND	-	11.54
MP-S-3	Shallow	30.42	12/8/2017	09:52	19.11	-	ND	-	11.31
MW-02	Shallow	31.18	5/23/2017	13:34	11.90	-	ND	-	19.28
MW-02	Shallow	31.18	7/20/2017	12:46	21.73	-	ND	-	9.45
MW-02	Shallow	31.18	9/15/2017	10:56	23.90	22.10	1.80	0.29	8.72
MW-02	Shallow	31.18	12/8/2017	13:23	20.47	19.99	0.48	0.08	11.09
MW-02	Shallow	31.18	4/19/2018	11:20	16.65	-	ND	-	14.53
MW-02	Shallow	31.18	5/22/2018	09:59	13.14	-	ND	-	18.04
MW-02	Shallow	31.18	6/14/2018	10:44	20.12	15.16	4.96	0.81	15.03
MW-02	Shallow	31.18	9/13/2018	11:13	23.21	22.15	1.06	0.17	8.82
MW-02	Shallow	31.18	10/18/2018	10:49	24.55	24.16	0.39	0.06	6.94
MW-02	Shallow	31.18	11/26/2018	10:56	22.50	-	ND	-	8.68
MW-02	Shallow	31.18	12/17/2018	12:47	22.13	-	ND	-	9.05
MW-02	Shallow	31.18	1/9/2019	09:21	21.05	-	ND	-	10.13
MW-02	Shallow	31.18	2/13/2019	09:16	20.87	20.87	Trace	-	10.31
MW-02	Shallow	31.18	3/11/2019	09:49	20.96	-	ND	-	10.22
MW-02	Shallow	31.18	4/10/2019	10:54	18.11*	-	ND	-	13.07*
MW-02	Shallow	31.18	5/8/2019	10:00	18.59	-	ND	-	12.59
MW-02	Shallow	31.18	6/6/2019	09:47	18.80	-	ND	-	12.38
MW-02	Shallow	31.18	07/10/2019	12:38	21.02	-	ND	-	10.16
MW-02	Shallow	31.18	08/14/2019	09:57	21.68	21.67	0.01	0.00	9.51
MW-02	Shallow	31.18	09/09/2019	11:41	22.01	-	ND	-	9.17
MW-02	Shallow	31.18	10/11/2019	09:38	22.57	-	ND	-	8.61
MW-02	Shallow	31.18	11/07/2019	10:22	22.88	-	ND	-	8.30
MW-02	Shallow	31.18	12/06/2019	09:43	24.01	-	ND	-	7.17
MW-03	Shallow	31.67	5/23/2017	12:10	11.72	-	ND	-	19.95
MW-03	Shallow	31.67	7/20/2017	11:32	18.08	-	ND	-	13.59
MW-03	Shallow	31.67	9/15/2017	08:59	21.01	-	ND	-	10.66
MW-03	Shallow	31.67	12/8/2017	11:00	19.08	-	ND	-	12.59
MW-03	Shallow	31.67	4/16/2018	11:24	16.55	-	ND	-	15.12
MW-03	Shallow	31.67	5/22/2018	11:41	13.33	-	ND	-	18.34
MW-03	Shallow	31.67	9/13/2018	10:55	21.70	-	ND	-	9.97
MW-03	Shallow	31.67	10/18/2018	09:26	22.75	-	ND	-	8.92
MW-03	Shallow	31.67	11/26/2018	10:04	22.46	-	ND	-	9.21
MW-03	Shallow	31.67	12/18/2018	09:28	21.97	-	ND	-	9.70
MW-03	Shallow	31.67	1/9/2019	09:02	20.64	-	ND	-	11.03
MW-03	Shallow	31.67	2/13/2019	08:51	20.03	-	ND	-	11.64
MW-03	Shallow	31.67	3/11/2019	08:47	19.62	-	ND	-	12.05
MW-03	Shallow	31.67	4/10/2019	09:11	19.29	-	ND	-	12.38
MW-03	Shallow	31.67	5/8/2019	08:24	17.69	-	ND	-	13.98
MW-03	Shallow	31.67	6/6/2019	08:23	17.62	-	ND	-	14.05
MW-03	Shallow	31.67	07/10/2019	11:39	20.30	-	ND	-	11.37
MW-03	Shallow	31.67	08/14/2019	08:40	21.53	-	ND	-	10.14
MW-03	Shallow	31.67	09/09/2019	10:35	22.06	-	ND	-	9.61
MW-03	Shallow	31.67	10/11/2019	08:34	22.87	-	ND	-	8.80
MW-03	Shallow	31.67	11/07/2019	09:10	23.42	-	ND	-	8.25
MW-03	Shallow	31.67	12/06/2019	08:30	22.98	-	ND	-	8.69
MW-04	Shallow	31.37	7/20/2017	11:03	15.28	-	ND	-	16.09
MW-04	Shallow	31.37	4/19/2018	11:10	15.25	-	ND	-	16.12
MW-04	Shallow	31.37	5/22/2018	11:44	12.98	-	ND	-	18.39
MW-05	Shallow	31.27	7/20/2017	11:15	18.95	-	ND	-	12.32
MW-05	Shallow	31.27	4/19/2018	11:03	16.53	-	ND	-	14.74
MW-05	Shallow	31.27	5/22/2018	11:46	11.55	-	ND	-	19.72
MW-06	Shallow	31.23	5/23/2017	12:06	11.75	-	ND	-	19.48
MW-06	Shallow	31.23	7/20/2017	11:28	18.75	-	ND	-	12.48
MW-06	Shallow	31.23	9/15/2017	09:05	21.83	-	ND	-	9.40
MW-06	Shallow	31.23	12/8/2017	09:17	19.55	-	ND	-	11.68
MW-06	Shallow	31.23	4/19/2018	11:17	16.40	-	ND	-	14.83
MW-06	Shallow	31.23	5/22/2018	11:48	12.55	-	ND	-	18.68

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-06	Shallow	31.23	9/13/2018	10:53	22.30	-	ND	-	8.93
MW-06	Shallow	31.23	10/18/2018	09:33	23.22	-	ND	-	8.01
MW-06	Shallow	31.23	11/26/2018	10:02	22.53	-	ND	-	8.70
MW-06	Shallow	31.23	12/18/2018	10:53	22.12	-	ND	-	9.11
MW-06	Shallow	31.23	1/9/2019	09:05	20.86	-	ND	-	10.37
MW-06	Shallow	31.23	2/13/2019	08:53	20.47	-	ND	-	10.76
MW-06	Shallow	31.23	3/11/2019	08:49	20.26	-	ND	-	10.97
MW-06	Shallow	31.23	4/10/2019	09:13	19.16	-	ND	-	12.07
MW-06	Shallow	31.23	5/8/2019	08:28	17.86	-	ND	-	13.37
MW-06	Shallow	31.23	6/6/2019	08:26	17.50	-	ND	-	13.73
MW-06	Shallow	31.23	07/10/2019	11:41	21.07	-	ND	-	10.16
MW-06	Shallow	31.23	08/14/2019	08:42	22.00	-	ND	-	9.23
MW-06	Shallow	31.23	09/09/2019	10:37	22.60	-	ND	-	8.63
MW-06	Shallow	31.23	10/11/2019	08:36	23.11	-	ND	-	8.12
MW-06	Shallow	31.23	11/07/2019	09:13	23.20	-	ND	-	8.03
MW-06	Shallow	31.23	12/06/2019	08:32	22.83	-	ND	-	8.40
MW-07	Shallow	30.31	4/10/2019				Dry		
MW-07	Shallow	30.31	5/8/2019				Dry		
MW-07	Shallow	30.31	6/6/2019				Dry		
MW-07	Shallow	30.31	07/10/2019				Dry		
MW-07	Shallow	30.31	08/14/2019				Dry		
MW-07	Shallow	30.31	09/09/2019				Dry		
MW-07	Shallow	30.31	10/18/2018				Unknown		
MW-07	Shallow	0.00	11/26/2018				Unknown		
MW-07	Shallow	0.00	12/18/2018				Dry		
MW-07	Shallow	30.31	10/11/2019				Dry		
MW-07	Shallow	30.31	11/07/2019				Dry		
MW-07	Shallow	30.31	12/06/2019				Dry		
MW-08	Shallow	30.93	5/23/2017	12:53	12.80	-	ND	-	18.13
MW-08	Shallow	30.93	7/20/2017	12:50	19.20	-	ND	-	11.73
MW-08	Shallow	30.93	9/15/2017	09:28	21.93	-	ND	-	9.00
MW-08	Shallow	30.93	11/7/2017	09:41	21.75	-	ND	-	9.18
MW-08	Shallow	30.93	12/8/2017	11:57	19.73	-	ND	-	11.20
MW-08	Shallow	30.93	1/31/2018	11:43	17.07	-	ND	-	13.86
MW-08	Shallow	30.93	3/6/2018	11:17	18.24	-	ND	-	12.69
MW-08	Shallow	30.93	4/19/2018	13:32	16.10	-	ND	-	14.83
MW-08	Shallow	30.93	5/22/2018	10:00	12.14	-	ND	-	18.79
MW-08	Shallow	30.93	6/14/2018	10:27	15.93	-	ND	-	15.00
MW-08	Shallow	30.93	7/13/2018	09:53	19.90	-	ND	-	11.03
MW-08	Shallow	30.93	8/9/2018	09:33	21.34	-	ND	-	9.59
MW-08	Shallow	30.93	9/13/2018	11:07	22.23	-	ND	-	8.70
MW-08	Shallow	30.93	10/18/2018	10:41	23.31	-	ND	-	7.62
MW-08	Shallow	30.93	11/26/2018	09:58	22.28	-	ND	-	8.65
MW-08	Shallow	30.93	12/18/2018	13:12	21.82	-	ND	-	9.11
MW-08	Shallow	30.93	1/9/2019	09:19	20.74	-	ND	-	10.19
MW-08	Shallow	30.93	2/13/2019	09:14	20.66	-	ND	-	10.27
MW-08	Shallow	30.93	3/11/2019	09:26	21.03	-	ND	-	9.90
MW-08	Shallow	30.93	4/10/2019	10:05	19.21	-	ND	-	11.72
MW-08	Shallow	30.93	5/8/2019	09:45	18.56	-	ND	-	12.37
MW-08	Shallow	30.93	6/6/2019	09:30	18.13	-	ND	-	12.80
MW-08	Shallow	30.93	07/10/2019	12:43	22.20	-	ND	-	8.73
MW-08	Shallow	30.93	08/14/2019	09:51	22.88	-	ND	-	8.05
MW-08	Shallow	30.93	09/09/2019	11:39	23.46	-	ND	-	7.47
MW-08	Shallow	30.93	10/11/2019	09:27	23.70	-	ND	-	7.23
MW-08	Shallow	30.93	11/07/2019	10:04	23.73	-	ND	-	7.20
MW-08	Shallow	30.93	12/06/2019	09:27	23.29	-	ND	-	7.64
MW-11	Shallow	31.06	5/26/2017	10:45	14.16	-	ND	-	16.90
MW-11	Shallow	31.06	7/20/2017	12:20	22.32	-	ND	-	8.74
MW-11	Shallow	31.06	9/15/2017	11:00	22.40	22.39	0.01	0.001	8.67
MW-11	Shallow	31.06	11/7/2017	10:54	22.20	21.79	0.41	0.07	9.19
MW-11	Shallow	31.06	12/8/2017	13:28	20.41	19.91	0.50	0.08	11.05
MW-11	Shallow	31.06	1/31/2018	12:05	17.34	17.21	0.13	0.02	13.82
MW-11	Shallow	31.06	3/6/2018	11:31	18.70	18.20	0.50	0.08	12.76
MW-11	Shallow	31.06	4/19/2018	14:02	16.29	-	ND	-	14.77
MW-11	Shallow	31.06	5/22/2018	10:00	13.60	-	ND	-	17.46

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-11	Shallow	31.06	6/14/2018	11:04	17.97	15.56	2.41	0.39	15.02
MW-11	Shallow	31.06	7/13/2018	10:39	20.07	18.87	1.20	0.20	11.95
MW-11	Shallow	31.06	8/9/2018	10:25	21.77	21.32	0.45	0.07	9.65
MW-11	Shallow	31.06	9/13/2018	11:10	22.30	22.30	Trace	-	8.76
MW-11	Shallow	31.06	10/18/2018	11:01	24.07	23.90	0.17	0.03	7.13
MW-11	Shallow	31.06	11/26/2018	10:57	22.33	-	ND	-	8.73
MW-11	Shallow	31.06	12/17/2018	14:00	21.98	21.95	0.03	0.005	9.10
MW-11	Shallow	31.06	1/9/2019	09:25	20.89	20.88	0.01	0.002	10.18
MW-11	Shallow	31.06	2/13/2019	09:18	20.69	-	ND	-	10.37
MW-11	Shallow	31.06	3/11/2019	09:52	21.62	-	ND	-	9.44
MW-11	Shallow	31.06	4/10/2019	10:57	17.75	-	ND	-	13.31
MW-11	Shallow	31.06	5/8/2019	10:05	19.73	19.73	Trace	-	11.33
MW-11	Shallow	31.06	6/6/2019	09:54	18.31	-	ND	-	12.75
MW-11	Shallow	31.06	07/10/2019	12:31	23.60	-	ND	-	7.46
MW-11	Shallow	31.06	08/14/2019	10:04	23.45	23.33	0.12	0.02	7.71
MW-11	Shallow	31.06	09/09/2019	11:48	23.85	23.76	0.09	0.01	7.28
MW-11	Shallow	31.06	10/11/2019	09:41	23.43	23.42	0.01	0.00	7.64
MW-11	Shallow	31.06	11/07/2019	10:25	23.74	23.70	0.04	0.01	7.35
MW-11	Shallow	31.06	12/06/2019	09:40	24.01	-	ND	-	7.05
MW-14	Shallow	32.58	5/23/2017	11:15	11.46	-	ND	-	21.12
MW-14	Shallow	32.58	7/20/2017	10:38	15.27	-	ND	-	17.31
MW-14	Shallow	32.58	9/15/2017	09:10	16.67	-	ND	-	15.91
MW-14	Shallow	32.58	12/8/2017	08:58	16.03	-	ND	-	16.55
MW-15	Shallow	32.35	5/23/2017	11:12	13.83	-	ND	-	18.52
MW-15	Shallow	32.35	7/20/2017	10:41	21.10	-	ND	-	11.25
MW-15	Shallow	32.35	9/15/2017	09:13	23.72	-	ND	-	8.63
MW-15	Shallow	32.35	12/8/2017	08:58	21.57	-	ND	-	10.78
MW-16	Shallow	31.88	5/23/2017	11:25	13.92	-	ND	-	17.96
MW-16	Shallow	31.88	7/20/2017	10:28	26.55	-	ND	-	5.33
MW-16	Shallow	31.88	9/15/2017	09:19	23.81	-	ND	-	8.07
MW-16	Shallow	31.88	12/8/2017	09:04	21.48	-	ND	-	10.40
MW-17	Shallow	31.79	5/23/2017	11:20	12.70	-	ND	-	19.09
MW-17	Shallow	31.79	7/20/2017	10:32	20.05	-	ND	-	11.74
MW-17	Shallow	31.79	9/15/2017	09:17	22.53	-	ND	-	9.26
MW-17	Shallow	31.79	12/8/2017	09:03	20.55	-	ND	-	11.24
MW-18	Shallow	30.87	5/23/2017	13:16	12.99	-	ND	-	17.88
MW-18	Shallow	30.87	7/20/2017	11:40	20.43	-	ND	-	10.44
MW-18	Shallow	30.87	9/15/2017	09:40	22.76	-	ND	-	8.11
MW-18	Shallow	30.87	11/7/2017	10:03	21.77	-	ND	-	9.10
MW-18	Shallow	30.87	12/8/2017	12:15	20.31	-	ND	-	10.56
MW-18	Shallow	30.87	1/31/2018	10:50	17.09	-	ND	-	13.78
MW-18	Shallow	30.87	3/6/2018	09:55	18.91	-	ND	-	11.96
MW-18	Shallow	30.87	4/19/2018	13:12	15.32	-	ND	-	15.55
MW-18	Shallow	30.87	5/22/2018	10:00	11.05	-	ND	-	19.82
MW-18	Shallow	30.87	6/14/2018	10:16	17.56	-	ND	-	13.31
MW-18	Shallow	30.87	7/13/2018	09:43	20.33	-	ND	-	10.54
MW-18	Shallow	30.87	8/9/2018	09:20	21.71	-	ND	-	9.16
MW-18	Shallow	30.87	9/13/2018	10:37	22.18	-	ND	-	8.69
MW-18	Shallow	30.87	10/18/2018	09:42	23.89	-	ND	-	6.98
MW-18	Shallow	30.87	11/26/2018	10:45	22.06	-	ND	-	8.81
MW-18	Shallow	30.87	12/19/2018	11:45	21.31	-	ND	-	9.56
MW-18	Shallow	30.87	1/9/2019	09:15	20.50	-	ND	-	10.37
MW-18	Shallow	30.87	2/13/2019	09:02	20.63	-	ND	-	10.24
MW-18	Shallow	30.87	3/11/2019	08:54	20.91	-	ND	-	9.96
MW-18	Shallow	30.87	4/10/2019	09:18	15.56	-	ND	-	15.31
MW-18	Shallow	30.87	5/8/2019	08:43	19.01	-	ND	-	11.86
MW-18	Shallow	30.87	6/6/2019	08:33	17.99	-	ND	-	12.88
MW-18	Shallow	30.87	07/10/2019	11:53	21.70	-	ND	-	9.17
MW-18	Shallow	30.87	08/14/2019	08:54	21.70	-	ND	-	9.17
MW-18	Shallow	30.87	09/09/2019	10:44	23.38	-	ND	-	7.49
MW-18	Shallow	30.87	10/11/2019	08:44	23.36	-	ND	-	7.51
MW-18	Shallow	30.87	11/07/2019	09:19	23.54	-	ND	-	7.33
MW-18	Shallow	30.87	12/06/2019	08:39	23.17	-	ND	-	7.70
MW-19	Shallow	31.70	5/23/2017	11:58	12.61	-	ND	-	19.09
MW-19	Shallow	31.70	7/20/2017	11:20	19.94	-	ND	-	11.76
MW-19	Shallow	31.70	9/15/2017	09:24	22.86	-	ND	-	8.84

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-19	Shallow	31.70	12/8/2017	09:20	20.48	-	ND	-	11.22
MW-19	Shallow	31.70	4/19/2018	11:00	16.96	-	ND	-	14.74
MW-19	Shallow	31.70	5/22/2018	11:52	12.63	-	ND	-	19.07
MW-19	Shallow	31.70	9/13/2018	10:48	23.04	-	ND	-	8.66
MW-19	Shallow	31.70	10/18/2018	09:35	23.89	-	ND	-	7.81
MW-19	Shallow	31.70	11/26/2018	10:00	23.15	-	ND	-	8.55
MW-19	Shallow	31.70	12/18/2018	11:54	22.74	-	ND	-	8.96
MW-19	Shallow	31.70	1/9/2019	09:07	21.56	-	ND	-	10.14
MW-19	Shallow	31.70	2/13/2019	08:55	21.29	-	ND	-	10.41
MW-19	Shallow	31.70	3/11/2019	08:51	21.17	-	ND	-	10.53
MW-19	Shallow	31.70	4/10/2019	09:14	19.78	-	ND	-	11.92
MW-19	Shallow	31.70	5/8/2019	08:31	18.73	-	ND	-	12.97
MW-19	Shallow	31.70	6/6/2019	08:28	18.31	-	ND	-	13.39
MW-19	Shallow	31.70	07/10/2019	11:43	21.83	-	ND	-	9.87
MW-19	Shallow	31.70	08/14/2019	08:45	22.71	-	ND	-	8.99
MW-19	Shallow	31.70	09/09/2019	10:39	23.27	-	ND	-	8.43
MW-19	Shallow	31.70	10/11/2019	08:38	23.80	-	ND	-	7.90
MW-19	Shallow	31.70	11/07/2019	09:15	23.83	-	ND	-	7.87
MW-19	Shallow	31.70	12/06/2019	08:35	23.39	-	ND	-	8.31
MW-20	Shallow	30.11	7/20/2017	11:11	16.08	-	ND	-	14.03
MW-20	Shallow	30.11	4/19/2018	11:07	14.77	-	ND	-	15.34
MW-21	Shallow	31.36	5/23/2017	12:22	9.89	-	ND	-	21.47
MW-21	Shallow	31.36	5/31/2017	15:15	10.09	-	ND	-	21.27
MW-21	Shallow	31.36	7/20/2017	10:52	13.85	-	ND	-	17.51
MW-21	Shallow	31.36	9/15/2017	08:55	14.76	-	ND	-	16.60
MW-21	Shallow	31.36	11/7/2017	09:01	14.74	-	ND	-	16.62
MW-21	Shallow	31.36	12/8/2017	11:22	13.70	-	ND	-	17.66
MW-21	Shallow	31.36	1/31/2018	10:30	13.19	-	ND	-	18.17
MW-21	Shallow	31.36	3/6/2018	09:30	13.48	-	ND	-	17.88
MW-21	Shallow	31.36	4/19/2018	13:48	13.32	-	ND	-	18.04
MW-21	Shallow	31.36	5/22/2018	10:00	12.83	-	ND	-	18.53
MW-21	Shallow	31.36	6/14/2018	10:40	12.96	-	ND	-	18.40
MW-21	Shallow	31.36	7/13/2018	11:12	14.05	-	ND	-	17.31
MW-21	Shallow	31.36	8/9/2018	10:54	14.43	-	ND	-	16.93
MW-21	Shallow	31.36	9/13/2018	10:59	15.23	-	ND	-	16.13
MW-21	Shallow	31.36	10/18/2018	09:24	15.72	-	ND	-	15.64
MW-21	Shallow	31.36	11/26/2018	10:07	15.94	-	ND	-	15.42
MW-21	Shallow	31.36	12/18/2018	07:50	15.92	-	ND	-	15.44
MW-21	Shallow	31.36	1/9/2019	09:01	14.80	-	ND	-	16.56
MW-21	Shallow	31.36	2/13/2019	08:49	14.18	-	ND	-	17.18
MW-21	Shallow	31.36	3/11/2019	08:45	13.78	-	ND	-	17.58
MW-21	Shallow	31.36	4/10/2019	09:08	14.09	-	ND	-	17.27
MW-21	Shallow	31.36	5/8/2019	08:20	13.93	-	ND	-	17.43
MW-21	Shallow	31.36	6/6/2019	08:19	14.23	-	ND	-	17.13
MW-21	Shallow	31.36	07/10/2019	11:37	14.73	-	ND	-	16.63
MW-21	Shallow	31.36	08/14/2019	08:37	15.22	-	ND	-	16.14
MW-21	Shallow	31.36	09/09/2019	10:32	15.52	-	ND	-	15.84
MW-21	Shallow	31.36	10/11/2019	08:28	15.77	-	ND	-	15.59
MW-21	Shallow	31.36	11/07/2019	09:08	15.91	-	ND	-	15.45
MW-21	Shallow	31.36	12/06/2019	08:28	16.04	-	ND	-	15.32
MW-24A	Shallow	32.35	5/23/2017	15:48	13.99	-	ND	-	18.36
MW-24A	Shallow	32.35	7/20/2017	10:05	18.47	-	ND	-	13.88
MW-24A	Shallow	32.35	9/15/2017	08:36	19.30	-	ND	-	13.05
MW-24A	Shallow	32.35	12/8/2017	10:47	17.86	-	ND	-	14.49
MW-24A	Shallow	32.35	4/19/2018	10:30	16.65	-	ND	-	15.70
MW-24A	Shallow	32.35	5/22/2018	11:02	13.06	-	ND	-	19.29
MW-24A	Shallow	32.35	6/14/2018	09:31	16.90	-	ND	-	15.45
MW-24A	Shallow	32.35	9/13/2018	09:58	20.01	-	ND	-	12.34
MW-24A	Shallow	32.35	10/18/2018	Dry					
MW-24A	Shallow	32.35	11/26/2018	10:18	23.26	-	ND	-	9.09
MW-24A	Shallow	32.35	12/13/2018	10:50	21.93	-	ND	-	10.42
MW-24A	Shallow	32.35	1/9/2019	08:55	18.75	-	ND	-	13.60
MW-24A	Shallow	32.35	2/13/2019	08:43	18.33	-	ND	-	14.02
MW-24A	Shallow	32.35	3/11/2019	09:15	18.12	-	ND	-	14.23
MW-24A	Shallow	32.35	4/10/2019	09:35	17.31	-	ND	-	15.04
MW-24A	Shallow	32.35	5/8/2019	09:15	18.09	-	ND	-	14.26

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-24A	Shallow	32.35	6/6/2019	09:02	18.27	-	ND	-	14.08
MW-24A	Shallow	32.35	07/10/2019	12:11	19.05	-	ND	-	13.30
MW-24A	Shallow	32.35	08/14/2019	09:20	19.82	-	ND	-	12.53
MW-24A	Shallow	32.35	09/09/2019	11:08	21.52	-	ND	-	10.83
MW-24A	Shallow	32.35	10/11/2019	09:09	23.25	-	ND	-	9.10
MW-24A	Shallow	32.35	11/07/2019	09:44	23.53	-	ND	-	8.82
MW-24A	Shallow	32.35	12/06/2019	Dry					
MW-25	Shallow	31.78	5/23/2017	09:39	11.69	-	ND	-	20.09
MW-25	Shallow	31.78	7/20/2017	11:02	18.80	-	ND	-	12.98
MW-25	Shallow	31.78	9/15/2017	08:52	23.36	-	ND	-	8.42
MW-25	Shallow	31.78	12/8/2017	10:53	19.98	-	ND	-	11.80
MW-25	Shallow	31.78	4/19/2018	11:27	16.08	-	ND	-	15.70
MW-25	Shallow	31.78	5/22/2018	11:29	13.33	-	ND	-	18.45
MW-25	Shallow	31.78	9/13/2018	11:01	22.84	-	ND	-	8.94
MW-25	Shallow	31.78	10/18/2018	10:38	24.97	-	ND	-	6.81
MW-25	Shallow	31.78	11/26/2018	10:09	22.45	-	ND	-	9.33
MW-25	Shallow	31.78	12/20/2018	09:38	21.66	-	ND	-	10.12
MW-25	Shallow	31.78	1/9/2019	08:58	21.15	-	ND	-	10.63
MW-25	Shallow	31.78	3/11/2019	08:42	21.20	-	ND	-	10.58
MW-25	Shallow	31.78	4/10/2019	09:06	18.56	-	ND	-	13.22
MW-25	Shallow	31.78	5/8/2019	09:28	18.05	-	ND	-	13.73
MW-25	Shallow	31.78	6/6/2019	09:15	17.74	-	ND	-	14.04
MW-25	Shallow	31.78	07/10/2019	12:19	22.55	-	ND	-	9.23
MW-25	Shallow	31.78	08/14/2019	09:24	22.96	-	ND	-	8.82
MW-25	Shallow	31.78	09/09/2019	10:30	24.48	-	ND	-	7.30
MW-25	Shallow	31.78	10/11/2019	08:31	24.19	-	ND	-	7.59
MW-25	Shallow	31.78	11/07/2019	09:04	24.43	-	ND	-	7.35
MW-25	Shallow	31.78	12/06/2019	08:25	24.01	-	ND	-	7.77
MW-26	Deep	31.89	5/23/2017	15:25	14.32	-	ND	-	17.57
MW-26	Deep	31.89	7/20/2017	12:03	23.08	-	ND	-	8.81
MW-26	Deep	31.89	9/15/2017	10:03	25.33	-	ND	-	6.56
MW-26	Deep	31.89	12/8/2017	10:25	21.66	-	ND	-	10.23
MW-26	Deep	31.89	4/19/2018	10:41	16.17	-	ND	-	15.72
MW-26	Deep	31.89	5/22/2018	10:50	12.39	-	ND	-	19.50
MW-26	Deep	31.89	6/14/2018	08:46	19.28	-	ND	-	12.61
MW-26	Deep	31.89	9/13/2018	10:14	23.23	-	ND	-	8.66
MW-26	Deep	31.89	10/18/2018	10:02	26.77	-	ND	-	5.12
MW-26	Deep	31.89	11/26/2018	10:27	23.08	-	ND	-	8.81
MW-26	Deep	31.89	12/14/2018	08:45	23.09	-	ND	-	8.80
MW-26	Deep	31.89	1/9/2019	08:44	21.47	-	ND	-	10.42
MW-26	Deep	31.89	2/13/2019	08:35	21.49	-	ND	-	10.40
MW-26	Deep	31.89	3/11/2019	09:05	22.90	-	ND	-	8.99
MW-26	Deep	31.89	4/10/2019	09:26	15.33	-	ND	-	16.56
MW-26	Deep	31.89	5/8/2019	09:04	21.37	-	ND	-	10.52
MW-26	Deep	31.89	6/6/2019	08:50	19.83	-	ND	-	12.06
MW-26	Deep	31.89	07/10/2019	12:03	25.35	-	ND	-	6.54
MW-26	Deep	31.89	08/14/2019	09:08	24.63	-	ND	-	7.26
MW-26	Deep	31.89	09/09/2019	10:57	26.95	-	ND	-	4.94
MW-26	Deep	31.89	10/11/2019	08:54	26.34	-	ND	-	5.55
MW-26	Deep	31.89	11/07/2019	09:33	26.67	-	ND	-	5.22
MW-26	Deep	31.89	12/06/2019	08:58	25.29	-	ND	-	6.60
MW-27	Deep	31.46	5/23/2017	14:55	13.88	-	ND	-	17.58
MW-27	Deep	31.46	7/20/2017	11:10	22.39	-	ND	-	9.07
MW-27	Deep	31.46	9/15/2017	09:51	25.11	-	ND	-	6.35
MW-27	Deep	31.46	11/7/2017	10:17	22.58	-	ND	-	8.88
MW-27	Deep	31.46	12/8/2017	12:29	21.55	-	ND	-	9.91
MW-27	Deep	31.46	1/31/2018	11:08	17.94	-	ND	-	13.52
MW-27	Deep	31.46	3/6/2018	10:17	19.90	-	ND	-	11.56
MW-27	Deep	31.46	4/19/2018	12:39	15.89	-	ND	-	15.57
MW-27	Deep	31.46	5/22/2018	10:00	11.95	-	ND	-	19.51
MW-27	Deep	31.46	6/14/2018	10:04	18.91	-	ND	-	12.55
MW-27	Deep	31.46	7/13/2018	10:06	20.96	-	ND	-	10.50
MW-27	Deep	31.46	8/9/2018	09:46	23.04	-	ND	-	8.42
MW-27	Deep	31.46	9/13/2018	10:31	22.91	-	ND	-	8.55
MW-27	Deep	31.46	10/18/2018	09:48	26.28	-	ND	-	5.18
MW-27	Deep	31.46	11/26/2018	10:40	22.73	-	ND	-	8.73

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-27	Deep	31.46	12/17/2018	09:45	23.30	-	ND	-	8.16
MW-27	Deep	31.46	1/9/2019	08:34	20.98	-	ND	-	10.48
MW-27	Deep	31.46	2/13/2019	09:06	21.04	-	ND	-	10.42
MW-27	Deep	31.46	3/11/2019	08:59	22.14	-	ND	-	9.32
MW-27	Deep	31.46	4/10/2019	09:23	14.88	-	ND	-	16.58
MW-27	Deep	31.46	5/8/2019	08:54	20.38	-	ND	-	11.08
MW-27	Deep	31.46	6/6/2019	08:43	18.88	-	ND	-	12.58
MW-27	Deep	31.46	07/10/2019	11:59	24.00	-	ND	-	7.46
MW-27	Deep	31.46	08/14/2019	09:01	23.36	-	ND	-	8.10
MW-27	Deep	31.46	09/09/2019	10:50	26.06	-	ND	-	5.40
MW-27	Deep	31.46	10/11/2019	08:49	25.22	-	ND	-	6.24
MW-27	Deep	31.46	11/07/2019	09:25	25.68	-	ND	-	5.78
MW-27	Deep	31.46	12/06/2019	08:50	24.80	-	ND	-	6.66
MW-28	Shallow	31.26	5/23/2017	10:38	12.66	-	ND	-	18.60
MW-28	Shallow	31.26	7/20/2017	10:42	18.10	-	ND	-	13.16
MW-28	Shallow	31.26	9/15/2017	08:50	22.99	-	ND	-	8.27
MW-28	Shallow	31.26	11/7/2017	08:45	22.11	-	ND	-	9.15
MW-28	Shallow	31.26	12/8/2017	13:10	20.39	-	ND	-	10.87
MW-28	Shallow	31.26	1/31/2018	11:34	16.98	-	ND	-	14.28
MW-28	Shallow	31.26	3/6/2018	11:49	18.82	-	ND	-	12.44
MW-28	Shallow	31.26	4/19/2018	13:42	15.82	-	ND	-	15.44
MW-28	Shallow	31.26	5/22/2018	10:00	12.69	-	ND	-	18.57
MW-28	Shallow	31.26	6/14/2018	11:15	16.71	-	ND	-	14.55
MW-28	Shallow	31.26	7/13/2018	11:20	20.31	-	ND	-	10.95
MW-28	Shallow	31.26	8/9/2018	11:07	22.05	-	ND	-	9.21
MW-28	Shallow	31.26	9/13/2018	10:08	22.76	-	ND	-	8.50
MW-28	Shallow	31.26	10/18/2018	10:16	24.23	-	ND	-	7.03
MW-28	Shallow	31.26	11/26/2018	10:12	22.50	-	ND	-	8.76
MW-28	Shallow	31.26	12/13/2018	12:45	22.25	-	ND	-	9.01
MW-28	Shallow	31.26	1/9/2019	08:57	21.20	-	ND	-	10.06
MW-28	Shallow	31.26	2/13/2019	08:57	20.52	-	ND	-	10.74
MW-28	Shallow	31.26	3/11/2019	09:21	19.74	-	ND	-	11.52
MW-28	Shallow	31.26	4/10/2019	09:47	17.14	-	ND	-	14.12
MW-28	Shallow	31.26	5/8/2019	09:25	17.79	-	ND	-	13.47
MW-28	Shallow	31.26	6/6/2019	09:12	17.44	-	ND	-	13.82
MW-28	Shallow	31.26	07/10/2019	12:17	23.03	-	ND	-	8.23
MW-28	Shallow	31.26	08/14/2019	09:27	22.95	-	ND	-	8.31
MW-28	Shallow	31.26	09/09/2019	11:15	24.21	-	ND	-	7.05
MW-28	Shallow	31.26	10/11/2019	09:16	24.34	-	ND	-	6.92
MW-28	Shallow	31.26	11/07/2019	09:52	24.37	-	ND	-	6.89
MW-28	Shallow	31.26	12/06/2019	09:16	23.95	-	ND	-	7.31
MW-29	Shallow	31.90	5/23/2017	15:26	12.19	-	ND	-	19.71
MW-29	Shallow	31.90	7/20/2017	10:38	16.93	-	ND	-	14.97
MW-29	Shallow	31.90	9/15/2017	10:10	19.41	-	ND	-	12.49
MW-29	Shallow	31.90	12/8/2017	10:37	18.29	-	ND	-	13.61
MW-29	Shallow	31.90	4/19/2018	10:35	16.67	-	ND	-	15.23
MW-29	Shallow	31.90	5/22/2018	10:59	14.38	-	ND	-	17.52
MW-29	Shallow	31.90	6/14/2018	09:45	15.33	-	ND	-	16.57
MW-29	Shallow	31.90	9/13/2018	10:09	19.77	-	ND	-	12.13
MW-29	Shallow	31.90	10/18/2018	10:07	21.83	-	ND	-	10.07
MW-29	Shallow	31.90	11/26/2018	10:23	22.30	-	ND	-	9.60
MW-29	Shallow	31.90	12/12/2018	10:20	22.02	-	ND	-	9.88
MW-29	Shallow	31.90	1/9/2019	08:48	20.91	-	ND	-	10.99
MW-29	Shallow	31.90	2/13/2019	08:45	19.37	-	ND	-	12.53
MW-29	Shallow	31.90	3/11/2019	09:23	18.89	-	ND	-	13.01
MW-29	Shallow	31.90	4/10/2019	09:50	19.05	-	ND	-	12.85
MW-29	Shallow	31.90	5/8/2019	09:32	20.12	-	ND	-	11.78
MW-29	Shallow	31.90	6/6/2019	09:19	19.24	-	ND	-	12.66
MW-29	Shallow	31.90	07/10/2019	12:21	21.72	-	ND	-	10.18
MW-29	Shallow	31.90	08/14/2019	09:32	20.80	-	ND	-	11.10
MW-29	Shallow	31.90	09/09/2019	11:20	19.80	-	ND	-	12.10
MW-29	Shallow	31.90	10/11/2019			Blocked. Potentially biofouled.			
MW-29**	Shallow	31.90	11/07/2019	09:54	22.44	-	ND	-	9.46
MW-29**	Shallow	31.90	12/06/2019	09:19	23.49	-	ND	-	8.41
MW-30	Shallow	31.05	5/23/2017	13:10	12.20	-	ND	-	18.85
MW-30	Shallow	31.05	7/20/2017	11:49	19.49	-	ND	-	11.56

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-30	Shallow	31.05	9/15/2017	09:34	22.49	-	ND	-	8.56
MW-30	Shallow	31.05	11/7/2017	09:52	22.00	-	ND	-	9.05
MW-30	Shallow	31.05	12/8/2017	12:08	19.96	-	ND	-	11.09
MW-30	Shallow	31.05	1/31/2018	10:42	17.31	-	ND	-	13.74
MW-30	Shallow	31.05	3/6/2018	09:45	18.47	-	ND	-	12.58
MW-30	Shallow	31.05	4/19/2018	13:17	16.22	-	ND	-	14.83
MW-30	Shallow	31.05	5/22/2018	10:00	12.07	-	ND	-	18.98
MW-30	Shallow	31.05	6/14/2018	10:20	16.35	-	ND	-	14.70
MW-30	Shallow	31.05	7/13/2018	09:39	20.17	-	ND	-	10.88
MW-30	Shallow	31.05	8/9/2018	09:16	21.57	-	ND	-	9.48
MW-30	Shallow	31.05	9/13/2018	10:44	22.45	-	ND	-	8.60
MW-30	Shallow	31.05	10/18/2018	09:39	23.51	-	ND	-	7.54
MW-30	Shallow	31.05	11/26/2018	10:50	22.47	-	ND	-	8.58
MW-30	Shallow	31.05	12/12/2018	11:53	22.18	-	ND	-	8.87
MW-30	Shallow	31.05	1/9/2019	09:14	20.93	-	ND	-	10.12
MW-30	Shallow	31.05	2/13/2019	09:01	20.71	-	ND	-	10.34
MW-30	Shallow	31.05	3/11/2019	09:29	20.86	-	ND	-	10.19
MW-30	Shallow	31.05	4/10/2019	09:57	18.80	-	ND	-	12.25
MW-30	Shallow	31.05	5/8/2019	09:42	18.45	-	ND	-	12.60
MW-30	Shallow	31.05	6/6/2019	09:27	17.88	-	ND	-	13.17
MW-30	Shallow	31.05	07/10/2019	11:51	21.46	-	ND	-	9.59
MW-30	Shallow	31.05	08/14/2019	09:48	22.48	-	ND	-	8.57
MW-30	Shallow	31.05	09/09/2019	11:35	23.10	-	ND	-	7.95
MW-30	Shallow	31.05	10/11/2019	09:24	23.57	-	ND	-	7.48
MW-30	Shallow	31.05	11/07/2019	10:00	23.58	-	ND	-	7.47
MW-30	Shallow	31.05	12/06/2019	09:25	23.20	-	ND	-	7.85
MW-31	Shallow	30.77	5/23/2017	13:02	12.71	-	ND	-	18.06
MW-31	Shallow	30.77	7/20/2017	11:43	20.23	-	ND	-	10.54
MW-31	Shallow	30.77	9/15/2017	09:37	22.56	-	ND	-	8.21
MW-31	Shallow	30.77	12/8/2017	09:34	20.06	-	ND	-	10.71
MW-31	Shallow	30.77	4/19/2018	10:52	15.52	-	ND	-	15.25
MW-31	Shallow	30.77	5/22/2018	09:49	11.23	-	ND	-	19.54
MW-31	Shallow	30.77	9/13/2018	10:40	22.26	-	ND	-	8.51
MW-31	Shallow	30.77	10/18/2018	09:40	23.82	-	ND	-	6.95
MW-31	Shallow	30.77	11/26/2018	10:46	22.17	-	ND	-	8.60
MW-31	Shallow	30.77	12/19/2018	13:07	21.35	-	ND	-	9.42
MW-31	Shallow	30.77	1/9/2019	09:09	20.62	-	ND	-	10.15
MW-31	Shallow	30.77	2/13/2019	08:57	20.60	-	ND	-	10.17
MW-31	Shallow	30.77	3/11/2019	08:53	20.73	-	ND	-	10.04
MW-31	Shallow	30.77	4/10/2019	09:17	16.56	-	ND	-	14.21
MW-31	Shallow	30.77	5/8/2019	08:38	18.64	-	ND	-	12.13
MW-31	Shallow	30.77	6/6/2019	08:31	17.74	-	ND	-	13.03
MW-31	Shallow	30.77	07/10/2019	11:47	21.53	-	ND	-	9.24
MW-31	Shallow	30.77	08/14/2019	08:48	21.94	-	ND	-	8.83
MW-31	Shallow	30.77	09/09/2019	10:42	22.97	-	ND	-	7.80
MW-31	Shallow	30.77	10/11/2019	08:42	23.32	-	ND	-	7.45
MW-31	Shallow	30.77	11/07/2019	09:17	23.46	-	ND	-	7.31
MW-31	Shallow	30.77	12/06/2019	08:37	22.94	-	ND	-	7.83
MW-32	Deep	31.08	5/23/2017	13:08	13.40	-	ND	-	17.68
MW-32	Deep	31.08	7/20/2017	11:54	21.50	-	ND	-	9.58
MW-32	Deep	31.08	9/15/2017	09:31	24.81	-	ND	-	6.27
MW-32	Deep	31.08	11/7/2017	09:47	22.56	-	ND	-	8.52
MW-32	Deep	31.08	12/8/2017	12:04	21.02	-	ND	-	10.06
MW-32	Deep	31.08	1/31/2018	10:38	18.62	-	ND	-	12.46
MW-32	Deep	31.08	3/6/2018	09:40	19.12	-	ND	-	11.96
MW-32	Deep	31.08	4/19/2018	13:23	15.93	-	ND	-	15.15
MW-32	Deep	31.08	5/22/2018	10:00	12.22	-	ND	-	18.86
MW-32	Deep	31.08	6/14/2018	10:23	18.11	-	ND	-	12.97
MW-32	Deep	31.08	7/13/2018	09:35	20.19	-	ND	-	10.89
MW-32	Deep	31.08	8/9/2018	09:12	21.88	-	ND	-	9.20
MW-32	Deep	31.08	9/13/2018	10:46	22.56	-	ND	-	8.52
MW-32	Deep	31.08	10/18/2018	09:38	24.04	-	ND	-	7.04
MW-32	Deep	31.08	11/26/2018	10:48	22.85	-	ND	-	8.23
MW-32	Deep	31.08	12/20/2018	07:44	22.28	-	ND	-	8.80
MW-32	Deep	31.08	1/9/2019	09:13	21.28	-	ND	-	9.80
MW-32	Deep	31.08	2/13/2019	08:59	21.53	-	ND	-	9.55

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-32	Deep	31.08	3/11/2019	09:27	21.42	-	ND	-	9.66
MW-32	Deep	31.08	4/10/2019	09:54	16.92	-	ND	-	14.16
MW-32	Deep	31.08	5/8/2019	09:40	19.11	-	ND	-	11.97
MW-32	Deep	31.08	6/6/2019	09:25	19.19	-	ND	-	11.89
MW-32	Deep	31.08	07/10/2019	11:49	22.55	-	ND	-	8.53
MW-32	Deep	31.08	08/14/2019	09:47	22.69	-	ND	-	8.39
MW-32	Deep	31.08	09/09/2019	11:32	23.62	-	ND	-	7.46
MW-32	Deep	31.08	10/11/2019	09:23	24.44	-	ND	-	6.64
MW-32	Deep	31.08	11/07/2019	09:58	23.80	-	ND	-	7.28
MW-32	Deep	31.08	12/06/2019	09:24	23.81	-	ND	-	7.27
MW-33	Deep	30.88	5/23/2017	13:22	12.08	-	ND	-	18.80
MW-33	Deep	30.88	7/20/2017	11:34	19.57	-	ND	-	11.31
MW-33	Deep	30.88	9/15/2017	09:42	21.79	-	ND	-	9.09
MW-33	Deep	30.88	11/7/2017	10:08	22.18	-	ND	-	8.70
MW-33	Deep	30.88	12/8/2017	12:20	21.40	-	ND	-	9.48
MW-33	Deep	30.88	1/31/2018	10:55	19.70	-	ND	-	11.18
MW-33	Deep	30.88	3/6/2018	10:02	19.67	-	ND	-	11.21
MW-33	Deep	30.88	4/19/2018	13:04	17.68	-	ND	-	13.20
MW-33	Deep	30.88	5/22/2018	10:00	15.64	-	ND	-	15.24
MW-33	Deep	30.88	6/14/2018	10:13	19.18	-	ND	-	11.70
MW-33	Deep	30.88	7/13/2018	09:47	19.69	-	ND	-	11.19
MW-33	Deep	30.88	8/9/2018	09:24	20.60	-	ND	-	10.28
MW-33	Deep	30.88	9/13/2018	10:35	26.77	-	ND	-	4.11
MW-33	Deep	30.88	10/18/2018	09:44	25.33	-	ND	-	5.55
MW-33	Deep	30.88	11/26/2018	10:44	23.75	-	ND	-	7.13
MW-33	Deep	30.88	12/19/2018	10:30	21.53	-	ND	-	9.35
MW-33	Deep	30.88	1/9/2019	09:17	27.57	-	ND	-	3.31
MW-33	Deep	30.88	2/13/2019	09:04	24.65	-	ND	-	6.23
MW-33	Deep	30.88	3/11/2019	08:56	23.05	-	ND	-	7.83
MW-33	Deep	30.88	4/10/2019	09:20	23.41	-	ND	-	7.47
MW-33	Deep	30.88	5/8/2019	08:46	18.63	-	ND	-	12.25
MW-33	Deep	30.88	6/6/2019	08:36	18.67	-	ND	-	12.21
MW-33	Deep	30.88	07/10/2019	11:55	23.94	-	ND	-	6.94
MW-33	Deep	30.88	08/14/2019	08:56	22.86	-	ND	-	8.02
MW-33	Deep	30.88	09/09/2019	10:46	23.20	-	ND	-	7.68
MW-33	Deep	30.88	10/11/2019	08:45	30.61	-	ND	-	0.27
MW-33	Deep	30.88	11/07/2019	09:21	23.95	-	ND	-	6.93
MW-33	Deep	30.88	12/06/2019	08:42	22.64	-	ND	-	8.24
MW-34	Shallow	30.72	5/23/2017	13:59	11.18	-	ND	-	19.54
MW-34	Shallow	30.72	7/20/2017	11:27	17.66	-	ND	-	13.06
MW-34	Shallow	30.72	8/13/2017	07:32	20.72	20.63	0.09	0.01	10.07
MW-34	Shallow	30.72	8/17/2017	10:02	18.88	-	ND	-	11.84
MW-34	Shallow	30.72	9/15/2017	10:45	23.34	23.06	0.28	0.05	7.60
MW-34	Shallow	30.72	11/7/2017	10:27	21.88	21.69	0.19	0.03	8.99
MW-34	Shallow	30.72	12/8/2017	12:56	20.35	20.21	0.14	0.02	10.48
MW-34	Shallow	30.72	1/31/2018	11:55	17.09	-	ND	-	13.63
MW-34	Shallow	30.72	3/6/2018	10:52	20.10	18.02	2.08	0.34	12.28
MW-34	Shallow	30.72	4/19/2018	12:50	15.88	15.88	Trace	-	14.84
MW-34	Shallow	30.72	5/22/2018	10:00	12.63	-	ND	-	18.09
MW-34	Shallow	30.72	6/14/2018	10:57	16.51	15.71	0.80	0.13	14.85
MW-34	Shallow	30.72	7/13/2018	10:20	19.85	18.40	1.45	0.24	12.03
MW-34	Shallow	30.72	8/9/2018	10:12	22.54	21.10	1.44	0.24	9.33
MW-34	Shallow	30.72	9/13/2018	11:25	22.25	22.22	0.03	0.005	8.49
MW-34	Shallow	30.72	10/18/2018	10:46	24.58	24.50	0.08	0.01	6.20
MW-34	Shallow	30.72	11/26/2018	10:54	21.98	-	ND	-	8.74
MW-34	Shallow	30.72	12/19/2018	09:17	21.40	-	ND	-	9.32
MW-34	Shallow	30.72	1/9/2019	09:22	20.47	-	ND	-	10.25
MW-34	Shallow	30.72	2/13/2019	09:21	20.60	-	ND	-	10.12
MW-34	Shallow	30.72	3/11/2019	09:42	22.20	21.86	0.34	0.06	8.79
MW-34	Shallow	30.72	4/10/2019	10:59	16.94	-	ND	-	13.78
MW-34	Shallow	30.72	5/8/2019	10:15	19.72	-	ND	-	11.00
MW-34	Shallow	30.72	6/6/2019	09:50	18.10	-	ND	-	12.62
MW-34	Shallow	30.72	07/10/2019	12:36	18.95	-	ND	-	11.77
MW-34	Shallow	30.72	08/14/2019	10:01	19.54	-	ND	-	11.18
MW-34	Shallow	30.72	09/09/2019	11:46	21.16	-	ND	-	9.56
MW-34	Shallow	30.72	10/11/2019	09:46	24.42	-	ND	-	6.30

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-34	Shallow	30.72	11/07/2019	10:31	24.37	24.36	0.01	0.00	6.36
MW-34	Shallow	30.72	12/06/2019	09:46	23.81	-	ND	-	6.91
MW-35	Deep	30.83	5/23/2017	14:38	13.19	-	ND	-	17.64
MW-35	Deep	30.83	7/20/2017	11:20	21.58	-	ND	-	9.25
MW-35	Deep	30.83	8/13/2017	07:27	22.65	-	ND	-	8.18
MW-35	Deep	30.83	8/17/2017	09:54	23.68	-	ND	-	7.15
MW-35	Deep	30.83	9/15/2017	10:35	24.40	-	ND	-	6.43
MW-35	Deep	30.83	11/7/2017	10:22	21.91	-	ND	-	8.92
MW-35	Deep	30.83	12/8/2017	12:41	20.84	-	ND	-	9.99
MW-35	Deep	30.83	1/31/2018	11:48	17.33	-	ND	-	13.50
MW-35	Deep	30.83	3/6/2018	11:08	19.29	-	ND	-	11.54
MW-35	Deep	30.83	4/19/2018	12:30	15.29	-	ND	-	15.54
MW-35	Deep	30.83	5/22/2018	10:00	11.41	-	ND	-	19.42
MW-35	Deep	30.83	6/14/2018	10:53	18.29	-	ND	-	12.54
MW-35	Deep	30.83	7/13/2018	10:30	20.37	-	ND	-	10.46
MW-35	Deep	30.83	8/9/2018	10:06	22.39	-	ND	-	8.44
MW-35	Deep	30.83	9/13/2018	11:05	22.49	-	ND	-	8.34
MW-35	Deep	30.83	10/18/2018	10:44	25.28	-	ND	-	5.55
MW-35	Deep	30.83	11/26/2018	10:52	22.10	-	ND	-	8.73
MW-35	Deep	30.83	12/19/2018	08:15	21.22	-	ND	-	9.61
MW-35	Deep	30.83	1/9/2019	09:24	20.48	-	ND	-	10.35
MW-35	Deep	30.83	2/13/2019	09:12	20.47	-	ND	-	10.36
MW-35	Deep	30.83	3/11/2019	09:39	21.92	-	ND	-	8.91
MW-35	Deep	30.83	4/10/2019	10:50	14.66	-	ND	-	16.17
MW-35	Deep	30.83	5/8/2019	09:57	20.43	-	ND	-	10.40
MW-35	Deep	30.83	6/6/2019	09:44	18.69	-	ND	-	12.14
MW-35	Deep	30.83	07/10/2019	12:34	23.70	-	ND	-	7.13
MW-35	Deep	30.83	08/14/2019	09:54	23.31	-	ND	-	7.52
MW-35	Deep	30.83	09/09/2019	11:44	25.75	-	ND	-	5.08
MW-35	Deep	30.83	10/11/2019	09:37	25.11	-	ND	-	5.72
MW-35	Deep	30.83	11/07/2019	10:15	25.35	-	ND	-	5.48
MW-35	Deep	30.83	12/06/2019	09:37	24.00	-	ND	-	6.83
MW-36	Shallow	30.16	5/23/2017	14:54	12.68	-	ND	-	17.48
MW-36	Shallow	30.16	7/20/2017	11:15	20.89	-	ND	-	9.27
MW-36	Shallow	30.16	9/15/2017	09:46	23.49	-	ND	-	6.67
MW-36	Shallow	30.16	11/7/2017	10:12	21.25	-	ND	-	8.91
MW-36	Shallow	30.16	12/8/2017	12:33	20.16	-	ND	-	10.00
MW-36	Shallow	30.16	1/31/2018	11:02	16.49	-	ND	-	13.67
MW-36	Shallow	30.16	3/6/2018	10:10	18.56	-	ND	-	11.60
MW-36	Shallow	30.16	4/19/2018	12:45	14.51	-	ND	-	15.65
MW-36	Shallow	30.16	5/22/2018	10:00	10.43	-	ND	-	19.73
MW-36	Shallow	30.16	6/14/2018	10:08	17.42	-	ND	-	12.74
MW-36	Shallow	30.16	7/13/2018	10:12	19.68	-	ND	-	10.48
MW-36	Shallow	30.16	8/9/2018	09:53	21.66	-	ND	-	8.50
MW-36	Shallow	30.16	9/13/2018	10:33	21.59	-	ND	-	8.57
MW-36	Shallow	30.16	10/18/2018	09:46	24.36	-	ND	-	5.80
MW-36	Shallow	30.16	11/26/2018	10:42	21.35	-	ND	-	8.81
MW-36	Shallow	30.16	12/17/2018	11:35	20.96	-	ND	-	9.20
MW-36	Shallow	30.16	1/9/2019	08:33	19.66	-	ND	-	10.50
MW-36	Shallow	30.16	2/13/2019	09:05	19.72	-	ND	-	10.44
MW-36	Shallow	30.16	3/11/2019	08:57	20.74	-	ND	-	9.42
MW-36	Shallow	30.16	4/10/2019	09:22	14.03	-	ND	-	16.13
MW-36	Shallow	30.16	5/8/2019	08:50	18.55	-	ND	-	11.61
MW-36	Shallow	30.16	6/6/2019	08:41	17.49	-	ND	-	12.67
MW-36	Shallow	30.16	07/10/2019	11:57	22.35	-	ND	-	7.81
MW-36	Shallow	30.16	08/14/2019	08:59	21.62	-	ND	-	8.54
MW-36	Shallow	30.16	09/09/2019	10:48	23.76	-	ND	-	6.40
MW-36	Shallow	30.16	10/11/2019	08:47	23.36	-	ND	-	6.80
MW-36	Shallow	30.16	11/07/2019	09:23	23.63	-	ND	-	6.53
MW-36	Shallow	30.16	12/06/2019	08:47	23.22	-	ND	-	6.94
MW-37	Deep	31.27	5/23/2017	15:03	13.65	-	ND	-	17.62
MW-37	Deep	31.27	7/20/2017	11:55	22.28	-	ND	-	8.99
MW-37	Deep	31.27	9/15/2017	10:22	24.49	-	ND	-	6.78
MW-37	Deep	31.27	12/8/2017	10:18	21.01	-	ND	-	10.26
MW-37	Deep	31.27	4/19/2018	10:46	15.56	-	ND	-	15.71
MW-37	Deep	31.27	5/22/2018	10:46	11.79	-	ND	-	19.48

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-37	Deep	31.27	6/14/2018	09:56	18.80	-	ND	-	12.47
MW-37	Deep	31.27	9/13/2018	10:23	22.63	-	ND	-	8.64
MW-37	Deep	31.27	10/18/2018	09:52	26.00	-	ND	-	5.27
MW-37	Deep	31.27	11/26/2018	10:36	22.50	-	ND	-	8.77
MW-37	Deep	31.27	12/17/2018	08:26	23.68	-	ND	-	7.59
MW-37	Deep	31.27	1/9/2019	08:38	20.81	-	ND	-	10.46
MW-37	Deep	31.27	2/13/2019	09:10	20.67	-	ND	-	10.60
MW-37	Deep	31.27	3/11/2019	09:37	22.31	-	ND	-	8.96
MW-37	Deep	31.27	4/10/2019	10:47	14.82	-	ND	-	16.45
MW-37	Deep	31.27	5/8/2019	09:53	20.89	-	ND	-	10.38
MW-37	Deep	31.27	6/6/2019	09:38	19.19	-	ND	-	12.08
MW-37	Deep	31.27	07/10/2019	12:28	24.26	-	ND	-	7.01
MW-37	Deep	31.27	08/14/2019	09:43	23.89	-	ND	-	7.38
MW-37	Deep	31.27	09/09/2019	11:29	26.36	-	ND	-	4.91
MW-37	Deep	31.27	10/11/2019	09:33	25.69	-	ND	-	5.58
MW-37	Deep	31.27	11/07/2019	10:12	25.96	-	ND	-	5.31
MW-37	Deep	31.27	12/06/2019	09:34	24.51	-	ND	-	6.76
MW-38	Shallow	31.54	5/23/2017	15:10	11.85	-	ND	-	19.69
MW-38	Shallow	31.54	7/20/2017	11:51	16.81	-	ND	-	14.73
MW-38	Shallow	31.54	9/15/2017	10:15	19.91	19.85	0.06	0.01	11.68
MW-38	Shallow	31.54	12/8/2017	10:19	19.38	19.33	0.05	0.01	12.20
MW-38	Shallow	31.54	4/19/2018	10:44	17.13	-	ND	-	14.41
MW-38	Shallow	31.54	5/22/2018	10:47	14.42	-	ND	-	17.12
MW-38	Shallow	31.54	6/14/2018	09:55	14.95	-	ND	-	16.59
MW-38	Shallow	31.54	9/13/2018	10:20	20.26	-	ND	-	11.28
MW-38	Shallow	31.54	10/18/2018	09:54	21.95	-	ND	-	9.59
MW-38	Shallow	31.54	11/26/2018	10:37	22.39	-	ND	-	9.15
MW-38	Shallow	31.54	12/17/2018	08:10	22.44	22.43	0.01	0.002	9.11
MW-38	Shallow	31.54	1/9/2019	08:40	21.23	-	ND	-	10.31
MW-38	Shallow	31.54	2/13/2019	09:09	20.85	-	ND	-	10.69
MW-38	Shallow	31.54	3/11/2019	09:32	20.41	20.40	0.01	0.002	11.14
MW-38	Shallow	31.54	4/10/2019	10:45	19.04	-	ND	-	12.50
MW-38	Shallow	31.54	5/8/2019	09:50	20.29	-	ND	-	11.25
MW-38	Shallow	31.54	6/6/2019	09:36	18.66	-	ND	-	12.88
MW-38	Shallow	31.54	07/10/2019	12:24	20.35	-	ND	-	11.19
MW-38	Shallow	31.54	08/14/2019	09:40	21.06	21.03	0.03	0.00	10.50
MW-38	Shallow	31.54	09/09/2019	11:25	21.54	21.55	0.01	0.00	10.01
MW-38	Shallow	31.54	10/11/2019	09:30	22.17	-	ND	-	9.37
MW-38	Shallow	31.54	11/07/2019	10:09	22.15	-	ND	-	9.39
MW-38	Shallow	31.54	12/06/2019	09:31	22.59	-	ND	-	8.95
MW-39	Shallow	31.08	5/23/2017	15:15	13.61	-	ND	-	17.47
MW-39	Shallow	31.08	7/20/2017	11:58	22.16	-	ND	-	8.92
MW-39	Shallow	31.08	9/15/2017	09:54	24.13	24.11	0.02	0.003	6.97
MW-39	Shallow	31.08	12/8/2017	10:23	20.88	-	ND	-	10.20
MW-39	Shallow	31.08	4/19/2018	10:49	15.29	-	ND	-	15.79
MW-39	Shallow	31.08	5/22/2018	10:44	11.35	11.35	Trace	-	19.73
MW-39	Shallow	31.08	6/14/2018	09:59	18.49	18.46	0.03	0.005	12.61
MW-39	Shallow	31.08	9/13/2018	10:16	22.41	-	ND	-	8.67
MW-39	Shallow	31.08	10/18/2018	09:58	24.82	-	ND	-	6.26
MW-39	Shallow	31.08	11/26/2018	10:29	22.20	-	ND	-	8.88
MW-39	Shallow	31.08	12/14/2018	10:50	21.53	-	ND	-	9.55
MW-39	Shallow	31.08	1/9/2019	08:36	20.67	-	ND	-	10.41
MW-39	Shallow	31.08	2/13/2019	09:07	20.91	-	ND	-	10.17
MW-39	Shallow	31.08	3/11/2019	09:00	21.67	-	ND	-	9.41
MW-39	Shallow	31.08	4/10/2019	09:24	15.02	-	ND	-	16.06
MW-39	Shallow	31.08	5/8/2019	08:58	19.58	19.54	0.04	0.01	11.53
MW-39	Shallow	31.08	6/6/2019	08:47	18.18	-	ND	-	12.90
MW-39	Shallow	31.08	07/10/2019	12:01	23.11	23.09	0.02	0.00	7.99
MW-39	Shallow	31.08	08/14/2019	09:04	22.44	22.44	0.00	0.00	8.64
MW-39	Shallow	31.08	09/09/2019	10:53	24.57	-	ND	-	6.51
MW-39	Shallow	31.08	10/11/2019	08:51	24.19	24.19	Sheen	-	6.89
MW-39	Shallow	31.08	11/07/2019	09:28	24.35	24.34	0.01	0.00	6.74
MW-39	Shallow	31.08	12/06/2019	08:54	24.13	-	ND	-	6.95
MW-40	Deep	31.71	5/23/2017	15:46	14.05	-	ND	-	17.66
MW-40	Deep	31.71	7/20/2017	10:20	22.22	-	ND	-	9.49
MW-40	Deep	31.71	9/15/2017	08:42	25.93	-	ND	-	5.78

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-40	Deep	31.71	11/7/2017	08:30	24.42	-	ND	-	7.29
MW-40	Deep	31.71	12/8/2017	11:39	21.81	-	ND	-	9.90
MW-40	Deep	31.71	1/31/2018	11:19	18.20	-	ND	-	13.51
MW-40	Deep	31.71	3/6/2018	10:30	20.15	-	ND	-	11.56
MW-40	Deep	31.71	4/19/2018	12:15	16.14	-	ND	-	15.57
MW-40	Deep	31.71	5/22/2018	10:00	12.34	-	ND	-	19.37
MW-40	Deep	31.71	6/14/2018	09:37	18.98	-	ND	-	12.73
MW-40	Deep	31.71	7/13/2018	10:50	21.41	-	ND	-	10.30
MW-40	Deep	31.71	8/9/2018	10:40	23.50	-	ND	-	8.21
MW-40	Deep	31.71	9/13/2018	10:03	22.96	-	ND	-	8.75
MW-40	Deep	31.71	10/18/2018	10:39	26.23	-	ND	-	5.48
MW-40	Deep	31.71	11/26/2018	10:14	22.84	-	ND	-	8.87
MW-40	Deep	31.71	12/13/2018	11:24	22.66	-	ND	-	9.05
MW-40	Deep	31.71	1/9/2019	08:49	21.36	-	ND	-	10.35
MW-40	Deep	31.71	2/13/2019	08:41	21.48	-	ND	-	10.23
MW-40	Deep	31.71	3/11/2019	09:19	22.12	-	ND	-	9.59
MW-40	Deep	31.71	4/10/2019	09:44	15.34	-	ND	-	16.37
MW-40	Deep	31.71	5/8/2019	09:23	20.37	-	ND	-	11.34
MW-40	Deep	31.71	6/6/2019	09:08	19.11	-	ND	-	12.60
MW-40	Deep	31.71	07/10/2019	12:15	24.78	-	ND	-	6.93
MW-40	Deep	31.71	08/14/2019	09:30	23.49	-	ND	-	8.22
MW-40	Deep	31.71	09/09/2019	11:12	25.90	-	ND	-	5.81
MW-40	Deep	31.71	10/11/2019	09:14	25.19	-	ND	-	6.52
MW-40	Deep	31.71	11/07/2019	09:49	25.57	-	ND	-	6.14
MW-40	Deep	31.71	12/06/2019	09:13	24.93	-	ND	-	6.78
MW-41	Shallow	31.32	5/23/2017	15:49	12.07	-	ND	-	19.25
MW-41	Shallow	31.32	7/20/2017	10:27	19.56	-	ND	-	11.76
MW-41	Shallow	31.32	9/15/2017	08:40	19.61	-	ND	-	11.71
MW-41	Shallow	31.32	11/07/2017	08:28	17.38	-	ND	-	13.94
MW-41	Shallow	31.32	12/8/2017	11:30	16.45	-	ND	-	14.87
MW-41	Shallow	31.32	1/31/2018	11:28	15.74	-	ND	-	15.58
MW-41	Shallow	31.32	3/6/2018	10:36	16.17	-	ND	-	15.15
MW-41	Shallow	31.32	4/19/2018	12:01	15.59	-	ND	-	15.73
MW-41	Shallow	31.32	5/22/2018	10:00	13.26	-	ND	-	18.06
MW-41	Shallow	31.32	6/14/2018	09:32	14.95	-	ND	-	16.37
MW-41	Shallow	31.32	7/13/2018	10:56	16.58	-	ND	-	14.74
MW-41	Shallow	31.32	8/9/2018	10:46	17.47	-	ND	-	13.85
MW-41	Shallow	31.32	9/13/2018	10:00	18.11	-	ND	-	13.21
MW-41	Shallow	31.32	10/18/2018	10:19	18.77	-	ND	-	12.55
MW-41	Shallow	31.32	11/26/2018	10:16	19.00	-	ND	-	12.32
MW-41	Shallow	31.32	12/13/2018	09:30	18.68	-	ND	-	12.64
MW-41	Shallow	31.32	1/9/2019	08:51	17.52	-	ND	-	13.80
MW-41	Shallow	31.32	2/13/2019	08:42	17.01	-	ND	-	14.31
MW-41	Shallow	31.32	3/11/2019	09:17	16.68	-	ND	-	14.64
MW-41	Shallow	31.32	4/10/2019	09:41	16.65	-	ND	-	14.67
MW-41	Shallow	31.32	5/8/2019	09:20	16.56	-	ND	-	14.76
MW-41	Shallow	31.32	6/6/2019	09:06	16.75	-	ND	-	14.57
MW-41	Shallow	31.32	07/10/2019	12:13	17.51	-	ND	-	13.81
MW-41	Shallow	31.32	08/14/2019	09:29	18.03	-	ND	-	13.29
MW-41	Shallow	31.32	09/09/2019	11:10	18.26	-	ND	-	13.06
MW-41	Shallow	31.32	10/11/2019	09:11	18.48	-	ND	-	12.84
MW-41	Shallow	31.32	11/07/2019	09:47	18.58	-	ND	-	12.74
MW-41	Shallow	31.32	12/06/2019	09:11	18.69	-	ND	-	12.63
MW-42	Deep	31.94	5/23/2017	15:44	14.85	-	ND	-	17.09
MW-42	Deep	31.94	7/20/2017	15:44	14.85	-	ND	-	17.09
MW-42	Deep	31.94	9/15/2017	08:45	26.28	-	ND	-	5.66
MW-42	Deep	31.94	11/7/2017	08:26	23.10	-	ND	-	8.84
MW-42	Deep	31.94	12/8/2017	11:46	22.05	-	ND	-	9.89
MW-42	Deep	31.94	1/31/2018	11:15	18.37	-	ND	-	13.57
MW-42	Deep	31.94	3/6/2018	10:25	20.75	-	ND	-	11.19
MW-42	Deep	31.94	4/19/2018	12:20	16.40	-	ND	-	15.54
MW-42	Deep	31.94	5/22/2018	10:00	12.55	-	ND	-	19.39
MW-42	Deep	31.94	6/14/2018	09:40	19.30	-	ND	-	12.64
MW-42	Deep	31.94	7/13/2018	11:08	21.38	-	ND	-	10.56
MW-42	Deep	31.94	8/9/2018	10:51	23.17	-	ND	-	8.77
MW-42	Deep	31.94	9/13/2018	10:06	23.88	-	ND	-	8.06

Table 2
Groundwater Elevations
Premier Edible Oils
Portland, Oregon

Well Identification	Screen Zone	Measuring Point ft-NAVD88	Date	Time	Depth to Groundwater feet-btc	Depth to Product feet-btc	Product Thickness feet	Product Volume gal	Groundwater Elevation ft-NAVD88
MW-42	Deep	31.94	10/18/2018	10:21	25.80	-	ND	-	6.14
MW-42	Deep	31.94	11/26/2018	10:21	23.21	-	ND	-	8.73
MW-42	Deep	31.94	12/13/2018	07:30	23.58	-	ND	-	8.36
MW-42	Deep	31.94	1/9/2019	08:53	22.28	-	ND	-	9.66
MW-42	Deep	31.94	2/13/2019	08:39	22.33	-	ND	-	9.61
MW-42	Deep	31.94	3/11/2019	09:12	22.87	-	ND	-	9.07
MW-42	Deep	31.94	4/10/2019	09:31	16.39	-	ND	-	15.55
MW-42	Deep	31.94	5/8/2019	09:13	20.72	-	ND	-	11.22
MW-42	Deep	31.94	6/6/2019	08:58	18.96	-	ND	-	12.98
MW-42	Deep	31.94	07/10/2019	12:09	23.77	-	ND	-	8.17
MW-42	Deep	31.94	08/14/2019	09:17	23.73	-	ND	-	8.21
MW-42	Deep	31.94	09/09/2019	11:05	24.55	-	ND	-	7.39
MW-42	Deep	31.94	10/11/2019	09:06	24.93	-	ND	-	7.01
MW-42	Deep	31.94	11/07/2019	09:43	24.65	-	ND	-	7.29
MW-42	Deep	31.94	12/06/2019	09:05	23.87	-	ND	-	8.07
MW-43	Shallow	31.39	5/23/2017	15:21	13.88	-	ND	-	17.51
MW-43	Shallow	31.39	7/20/2017	10:34	21.96	-	ND	-	9.43
MW-43	Shallow	31.39	9/15/2017	10:07	24.21	-	ND	-	7.18
MW-43	Shallow	31.39	12/8/2017	10:32	21.20	-	ND	-	10.19
MW-43	Shallow	31.39	4/19/2018	10:39	15.65	-	ND	-	15.74
MW-43	Shallow	31.39	5/22/2018	10:55	11.66	-	ND	-	19.73
MW-43	Shallow	31.39	6/14/2018	8:48	18.69	-	ND	-	12.70
MW-43	Shallow	31.39	9/13/2018	10:12	22.90	-	ND	-	8.49
MW-43	Shallow	31.39	10/18/2018	10:05	25.03	-	ND	-	6.36
MW-43	Shallow	31.39	11/26/2018	10:25	22.53	-	ND	-	8.86
MW-43	Shallow	31.39	12/12/2018	09:10	22.23	-	ND	-	9.16
MW-43	Shallow	31.39	1/9/2019	08:45	21.12	-	ND	-	10.27
MW-43	Shallow	31.39	2/13/2019	08:37	21.51	-	ND	-	9.88
MW-43	Shallow	31.39	3/11/2019	09:09	21.89	21.88	0.01	0.002	9.51
MW-43	Shallow	31.39	4/10/2019	09:28	14.98	-	ND	-	16.41
MW-43	Shallow	31.39	5/8/2019	09:08	19.82	19.82	Trace	-	11.57
MW-43	Shallow	31.39	6/6/2019	08:54	18.17	-	ND	-	13.22
MW-43	Shallow	31.39	07/10/2019	12:06	23.20	23.19	0.01	0.00	8.20
MW-43	Shallow	31.39	08/14/2019	09:11	22.69	22.68	0.01	0.00	8.71
MW-43	Shallow	31.39	10/11/2019	08:57	24.22	24.16	0.06	0.01	7.22
MW-43	Shallow	31.39	09/09/2019	11:01	24.63	-	ND	-	6.76
MW-43	Shallow	31.39	11/07/2019	09:36	24.80	24.50	0.30	0.05	6.83
MW-43	Shallow	31.39	12/06/2019	09:01	24.35	24.28	0.07	0.01	7.10

Notes:

* = Unstable field reading; value is an approximation.

** = Potential biofouling at MW-29, value is considered an approximation.

- = 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 3
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	27.00	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
6/2/2017	DTW measured (ft BTOC)	11.72	12.20	11.93	10.15	12.67	12.07	12.00	12.34	16.51	11.32	12.05	11.35	12.90	11.88	13.20
	DTW calculated (ft BTOC)	11.75	12.04	11.99	10.29	12.78	12.14	12.17	12.70	15.91	11.48	12.24	11.49	13.27	12.03	13.46
	Calibration Offset	0.03	-0.16	0.06	0.14	0.11	0.07	0.17	0.36	-0.60	0.16	0.19	0.14	0.37	0.15	0.26
7/20/2017	DTW measured (ft BTOC)	19.20	19.32	20.36	12.85	22.39	20.10	19.49	21.50	19.57	17.66	21.58	20.89	22.22	15.75	22.56
	DTW calculated (ft BTOC)	19.22	19.05	20.48	12.96	22.51	20.17	19.67	21.91	20.42	17.48	21.72	21.01	22.60	16.52	22.18
	Calibration Offset	0.02	-0.27	0.12	0.11	0.12	0.07	0.18	0.41	0.85	-0.18	0.14	0.12	0.38	0.77	-0.38
9/15/2017	DTW measured (ft BTOC)	22.03	22.47	22.80	14.42	24.81	22.79	22.20	23.00	21.07	23.34	24.12	23.22	24.44	17.52	24.18
	DTW calculated (ft BTOC)	21.96	22.73	22.73	14.42	24.81	22.79	22.20	23.00	21.43	23.36	24.44	23.36	25.06	18.43	24.84
	Calibration Offset	-0.07	0.26	-0.07	0.16	0.15	0.07	0.15	0.89	0.36	0.02	0.32	0.14	0.62	0.91	0.66
11/7/2017	DTW measured (ft BTOC)	21.75	21.87	21.77	14.74	22.58	22.11	22.00	22.56	22.18	21.88	21.91	21.25	23.42	17.38	23.10
	DTW calculated (ft BTOC)	21.70	22.24	21.83	14.86	22.63	22.16	22.14	22.52	22.30	21.97	22.12	21.30	22.93	18.17	23.63
	Calibration Offset	-0.05	0.37	0.06	0.12	0.05	0.05	0.14	-0.04	0.12	0.09	0.21	0.05	-0.49	0.79	0.53
12/8/2017	DTW measured (ft BTOC)	19.73	20.01	20.31	13.70	21.55	20.39	19.96	21.02	21.40	20.35	20.84	20.16	21.81	16.45	22.05
	DTW calculated (ft BTOC)	19.69	20.41	20.34	13.73	21.56	20.43	20.14	21.29	21.47	20.58	21.25	20.16	21.91	17.46	22.30
	Calibration Offset	-0.04	0.40	0.03	0.03	0.01	0.04	0.18	0.27	0.07	0.23	0.41	0.00	0.10	1.01	0.25
1/31/2018	DTW measured (ft BTOC)	17.07	17.24	17.09	13.19	17.94	16.98	17.31	18.62	19.70	17.09	17.33	16.49	18.20	15.74	18.37
	DTW calculated (ft BTOC)	17.08	17.68	17.21	13.24	18.07	17.03	17.46	18.28	19.69	17.37	17.62	16.60	18.52	16.85	18.70
	Calibration Offset	0.01	0.45	0.12	0.05	0.13	0.05	0.15	-0.34	-0.01	0.28	0.29	0.11	0.32	1.11	0.33
3/6/2018	DTW measured (ft BTOC)	18.24	18.30	18.91	13.48	19.90	18.82	18.47	19.12	19.67	18.02	19.29	18.56	20.15	16.17	20.75
	DTW calculated (ft BTOC)	18.22	18.73	18.91	13.53	20.02	18.87	18.58	19.33	19.77	18.61	19.58	18.63	20.46	17.47	21.02
	Calibration Offset	-0.02	0.43	0.00	0.05	0.12	0.05	0.11	0.21	0.10	0.59	0.29	0.07	0.31	1.30	0.27
4/19/2018	DTW measured (ft BTOC)	16.10	16.29	15.32	13.32	15.89	15.82	16.22	15.93	17.68	15.88	15.29	14.51	16.14	15.59	16.40
	DTW calculated (ft BTOC)	16.10	16.77	15.41	13.39	16.03	15.88	16.47	16.31	17.85	16.19	15.63	14.65	16.49	17.59	16.73
	Calibration Offset	0.00	0.48	0.09	0.07	0.14	0.06	0.25	0.38	0.17	0.31	0.34	0.14	0.35	2.00	0.33
5/22/2018	DTW measured (ft BTOC)	12.14	13.60	11.05	12.83	11.95	12.69	12.07	12.22	15.64	12.63	11.41	10.43	12.34	13.26	12.55
	DTW calculated (ft BTOC)	12.14	14.28	11.17	12.91	12.05	12.79	12.24	12.47	15.75	12.99	11.81	10.58	12.66	15.10	12.95
	Calibration Offset	0.00	0.68	0.12	0.08	0.10	0.10	0.17	0.25	0.11	0.36	0.40	0.15	0.32	1.84	0.40
6/14/2018	DTW measured (ft BTOC)	15.93	16.04	17.56	12.96	18.91	16.71	16.35	18.11	19.18	15.87	18.29	17.42	18.98	19.95	19.30
	DTW calculated (ft BTOC)	15.93	16.46	17.63	13.03	19.00	16.76	16.54	18.38	19.33	16.13	18.46	17.59	19.42	18.28	19.82
	Calibration Offset	0.00	0.42	0.07	0.07	0.09	0.05	0.19	0.27	0.15	0.26	0.17	0.17	0.44	-1.67	0.52
7/13/2018	DTW measured (ft BTOC)	19.90	19.11	20.33	14.05	20.96	20.31	20.17	20.19	19.69	18.69	20.37	19.68	21.41	16.58	21.38
	DTW calculated (ft BTOC)	19.84	19.69	20.34	14.10	21.05	20.36	20.31	20.51	20.06	18.89	20.59	19.75	21.54	18.67	21.74
	Calibration Offset	-0.06	0.58	0.01	0.05	0.09	0.05	0.14	0.32	0.37	0.20	0.22	0.07	0.13	2.09	0.36
8/9/2018	DTW measured (ft BTOC)	21.34	21.41	21.71	14.43	23.04	22.05	21.57	21.88	20.60	21.39	22.39	21.66	23.50	17.47	23.17
	DTW calculated (ft BTOC)	21.26	21.90	21.75	14.66	23.23	22.07	21.74	22.20	20.72	21.54	22.70	21.70	23.69	19.59	23.42
	Calibration Offset	-0.08	0.49	0.04	0.23	0.19	0.02	0.17	0.32	0.12	0.15	0.31	0.04	0.19	2.12	0.25
9/13/2018	DTW measured (ft BTOC)	22.23	22.30	22.18	15.23	22.91	22.76	22.45	22.56	26.77	22.23	22.49	21.59	22.96	16.11	23.88
	DTW calculated (ft BTOC)	22.20	22.86	22.18	15.29	22.78	22.81	22.63	*	27.17	22.43	22.78	21.53	23.32	18.26	24.36
	Calibration Offset	-0.03	0.56	0.00	0.06	-0.13	0.05	0.18	*	0.40	0.20	0.29	-0.06	0.36	2.15	0.48
10/18/2018	DTW measured (ft BTOC)	23.31	23.93	23.89	15.72	26.28	24.23	23.51	24.04	25.33	24.52	25.28	24.36	26.23	16.77	25.80
	DTW calculated (ft BTOC)	23.27	24.44	23.98	15.78	26.36	24.27	23.66	24.38	25.60	24.78	25.48	24.42	26.43	19.01	26.21
	Calibration Offset	-0.04	0.51	0.09	0.06	0.08	0.04	0.15	0.34	0.27	0.26	0.20	0.06	0.20	2.24	0.41
11/26/2018	DTW measured (ft BTOC)	22.28	22.33	22.06	15.94	22.73	22.50	22.47	22.85	23.75	21.98	22.10	21.35	22.84	17.00	23.21
	DTW calculated (ft BTOC)	22.20	22.85	22.03	15.99	22.63	22.52	22.68	23.40	24.15	22.14	22.21	21.32	22.88	19.17	23.67
	Calibration Offset	-0.08	0.52	-0.03	0.05	-0.10	0.02	0.21	0.55	0.40	0.16	0.11	-0.03	0.04	2.17	0.46
12/18/2018	DTW measured (ft BTOC)	21.82	21.98	21.31	15.92	23.30	22.25	22.18	22.28	21.53	21.40	21.22	20.96	22.66	18.68	23.58
	DTW calculated (ft BTOC)	21.75	22.62	21.51	15.98	23.94	22.28	22.33	21.29	21.58	21.59	21.46	21.52	22.75	18.90	23.89
	Calibration Offset	-0.07	0.64	0.20	0.06	0.64	0.03	0.15	-0.99	0.05	0.19	0.24	0.56	0.09	0.22	0.31
1/9/2019	DTW measured (ft BTOC)	20.74	20.88	20.50	14.80	20.98	21.20	20.93	21.28	27.57	20.47	20.48	19.66	21.36	15.52	22.28
	DTW calculated (ft BTOC)	20.72	21.40	20.61	14.86	21.10	21.27	21.17	21.72	27.89	20.78	20.78	19.80	21.69	17.70	22.74
	Calibration Offset	-0.02	0.52	0.11	0.06	0.12	0.07	0.24	0.44	0.32	0.31	0.30	0.14	0.33	2.18	0.46

Table 3
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
2/13/2019	DTW measured (ft BTOC)	20.66	20.69	20.63	14.18	21.04	20.52	20.71	21.53	24.65	20.60	20.47	19.72	21.48	15.01	22.33
	DTW calculated (ft BTOC)	20.64	21.20	20.80	14.27	21.21	20.57	20.94	21.98	24.94	21.32	20.90	19.92	21.69	17.45	22.78
	Calibration Offset	-0.02	0.51	0.17	0.09	0.17	0.05	0.23	0.45	0.29	0.72	0.43	0.20	0.21	2.44	0.45
3/11/2019	DTW measured (ft BTOC)	21.03	21.62	20.91	13.78	22.14	19.74	20.86	21.42	23.05	21.93	21.92	20.74	22.12	14.68	22.87
	DTW calculated (ft BTOC)	20.99	21.99	21.00	13.84	22.27	19.79	21.05	21.86	23.32	22.34	22.35	20.83	22.54	17.03	23.34
	Calibration Offset	-0.04	0.37	0.09	0.06	0.13	0.05	0.19	0.44	0.27	0.41	0.43	0.09	0.42	2.35	0.47
4/10/2019	DTW measured (ft BTOC)	19.21	17.75	15.56	14.09	14.88	17.14	18.80	16.92	23.41	16.94	14.66	14.03	15.34	14.65	16.39
	DTW calculated (ft BTOC)	19.19	18.27	15.70	14.16	14.97	17.22	18.97	17.34	23.84	17.26	15.00	14.21	15.70	16.83	16.83
	Calibration Offset	-0.02	0.52	0.14	0.07	0.09	0.08	0.17	0.42	0.43	0.32	0.34	0.18	0.36	2.18	0.44
5/8/2019	DTW measured (ft BTOC)	18.56	19.73	19.01	13.93	20.38	17.79	18.45	19.11	18.63	19.72	20.43	18.55	20.37	14.56	20.72
	DTW calculated (ft BTOC)	18.64	20.12	19.11	14.03	20.52	17.79	18.66	19.54	18.91	20.11	20.80	18.63	20.70	16.76	21.20
	Calibration Offset	0.08	0.39	0.10	0.10	0.14	0.00	0.21	0.43	0.28	0.39	0.37	0.08	0.33	2.20	0.48
6/6/2019	DTW measured (ft BTOC)	18.13	18.81	17.99	14.23	18.88	17.44	17.88	19.19	18.67	18.10	18.69	17.49	19.11	14.75	18.96
	DTW calculated (ft BTOC)	18.13	19.15	18.06	14.29	19.00	17.77	18.11	19.59	18.83	18.43	19.06	17.58	19.45	16.97	19.43
	Calibration Offset	0.00	0.34	0.07	0.06	0.12	0.33	0.23	0.40	0.16	0.33	0.37	0.09	0.34	2.22	0.47
7/10/2019	DTW measured (ft BTOC)	22.20	23.00	21.70	14.73	24.00	23.03	21.46	22.55	23.94	18.95	23.70	22.35	24.78	15.51	23.77
	DTW calculated (ft BTOC)	22.32	23.49	21.81	14.82	24.09	22.98	21.56	23.03	24.21	19.15	24.20	22.45	24.24	17.71	24.04
	Calibration Offset	0.12	0.49	0.11	0.09	0.09	-0.05	0.10	0.48	0.27	0.20	0.50	0.10	-0.54	2.20	0.27
8/14/2019	DTW measured (ft BTOC)	22.88	23.35	21.70	15.22	23.36	22.95	22.48	22.69	22.86	19.54	23.31	21.62	23.49	16.03	23.73
	DTW calculated (ft BTOC)	22.87	23.64	22.00	15.23	23.48	22.89	22.62	23.13	23.10	19.62	23.49	21.34	23.69	18.22	24.19
	Calibration Offset	-0.01	0.29	0.30	0.01	0.12	-0.06	0.14	0.44	0.24	0.08	0.18	-0.28	0.20	2.19	0.46
9/9/2019	DTW measured (ft BTOC)	23.34	23.76	23.38	15.52	26.06	24.21	23.10	23.62	23.20	21.16	25.75	23.76	25.90	16.26	24.55
	DTW calculated (ft BTOC)	23.43	24.43	23.50	15.58	26.20	24.25	23.31	24.05	23.44	20.81	26.05	23.71	26.23	18.43	24.99
	Calibration Offset	0.09	0.67	0.12	0.06	0.14	0.04	0.21	0.43	0.24	-0.35	0.30	-0.05	0.33	2.17	0.44
10/11/2019	DTW measured (ft BTOC)	23.70	23.42	23.36	15.57	25.22	24.34	23.57	24.44	30.61	24.42	25.11	23.36	25.19	16.48	24.93
	DTW calculated (ft BTOC)	23.68	24.16	23.48	15.84	25.41	24.35	23.78	24.85	30.70	24.23	25.30	23.27	25.56	18.67	25.35
	Calibration Offset	-0.02	0.74	0.12	0.27	0.19	0.01	0.21	0.41	0.09	-0.19	0.19	-0.09	0.37	2.19	0.42
11/7/2019	DTW measured (ft BTOC)	23.73	23.74	23.54	15.91	25.68	24.37	23.58	23.80	23.95	24.37	25.35	23.63	25.57	16.58	24.65
	DTW calculated (ft BTOC)	23.68	24.68	23.66	15.98	25.73	24.30	23.82	24.12	24.14	24.50	25.58	23.70	25.82	18.76	25.04
	Calibration Offset	-0.05	0.94	0.12	0.07	0.05	-0.07	0.24	0.32	0.19	0.13	0.23	0.07	0.25	2.18	0.39
12/6/2019	DTW measured (ft BTOC)	23.29	24.01	23.17	16.04	24.80	23.95	23.20	23.81	22.64	23.81	24.00	23.22	24.93	16.69	23.87
	DTW calculated (ft BTOC)	23.25	25.19	23.28	16.10	24.92	24.08	23.44	24.23	22.97	24.10	24.40	23.29	25.13	18.89	24.33
	Calibration Offset	-0.04	1.18	0.11	0.06	0.12	0.13	0.24	0.42	0.33	0.29	0.40	0.07	0.20	2.20	0.46

Notes:
 NAVD88 = North America Vertical Datum 1988
 DTW = Depth to Water
 BTOC = Below Top of Casing
 * = Pressure Transducer stopped recording on 8/15/18 for a period of 30 days. Measurements started again on 9/13/18.

Table 4
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	5/25/2018	-	-	ND	-	-	
MW-02	Shallow	31.18	8/31/2018	-	-	0.90	0.15	-	
MW-02	Shallow	31.18	12/17/2018	-	-	ND	-	-	
MW-02	Shallow	31.18	3/17/2019	23.03	20.73	2.30	0.38	9.99	
MW-02	Shallow	31.18	6/13/2019	18.83	18.81	0.02	0.003	12.37	
MW-02	Shallow	31.18	9/13/2019	23.70	23.12	0.58	0.09	7.94	
MW-02	Shallow	31.18	12/16/2019	22.41	-	ND	-	8.77	
MW-03	Shallow	31.67	8/31/2018	-	-	ND	-	-	
MW-03	Shallow	31.67	12/18/2018	-	-	ND	-	-	
MW-03	Shallow	31.67	3/18/2019	-	-	ND	-	-	
MW-03	Shallow	31.67	6/11/2019	-	-	ND	-	-	
MW-03	Shallow	31.67	9/11/2019	22.15	-	ND	-	9.52	
MW-03	Shallow	31.67	12/10/2019	22.99	-	ND	-	8.68	
MW-06	Shallow	31.23	8/31/2018	-	-	ND	-	-	
MW-06	Shallow	31.23	12/18/2018	-	-	ND	-	-	
MW-06	Shallow	31.23	3/13/2019	-	-	ND	-	-	
MW-06	Shallow	31.23	6/11/2019	-	-	ND	-	-	
MW-06	Shallow	31.23	9/11/2019	22.87	-	ND	-	8.36	
MW-06	Shallow	31.23	12/10/2019	22.82	-	ND	-	8.41	
MW-07	Shallow	30.31	12/18/2018	-	-	ND	-	-	
MW-07	Shallow	30.31	3/13/2019	-	-	ND	-	-	
MW-07	Shallow	30.31	6/6/2019	-	-	ND	-	-	
MW-07	Shallow	30.31	9/9/2019	Dry					-
MW-07	Shallow	30.31	12/6/2019	Dry					-
MW-08	Shallow	30.93	8/31/2018	-	-	ND	-	-	
MW-08	Shallow	30.93	12/17/2018	-	-	ND	-	-	
MW-08	Shallow	30.93	3/13/2019	-	-	ND	-	-	
MW-08	Shallow	30.93	6/12/2019	-	-	ND	-	-	
MW-08	Shallow	30.93	9/18/2019	22.80	-	ND	-	8.13	
MW-08	Shallow	30.93	12/11/2019	22.62	-	ND	-	8.31	
MW-11	Shallow	31.06	5/25/2018	-	-	ND	-	-	
MW-11	Shallow	31.06	8/31/2018	-	-	0.23	0.04	-	
MW-11	Shallow	31.06	12/19/2018	21.98	21.95	0.03	0.005	9.10	
MW-11	Shallow	31.06	3/13/2019	21.84	21.51	0.33	0.05	9.48	
MW-11	Shallow	31.06	6/17/2019	19.57	19.56	0.01	0.00	11.50	
MW-11	Shallow	31.06	9/13/2019	23.70	23.66	0.04	0.01	7.39	
MW-11	Shallow	31.06	12/16/2019	22.17	22.14	0.03	0.00	8.91	
MW-18	Shallow	30.87	5/24/2018	-	-	ND	-	-	
MW-18	Shallow	30.87	12/18/2018	-	-	ND	-	-	
MW-18	Shallow	30.87	3/13/2019	-	-	ND	-	-	
MW-18	Shallow	30.87	6/12/2019	-	-	ND	-	-	
MW-18	Shallow	30.87	9/12/2019	22.80	-	ND	-	8.07	
MW-18	Shallow	30.87	12/11/2019	22.76	-	ND	-	8.11	
MW-19	Shallow	31.70	8/31/2018	-	-	ND	-	-	
MW-19	Shallow	31.70	12/18/2018	-	-	ND	-	-	
MW-19	Shallow	31.70	3/18/2019	-	-	ND	-	-	
MW-19	Shallow	31.70	6/11/2019	-	-	ND	-	-	
MW-19	Shallow	31.70	9/11/2019	23.50	-	ND	-	8.20	
MW-19	Shallow	31.70	12/10/2019	23.37	-	ND	-	8.33	
MW-21	Shallow	31.36	8/31/2018	-	-	ND	-	-	
MW-21	Shallow	31.36	12/14/2018	-	-	ND	-	-	
MW-21	Shallow	31.36	3/18/2019	-	-	ND	-	-	
MW-21	Shallow	31.36	6/11/2019	-	-	ND	-	-	
MW-21	Shallow	31.36	9/11/2019	15.57	-	ND	-	15.79	
MW-21	Shallow	31.36	12/10/2019	16.06	-	ND	-	15.30	
MW-24A	Shallow	32.35	5/25/2018	-	-	ND	-	-	
MW-24A	Shallow	32.35	12/20/2018	-	-	ND	-	-	
MW-24A	Shallow	32.35	3/12/2019	-	-	ND	-	-	

Table 4
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-24A	Shallow	32.35	6/10/2019	-	-	ND	-	-	
MW-24A	Shallow	32.35	9/10/2019	23.80	-	ND	-	8.55	
MW-24A	Shallow	32.35	12/9/2019	Dry					
MW-25	Shallow	31.78	8/31/2018	-	-	ND	-	-	
MW-25	Shallow	31.78	12/14/2018	-	-	ND	-	-	
MW-25	Shallow	31.78	3/18/2019	-	-	ND	-	-	
MW-25	Shallow	31.78	6/18/2019	-	-	ND	-	-	
MW-25	Shallow	31.78	9/18/2019	23.10	-	ND	-	8.68	
MW-25	Shallow	31.78	12/10/2019	23.25	-	ND	-	8.53	
MW-26	Deep	31.89	5/24/2018	-	-	ND	-	-	
MW-26	Deep	31.89	8/29/2018	-	-	ND	-	-	
MW-26	Deep	31.89	12/17/2018	-	-	ND	-	-	
MW-26	Deep	31.89	3/14/2019	-	-	ND	-	-	
MW-26	Deep	31.89	6/18/2019	-	-	ND	-	-	
MW-26	Deep	31.89	9/13/2019	23.87	-	ND	-	8.02	
MW-26	Deep	31.89	12/12/2019	23.89	-	ND	-	8.00	
MW-27	Deep	31.46	5/24/2018	-	-	ND	-	-	
MW-27	Deep	31.46	8/30/2018	-	-	ND	-	-	
MW-27	Deep	31.46	12/13/2018	-	-	ND	-	-	
MW-27	Deep	31.46	3/14/2019	-	-	ND	-	-	
MW-27	Deep	31.46	6/18/2019	-	-	ND	-	-	
MW-27	Deep	31.46	9/12/2019	24.70	-	ND	-	6.76	
MW-27	Deep	31.46	12/13/2019	22.29	-	ND	-	9.17	
MW-28	Shallow	31.26	8/31/2018	-	-	ND	-	-	
MW-28	Shallow	31.26	12/12/2018	-	-	ND	-	-	
MW-28	Shallow	31.26	3/14/2019	-	-	ND	-	-	
MW-28	Shallow	31.26	6/18/2019	-	-	ND	-	-	
MW-28	Shallow	31.26	9/18/2019	23.22	-	ND	-	8.04	
MW-28	Shallow	31.26	12/12/2019	22.87	-	ND	-	8.39	
MW-29	Shallow	31.90	12/12/2018	-	-	ND	-	-	
MW-29	Shallow	31.90	3/14/2019	-	-	ND	-	-	
MW-29	Shallow	31.90	6/12/2019	-	-	ND	-	-	
MW-29	Shallow	31.90	9/18/2019	Potentially biofouled at 20.55 ft bgs.					
MW-29	Shallow	31.90	12/12/2019	Potentially biofouled at 24.50 ft bgs.					
MW-30	Shallow	31.05	5/23/2018	-	-	ND	-	-	
MW-30	Shallow	31.05	8/31/2018	-	-	ND	-	-	
MW-30	Shallow	31.05	12/19/2018	-	-	ND	-	-	
MW-30	Shallow	31.05	3/13/2019	-	-	ND	-	-	
MW-30	Shallow	31.05	6/17/2019	-	-	ND	-	-	
MW-30	Shallow	31.05	9/17/2019	22.97	-	ND	-	8.08	
MW-30	Shallow	31.05	12/11/2019	22.80	-	ND	-	8.25	
MW-31	Shallow	30.77	5/23/2018	-	-	ND	-	-	
MW-31	Shallow	30.77	12/20/2018	-	-	ND	-	-	
MW-31	Shallow	30.77	3/13/2019	-	-	ND	-	-	
MW-31	Shallow	30.77	6/11/2019	-	-	ND	-	-	
MW-31	Shallow	30.77	9/12/2019	22.69	-	ND	-	8.08	
MW-31	Shallow	30.77	12/11/2019	22.57	-	ND	-	8.20	
MW-32	Deep	31.08	5/24/2018	-	-	ND	-	-	
MW-32	Deep	31.08	8/31/2018	-	-	ND	-	-	
MW-32	Deep	31.08	12/19/2018	-	-	ND	-	-	
MW-32	Deep	31.08	3/12/2019	-	-	ND	-	-	
MW-32	Deep	31.08	6/10/2019	-	-	ND	-	-	
MW-32	Deep	31.08	9/10/2019	23.30	-	ND	-	7.78	
MW-32	Deep	31.08	12/9/2019	23.33	-	ND	-	7.75	
MW-33	Deep	30.88	5/23/2018	-	-	ND	-	-	
MW-33	Deep	30.88	12/21/2018	-	-	ND	-	-	
MW-33	Deep	30.88	3/12/2019	-	-	ND	-	-	
MW-33	Deep	30.88	6/11/2019	-	-	ND	-	-	
MW-33	Deep	30.88	9/10/2019	23.52	-	ND	-	7.36	

Table 4
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-33	Deep	30.88	12/9/2019	22.72	-	ND	-	8.16
MW-34	Shallow	30.72	5/24/2018	-	-	ND	-	-
MW-34	Shallow	30.72	8/31/2018	-	-	1.49	0.24	-
MW-34	Shallow	30.72	12/19/2018	-	-	ND	-	-
MW-34	Shallow	30.72	3/11/2019	22.20	21.83	0.37	0.06	8.82
MW-34	Shallow	30.72	6/17/2019	-	-	ND	-	-
MW-34	Shallow	30.72	9/17/2019	22.42	-	ND	-	8.30
MW-34	Shallow	30.72	12/16/2019	22.00	-	ND	-	8.72
MW-35	Deep	30.83	5/23/2018	-	-	ND	-	-
MW-35	Deep	30.83	8/31/2018	-	-	ND	-	-
MW-35	Deep	30.83	12/19/2018	-	-	ND	-	-
MW-35	Deep	30.83	3/13/2019	-	-	ND	-	-
MW-35	Deep	30.83	6/17/2019	-	-	ND	-	-
MW-35	Deep	30.83	9/17/2019	22.12	-	ND	-	8.71
MW-35	Deep	30.83	12/16/2019	22.27	-	ND	-	8.56
MW-36	Shallow	30.16	5/23/2018	-	-	ND	-	-
MW-36	Shallow	30.16	8/30/2018	-	-	ND	-	-
MW-36	Shallow	30.16	12/17/2018	-	-	ND	-	-
MW-36	Shallow	30.16	3/14/2019	-	-	ND	-	-
MW-36	Shallow	30.16	6/13/2019	-	-	ND	-	-
MW-36	Shallow	30.16	9/12/2019	22.80	-	ND	-	7.36
MW-36	Shallow	30.16	12/13/2019	20.70	-	ND	-	9.46
MW-37	Deep	31.27	5/24/2018	-	-	ND	-	-
MW-37	Deep	31.27	8/31/2018	-	-	ND	-	-
MW-37	Deep	31.27	12/17/2018	-	-	ND	-	-
MW-37	Deep	31.27	3/14/2019	-	-	ND	-	-
MW-37	Deep	31.27	6/12/2019	-	-	ND	-	-
MW-37	Deep	31.27	9/13/2019	23.57	-	ND	-	7.70
MW-37	Deep	31.27	12/13/2019	22.93	-	ND	-	8.34
MW-38	Shallow	31.54	5/25/2018	-	-	ND	-	-
MW-38	Shallow	31.54	8/31/2018	-	-	ND	-	-
MW-38	Shallow	31.54	12/17/2018	22.44	22.43	0.01	0.002	9.11
MW-38	Shallow	31.54	3/11/2019	20.90	20.80	0.10	0.02	10.72
MW-38	Shallow	31.54	6/12/2019	-	-	ND	-	-
MW-38	Shallow	31.54	9/13/2019	21.85	-	ND	-	9.69
MW-38	Shallow	31.54	12/13/2019	21.43	-	ND	-	10.11
MW-39	Shallow	31.08	5/25/2018	-	-	ND	-	-
MW-39	Shallow	31.08	8/29/2018	-	-	ND	-	-
MW-39	Shallow	31.08	12/14/2018	-	-	ND	-	-
MW-39	Shallow	31.08	3/14/2019	23.29	23.19	0.10	0.02	7.87
MW-39	Shallow	31.08	6/13/2019	19.86	19.82	0.04	0.01	11.25
MW-39	Shallow	31.08	9/12/2019	24.16	-	ND	-	6.92
MW-39	Shallow	31.08	12/13/2019	22.24	-	ND	-	8.84
MW-40	Deep	31.71	5/24/2018	-	-	ND	-	-
MW-40	Deep	31.71	12/13/2018	-	-	ND	-	-
MW-40	Deep	31.71	3/14/2019	-	-	ND	-	-
MW-40	Deep	31.71	6/18/2019	-	-	ND	-	-
MW-40	Deep	31.71	9/13/2019	24.34	-	ND	-	7.37
MW-40	Deep	31.71	12/12/2019	22.88	-	ND	-	8.83
MW-41	Shallow	31.32	5/25/2018	-	-	ND	-	-
MW-41	Shallow	31.32	12/13/2018	-	-	ND	-	-
MW-41	Shallow	31.32	3/19/2019	-	-	ND	-	-
MW-41	Shallow	31.32	6/10/2019	-	-	ND	-	-
MW-41	Shallow	31.32	9/13/2019	18.39	-	ND	-	12.93
MW-41	Shallow	31.32	12/12/2019	18.77	-	ND	-	12.55

Table 4
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-42	Deep	31.94	5/25/2018	-	-	ND	-	-
MW-42	Deep	31.94	8/29/2018	-	-	ND	-	-
MW-42	Deep	31.94	12/13/2018	-	-	ND	-	-
MW-42	Deep	31.94	3/12/2019	-	-	ND	-	-
MW-42	Deep	31.94	6/10/2019	-	-	ND	-	-
MW-42	Deep	31.94	9/10/2019	24.80	-	ND	-	7.14
MW-42	Deep	31.94	12/9/2019	23.79	-	ND	-	8.15
MW-43	Shallow	31.39	5/24/2018	-	-	0.0*	-	-
MW-43	Shallow	31.39	12/12/2018	-	-	ND	-	-
MW-43	Shallow	31.39	3/11/2019	22.95	22.74	ND	-	-
MW-43	Shallow	31.39	6/13/2019	20.76	20.75	0.01	0.002	10.64
MW-43	Shallow	31.39	9/13/2019	23.07	23.06	0.01	0.00	8.33
MW-43	Shallow	31.39	12/9/2019	22.85	22.83	0.02	0.003	8.56

Notes:

* = LNAPL observed; thickness not measured

- = 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 5
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 2018	3/6/2018	-	-	-	-	-	-	0.00
Q2 2018	6/14/2018	0.80	-	-	-	-	-	0.80
Q3 2018	8/31/2018	0.15	0.04	0.24	-	-	-	0.43
Q4 2018	12/17/2018	-	-	-	-	-	-	0.00
Q1 2019	3/15/2019	1.0*	0.04	0.06	0.02	0.02	0.03	1.18
Q2 2019	6/13/2019	-	-	-	-	-	-	0.00
Q3 2019	9/18/2019	-	-	-	-	-	-	0.00
Q4 2019	12/9/2019	-	-	-	-	-	-	0.00
Total Recovered		1.95	0.08	0.30	0.02	0.02	0.03	2.41

Notes:

- = not applicable

* = approximate value

Table 6
Groundwater Field Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance μS/cm	Temperature °C	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-02	5/25/2018	6.57	449	15.63	-127.80	2.36	4.26
MW-02	8/31/2018	Not collected due to presence of LNAPL					
MW-02	12/17/2018	6.26	465	15.90	-91.80	0.24	0.11
MW-02	3/17/2019	Not collected due to presence of LNAPL					
MW-02	6/13/2019	Not collected due to presence of LNAPL					
MW-02	9/13/2019	Not collected due to presence of LNAPL					
MW-02	12/16/2019	6.51	927	26.48	21.9	0.21	81.6
MW-03	5/25/2017	6.97	0	10.85	87.50	7.15	2.50
MW-03	8/31/2018	Not collected due to presence of LNAPL					
MW-03	12/18/2018	6.19	102	14.89	162.60	3.97	13.15
MW-03	3/18/2019	6.31	105	15.41	93.1	3.61	4.28
MW-03	6/11/2019	6.52	110	16.17	175.60	3.16	1.14
MW-03	9/11/2019	5.83	159	17.26	163.5	1.24	97.3
MW-03	12/10/2019	6.11	198	14.42	100.4	1.03	316
MW-06	5/25/2017	6.65	0	11.13	84.70	3.20	30.40
MW-06	8/31/2018	--	--	--	--	--	--
MW-06	12/18/2018	6.05	136	14.69	55.60	0.35	1.75
MW-06	3/13/2019	6.13	175	16.12	85.00	0.67	5.68
MW-06	6/11/2019	6.33	146	17.31	-43.7	0.24	2.72
MW-06	9/11/2019	6.01	161	16.83	-17.2	0.36	2.4
MW-06	12/10/2019	6.36	208	15.00	4.0	0.24	7.45
MW-07	6/6/2019	Dry					
MW-07	9/9/2019	Dry					
MW-07	12/6/2019	Dry					
MW-08	5/26/2017	6.58	0	--	-78.60	0.28	25.30
MW-08	8/31/2018	Not collected due to presence of LNAPL					
MW-08	12/18/2018	6.23	226	15.36	-45.70	0.15	1.76
MW-08	3/13/2019	6.32	212	16.17	-13.80	0.49	1.81
MW-08	6/12/2019	5.5	499	17.95	82.2	0.46	12.6
MW-08	9/18/2019	6.16	307	20.40	11.9	0.32	5.67
MW-08	12/11/2019	6.12	342	21.30	69.0	0.31	2.5
MW-11	5/25/2018	6.56	459	15.58	-117.00	0.80	3.11
MW-11	8/31/2018	Not collected due to presence of LNAPL					
MW-11	12/17/2018	Not collected due to presence of LNAPL					
MW-11	3/13/2019	Not collected due to presence of LNAPL					
MW-11	6/17/2019	Not collected due to presence of LNAPL					
MW-11	9/13/2019	Not collected due to presence of LNAPL					
MW-11	12/16/2019	Not collected due to presence of LNAPL					

Table 6
Groundwater Field Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance μS/cm	Temperature °C	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-18	5/31/2017	6.38	0	11.64	-44.50	0.25	62.10
MW-18	5/24/2018	6.46	240	14.41	98.70	1.31	25.10
MW-18	9/4/2018	5.95	167	16.19	158.50	0.41	4.00
MW-18	12/19/2018	6.44	321	14.45	-47.80	0.17	9.39
MW-18	3/13/2019	6.09	304	15.23	65.0	0.61	5.56
MW-18	6/12/2019	5.96	195	16.24	83.3	0.50	6.63
MW-18	9/12/2019	4.91	146	17.13	167.6	1.50	1.89
MW-18	12/11/2019	6.30	229	16.09	51.5	0.36	3.54
MW-19	5/31/2017	7.17	--	--	107.80	3.10	3.90
MW-19	8/31/2018	--	--	--	--	--	--
MW-19	12/18/2018	6.39	174	15.15	109.10	0.30	3.08
MW-19	3/18/2019	6.48	160	16.09	106.4	0.96	4.02
MW-19	6/11/2019	6.63	129	15.56	228.9	3.00	1.34
MW-19	9/11/2019	6.10	183	17.41	65.5	1.34	20.7
MW-19	12/10/2019	6.53	203	14.27	60.8	0.31	6.7
MW-21	5/31/2017	7.03	--	--	115.10	2.18	9.40
MW-21	8/31/2018	--	--	--	--	--	--
MW-21	12/18/2018	6.19	77	15.28	148.90	1.83	4.97
MW-21	3/18/2019	6.33	80	15.96	135.3	3.02	0.76
MW-21	6/11/2019	6.44	61	16.08	196.6	1.28	0.42
MW-21	9/11/2019	5.92	100	17.18	152.5	1.46	2.97
MW-21	12/10/2019	6.31	95	16.03	103.2	1.73	2.65
MW-24A	5/26/2017	6.17	146	15.19	29.10	1.39	2.18
MW-24A	5/25/2018	6.58	108	13.72	47.60	9.32	13.80
MW-24A	9/5/2018	5.83	161	16.23	173.90	3.57	233.00
MW-24A	12/14/2018	6.38	98	13.88	102.40	6.60	--
MW-24A	3/12/2019	6.35	72	13.19	199.0	5.36	--
MW-24A	6/10/2019	6.47	88	17.81	298.9	3.85	9.27
MW-24A	9/10/2019	Not collected due to presence of LNAPL					
MW-24A	12/9/2019	Dry					
MW-25	5/26/2017	5.96	173	14.89	139.90	1.97	0.87
MW-25	8/31/2018	--	--	--	--	--	--
MW-25	12/20/2018	7.25	100	14.46	76.60	0.22	1.52
MW-25	3/18/2019	6.15	128	17.20	157.5	0.72	1.01
MW-25	6/18/2019	6.35	96	15.33	111.0	2.02	--
MW-25	9/18/2019	6.13	125	16.51	72.6	1.53	2.72
MW-25	12/10/2019	6.24	134	13.73	130.7	3.64	5.46
MW-26	5/26/2017	6.06	215	15.04	116.50	2.17	3.68
MW-26	5/24/2018	7.10	451	16.95	-123.50	0.29	47.40
MW-26	8/29/2018	6.54	455	17.61	-113.90	0.19	11.90
MW-26	12/14/2018	6.35	375	13.81	37.70	0.29	4.30
MW-26	3/14/2019	6.5	419	14.87	65.8	0.63	7.72
MW-26	6/18/2019	6.61	371	16.37	-54.0	0.30	--
MW-26	9/13/2019	5.84	120	18.00	188.6	0.44	10.5
MW-26	12/12/2019	6.48	108	17.50	62.4	0.57	3.06

Table 6
Groundwater Field Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance μS/cm	Temperature °C	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-27	5/30/2017	6.47	658	15.17	-68.90	0.35	4.87
MW-27	5/30/2017	6.47	658	15.17	-68.90	0.35	4.87
MW-27	5/24/2018	6.69	515	17.57	-118.50	0.62	4.29
MW-27	8/30/2018	6.48	624	18.17	-90.50	0.23	8.56
MW-27	12/17/2018	6.37	577	15.38	-69.00	0.27	1.43
MW-27	3/14/2019	6.47	633	16.26	-5.5	0.49	5.38
MW-27	6/18/2019	6.56	522	17.31	-99.8	0.48	--
MW-27	9/12/2019	6.19	448	19.68	-67.9	1.36	7.98
MW-27	12/13/2019	6.46	287	19.28	-32.2	0.20	-
MW-28	6/1/2017	6.48	0	12.29	121.80	4.06	17.90
MW-28	8/31/2018	--	--	--	--	--	--
MW-28	12/13/2018	6.21	145	15.80	102.30	3.48	0.73
MW-28	3/14/2019	6.26	154	16.90	78.5	2.95	5.69
MW-28	6/18/2019	6.34	132	15.98	130.0	3.07	--
MW-28	9/18/2019	6.35	145	17.30	54.6	4.68	1.07
MW-28	12/12/2019	6.50	114	17.45	51.8	6.28	3.49
MW-29	6/1/2017	6.62	1	12.92	-123.70	0.21	28.10
MW-29	5/23/2018	6.76	509	18.02	-118.70	0.14	--
MW-29	9/5/2018	6.27	558	18.55	-84.60	0.23	38.30
MW-29	12/12/2018	6.12	423	15.21	-92.80	0.32	16.02
MW-29	3/14/2019	6.41	503	17.48	-5.8	0.37	3.67
MW-29	6/12/2019	6.27	260	19.46	-64.5	0.34	10.74
MW-29	9/18/2019	Not collected due to potential bio fouling at 20.55 ft bgs					
MW-29	12/12/2019	Not collected due to potentially bio fouled at 24.50 ft bgs					
MW-30	5/31/2017	6.28	0	--	97.60	0.26	3.40
MW-30	5/23/2018	6.02	126	15.20	94.50	4.13	11.80
MW-30	8/31/2018	6.23	350	15.84	19.30	0.33	5.22
MW-30	12/12/2018	6.15	255	14.03	6.00	0.29	14.71
MW-30	3/13/2019	5.97	176	14.37	157.5	3.27	4.82
MW-30	6/17/2019	5.86	189	14.83	222.5	6.80	2.98
MW-30	9/17/2019	5.87	328	16.63	-28.2	0.81	33.20
MW-30	12/11/2019	5.97	338	15.47	61.0	0.30	4.66
MW-31	5/31/2017	6.26	0	11.58	56.20	0.50	3.30
MW-31	5/24/2018	6.29	180	14.29	206.40	6.64	2.13
MW-31	9/4/2018	6.04	256	15.93	164.40	2.39	2.85
MW-31	12/19/2018	6.29	226	14.33	52.70	0.25	5.26
MW-31	3/13/2019	6.22	149	14.93	147.5	3.65	1.77
MW-31	6/11/2019	6.25	102	14.78	205.40	2.95	3.13
MW-31	9/12/2019	5.61	187	15.57	220.0	2.51	1.06
MW-31	12/11/2019	6.41	242	15.95	81.9	0.62	1.43

Table 6
Groundwater Field Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance μS/cm	Temperature °C	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-32	5/31/2017	11.79	--	--	-140.00	0.37	11.90
MW-32	5/23/2018	11.43	601	15.85	24.60	2.30	2.08
MW-32	8/31/2018	11.08	505	16.40	142.80	0.35	8.93
MW-32	12/20/2018	11.03	227	14.02	75.00	3.33	--
MW-32	3/12/2019	11.67	794	16.08	74.5	1.36	--
MW-32	6/10/2019	11.26	296	16.41	-34.8	4.06	--
MW-32	9/10/2019	9.76	188	17.35	137.7	5.13	--
MW-32	12/9/2019	8.88	103	14.77	59.9	1.31	20.9
MW-33	5/25/2017	12.29	4	13.77	-87.40	5.37	4.20
MW-33	5/24/2018	12.37	3487	15.99	-641.40	0.81	2.13
MW-33	9/4/2018	11.81	2179	18.33	76.60	0.67	7.11
MW-33	12/19/2018	12.23	2392	14.89	-22.00	0.24	13.22
MW-33	12/21/2018	12.39	2220	11.60	-26.30	0.86	9.10
MW-33	3/12/2019	12.08	1753	15.85	32.1	0.48	--
MW-33	6/11/2019	10.87	177	19.40	-26.6	2.68	31.2
MW-33	9/10/2019	9.34	163	20.26	102.4	0.34	--
MW-33	12/9/2019	10.94	283	15.78	34.5	0.45	24.2
MW-34	5/26/2017	6.40	0	13.53	-66.80	0.16	9.10
MW-34	5/23/2018	6.40	397	18.44	-68.70	0.20	--
MW-34	8/31/2018	Not collected due to presence of LNAPL					
MW-34	12/19/2018	6.19	517	16.14	39.40	0.29	3.66
MW-34	3/11/2019	Not collected due to presence of LNAPL					
MW-34	6/17/2019	6.12	470	33.08	-94.0	0.21	22.3
MW-34	9/17/2019	6.31	548	26.20	-115.4	0.04	119
MW-34	12/16/2019	6.48	488	24.78	91.5	0.32	>1000
MW-35	5/30/2017	6.85	0	--	-138.60	0.04	30.10
MW-35	5/23/2018	6.53	357	18.35	-74.90	0.00	--
MW-35	8/31/2018	6.15	459	17.31	-22.50	0.29	2.76
MW-35	12/19/2018	6.14	488	15.80	115.00	0.29	9.21
MW-35	3/13/2019	6.39	447	17.73	-14.70	0.41	3.78
MW-35	6/17/2019	6.57	199	22.56	100.20	0.21	9.80
MW-35	9/17/2019	6.48	152	24.22	-96.70	0.12	0.03
MW-35	12/16/2019	6.43	140	24.60	61.2	0.31	1.50
MW-36	5/30/2017	6.73	1	11.67	-83.80	0.21	91.40
MW-36	5/24/2018	6.68	471	17.08	-101.20	0.17	11.60
MW-36	8/30/2018	6.30	461	18.11	-84.50	0.17	6.54
MW-36	12/17/2018	6.25	459	15.79	-44.60	0.24	1.18
MW-36	3/14/2019	6.25	359	16.77	14.5	0.58	5.20
MW-36	6/13/2019	5.97	247	17.86	-49.9	0.34	8.91
MW-36	9/12/2019	6.33	516	21.03	-47.1	0.30	3.09
MW-36	12/13/2019	6.52	513	19.95	-33.1	0.30	4.49

Table 6
Groundwater Field Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Monitoring Well	Date	pH	Specific Conductance μS/cm	Temperature °C	ORP mV	Dissolved Oxygen mg/L	Turbidity NTU
MW-37	5/30/2017	12.20	2	13.37	-271.90	0.17	30.90
MW-37	5/25/2018	6.85	532	15.40	-34.90	0.58	4.76
MW-37	8/31/2018	6.78	469	17.66	-117.00	0.22	9.70
MW-37	12/17/2018	6.40	382	14.57	74.60	0.29	29.29
MW-37	3/14/2019	6.67	413	16.65	53.9	0.42	5.22
MW-37	6/12/2019	7.01	339	18.52	-138.8	0.16	26.4
MW-37	9/17/2019	6.63	263	19.60	-31.8	0.19	6.24
MW-37	12/13/2019	6.82	202	19.72	20.9	0.26	2.07
MW-38	5/26/2017	6.05	410	16.44	-1.90	0.78	3.65
MW-38	5/25/2018	6.51	540	15.86	-59.10	0.73	2.57
MW-38	8/31/2018	6.26	452	18.54	-69.10	0.17	3.28
MW-38	12/17/2018	Not collected due to presence of LNAPL					
MW-38	3/11/2019	Not collected due to presence of LNAPL					
MW-38	6/12/2019	6.26	314	19.84	-57.4	0.49	7.01
MW-38	9/13/2019	5.97	473	23.62	-18.6	0.22	7.32
MW-38	12/13/2019	6.14	393	21.48	37.8	0.16	28.3
MW-39	5/26/2017	6.34	561	17.81	-80.80	0.60	7.59
MW-39	5/24/2018	6.68	472	17.08	-101.20	0.17	11.60
MW-39	8/29/2018	6.3	551	19.13	-100.5	0.25	7.87
MW-39	12/14/2018	6.23	553	14.91	-11.50	0.27	1.65
MW-39	3/14/2019	Not collected due to presence of LNAPL					
MW-39	6/13/2019	Not collected due to presence of LNAPL					
MW-39	9/12/2019	6.11	614	18.69	-76.1	0.19	17.5
MW-39	12/13/2019	6.06	497	17.85	49.4	0.32	3.81
MW-40	5/26/2017	12.98	3	14.44	-61.80	1.61	4.84
MW-40	5/25/2018	6.78	233	15.30	22.20	0.47	11.03
MW-40	9/5/2018	6.49	271	17.15	-27.0	0.21	8.12
MW-40	12/13/2018	6.52	236	14.59	-87.0	0.29	4.53
MW-40	3/14/2019	6.45	251	16.27	92.00	0.38	2.36
MW-40	6/18/2019	6.73	233	15.83	0.28	-99.30	8.91
MW-40	9/13/2019	6.3	288	16.93	22.3	0.22	5.22
MW-40	12/12/2019	6.70	263	15.95	5.10	0.97	3.73
MW-41	5/25/2017	6.63	0.251	12.42	-108.2	0.13	17.6
MW-41	5/25/2018	6.56	107	14.48	70.60	6.41	78.70
MW-41	9/5/2018	6.13	126	16.42	58.90	0.48	7.46
MW-41	12/13/2018	6.28	134	14.94	-44.9	0.34	2.46
MW-41	3/19/2019	6.11	130	14.97	118.9	0.82	16.6
MW-41	6/10/2019	6.44	107	16.47	-4.20	0.35	3.20
MW-41	9/13/2019	5.77	130	16.70	111.00	0.70	3.95
MW-41	12/12/2019	6.35	140	16.27	35.4	0.70	4.22

Table 6
Groundwater Field Parameters
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-42	5/25/2017	12.6	5.514	14.17	-160.6	0.26	2.6
MW-42	5/24/2018	12.31	1935	15.55	-318.9	0.28	14.6
MW-42	8/29/2018	11.15	523	21.09	-13.20	3.07	22.10
MW-42	12/13/2018	10.34	141	12.90	83.50	0.28	7.28
MW-42	3/12/2019	10.75	146	14.34	103.0	0.80	--
MW-42	6/10/2019	10.39	120	17.53	-8.1	0.15	28.9
MW-42	9/10/2019	11.03	116	17.52	152.40	11.03	--
MW-42	12/9/2019	9.47	156	13.41	51.1	1.25	0.0
MW-43	5/26/2017	6.62	1	12.79	-150.20	0.16	312.00
MW-43	8/29/2018	6.16	564	19.40	-127.0	0.15	1.9
MW-43	12/12/2018	6.27	455	14.27	100.8	0.25	0.84
MW-43	3/11/2019	Not collected due to presence of LNAPL					
MW-43	6/13/2019	Not collected due to presence of LNAPL					
MW-43	9/13/2019	Not collected due to presence of LNAPL					
MW-43	12/9/2019	Not collected due to presence of LNAPL					

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

Table 7
Groundwater Analytical Data - Petroleum Related Compounds
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Method		SW8260C/SW8260C-SIM					NWTPH-Dx, SGT		NWTPH-Gx	NWEPH	NWVPH
Analyte		Benzene	Ethylbenzene	m,p-Xylenes	o-Xylene	Toluene	Motor Oil Range Organics (C24-C36)	TPH Diesel Range Organics	TPH-GRO (Gasoline Range Organics)	C10-C12-Aliphatics	C10-C12-Aliphatics
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		1.4	210	13	13	1,500	NS	1000	1000	2.6	2.6
Well	Sample Date										
MW-02	25-May-18	2.1	1.1	4.3	2.6	4.0	< 350	2,600	1,900 j	--	--
MW-02	17-Dec-18	5.2	1.7	8.2	4.2	5.9	3,500 J-	65,000 J-	3,000	280 J-	470
MW-02	16-Dec-19	0.22 j	< 0.14	0.36 j	0.18 j	0.49 j	3,300 j	89,700	1,010 NJ	297 J-	152
MW-03	25-May-17	< 0.025	< 0.030	< 0.050	< 0.060	< 0.025	< 81	< 310 U	< 50	< 49	< 50 U
MW-03	18-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 98	120	< 100	< 4.1 UJ	< 21
MW-03	18-Mar-19	< 0.016 UJ	< 0.011	< 0.011	< 0.010	< 0.20 UJ	< 93	< 63	< 100	< 5.7 UJ	< 21
MW-03	11-Jun-19	< 0.10	< 0.14	--	--	--	< 0.083	300 j	510	< 5.91	< 4.07
MW-03	11-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 80	120 j	< 38.3	< 5.80 UJ	< 4.07 UJ
MW-03	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 89	100 j	< 100 U	< 5.89 UJ	< 4.07
MW-06	25-May-17	< 0.025	0.038 j	< 0.050	< 0.060	0.053 j	85 j	< 400 U	< 50	< 3.0	< 50 U
MW-06	18-Dec-18	0.072 j	0.17 j	0.29 j	< 0.15	0.35	< 97	1,500 NJ	1,300 J+	63 J-	670
MW-06	18-Mar-19	0.057 J	0.085 J-	0.14 J+	0.077 J+	1.6 J	< 95	1,700 NJ	2,200	< 5.7 UJ	630
MW-06	11-Jun-19	< 0.10	< 0.14	--	--	0.50 j	--	490	1,700 NJ	255	279
MW-06	11-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 1.0 U	< 75	1,200	3,330	R	673 J
MW-06	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	0.29 j	88 j	1,400	3,940 NJ	< 5.86	604
MW-08	26-May-17	0.10 j	0.064 j	0.12 j	0.12 j	0.090 j	88 j	< 1,500 U	770	19 j	44 j
MW-08	18-Dec-18	0.82	0.053 j	0.20 j	0.19 j	0.14 j	< 97	600	410	21 J-	< 21
MW-08	13-Mar-19	0.25	0.044 j	0.27 j	0.13 j	0.12 j	150 j	670 NJ	590	10 J-	57
MW-08	12-Jun-19	0.75 j	< 0.14	--	--	< 0.083	--	990	432 NJ	45.1	< 4.07
MW-08	18-Sep-19	0.49 j	< 0.14	< 0.31	< 0.16	< 0.083	250 j	1,500	314	< 5.88 UJ	< 4.07
MW-08	11-Dec-19	0.12 j	< 0.14	< 0.31	< 0.16	< 0.083	140 j	750	< 100 U	< 20.0	< 20.0
MW-11	25-May-18	2.2	2.5	17	6.0	12	880 J+	30,000 J+	2,700	--	--
MW-18	31-May-17	0.11 j	< 0.030	0.059 j	0.094 j	0.20	< 80	430	88 j	< 3.0	< 50 U
MW-18	24-May-18	< 0.20	< 0.20	< 0.50	< 0.50	0.077 j	< 360	< 110	< 250	--	< 50
MW-18	04-Sep-18	0.041 j	0.15 j	0.69	0.28 j	0.27	< 97	820	320	--	130
MW-18	19-Dec-18	0.39	< 0.030	< 0.12	< 0.15	0.057 j	480	1,300	180 j	4.3 J-	< 21
MW-18	13-Mar-19	0.087 j	0.052 j	0.30 j	0.24 j	0.18 j	< 96	550	380	< 6.0 UJ	66
MW-18	12-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	500	363	< 5.87	< 4.07
MW-18	12-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 75	2,200	354 NJ	< 5.81	< 4.07
MW-18	11-Dec-19	0.18 j	< 0.14	< 0.31	< 0.16	< 0.083	160 j	680	107 J+	< 19.9	< 20.0
MW-18 - Dup	04-Sep-18	0.047 j	0.15 j	0.79	0.31 j	0.28	< 97	770 NJ	430	--	120
MW-19	31-May-17	< 0.025	< 0.030	< 0.050	< 0.060	0.042 j	< 79	46 j	< 50	< 3.1	< 6.1
MW-19	18-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	160 j	470	< 100	< 4.2 UJ	< 21
MW-19	18-Mar-19	< 0.016 UJ	< 0.011	< 0.011	< 0.010	< 0.20 UJ	< 97	< 65	< 100	< 5.7 UJ	< 21
MW-19	11-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	75 j	301	31.0	< 4.07
MW-19	11-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 77	110 j	< 38.3	R	< 4.07 UJ
MW-19	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	190 j	< 100 U	< 5.84	< 4.07
MW-21	31-May-17	< 0.025	< 0.030	< 0.050	< 0.060	< 0.025	< 79	34 j	< 50	< 3.4	< 6.1
MW-21	18-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 98	< 66	< 100	4.1 J-	< 21
MW-21	18-Mar-19	< 0.016 UJ	< 0.011	< 0.011	< 0.010	< 0.20 UJ	< 95	< 64	< 100	--	< 21
MW-21	11-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	200 j	366	< 5.89	< 4.07
MW-21	11-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 77	< 65	< 38.3	< 5.85 UJ	< 4.07 UJ
MW-21	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 75	< 64	< 38.3	< 5.85	< 4.07
MW-24A	26-May-17	< 0.025	0.031 j	< 0.050	< 0.060	0.036 j	< 79	< 220 U	< 50	< 3.0	< 6.1
MW-24A	25-May-18	< 0.20	< 0.20	< 0.50	< 0.50	0.063 j	< 360	< 110	< 250	--	--
MW-24A	05-Sep-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 98	< 66	< 70	--	--
MW-24A	14-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	0.12 j	< 100	< 69	< 100	--	--
MW-24A	12-Mar-19	0.10 J-	0.019 J-	0.030 J-	0.014 J-	0.074 J-	660	2,200 NJ	740	180 J-	< 21
MW-24A	10-Jun-19	0.71 j	< 0.14	--	--	0.38 j	--	870	2,040 NJ	< 5.91	132
MW-24A	11-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	190 j	110 j	< 38.3	--	R
MW-25	26-May-17	< 0.025	< 0.030	< 0.050	< 0.060	< 0.025	< 78	< 300 U	< 50	< 3.0	< 6.1
MW-25	20-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 98	< 66	< 100	< 4.1 UJ	< 21
MW-25	18-Mar-19	0.56 J	< 0.011 UJ	0.57 J-	0.13 J	0.39 J-	< 100	< 68	130 j	< 5.8 UJ	< 21
MW-25	18-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 75	82 j	< 38.3	< 5.84	< 4.07
MW-25	10-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	< 66	< 38.3	< 5.87	< 4.07
MW-25*	13-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	< 58	< 38.3	< 5.83	< 4.07
MW-26	26-May-17	< 0.025	0.030 j	< 0.050	< 0.060	0.025 j	< 79	< 120 U	< 50	< 3.0	< 50 U
MW-26	24-May-18	29	2.1	20	6.8	16	< 350	520 NJ	2,200 J+	--	110 J+
MW-26	29-Aug-18	31	3.2	23	8.7	18	< 98	1,800 NJ	2,300	--	350
MW-26	14-Dec-18	31	3.2	26	11	19	< 99	1,100	2,000	< 4.2 UJ	370
MW-26	14-Mar-19	29 J-	3.4 J-	25 J-	10 J-	20 J-	< 95	1,100 NJ	130 J-	< 5.9 UJ	460
MW-26	13-Sep-19	0.41 j	< 0.14	0.82 j	0.59 j	0.79 j	< 400 U	350 j	379	< 5.83	< 4.07
MW-26	12-Dec-19	0.11 j	< 0.14	0.33 j	0.49 j	0.43 j	< 80	300 j	188	< 5.91	< 4.07
MW-26*	13-Jun-19	25.2	2.9	--	--	18.4	--	870	2,240 NJ	234 J-	172
MW-27	30-May-17	43	4.7	24	11	29	430	6,700	3,000 J+	18 J+	88 J+
MW-27	24-May-18	18	1.5	9.7	4.3	11	< 350	1,300 NJ	1,800 J+	--	120
MW-27	30-Aug-18	17	1.4	4.7	4.6	4.2	98 J+	4,600 NJ	1,300	--	370

Table 7
Groundwater Analytical Data - Petroleum Related Compounds
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Method		SW8260C/SW8260C-SIM					NWTPH-Dx, SGT		NWTPH-Gx	NWEPH	NWVPH
		Analyte	Benzene	Ethylbenzene	m,p-Xylenes	o-Xylene	Toluene	Motor Oil Range Organics (C24-C36)	TPH Diesel Range Organics	TPH-GRO (Gasoline Range Organics)	C10-C12-Aliphatics
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-27	17-Dec-18	22	1.4	4.9	4.2	3.7	1,500	6,400	2,100	64 J-	380
MW-27	14-Mar-19	22	1.6	3.6	2.7	2.9	< 94	2,400	160 J-	< 5.8 UJ	480
MW-27	12-Sep-19	9.0	0.92 j	4.9	1.5	4.2	< 77	1,800	1,530	< 5.84	309
MW-27	13-Dec-19	2.7	0.40 j	0.46 j	0.20 j	0.55 j	< 85 UJ	740 J-	1,090 NJ	< 5.87	176
MW-27 - Dup	30-May-17	46	4.8	24	11	30	430	6,700	3,000 J+	23 J+	95 J+
MW-27 - Dup	17-Dec-18	21	1.4	5.0	4.2	3.8	2,300	7,400	2,200	51 J-	380
MW-27 Dup	13-Dec-19	2.7	0.38 j	0.46 j	0.21 j	0.57 j	< 400 U	1,500	1,310	< 5.85	93.8
MW-27*	13-Jun-19	28.9	1.2	--	--	5.3	--	1,500	2,680 NJ	76.9	247
MW-28	01-Jun-17	< 0.025	< 0.030	< 0.050	< 0.060	0.050 j	< 79	24 j	< 50	< 3.2	< 50 U
MW-28	13-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 98	< 66	< 100	< 4.1 UJ	< 21
MW-28	14-Mar-19	0.045 j	0.020 j	0.090 j	0.046 j	< 0.20 U	< 98	< 67	24,000 J-	< 5.8 UJ	< 21
MW-28	18-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	0.14 j	150 j	150 j	< 38.3	< 5.84	< 4.07
MW-28	12-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	71 j	< 38.3	< 5.86	< 4.07
MW-28*	13-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	< 56	< 38.3	< 5.91	< 4.07
MW-29	01-Jun-17	2.3	2.3	10	1.1	4.2	< 79	2,400 NJ	3,700 J+	29 J+	130 J+
MW-29	23-May-18	9.0	2.7	15	1.9	8.3	< 98	1,200	2,600 J+	--	--
MW-29	05-Sep-18	1.2	2.7	11	1.1	4.4	200 j	2,700 NJ	2,200	--	--
MW-29	12-Dec-18	2.4	3.9	19	1.6	4.6	210 j	3,700	3,800 J+	65 J-	--
MW-29	14-Mar-19	0.85	2.8	11	1.3	3.7	< 95	2,500 NJ	1,700 J-	9.6 J-	800
MW-29	12-Jun-19	0.86 j	1.6	--	--	2.9	--	3,800	4,290 NJ	150 J+	449
MW-30	31-May-17	< 0.025	< 0.030	< 0.050	< 0.060	0.037 j	< 80	110	< 50	< 3.1	< 6.1
MW-30	23-May-18	0.040 j	< 0.030	< 0.12	< 0.15	0.12 j	< 97	< 66	< 100	--	--
MW-30	31-Aug-18	0.44	< 0.030	0.13 j	0.15 j	< 0.050	140 j	1,300	< 70	--	--
MW-30	12-Dec-18	0.14 j	< 0.030	< 0.12	< 0.15	< 0.050	220 j	1,100	180 j	< 4.1 UJ	< 21
MW-30	13-Mar-19	< 0.016 UJ	< 0.011	< 0.011	< 0.010	< 0.0070	< 94	< 64	< 100	< 5.9 UJ	< 21
MW-30	17-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	88 j	66.6 j	< 5.85	< 4.07
MW-30	17-Sep-19	0.25 j	< 0.14	< 0.31	0.22 j	< 0.083	220 j	3,200	292	< 5.81	< 4.07
MW-30	11-Dec-19	0.11 j	< 0.14	< 0.31	< 0.16	< 0.083	390 j	8,400	333	< 19.9 UJ	< 20.0
MW-31	31-May-17	0.064 j	0.032 j	< 0.050	< 0.060	0.072 j	< 80	110	< 50	< 3.1	< 6.1
MW-31	24-May-18	< 0.20	< 0.20	< 0.50	< 0.50	0.080 j	< 360	< 110	< 250	--	< 50
MW-31	04-Sep-18	0.042 j	< 0.030	< 0.12	< 0.15	< 0.050	< 97	150	< 70	--	< 21
MW-31	19-Dec-18	0.24	< 0.030	< 0.12	< 0.15	< 0.050	380	770	< 100	< 4.1 UJ	< 21
MW-31	13-Mar-19	< 0.016	< 0.011	< 0.011	< 0.010	< 0.0070	< 100	< 71	< 100	< 6.5 UJ	< 21
MW-31	11-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	340 j	418	< 5.89	< 4.07
MW-31	12-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 77	< 65	< 38.3	< 5.77	< 4.07
MW-31	11-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	190 j	2,200	70.5 j	< 20.0	< 20.0
MW-32	31-May-17	0.96	0.080 j	0.80	0.11 j	0.28	< 79	320	300 j	4.9 j	< 50 U
MW-32	23-May-18	0.14 j	0.060 j	0.31 j	0.18 j	22	< 100	130	200 j	--	--
MW-32	31-Aug-18	0.35	0.062 j	0.60	0.15 j	10	< 99	530	220	--	--
MW-32	20-Dec-18	0.45	0.063 j	< 0.12	< 0.15	5.0	140 j	1,000	300	22 J-	42 j
MW-32	12-Mar-19	0.69 J-	0.052 J-	0.77 J-	0.10 J-	0.50 J-	1,500	4,800 NJ	1,200 J-	170 J-	180
MW-32	10-Jun-19	0.61 j	< 0.14	--	--	1.1	--	1,400	1,250 NJ	< 5.88	< 4.07
MW-32	10-Sep-19	0.14 j	< 0.14	0.53 j	< 0.16	0.57 j	110 j	380 j	96.8 j	< 5.94	< 4.07
MW-32	09-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	0.25 j	190 J-	490	142 J+	< 5.86	< 4.07
MW-33	25-May-17	0.18 j	0.17 j	1.5	0.40 j	0.58	110 j	< 970 U	640	< 3.1	32 J+
MW-33	24-May-18	0.18 j	0.12 j	1.1	0.30 j	2.5	< 360	420	390	--	48 j
MW-33	04-Sep-18	0.12 j	0.065 j	0.56	0.17 j	4.0	130 j	1,100	590 NJ	--	380
MW-33	19-Dec-18	0.18 j	0.069 j	0.35 j	< 0.15	1.9	320 j	2,100	730	< 4.2 UJ	190
MW-33	12-Mar-19	0.43 J-	0.087 J-	0.45 J-	0.11 J-	1.0 J-	1,000	3,400 NJ	1,200	450 J-	130
MW-33	11-Jun-19	0.33 j	0.18 j	--	--	0.64 j	--	2,000	1,160 NJ	33.1	41.8
MW-33	10-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	0.16 j	140 J-	270 j	92.2 j	15.7 j	< 4.07
MW-33	09-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	170 j	340 j	297 NJ	< 5.87	< 4.07
MW-34	26-May-17	11	0.78	3.9	4.1	5.5	110 j	1,400	1,200 J+	8.3 j	42 J+
MW-34	23-May-18	17	1.4	2.7	4.4	2.7	< 98	1,400	1,700	--	--
MW-34	19-Dec-18	23	3.6	2.8	2.5	0.99	2,000	6,900	2,200	98 J-	370
MW-34	17-Jun-19	0.56 j	< 0.14	--	--	< 0.083	--	9,400	1,490 NJ	22.5 J-	337
MW-34	18-Sep-19	0.95 J-	0.27 J-	1.1 J-	1.4 J-	756 J-	11,400	182,000	7,340 J-	302 J-	5,190 J-
MW-34	16-Dec-19	< 0.51	< 0.69	< 1.5	< 0.80	0.79 j	6,600 j	216,000	1,790 NJ	10,300 J-	4,490 J
MW-34 - Dup	23-May-18	17	1.4	2.7	4.5	2.7	2,600	2,600	1,700	--	--
MW-35	30-May-17	44	5.5	30	15	31	620	6,700	3,000 J+	25 J+	100 J+
MW-35	23-May-18	40	1.3	4.6	6.8	12	< 98	1,200	1,800	--	--
MW-35	31-Aug-18	24	0.44	4.4	6.2	4.7	210 j	3,000	1,600	--	--
MW-35	19-Dec-18	38	0.74	4.1	5.5	6.2	640 J+	4,200 J+	2,200	36 J-	420
MW-35	13-Mar-19	57 J-	0.90	6.1	6.9	10	< 94	1,200 NJ	2,200	< 6.0 UJ	440
MW-35	17-Jun-19	1.4	< 0.14	--	--	0.28 j	--	960	587 NJ	22.4	< 4.07
MW-35	17-Sep-19	0.50 j	< 0.14	< 0.31	< 0.16	< 1.0 U	80 j	580	209	< 5.73 UJ	< 4.07
MW-35	16-Dec-19	0.32 j	< 0.14	0.38 j	< 0.16	0.16 j	83 j	620	303	53.5	< 4.07
MW-35 - Dup	30-May-17	45	5.2	29	14	32	340	5,200	3,000 J+	12 J+	85 J+
MW-35 - Dup	31-Aug-18	24	0.45	4.5	6.3	4.8	160 j	3,300	1,700	--	--
MW-35 Dup	13-Mar-19	61 J-	0.87	6.0	6.3	9.9	< 93	1,200 NJ	2,100	< 5.9 UJ	450 J+
MW-35 Dup	17-Jun-19	1.5	< 0.14	--	--	< 0.083	--	270 j	602	< 5.83	< 4.07
MW-35 Dup	17-Sep-19	0.48 j	< 0.14	< 0.31	< 0.16	< 1.0 U	< 77	510	214	< 5.76	< 4.07
MW-35 Dup	16-Dec-19	0.32 j	< 0.14	0.33 j	< 0.16	0.14 j	89 j	670	229	< 5.76	54.9 J
MW-36	30-May-17	9.1	0.50	3.1	2.0	3.0	170 j	1,900	1,200 J+	13 j	53 J+
MW-36	24-May-18	2.0	0.38	0.96	1.1	1.2	< 360	1,200	810	--	60
MW-36	30-Aug-18	12	2.5	12	4.3	11	< 97	3,200 NJ	1,100	--	280 J+
MW-36	17-Dec-18	30	4.2	23	10	23	630	5,000	2,100	91 J-	320
MW-36	14-Mar-19	9.2	1.6	8.2	3.1	8.9	< 94	1,500	4,000 J	6.3 J-	300
MW-36	12-Sep-19	34.7	5.4	32.7	11.7	31.7	88 j	2,900	2,650 NJ	< 5.84	222
MW-36	13-Dec-19	31.1	6.6	30.5	11.7	31.4	210 j	3,600	2,910 NJ	< 5.88	321
MW-36 - Dup	30-May-17	9.1	0.51	3.1	2.1	2.9	180 j	1,900	1,300	33 j	46 J+
MW-36 - Dup	24-May-18	2.0	0.37	1.0	1.2	1.2	< 360	1,100 NJ	780	--	65
MW-36 Dup	14-Mar-19	8.8	1.5	7.5	2.8	7.1	< 95	2,000	2,100 J-	< 5.8 UJ	300
MW-36 Dup	12-Sep-19	33.8	5.4	32.3	11.6	31.3	< 80	2,200	2,540	< 5.55 UJ	217

Table 7
Groundwater Analytical Data - Petroleum Related Compounds
Premier Edible Oils, 10400 N Burgard Way
Portland OR

Method		SW8260C/SW8260C-SIM					NWTPH-Dx, SGT		NWTPH-Gx	NWEPH	NWVPH
Analyte		Benzene	Ethylbenzene	m,p-Xylenes	o-Xylene	Toluene	Motor Oil Range Organics (C24-C36)	TPH Diesel Range Organics	TPH-GRO (Gasoline Range Organics)	C10-C12-Aliphatics	C10-C12-Aliphatics
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-36 Dup*	13-Jun-19	3.1	0.48 j	--	--	2.3	--	2,900	1,820 NJ	92.7 J-	130
MW-36*	13-Jun-19	3.1	0.39 j	--	--	2.3	--	3,500	1,900 NJ	114	142
MW-37	30-May-17	14	1.7	15	4.2	11	< 79	1,200	2,000 J+	7.2 J+	79 J+
MW-37	25-May-18	15	2.0	14	5.3	12	< 360	1,400	1,800 j	--	--
MW-37	31-Aug-18	20	2.8	18	7.5	15	< 98	1,500	2,000	--	--
MW-37	17-Dec-18	14	2.5	18	7.0	11	330 j	2,500	1,800 J+	< 4.2 UJ	390
MW-37	14-Mar-19	13	2.1	15	6.6	11	< 100	900 NJ	1,700 J-	< 5.8 UJ	450
MW-37	12-Jun-19	12.4	2.1	--	--	10.8	--	1,400	2,900 NJ	75.0	358
MW-37	17-Sep-19	1.5	0.35 j	1.1 j	1.3	1.4 J+	96 j	340 j	470	< 5.85	69.8
MW-37	13-Dec-19	0.23 j	< 0.14	0.41 j	0.30 j	0.38 j	< 89	310 j	294	21.1	< 4.07
MW-38	26-May-17	37	2.6	17	6.3	14	610	6,900	2,500 J+	16 J+	89 J+
MW-38	25-May-18	83	4.3	32	9.0	29	< 350	2,600	2,900	--	--
MW-38	31-Aug-18	26	2.2	15	5.2	11	160 j	3,700	2,100	--	--
MW-38	12-Jun-19	11.4	1.3	--	--	8.0	--	3,500	4,020 NJ	64.7	534
MW-38	13-Sep-19	10.8	1.4	7.5	3.2	6.1	430 J+	15,100	4,270 NJ	10,500	226
MW-38	13-Dec-19	9.2 J+	1.4 J+	9.0 J+	3.7 J+	7.6 J+	590	23,200	8,150 NJ	914	1,180
MW-39	26-May-17	21	5.9	20	9.7	17	610	7,500	3,000 J+	68	110 J
MW-39	24-May-18	22	2.9	20	8.3	14	< 360	2,900 NJ	2,600 J+	--	160 J+
MW-39	29-Aug-18	30	7.9	35	13	21	< 97	4,900 NJ	2,700	--	560 J+
MW-39	14-Dec-18	60	9.7	39	15	32	230 j	4,200	3,200	110 J-	500
MW-39	12-Sep-19	44.9	10.9	43.0	14.4	27.7	160 j	6,800	4,530 NJ	< 5.73	216
MW-39	13-Dec-19	65.5	12.2	52.0	16.8	41.6	250 j	5,400	5,260 NJ	7.85 j	536 J+
MW-40	26-May-17	< 0.025	0.034 j	< 0.050	< 0.060	0.046 j	< 79	< 230 U	< 50	< 3.0	< 50 U
MW-40	25-May-18	< 0.20	< 0.20	< 0.50	< 0.50	0.076 j	< 360	< 110	< 250	--	--
MW-40	05-Sep-18	< 0.030	< 0.030	< 0.12	< 0.15	0.068 j	< 98	< 66	120 NJ	--	--
MW-40	13-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	0.083 j	< 98	< 67	< 100	< 4.1 UJ	< 21
MW-40	18-Mar-19	0.028 J	< 0.011 UJ	< 0.50 UJ	< 0.010 UJ	< 0.2 UJ	< 94	< 64	< 100	< 5.8 UJ	< 21
MW-40	13-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	< 66	< 38.3	< 5.76	< 4.07
MW-40	12-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	75 j	68.3 j	< 5.85	< 4.07
MW-40*	13-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	71 j	< 100 U	80.6	< 4.07
MW-41	25-May-17	< 0.025	< 0.030	< 0.050	< 0.060	0.047 j	91 j	< 280 U	< 50	< 3.2	< 6.1
MW-41	25-May-18	< 0.20	< 0.20	< 0.50	< 0.50	0.061 j	< 360	< 110	< 250	--	--
MW-41	05-Sep-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 97	< 66	< 70	--	--
MW-41	13-Dec-18	< 0.030	< 0.030	< 0.12	< 0.15	< 0.050	< 98	< 66	< 100	< 4.1 UJ	--
MW-41	19-Mar-19	< 0.016	< 0.011	< 0.011	< 0.010	< 0.0070	< 94	< 64	< 100	< 5.8 UJ	< 21
MW-41	10-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	< 54	210	< 5.92	< 4.07
MW-41	13-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 78	< 66	< 38.3	< 5.79	< 4.07
MW-41	12-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	< 80	< 68	< 38.3	< 5.87	< 4.07
MW-42	25-May-17	< 0.025	< 0.030	< 0.050	< 0.060	0.050 j	< 80	< 220 U	< 50	< 3.0	< 6.1
MW-42	24-May-18	0.23	0.047 j	0.19 j	0.15 j	0.86	< 360	< 110	120 j	--	< 50
MW-42	29-Aug-18	0.12 j	< 0.030	< 0.12	< 0.15	< 0.050	--	--	< 70	--	< 50 U
MW-42	30-Aug-18	0.13 j	< 0.030	0.12 j	< 0.15	0.12 j	< 98	< 66	< 70	--	< 21
MW-42	13-Dec-18	0.067 j	< 0.030	< 0.12	< 0.15	0.16 j	< 100	170	< 100	< 4.3 UJ	--
MW-42	12-Mar-19	0.38 J-	0.054 J-	0.15 J-	0.049 J-	0.33 J-	1,900	5,400 NJ	1,200	340 J-	32 j
MW-42	10-Jun-19	< 0.10	< 0.14	--	--	< 0.083	--	1,100	503	23.7	< 4.07
MW-42	10-Sep-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	170 j	240 j	< 38.3	< 5.83	< 4.07
MW-42	09-Dec-19	< 0.10	< 0.14	< 0.31	< 0.16	< 0.083	200 j	240 j	156 J+	< 5.87	< 4.07
MW-43	26-May-17	6.5	3.1	16	2.5	6.7	220 j	5,000	2,800 J+	13 J+	100 J+
MW-43	29-Aug-18	6.8	4.4	18	2.6	7.9	140 j	5,100 NJ	2,200	--	520
MW-43	12-Dec-18	27	14	55	4.3	34	160 j	2,700	3,300 J+	310 J-	--
MW-43 - Dup	12-Dec-18	28	14	54	4.5	36	< 97	710	3,400 J+	25 J-	--

Notes:
 < = Compound not detected. Reportable detection limit shown.
 -- = not analyzed
 µg/L = micrograms per liter
 GW SCM = Groundwater Source Control Measure
 NS = No Standard for GW SCM Performance Evaluation
 Dup = Field Duplicate Sample
 Bolded values indicate concentrations above the Reportable Detection Limit.
 Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.
 * = Select analytes resampled 17-18 June.
 EPA 8620B used instead of SW8260C for Dec 2019 samples.

Qualifiers - Organics
 j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits
 J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits
 UJ = Evidence of the compound at an estimated quantity.
 UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
 U = Analyte was analyzed for, but not detected.
 R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.
 NWTPH-Gx analyses performed by TestAmerica - Seattle, WA of Seattle.
 SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.
 SW8270D-SIM analyses performed by TestAmerica - Seattle, WA of Seattle.
 SW9056 analyses performed by TestAmerica - Seattle, WA of Seattle.
 NWEPH analyses performed by TestAmerica - Seattle, WA of Seattle.
 NWVPH analyses performed by TestAmerica - Seattle, WA of Seattle.
 SM2320B analyses performed by TestAmerica - Seattle, WA of Seattle.
 SM2340C analyses performed by TestAmerica - Seattle, WA of Seattle.

Table 8
Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW620A		SW8270D-SIM						SW8270D-SIM						SW8270D-SIM				Calculated		
Analyte		Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (ND=0)
Unit		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		2.1	1,925	NS	NS	99	NS	4,000	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	14	530	0.0018	12	NS	400	0.0018
Well	Sample Date																					
MW-02	25-May-18	31	2,700	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-02	17-Dec-18	40	3,300 J+	5.3	1.0	11	6.9	2.8	0.29	0.14	0.12	0.074	0.049 j	0.40	0.012 j	0.85 j	17	0.079	1.9	23	1.5	0.20
MW-02	16-Dec-19	53.1	4,540	0.63 J-	0.57 J-	< 0.0032 UJ	< 0.0046 UJ	< 0.0062 UJ	< 0.0039 UJ	0.042 J-	< 0.013 UJ	0.028 J-	< 0.018 UJ	< 0.0092 UJ	< 0.0059 UJ	< 0.018 UJ	< 0.0059 UJ	0.022 J-	1.7 J-	< 0.010 UJ	< 0.015 UJ	0.044
MW-03	25-May-17	0.44 j	1.4 j	< 0.0062	< 0.0093	< 0.0021 UJ	< 0.0021	0.0050 j	< 0.021 U	< 0.0031	< 0.0083	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	< 0.0073	0.020 J-	< 0.021 U	< 0.0041	< 0.021 U	< 0.021 U
MW-03	18-Dec-18	0.21 j	1.4 j	< 0.019	< 0.040	< 0.0092	< 0.014	< 0.014	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.011	< 0.017	< 0.017	< 0.014	< 0.032	< 0.032	< 0.034	< 0.016 U	< 0.016 U
MW-03	18-Mar-19	0.32 j	2.3	< 0.019	< 0.040	< 0.014	0.0096 j	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	< 0.017	< 0.014	< 0.032	< 0.034	< 0.016 U	< 0.016 U
MW-03	11-Jun-19	0.30 j	6.5	--	--	< 0.0033	< 0.0048	< 0.0064	< 0.018	< 0.0041	< 0.0050	< 0.010	< 0.010	< 0.011	< 0.0095	< 0.0050	< 0.019	< 0.0061	< 0.0052	< 0.011	< 0.015	< 0.018 U
MW-03	11-Sep-19	0.24 j	11.2	< 0.0035	< 0.0062	< 0.012	< 0.0094	< 0.010	< 0.0079	< 0.0055	< 0.0087	< 0.0093	< 0.0064	< 0.010	< 0.0084	< 0.010	< 0.0053	< 0.013	< 0.0068	< 0.0064	< 0.010 U	< 0.010 U
MW-03	10-Dec-19	0.019 j	1,360	< 0.0058	< 0.0093	< 0.0036	< 0.0069	< 0.0043	< 0.0045	< 0.012	< 0.010	< 0.011	< 0.010	< 0.010	< 0.020	< 0.0066	< 0.015	0.011 j	< 0.012	< 0.016	< 0.015	< 0.015 U
MW-06	25-May-17	1.6	43	< 0.0062	< 0.0093	< 0.0021 UJ	< 0.0021	< 0.0031	< 0.0021	< 0.0031	< 0.0083	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	< 0.0073	< 0.013 UJ	< 0.0041	< 0.0041	< 0.0093 U	< 0.0093 U
MW-06	18-Dec-18	8.5	460 J+	11	1.1	1.0	0.41	0.20	0.14	0.011	0.011	0.011	0.011	0.011	0.011	0.059 j	2.8	3.0	1.2	0.043 j	< 0.013 U	< 0.013 U
MW-06	18-Mar-19	5.8	580	16	13	1.5 J-	0.52 J-	0.26 J-	0.014 J-	< 0.011 UJ	< 0.011 UJ	< 0.012 UJ	< 0.012 UJ	< 0.015 UJ	< 0.0096 UJ	< 0.048 UJ	3.0 J-	< 0.014 UJ	3.4 J-	1.3 J-	< 0.032 UJ	0.014
MW-06	11-Jun-19	5.5	392	--	--	1.0	0.32	0.12	< 0.018	< 0.0041	< 0.0094	< 0.010	< 0.010	< 0.0094	< 0.0094	0.043	2.1	1.6	0.052	< 0.018 U	< 0.018 U	
MW-06	11-Sep-19	8.3	435	13.0	13.8	1.7	0.50	0.23	< 0.0079	< 0.0055	< 0.0087	< 0.0093	< 0.0083	< 0.0084	< 0.010	< 0.0053	2.4	2.3	0.057	< 0.010 U	< 0.010 U	
MW-06	10-Dec-19	8.8	608	7.1	6.9	1.3	0.47	0.16	< 0.0039	0.0057 j	< 0.013	0.0098	< 0.010	< 0.0092	0.045	3.7	1.5	1.9	0.047	0.0057	< 0.010 U	< 0.010 U
MW-08	28-May-17	7.8	1,800	3.1	< 0.0094	1.3 J-	0.28	0.051	< 0.0021	< 0.0031	< 0.0084	< 0.0031	< 0.0094	< 0.0063	< 0.0021	0.038	1.3	< 0.0073	0.47 J-	< 0.0042	0.048	< 0.0094 U
MW-08	18-Dec-18	11	810 J+	0.14	0.14	0.48	0.083	0.13	< 0.014	< 0.011	< 0.011	< 0.011	< 0.012	< 0.011	< 0.011	0.059 j	0.71	< 0.014	0.25	< 0.031	0.074 j	< 0.016 U
MW-08	13-Mar-19	6.8	670	0.12	--	0.98	0.13	0.074 j	< 0.014	< 0.011	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	1.3	< 0.014	0.47	< 0.032	0.056 j
MW-08	12-Jun-19	1.9	2,830	--	--	0.31	< 0.0047	< 0.0063	< 0.018	< 0.0041	< 0.010	< 0.011	< 0.0094	< 0.0094	< 0.019	0.20	< 0.0051	0.38	< 0.011	0.11	< 0.018 U	< 0.018 U
MW-08	18-Sep-19	12.1	1,350	< 0.0055	< 0.0052	< 0.0046	< 0.0061	0.25	< 0.0039	< 0.0040	< 0.0097	< 0.010	< 0.0097	< 0.013	< 0.0091	< 0.0091	0.055	0.21	< 0.013	< 0.010	0.14	< 0.013 U
MW-08	11-Dec-19	7.8	1,850	< 0.0053	< 0.0050	0.068	< 0.0045	< 0.0059	< 0.0038	< 0.0039	< 0.012	< 0.0094	< 0.010	< 0.0088	< 0.0088	< 0.018	0.031 j	< 0.013	< 0.0065	< 0.010	0.092	< 0.013 U
MW-11	25-May-18	33	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-18	31-May-17	2.0	920	< 0.0062	< 0.0093	0.039	0.023	0.015 j	< 0.0021	< 0.0031	< 0.0082	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	0.023	< 0.0072	0.058	0.012 j	0.013 j	< 0.0093 U
MW-18	24-May-18	0.55 j	110	< 0.020	< 0.031	< 0.0031	0.0035 j	0.0034 j	< 0.020	< 0.031	< 0.020	< 0.031	< 0.020	< 0.020	< 0.031	0.0036 j	0.0036 j	< 0.020	< 0.041	0.0051 j	0.0059 j	0.0034
MW-18	04-Sep-18	1.1	710 J+	1.0	0.15 j	0.49	0.16	0.056 j	0.014 j	0.014 j	< 0.011	< 0.012	< 0.012	0.022 j	< 0.010	< 0.050	0.52	< 0.014	0.98	0.13	0.099 j	0.015
MW-18	19-Dec-18	1.2	1,100 J+	< 0.019	< 0.040	< 0.0091	0.051 j	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.012	< 0.051	< 0.014	< 0.031	< 0.016 U	< 0.031	< 0.033	< 0.016 U	< 0.016 U
MW-18	13-Mar-19	0.70 j	1,300	0.27	< 0.040	0.28	0.040 j	< 0.023	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	0.17	< 0.014	0.14	< 0.032	< 0.034	< 0.016 U
MW-18	12-Jun-19	0.53	540	< 0.0048	< 0.0064	< 0.0033	0.40	< 0.0048	< 0.018	< 0.0041	< 0.0050	< 0.010	< 0.011	< 0.0095	< 0.0050	< 0.019	< 0.0052	0.23	< 0.011	< 0.015	< 0.018 U	< 0.018 U
MW-18	12-Sep-19	0.60	553	0.32	< 0.0051	0.47	< 0.0045	< 0.0060	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010	< 0.0089	< 0.0089	< 0.018	0.34	< 0.013	3.0	< 0.010	0.025 j	< 0.013 U
MW-18	11-Dec-19	0.40 j	772	< 0.0054	< 0.0051	0.16	0.027 j	< 0.0060	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010	< 0.0089	< 0.0089	< 0.018	0.14	< 0.013	< 0.0066	< 0.010	0.019 j	< 0.013 U
MW-18 - Dup	04-Sep-18	1.1	760 J+	0.84	< 0.040	0.49	0.13	0.080 j	< 0.014	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	0.56	< 0.014	0.84	0.26	< 0.033	< 0.021 U	< 0.021 U
MW-19	31-May-17	0.49 j	31	< 0.0062	< 0.0093	< 0.0021	< 0.0031	< 0.0031	< 0.021 U	< 0.0031	< 0.0093	< 0.0031	< 0.0062	< 0.0083	< 0.0021	< 0.0021	< 0.0072	< 0.013	< 0.0041	< 0.0041	< 0.021 U	< 0.021 U
MW-19	18-Dec-18	0.21 j	970 J+	< 0.019	< 0.039	< 0.014	< 0.0091	< 0.022	< 0.014	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U	< 0.016 U
MW-19	18-Mar-19	0.27 j	1,900	0.42 j	0.042 j	0.015 j	< 0.0089	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.0099	< 0.050	0.019 j	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U
MW-19	11-Jun-19	0.27 j	17.5	--	--	< 0.0032	< 0.0047	< 0.0062	< 0.018	< 0.0041	< 0.0049	< 0.0099	< 0.011	< 0.0093	< 0.018	< 0.0060	< 0.0051	< 0.0069	< 0.011	< 0.015	< 0.018 U	< 0.018 U
MW-19	11-Sep-19	0.19 j	98.8	0.053	0.056	< 0.012	< 0.0099	< 0.0078	< 0.0092	< 0.0055	< 0.0086	< 0.0092	< 0.010	< 0.0083	< 0.0099	0.017 j	< 0.0053	< 0.012	0.021 j	< 0.0064	< 0.010 U	< 0.010 U
MW-19	10-Dec-19	0.33 j	627	0.013 j	0.011 j	< 0.0031	< 0.0045	< 0.0059	< 0.0038	< 0.0039	< 0.012	< 0.0094	< 0.010	< 0.0088	< 0.018	< 0.0057	< 0.013	0.0091 j	< 0.010	0.014 j	< 0.013 U	< 0.013 U
MW-21	31-May-17	0.80 j	32	< 0.0061	< 0.0092	< 0.0020	0.0033 j	< 0.0020	< 0.0092	< 0.0031	< 0.0082	< 0.0031	< 0.0092	< 0.0061	< 0.0020	< 0.0031	< 0.0071	< 0.013	< 0.0020 U	< 0.0041	< 0.0092 U	< 0.0092 U
MW-21	18-Dec-18	0.41 j	70 J+	< 0.019	< 0.039	< 0.014	< 0.0091	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U
MW-21	18-Mar-19	0.30 j	4.3	< 0.019	< 0.039	< 0.014	< 0.0090	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.050	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U
MW-21	11-Jun-19	0.20 j	3.6	--	--	< 0.0033	< 0.0047	< 0.0063	< 0.018	< 0.0041	< 0.0049	< 0.010	< 0.011	< 0.0094	< 0.0094	< 0.019	< 0.0061	< 0.0051	< 0.011	< 0.015	< 0.018 U	< 0.018 U
MW-21	11-Sep-19	0.40 j	55.4	< 0.0036	< 0.0062	< 0.012	< 0.0095	< 0.010	< 0.0080	< 0.0065												

Table 8
Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW620A		SW8270D-SIM					SW8270D-SIM					SW8270D-SIM					Calculated				
Analyte		Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (ND=0)	
Unit		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Selected GW SCM Performance Evaluation Criteria		2.1	1,925	NS	NS	99	NS	4,000	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	14	530	0.0018	12	NS	400	0.0018	
Well	Sample Date																						
MW-30	13-Mar-19	0.44 j	200	< 0.019	< 0.038	< 0.014	< 0.0089	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012 UJ	< 0.012	< 0.016	< 0.0098	< 0.049	< 0.017	< 0.014	< 0.031	< 0.031	< 0.032	< 0.016 U	
MW-30	17-Jun-19	0.19 j	13.2	--	--	< 0.0032	< 0.0047	< 0.0063	< 0.018	< 0.0041	< 0.0049	< 0.010	< 0.011	< 0.0093	< 0.019	< 0.0060	< 0.0051	< 0.0069	< 0.011	< 0.015	< 0.018 U	< 0.018 U	
MW-30	17-Sep-19	2.6	3,190	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0061	< 0.0039	< 0.0040	< 0.013	< 0.0097	< 0.010	< 0.0091	< 0.018	0.11	< 0.013	0.25 J-	< 0.010	0.032 j	< 0.013 U	< 0.013 U	
MW-30	11-Dec-19	9.8	2,220	< 0.0053	0.091	0.18	0.099	< 0.0059	< 0.0037	< 0.0038	< 0.012	< 0.0094	< 0.0099	< 0.0087	< 0.017	0.088	< 0.013	1.2	< 0.010	0.053	< 0.013 U	< 0.013 U	
MW-31	31-May-17	0.34 j	25	< 0.0092	< 0.0020	< 0.0020	< 0.0092	< 0.0020	< 0.0020	< 0.0031	< 0.0082	< 0.0031	< 0.0061	< 0.0082	< 0.0020	< 0.0031	< 0.0072	< 0.013	< 0.0041	< 0.0041	< 0.0092 U	< 0.0092 U	
MW-31	24-May-18	0.22 j	1.8 j	< 0.020	< 0.030	< 0.020	< 0.020	0.0040 j	0.0044 j	< 0.020	< 0.020	0.0057 j	< 0.030	< 0.020	0.0060 j	0.0039 j	0.0034 j	< 0.020	0.0052 j	0.0046 j	0.014	0.014	
MW-31	04-Sep-18	< 0.20	52 J+	< 0.019	< 0.039	< 0.014	< 0.0091	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.050	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U	
MW-31	19-Dec-18	0.20 j	100 J+	< 0.019	< 0.039	< 0.014	< 0.0090	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.050	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U	
MW-31	13-Mar-19	0.24 j	3.2	< 0.019	< 0.039	< 0.014	< 0.0090	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.050	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U	
MW-31	11-Jun-19	0.25 j	2.7	--	--	< 0.0032	< 0.0047	< 0.0063	< 0.018	< 0.0041	< 0.0049	< 0.010	< 0.011	< 0.0093	< 0.019	< 0.0060	< 0.0051	< 0.0069	< 0.011	< 0.015	< 0.018 U	< 0.018 U	
MW-31	12-Sep-19	0.15 j	12.5	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0061	< 0.0039	< 0.0040	< 0.013	< 0.0097	< 0.010	< 0.0091	< 0.018	< 0.0059	< 0.013	0.021 j	< 0.010	< 0.015	< 0.018 U	< 0.018 U	
MW-31	11-Dec-19	0.22 j	368	0.14	< 0.0051	< 0.0031	0.066	< 0.0060	< 0.0038	< 0.0039	< 0.012	< 0.0095	< 0.010	< 0.0089	< 0.018	0.041	< 0.013	0.20	< 0.010	< 0.014	< 0.014	< 0.013 U	
MW-32	31-May-17	9.0	390	0.063	< 0.0093	0.045	0.016 j	< 0.0031	< 0.0021	< 0.0031	< 0.0083	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	0.032	< 0.0072	0.11	0.050	< 0.0041	< 0.0093 U	
MW-32	23-May-18	3.7	< 0.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-32	31-Aug-18	2.3	2.6 J+	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-32	20-Dec-18	3.7	9.5 J+	< 0.019	< 0.040	< 0.014	< 0.0092	< 0.023	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	< 0.017	< 0.014	< 0.032	< 0.032	< 0.034	< 0.016 U	
MW-32	12-Mar-19	6.0	18	0.063 j	0.082 j	0.13	0.016 j	0.030 j	0.022 j	0.020 j	0.029 j	0.028 j	0.014 j	0.023 j	< 0.0097	< 0.049	0.052 j	0.030 j	0.30	0.048 j	0.052 j	0.028	
MW-32	10-Jun-19	6.1	1.9	--	--	0.033 j	< 0.0048	< 0.0064	< 0.018	< 0.0041	< 0.0050	< 0.010	< 0.011	< 0.0095	< 0.0095	< 0.0061	< 0.0052	0.055	< 0.011	< 0.015	< 0.018 U	< 0.018 U	
MW-32	10-Sep-19	6.1	17.5	< 0.0035	< 0.0061	< 0.012	< 0.0093	< 0.0099	< 0.0078	< 0.0055	< 0.0085	< 0.0092	< 0.010	< 0.0083	< 0.0099	< 0.0052	< 0.0053	0.044	< 0.0067	< 0.0063	< 0.010 U	< 0.010 U	
MW-32	09-Dec-19	8.9	6.9	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0062	< 0.0039	< 0.0040	< 0.013	< 0.0098	< 0.010	< 0.0092	< 0.018	< 0.0059	< 0.013	0.044	< 0.010	< 0.015	< 0.013 U	< 0.013 U	
MW-33	25-May-17	1.7	3.6	0.48	< 0.0092	0.31 J-	0.13	0.045	< 0.0020	< 0.0031	< 0.0081	< 0.0031	< 0.0092	< 0.0061	< 0.0020	< 0.0020	< 0.0020	0.35	< 0.0071	0.26 J-	0.33	< 0.0041	
MW-33	24-May-18	1.2	0.64 j	< 0.020	< 0.030	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.12	< 0.020	< 0.020	< 0.0092 U	< 0.0092 U	
MW-33	04-Sep-18	0.41 j	< 0.46	< 0.019	< 0.040	< 0.014	< 0.0092	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	< 0.017	< 0.014	0.074 j	< 0.032	< 0.034	< 0.016 U	
MW-33	19-Dec-18	--	--	0.23	< 0.040	< 0.014	< 0.0091	0.032 j	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	0.092 j	< 0.014	0.050 j	0.14	< 0.033	< 0.016 U	
MW-33	20-Dec-18	1.3	0.75 J+	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-33	12-Mar-19	1.6	60	0.032 j	< 0.038	0.027 j	0.032 j	0.028 j	0.016 j	0.017 j	0.026 j	0.018 j	< 0.012	0.018 j	< 0.0097	< 0.048	0.022 j	0.023 j	0.076 j	0.056 j	0.034 j	0.024	
MW-33	11-Jun-19	7.0	1,680	--	--	0.25	0.044	< 0.0065	< 0.018	< 0.0042	< 0.0051	< 0.010	< 0.011	< 0.0096	< 0.0096	< 0.0062	< 0.0053	0.26	0.033 j	< 0.015	< 0.018 U	< 0.018 U	
MW-33	10-Sep-19	2.7	10.4	0.041 j	< 0.0066	0.15	0.023 j	< 0.011	< 0.0084	< 0.0059	< 0.0092	< 0.0099	< 0.011	< 0.0089	< 0.011	< 0.0056	< 0.0057	0.13	< 0.0072	< 0.0068	< 0.011 U	< 0.011 U	
MW-33	09-Dec-19	3.4	3.5	0.039 j	0.018 j	0.082	0.039	< 0.0046	< 0.0062	< 0.0039	< 0.0040	< 0.013	< 0.0098	< 0.0092	< 0.018	< 0.0059	< 0.013	0.19	< 0.010	< 0.015	0.0000097	< 0.0000097	
MW-34	26-May-17	19	1,700	< 0.0062	< 0.0093	0.30 J-	< 0.0021	< 0.0031	< 0.0021	< 0.0031	< 0.0083	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	< 0.0073	0.69 J-	< 0.0042	< 0.0042	< 0.0093 U	< 0.0093 U	
MW-34	23-May-18	25	2,500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-34	19-Dec-18	35	4,000 J+	2.6	0.22	1.6	< 0.0091	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	1.5	< 0.014	1.0	< 0.033	< 0.016 U	< 0.016 U	
MW-34	17-Jun-19	36.2	3,220	--	--	2.0	0.64	< 0.064	< 0.18	< 0.041	< 0.050	< 0.10	< 0.11	< 0.095	< 0.095	< 0.061	< 0.052	2.0	< 0.11	< 0.15	< 0.18 U	< 0.18 U	
MW-34	18-Sep-19	77.5	2,600	2.7 J-	< 0.0060 UJ	1.6 J-	< 0.0053 UJ	< 0.0071 UJ	< 0.0045 UJ	0.090 J-	0.087 J-	0.056 J-	< 0.012 UJ	0.16 J-	< 0.011 UJ	< 0.021 UJ	2.2 J-	0.038 J-	0.99 J-	2.4 J-	< 0.017 UJ	0.10	
MW-34	16-Dec-19	85.1	4,070	0.60	< 0.0053	< 0.0033	1.5	< 0.0063	0.11	0.13	0.072	0.045	0.14	< 0.0094	< 0.019	< 0.0061	0.061	0.91	0.30	0.62	0.16	0.16	
MW-34 - Dup	23-May-18	25	2,500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-35	30-May-17	33	3,000	1.1	0.43	1.1	0.29	0.20	< 0.0021	< 0.0031	< 0.0082	< 0.0031	< 0.0092	< 0.0062	< 0.0021	0.091	1.7	< 0.0072	0.60	1.7	0.094	< 0.0092 U	
MW-35	23-May-18	15	3,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-35	31-Aug-18	11	3,700 J+	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-35	19-Dec-18	13	4,300 J+	1.2 J-	0.11 J-	0.66 J-	0.11 J-	0.60 J-	< 0.014 UJ	< 0.011 UJ	< 0.011 UJ	< 0.012 UJ	< 0.012 UJ	< 0.016 UJ	< 0.010 UJ	0.075 J-	< 0.017 UJ	< 0.014 UJ	1.6 J-	1.1 J-	0.069 J-	< 0.016 U	
MW-35	13-Mar-19	15	3,300</																				

Table 8
Groundwater Analytical Data - Semi-volatile Organic Compounds and Metals
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW6020A		SW8270D-SIM					SW8270D-SIM							SW8270D-SIM				Calculated		
Analyte	Unit	Arsenic	Manganese	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (ND=0)
Selected GW SCM Performance Evaluation Criteria	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		2.1	1,925	NS	NS	99	NS	4,000	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	14	530	0.0018	12	NS	400	0.0018
Well	Sample Date																					
MW-40	18-Mar-19	4.3	1,400	0.022 j	< 0.038	< 0.014	< 0.0087	< 0.021	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.015	< 0.0096	< 0.048	< 0.016	< 0.014	< 0.030	< 0.030	< 0.032	< 0.015 U
MW-40	13-Jun-19	4.6	1,740	--	--	< 0.0032	< 0.0047	< 0.0063	< 0.018	< 0.0041	< 0.0049	< 0.010	< 0.011	< 0.0093	< 0.019	< 0.0060	< 0.0051	< 0.0069	< 0.011	< 0.015	< 0.015	< 0.018 U
MW-40	13-Sep-19	3.8	1,430	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0061	< 0.0039	< 0.0040	< 0.013	< 0.0097	< 0.010	< 0.0091	< 0.0091	< 0.018	< 0.0059	< 0.013	< 0.0067	< 0.010	< 0.015	< 0.013 U
MW-40	12-Dec-19	3.7	1,240	< 0.0053	< 0.0050	< 0.0031	< 0.0045	0.014 j	< 0.0038	0.012 j	0.017 j	0.018 j	0.023 j	0.023 j	0.018 j	0.026 j	< 0.0057	0.019 j	< 0.0065	0.019 j	0.025 j	0.034
MW-41	25-May-17	3.4	610	< 0.0062	< 0.0093	< 0.0021 UJ	< 0.0021	< 0.0031	< 0.021 U	< 0.0031	< 0.0083	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	< 0.0031	< 0.0073	0.016 J-	< 0.0041	< 0.0041	< 0.021 U
MW-41	25-May-18	2.7 j	560	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-41	05-Sep-18	2.2	370 J+	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-41	13-Dec-18	3.0	420 J+	< 0.019	< 0.039	< 0.014	< 0.0091	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.050	< 0.017	< 0.014	< 0.031	< 0.031	< 0.033	< 0.016 U
MW-41	19-Mar-19	2.2	390	< 0.018	< 0.038	< 0.014	< 0.0087	< 0.021	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.015	< 0.0097	< 0.048	< 0.016	< 0.014	< 0.030	< 0.030	< 0.032	< 0.015 U
MW-41	10-Jun-19	1.8	423	--	--	< 0.0033	< 0.0047	< 0.0063	< 0.018	< 0.0041	< 0.0050	< 0.010	< 0.011	< 0.0094	< 0.0094	< 0.019	< 0.0061	< 0.0051	< 0.0070	< 0.011	< 0.015	< 0.018 U
MW-41	13-Sep-19	2.6	342	0.013 j	< 0.0052	< 0.0032	< 0.0046	< 0.0061	< 0.0039	< 0.0040	< 0.013	< 0.0097	< 0.010	< 0.0091	< 0.0091	< 0.018	< 0.0059	< 0.013	< 0.0067	< 0.010	< 0.015	< 0.013 U
MW-41	12-Dec-19	2.8	349	< 0.0053	< 0.0050	< 0.0031	< 0.0045	< 0.0059	< 0.0038	< 0.0039	< 0.012	< 0.0094	< 0.010	< 0.0088	< 0.0088	< 0.018	< 0.0057	< 0.013	< 0.0065	< 0.010	< 0.014	< 0.013 U
MW-42	25-May-17	5.4	58	< 0.0062	< 0.0093	< 0.0021 UJ	< 0.0021	< 0.0031	< 0.021 U	< 0.0031	< 0.0083	< 0.0031	< 0.0093	< 0.0062	< 0.0021	< 0.0021	< 0.0031	< 0.0073	0.023 J-	< 0.021 U	< 0.0041	< 0.021 U
MW-42	24-May-18	1.7	5.5	0.015 j	< 0.020	< 0.020	0.0031 j	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.0052 j	< 0.020	0.040 j	0.0060 j	< 0.020	< 0.031 U
MW-42	30-Aug-18	4.1	1.0 J+	< 0.019	< 0.040	< 0.014	< 0.0092	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	< 0.017	< 0.014	< 0.032	< 0.032	< 0.034	< 0.081 U
MW-42	13-Dec-18	3.5	5.6 J+	< 0.020	< 0.042	< 0.015	< 0.0097	< 0.024	< 0.015	< 0.012	< 0.012	< 0.013	< 0.013	< 0.017	< 0.011	< 0.054	< 0.018	< 0.015	< 0.033	< 0.033	< 0.035	< 0.017 U
MW-42	12-Mar-19	4.0	48	0.062 j	0.13 j	< 0.014	< 0.0091	< 0.022	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.050	0.023 j	< 0.014	0.047 j	0.042 j	< 0.033	< 0.016 U
MW-42	10-Jun-19	4.0	6.2	--	--	< 0.0032	< 0.0047	< 0.0062	< 0.017	< 0.0040	< 0.0049	< 0.0099	< 0.010	< 0.0092	< 0.0092	< 0.018	< 0.0060	< 0.0050	0.015 j	< 0.011	< 0.015	< 0.017 U
MW-42	10-Sep-19	3.8	15.2	< 0.0035	< 0.0061	< 0.012	< 0.0092	< 0.0098	< 0.0077	< 0.0054	< 0.0085	< 0.0091	< 0.0063	< 0.010	< 0.0082	< 0.0098	< 0.0052	< 0.0052	< 0.012	< 0.0066	< 0.0063	< 0.010 U
MW-42	09-Dec-19	4.0	15.1	< 0.0055	< 0.0052	< 0.0032	< 0.0046	< 0.0062	< 0.0039	< 0.0040	< 0.013	< 0.0098	< 0.010	< 0.0092	< 0.0092	< 0.018	< 0.0059	< 0.013	< 0.0068	< 0.010	< 0.015	< 0.013 U
MW-43	26-May-17	30	2,900	5.9	< 0.091	1.6 J-	0.51	0.11 j	< 0.020	< 0.030	< 0.081	< 0.030	< 0.091	< 0.060	< 0.020	< 0.020	1.8	< 0.071	1.6 J-	0.82	< 0.040	< 0.091 U
MW-43	29-Aug-18	31	3,300 J+	4.1	0.65	0.89 j	0.44 j	0.41	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	1.0	< 0.014	1.1	1.1	< 0.034	< 0.016 U
MW-43	12-Dec-18	41	3,700 J+	2.3	0.27	1.1	0.45	0.11	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	1.7	< 0.014	1.1	0.82	< 0.033	< 0.016 U
MW-43 - Dup	12-Dec-18	37	3,400 J+	2.5	0.29	0.87	0.27	0.11	< 0.014	< 0.011	< 0.011	< 0.012	< 0.012	< 0.016	< 0.010	< 0.051	1.4	< 0.014	1.2	0.90	0.043 j	< 0.016 U

Notes:

< = Compound not detected. Reportable detection limit shown.
 -- = not analyzed
 µg/L = micrograms per liter
 GW SCM = Groundwater Source Control Measure
 NS = No Standard for GW SCM Performance Evaluation
 Dup = Field Duplicate Sample
 Bolded values indicate concentrations above the Reportable Detection Limit.
 Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.
 * = Select analytes resampled 17-18 June.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits
 J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits
 NJ = Evidence of the compound at an estimated quantity.
 UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
 U = Analyte was analyzed for, but not detected.
 R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

Table 9
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW9056		SM2320B	SM2340C
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO3	Hardness as CaCO3
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-02	25-May-18	--	--	--	--
MW-02	17-Dec-18	< 20 UJ	< 1,200 U	230,000	200,000
MW-02	16-Dec-19	< 18	28,000	325,000	239,000
MW-03	25-May-17	1,500	13,000	52,000	51,000
MW-03	18-Dec-18	140 J-	5,000	59,000	54,000
MW-03	18-Mar-19	320	9,100	54,000	70,000
MW-03	11-Jun-19	230	6,700	71,500	61,300
MW-03	11-Sep-19	36 j	3,700	82,600	68,300
MW-03	10-Dec-19	43 j	12,400	139,000	108,000
MW-06	25-May-17	900	8,500	100,000	70,000
MW-06	18-Dec-18	< 20 UJ	3,000 J+	63,000	55,000
MW-06	18-Mar-19	470	8,200	80,000	60,000
MW-06	11-Jun-19	< 18	4,800	83,100	33,200
MW-06	11-Sep-19	< 18	< 280	72,500	23,200
MW-06	10-Dec-19	< 18	1,300 J+	122,000	33,800
MW-08	26-May-17	95 j	14,000	130,000	130,000
MW-08	18-Dec-18	< 20 UJ	< 1,200 U	91,000	80,000
MW-08	13-Mar-19	< 20	7,700	100,000	80,000
MW-08	12-Jun-19	< 18	253,000	< 2,000	149,000
MW-08	18-Sep-19	< 18	45,200 J-	87,200	67,000
MW-08	11-Dec-19	< 18	125,000	41,300	90,200
MW-11	25-May-18	--	--	--	--
MW-18	31-May-17	< 20	3,700	120,000	100,000
MW-18	24-May-18	150 J-	24,000	130,000	120,000
MW-18	04-Sep-18	60 J-	5,000	89,000	1,100,000
MW-18	19-Dec-18	< 20 UJ	2,900	170,000	250,000
MW-18	13-Mar-19	34 j	39,000	150,000	170,000
MW-18	12-Jun-19	59 j	24,000	105,000	96,000
MW-18	12-Sep-19	< 18	55,900 J-	< 2,000	34,200
MW-18	11-Dec-19	< 18	63,600	75,000	61,600
MW-18 - Dup	04-Sep-18	39 J-	5,200	80,000	250,000
MW-19	31-May-17	700	38,000	42,000	50,000
MW-19	18-Dec-18	< 20 UJ	2,100 J+	120,000	100,000
MW-19	18-Mar-19	320	11,000	90,000	82,000
MW-19	11-Jun-19	1,200	10,200	81,400	71,000
MW-19	11-Sep-19	200	8,200	94,900	74,100
MW-19	10-Dec-19	18 j	10,200	124,000	84,100

Table 9
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW9056		SM2320B	SM2340C
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO3	Hardness as CaCO3
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-21	31-May-17	470	4,100	29,000	27,000
MW-21	18-Dec-18	69 J-	3,400 J+	46,000	64,000
MW-21	18-Mar-19	210	7,400	41,000	38,000
MW-21	11-Jun-19	250	3,700	37,700	26,200
MW-21	11-Sep-19	100	2,800	51,900	39,300
MW-21	10-Dec-19	160	6,100	49,400	37,800
MW-24A	26-May-17	240	4,100	60,000	500,000
MW-24A	25-May-18	--	--	--	--
MW-24A	05-Sep-18	--	--	--	--
MW-24A	12-Mar-19	--	--	--	--
MW-24A	10-Jun-19	140	1,400 J-	58,200	46,300
MW-25	26-May-17	1,500	5,700	71,000	62,000
MW-25	20-Dec-18	R	2,300	54,000	49,000
MW-25	18-Mar-19	< 20	5,200	73,000	60,000
MW-25	13-Jun-19	180	11,100 J-	62,600	50,100
MW-25	18-Sep-19	38 j	1,600 J-	71,100	54,100
MW-25	10-Dec-19	48 j	10,100	74,800	59,100
MW-26	26-May-17	1,600	6,300	110,000	95,000
MW-26	24-May-18	< 200 UJ	650 j	260,000	200,000
MW-26	29-Aug-18	24 J-	< 1,200 U	260,000	1,400,000
MW-26	14-Dec-18	< 20 UJ	630 j	240,000	220,000
MW-26	14-Mar-19	< 20	890 j	260,000	250,000
MW-26	13-Sep-19	300	26,100 J-	35,800	38,200
MW-26	12-Dec-19	240	20,800 J-	40,300	36,300
MW-26*	13-Jun-19	< 18	1,600 J	239,000	180,000
MW-27	30-May-17	--	350 j	320,000	300,000
MW-27	24-May-18	< 200 UJ	680 j	240,000	200,000
MW-27	30-Aug-18	R	< 1,200 U	340,000	320,000
MW-27	17-Dec-18	< 20 UJ	< 1,200 U	330,000	310,000
MW-27	14-Mar-19	< 20	760 j	380,000	310,000
MW-27	13-Jun-19	< 18	< 1,200 UJ	367,000	294,000
MW-27	12-Sep-19	< 18	12,700 J-	186,000	158,000
MW-27	13-Dec-19	< 18 UJ	74,700	72,900	88,800
MW-27 - Dup	30-May-17	--	370 j	350,000	290,000
MW-27 - Dup	17-Dec-18	< 20 UJ	< 1,200 U	330,000	310,000
MW-27 Dup	13-Dec-19	< 18 UJ	74,200	75,400	89,600
MW-28	01-Jun-17	1,700	6,300	97,000	85,000

Table 9
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW9056		SM2320B	SM2340C
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO3	Hardness as CaCO3
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-28	13-Dec-18	910 J-	5,000	93,000	110,000
MW-28	14-Mar-19	1,100	6,800	82,000	93,000
MW-28	18-Sep-19	1,000	6,600 J-	67,300	58,000
MW-28	12-Dec-19	970	7,400 J-	51,700	45,300
MW-28*	18-Jun-19	960	6,200	82,200	70,200
MW-29	01-Jun-17	< 20	370 j	330,000	260,000
MW-29	23-May-18	--	--	--	--
MW-29	05-Sep-18	--	--	--	--
MW-29	12-Dec-18	39 J-	< 1,200 U	210,000	150,000
MW-29	14-Mar-19	36 j	8,900	270,000	310,000
MW-29	12-Jun-19	< 18	4,900	146,000	108,000
MW-30	31-May-17	130 j	2,500	92,000	83,000
MW-30	23-May-18	--	--	--	--
MW-30	31-Aug-18	--	--	--	--
MW-30	12-Dec-18	70 J-	< 1,200 U	180,000	150,000
MW-30	13-Mar-19	< 20	3,100	120,000	150,000
MW-30	17-Jun-19	56 j	25,900 J-	109,000	113,000
MW-30	17-Sep-19	< 18	42,200 J-	118,000	125,000
MW-30	11-Dec-19	< 18	79,800	91,200	102,000
MW-31	31-May-17	31 j	6,600	140,000	140,000
MW-31	24-May-18	< 200 UJ	9,600	87,000	80,000
MW-31	04-Sep-18	55 J-	6,200	170,000	160,000
MW-31	19-Dec-18	< 20 UJ	4,900	150,000	160,000
MW-31	13-Mar-19	390	13,000	88,000	95,000
MW-31	11-Jun-19	34 j	9,700 J-	60,800	54,200
MW-31	12-Sep-19	63 j	34,900 J-	73,800	72,100
MW-31	11-Dec-19	< 18	71,500	76,800	104,000
MW-32	31-May-17	< 20	14,000	410,000	390,000
MW-32	23-May-18	--	--	--	--
MW-32	31-Aug-18	--	--	--	--
MW-32	20-Dec-18	< 20 UJ	2,100	270,000	250,000
MW-32	12-Mar-19	22 j	2,300	290,000	1,000,000
MW-32	10-Jun-19	< 18	6,100 J-	139,000	87,400
MW-32	10-Sep-19	< 18	2,500	109,000	63,700
MW-32	09-Dec-19	< 18	6,700	60,900	20,600
MW-33	25-May-17	72 J-	250,000	590,000	520,000
MW-33	24-May-18	23 J-	800 j	890,000	620,000
MW-33	04-Sep-18	65 J-	31,000	560,000	550,000

Table 9
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW9056		SM2320B	SM2340C
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO3	Hardness as CaCO3
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-33	20-Dec-18	--	--	--	--
MW-33	21-Dec-18	< 20 UJ	5,100	530,000	620,000
MW-33	12-Mar-19	48 j	6,900	370,000	980,000
MW-33	11-Jun-19	< 18	6,300	221,000	164,000
MW-33	10-Sep-19	< 18	7,900	164,000	203,000
MW-33	09-Dec-19	< 18	14,800	72,000	37,400
MW-34	26-May-17	33 j	5,200	160,000	1,000,000
MW-34	23-May-18	--	--	--	--
MW-34	19-Dec-18	< 20 UJ	1,600	260,000	330,000
MW-34	17-Jun-19	< 18	92,100 J-	59,300	129,000
MW-34	18-Sep-19	< 18	10,900 J-	240,000	130,000
MW-34	16-Dec-19	< 18	14,600	337,000	174,000
MW-34 - Dup	23-May-18	--	--	--	--
MW-35	30-May-17	--	420 j	310,000	240,000
MW-35	23-May-18	--	--	--	--
MW-35	31-Aug-18	--	--	--	--
MW-35	19-Dec-18	< 20 UJ	950 j	260,000	210,000
MW-35	13-Mar-19	< 20	510 j	230,000	200,000
MW-35	17-Jun-19	< 18	24,500 J-	71,900	69,900
MW-35	17-Sep-19	< 18	26,500 J-	27,400	29,100
MW-35	16-Dec-19	< 18	24,200	44,100	34,200
MW-35 - Dup	30-May-17	--	460 j	280,000	230,000
MW-35 - Dup	31-Aug-18	--	--	--	--
MW-35 Dup	13-Mar-19	< 20	660 j	230,000	180,000
MW-35 Dup	17-Jun-19	< 18	24,800 J-	72,400	69,700
MW-35 Dup	17-Sep-19	< 18	26,000 J-	27,600	31,100
MW-35 Dup	16-Dec-19	< 18	23,800	44,900	34,800
MW-36	30-May-17	--	520 j	180,000	130,000
MW-36	24-May-18	< 200 UJ	6,000	150,000	300,000
MW-36	30-Aug-18	R	< 1,200 U	240,000	200,000
MW-36	17-Dec-18	< 20 UJ	< 1,200 U	240,000	240,000
MW-36	14-Mar-19	34 j	2,200	210,000	150,000
MW-36	13-Jun-19	< 18	19,800 J-	96,900	92,200
MW-36	12-Sep-19	< 18	940 J-	221,000	166,000
MW-36	13-Dec-19	< 18 UJ	< 1,200 U	226,000	160,000
MW-36 - Dup	30-May-17	--	520 j	200,000	150,000
MW-36 - Dup	24-May-18	< 200 UJ	5,900	150,000	200,000
MW-36 Dup	14-Mar-19	40 j	2,000	210,000	150,000
MW-36 Dup	13-Jun-19	< 18	19,400 J-	97,700	90,400
MW-36 Dup	12-Sep-19	< 18	< 280 UJ	222,000	163,000
MW-37	30-May-17	--	5,400	240,000	320,000
MW-37	25-May-18	--	--	--	--
MW-37	31-Aug-18	--	--	--	--

Table 9
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW9056		SM2320B	SM2340C
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO3	Hardness as CaCO3
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-37	17-Dec-18	46 J-	< 1,200 U	240,000	220,000
MW-37	14-Mar-19	< 20	1,000 j	240,000	170,000
MW-37	12-Jun-19	< 18	1,800	205,000	159,000
MW-37	17-Sep-19	< 18	14,400 J-	116,000	84,600
MW-37	13-Dec-19	< 18 UJ	32,100	89,100	79,700
MW-38	26-May-17	53 j	7,500	220,000	180,000
MW-38	25-May-18	--	--	--	--
MW-38	31-Aug-18	--	--	--	--
MW-38	12-Jun-19	< 18	3,600	168,000	119,000
MW-38	13-Sep-19	< 18	640 J-	131,000	114,000
MW-38	13-Dec-19	< 18 UJ	< 1,200 U	143,000	113,000
MW-39	26-May-17	50 j	< 1,200 U	230,000	200,000
MW-39	24-May-18	< 200 UJ	1,300	200,000	1,000,000
MW-39	29-Aug-18	R	< 1,200 U	270,000	210,000
MW-39	14-Dec-18	< 20 UJ	780 j	240,000	240,000
MW-39	12-Sep-19	< 18	< 280 UJ	255,000	181,000
MW-39	13-Dec-19	< 18 UJ	< 1,200 U	279,000	180,000
MW-40	26-May-17	34 j	< 1,200 U	160,000	500,000
MW-40	25-May-18	--	--	--	--
MW-40	05-Sep-18	--	--	--	--
MW-40	13-Dec-18	< 20 UJ	520 j	140,000	150,000
MW-40	18-Mar-19	< 20	760 j	130,000	140,000
MW-40	13-Jun-19	< 18	< 1,200 UJ	145,000	117,000
MW-40	13-Sep-19	< 18	54,300 J-	91,000	109,000
MW-40	12-Dec-19	< 18	38,800 J-	112,000	103,000
MW-41	25-May-17	< 20	6,700	87,000	100,000
MW-41	25-May-18	--	--	--	--
MW-41	05-Sep-18	--	--	--	--
MW-41	13-Dec-18	< 20 UJ	2,200	74,000	130,000
MW-41	19-Mar-19	110 j	3,300	74,000	70,000
MW-41	10-Jun-19	< 18	2,300 J-	66,600	46,600
MW-41	13-Sep-19	< 18	2,300 J-	62,500	37,800
MW-41	12-Dec-19	< 18	1,300 J+	78,600	37,500

Table 9
Groundwater Analytical Data - Water Quality Parameters
Premier Edible Oils, 10400 N Burgard Way
Portland, Oregon

Method		SW9056		SM2320B	SM2340C
Analyte		Nitrate as N	Sulfate	Alkalinity, Total as CaCO3	Hardness as CaCO3
Unit		µg/L	µg/L	µg/L	µg/L
Selected GW SCM Performance Evaluation Criteria		10,000	NS	20,000	NS
Well	Sample Date				
MW-42	25-May-17	95 j	< 2,900 U	250,000	260,000
MW-42	24-May-18	2,700 J-	9,800	290,000	210,000
MW-42	30-Aug-18	R	4,500 J+	120,000	100,000
MW-42	13-Dec-18	--	--	--	--
MW-42	12-Mar-19	24 j	4,200	71,000	95,000
MW-42	10-Jun-19	< 18	8,200 J-	81,100	41,700
MW-42	10-Sep-19	99 j	6,700	61,400	30,900
MW-42	09-Dec-19	42 j	8,400	96,300	70,700
MW-43	26-May-17	53 j	< 1,200 U	220,000	240,000
MW-43	29-Aug-18	R	< 1,200 U	280,000	280,000
MW-43	12-Dec-18	41 J-	< 1,200 U	240,000	190,000
MW-43 - Dup	12-Dec-18	47 J-	< 1,200 U	240,000	190,000

Notes:

< = Compound not detected. Reportable detection limit shown.

-- = not analyzed

µg/L = micrograms per liter

GW SCM = Groundwater Source Control Measure

NS = No Standard for GW SCM Performance Evaluation

Dup = Field Duplicate Sample

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the GW SCM Performance Evaluation Criteria.

*= Select analytes resampled 17-18 June.

Qualifiers - Organics

j = The result is an estimated concentration, detected between the Method Detection Limit and the Reporting Limit.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits

J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits

NJ = Evidence of the compound at an estimated quantity.

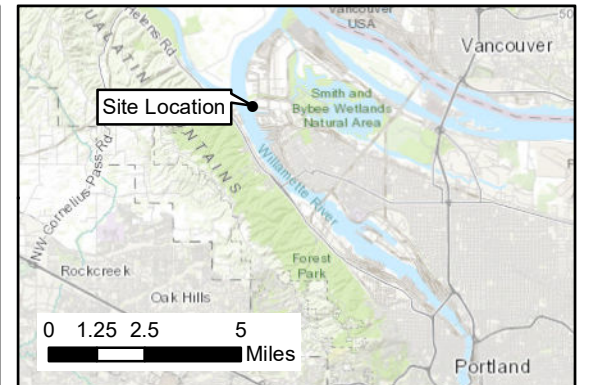
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

U = Analyte was analyzed for, but not detected.

R = Sample result is rejected and not used for decision making purposes based on evaluation of quality control data.

Attachment D – Annual Trends

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Trend Analysis Fig 1 Benzene Q4 2019.mxd
 REVISED: 03/01/2020 . SCALE: 1:1,440 when printed at 11x17



Legend

Monitoring Well Exceedance

- < 1.4 µg/L
- >= 1.4 - < 14 µg/L
- >= 14 - < 140 µg/L
- LNAPL Present
- Not Sampled
- Barrier Wall Alignment
- Barrier Wall Geocap
- Building Footprint
- Property Boundary

Notes:
 GW SCM Performance Criteria for benzene = 1.4 µg/L (micrograms per liter).
 Air-sparging started in March 2019.

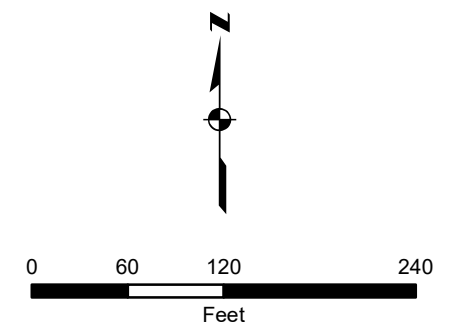
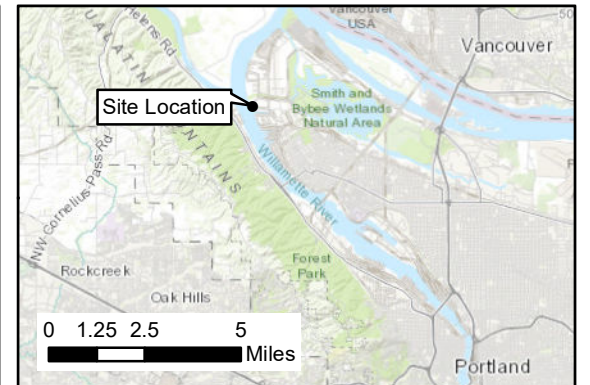


Figure 1
Benzene Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Trend Analysis Fig 2 TPH-DRO Q4 2019.mxd
 REVISED: 03/01/2020 . SCALE: 1:1,440 when printed at 11x17



Legend

Monitoring Well Exceedance

- < 1,000 µg/L
- >= 1,000 - < 10,000 µg/L
- >= 10,000 - < 100,000 µg/L
- LNAPL Present
- Not Sampled
- Barrier Wall Alignment
- Barrier Wall Geocap
- Building Footprint
- Property Boundary

Notes:
 GW SCM Performance Criteria for TPH-DRO = 1,000 µg/L (micrograms per liter).
 Air-sparging started in March 2019.

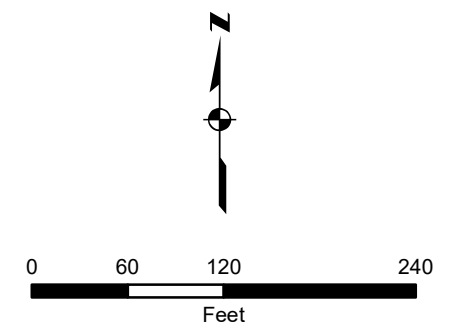
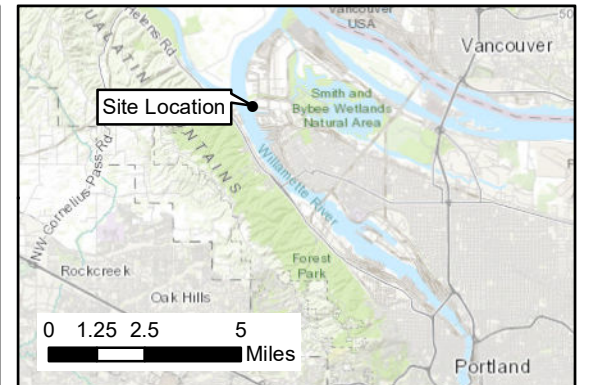


Figure 2
TPH-DRO Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Trend Analysis Fig 3 TPH-GRO Q4 2019.mxd
 REVISED: 03/01/2020 . SCALE: 1:1,440 when printed at 11x17



Legend

Monitoring Well Exceedance

- < 1,000 µg/L
- >= 1,000 - < 10,000 µg/L
- >= 10,000 - < 100,000 µg/L
- LNAPL Present
- Not Sampled

Barrier Wall Alignment

Barrier Wall Geocap

Building Footprint

Property Boundary

Notes:
 GW SCM Performance Criteria for TPH-GRO = 1,000 µg/L (micrograms per liter).
 Air-sparging started in March 2019.

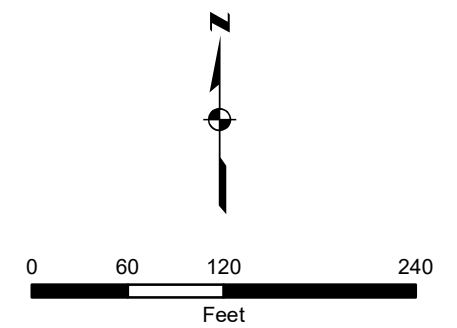
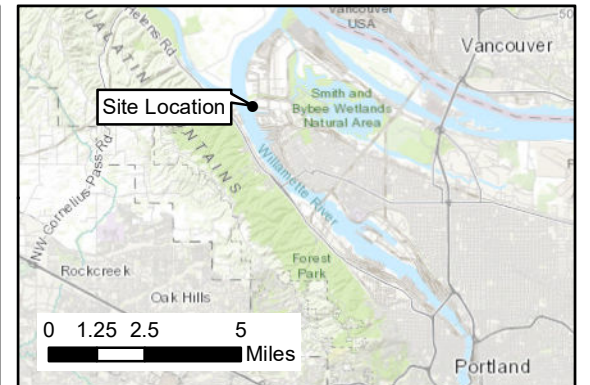
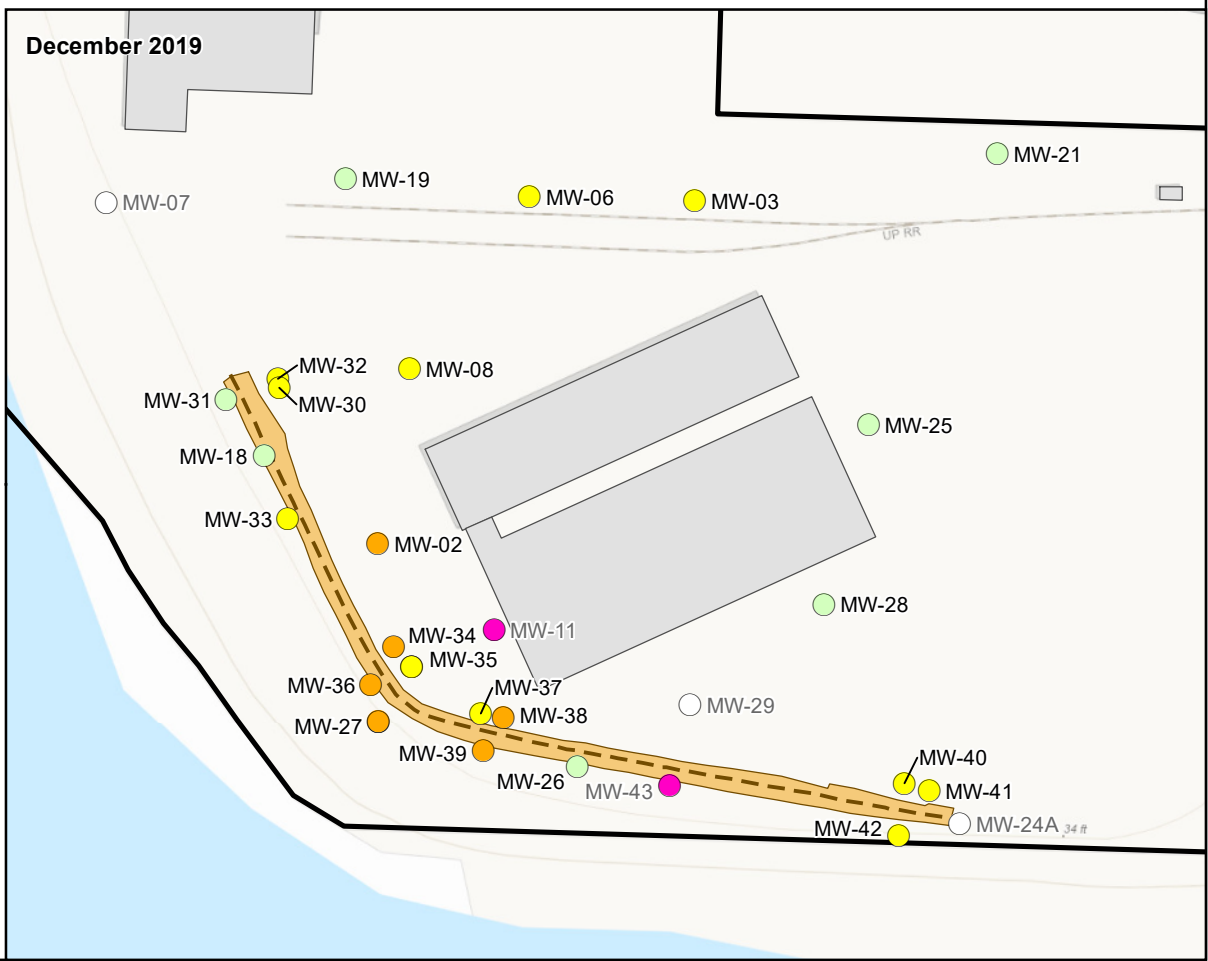
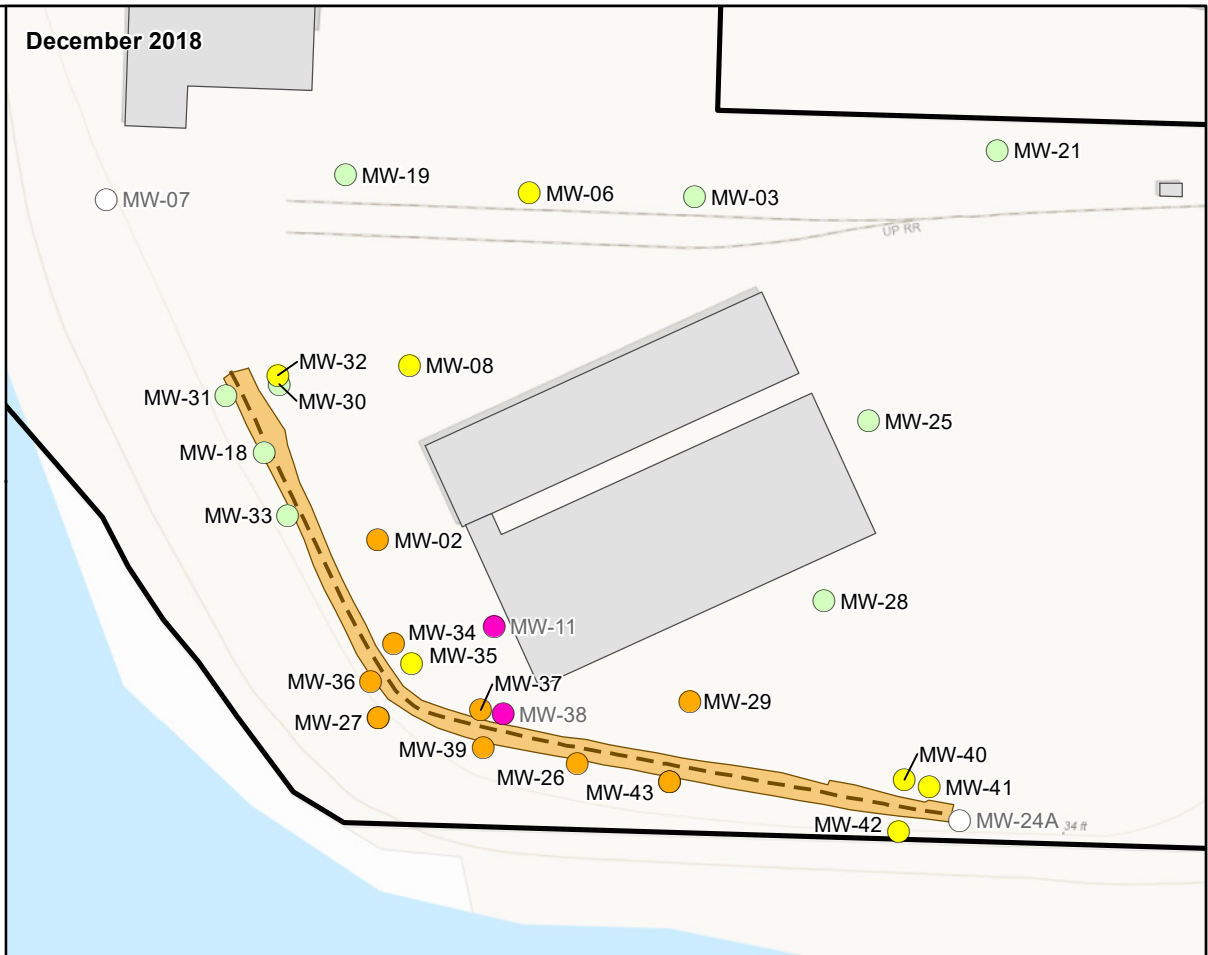


Figure 3
TPH-GRO Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet



Legend

Monitoring Well Exceedance

- < 2.1 µg/L
- >= 2.1 - < 21 µg/L
- >= 21 - < 210 µg/L
- LNAPL Present
- Not Sampled
- Barrier Wall Alignment
- Barrier Wall Geocap
- Building Footprint
- Property Boundary

Notes:
 GW SCM Performance Criteria for arsenic = 2.1 µg/L (micrograms per liter).
 Air-sparging started in March 2019.

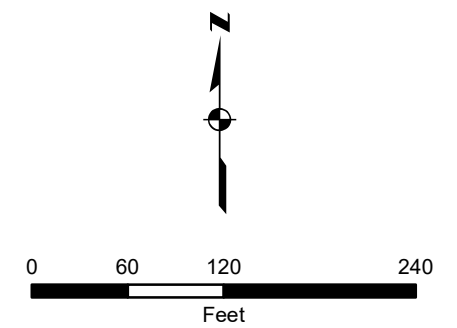
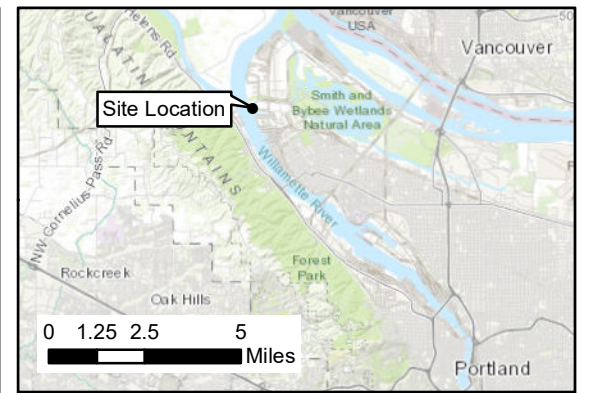


Figure 4
Arsenic Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019\Report\Trend Analysis Fig 4 Arsenic Q4 2019.mxd
 REVISED: 03/01/2020 SCALE: 1:1,440 when printed at 11x17
 Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet

FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Trend Analysis Fig 5 Manganese Q4 2019.mxd . SCALE: 1:1,440 when printed at 11x17
 DRAWN BY: Kelly Lyons
 REVISED: 03/01/2020



Legend

Monitoring Well Exceedance

- < 1,925 µg/L
- ≥ 1,925 - < 19,250 µg/L
- ≥ 19,250 - < 192,500 µg/L
- LNAPL Present
- Not Sampled

Barrier Wall Alignment
 Barrier Wall Alignment

Barrier Wall Geocap
 Barrier Wall Geocap

Building Footprint
 Building Footprint

Property Boundary
 Property Boundary

Notes:
 GW SCM Performance Criteria for manganese = 1,925 µg/L (micrograms per liter).
 Air-sparging started in March 2019.

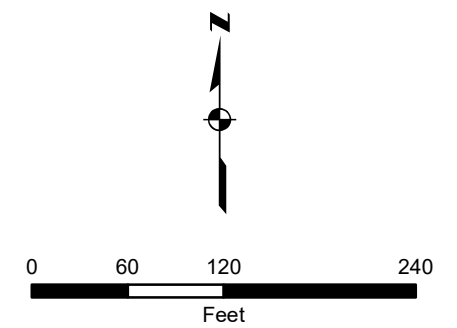
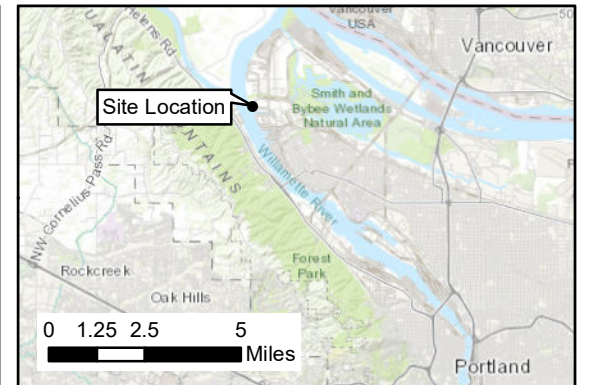
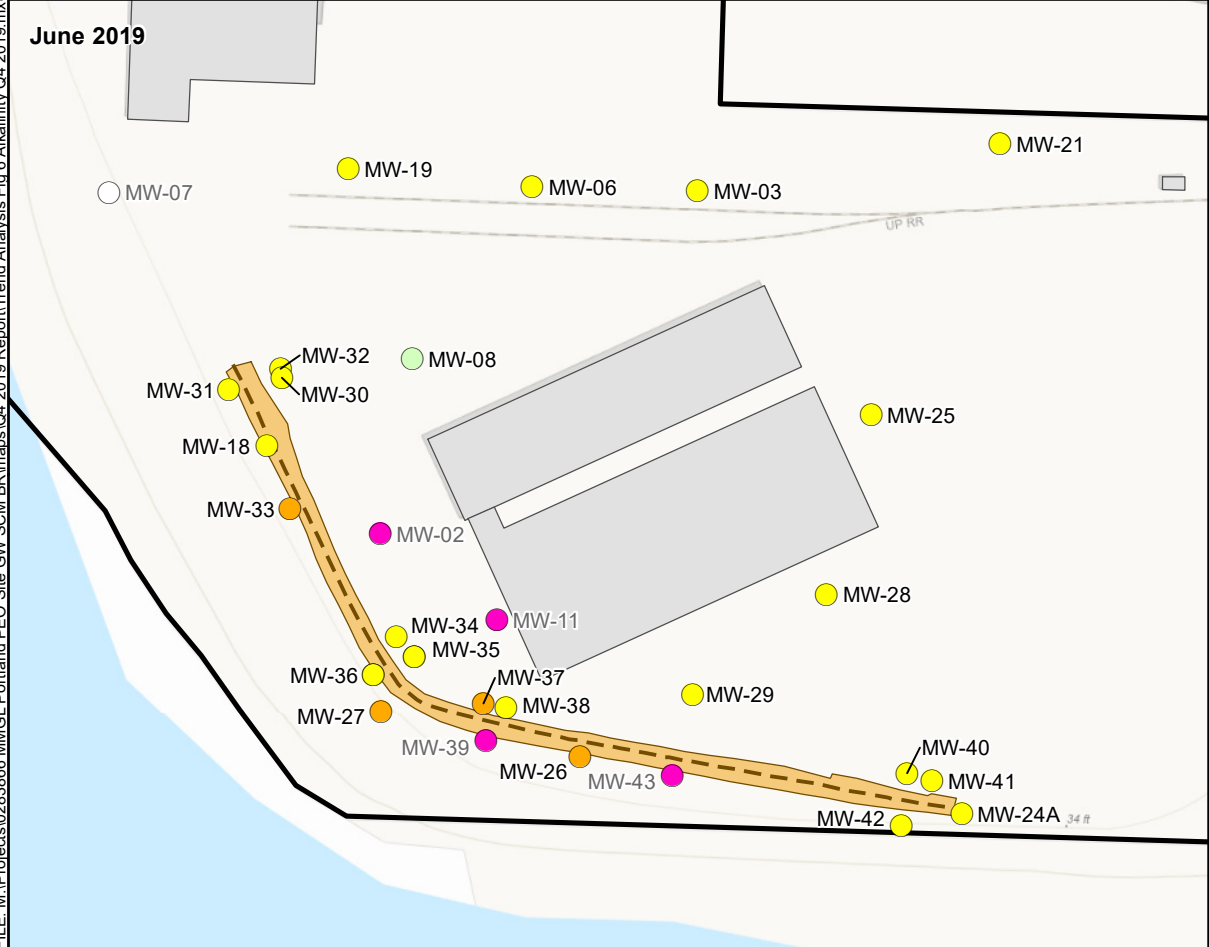
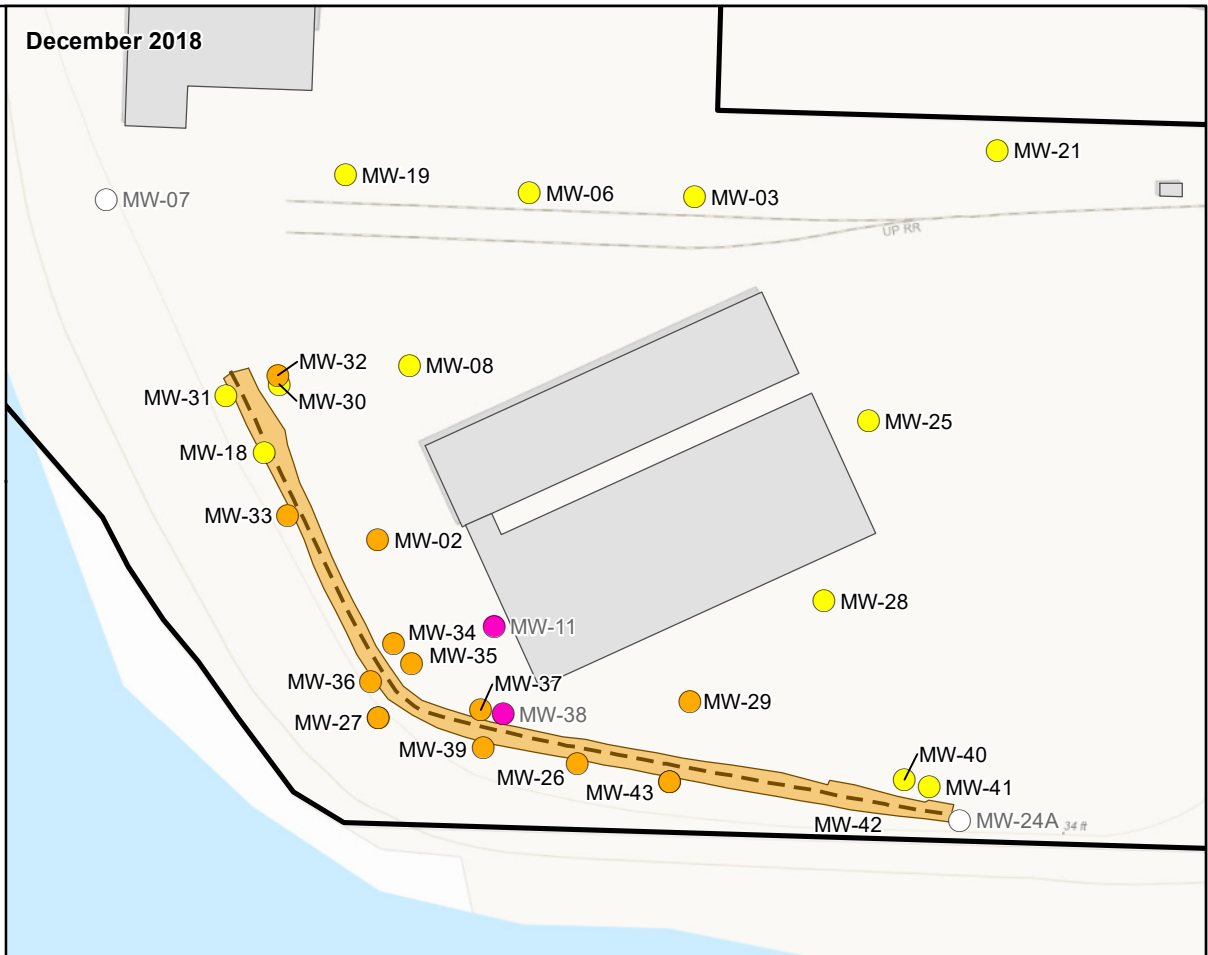


Figure 5
Manganese Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Trend Analysis Fig 6 Alkalinity Q4 2019.mxd
 REVISED: 03/01/2020 . SCALE: 1:1,440 when printed at 11x17



Legend

Monitoring Well Exceedance

- < 20,000 µg/L
- ≥ 20,000 - < 200,000 µg/L
- ≥ 200,000 - < 2,000,000 µg/L
- LNAPL Present
- Not Sampled

Barrier Wall Alignment

Barrier Wall Geocap

Building Footprint

Property Boundary

Notes:
 GW SCM Performance Criteria for alkalinity (total as CaCO₃) = 20,000 µg/L (micrograms per liter).
 Air-sparging started in March 2019.

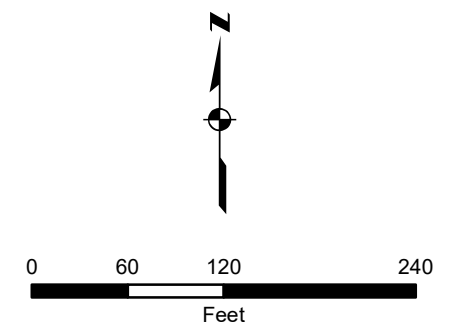
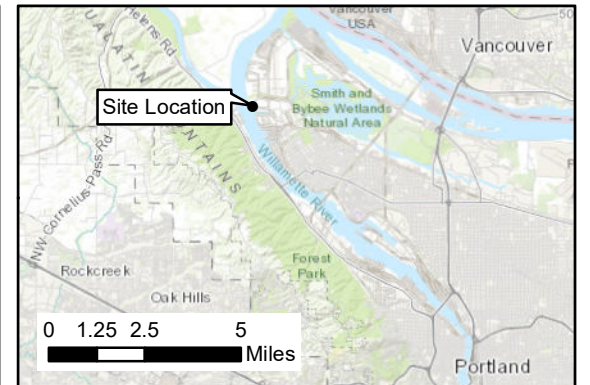


Figure 6
Alkalinity Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet

DRAWN BY: Kelly Lyons
 FILE: M:\Projects\0283866 MM\GL-Portland PEO Site GW SCM BR\maps\Q4 2019 Report\Trend Analysis Fig 7 Dissolved Oxygen Q4 2019.mxd
 SCALE: 1:1,440 when printed at 11x17
 REVISED: 03/01/2020



Legend

Monitoring Well Exceedance

- < 2 mg/L
- >= 2 - < 6 mg/L
- >= 6 mg/L
- LNAPL Present
- Not Sampled
- Barrier Wall Alignment
- Barrier Wall Geocap
- Building Footprint
- Property Boundary

Notes:
 Air-sparging started in March 2019.

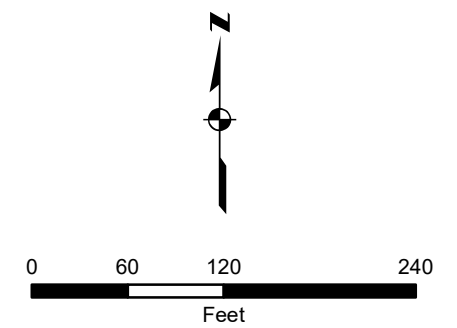
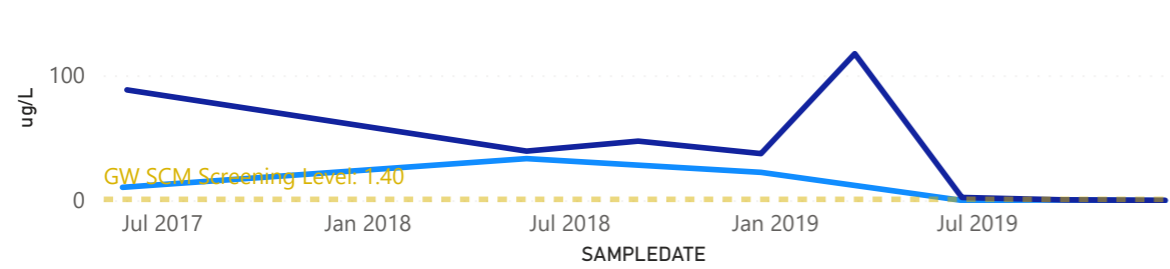


Figure 7
Dissolved Oxygen Trend Analysis
 Q4 Performance Monitoring Report
 Premier Edible Oils
 10400 N Burgard Way
 Portland, Oregon

Source: Esri - World Topographic; NAD 1983 StatePlane Oregon North FIPS 3601 Feet

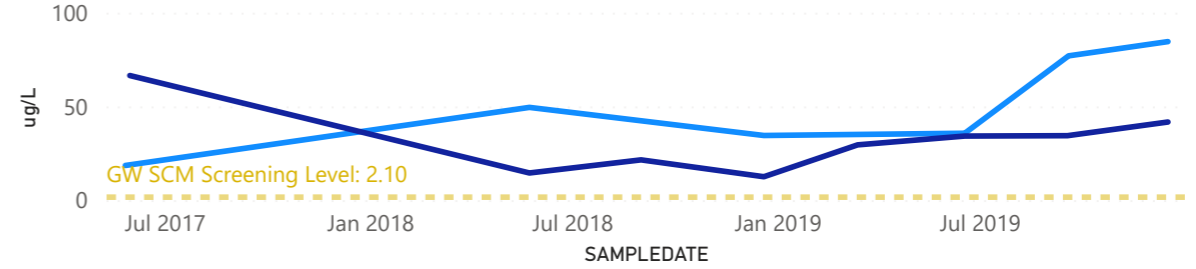
Benzene (ug/L)

Well ● MW-34_S-IN ● MW-35_D-IN



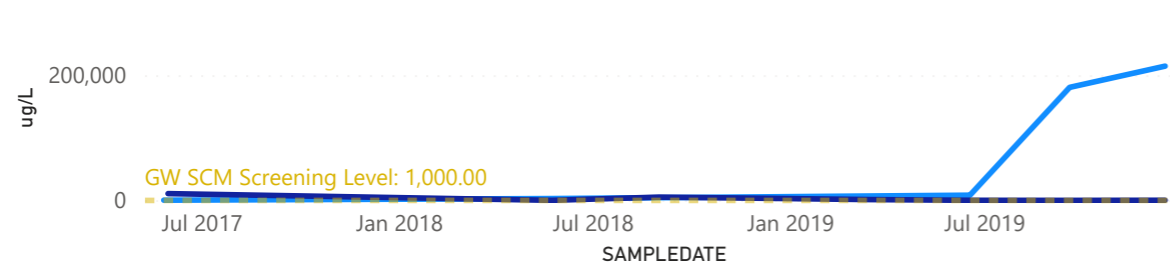
Arsenic (ug/L)

Well ● MW-34_S-IN ● MW-35_D-IN



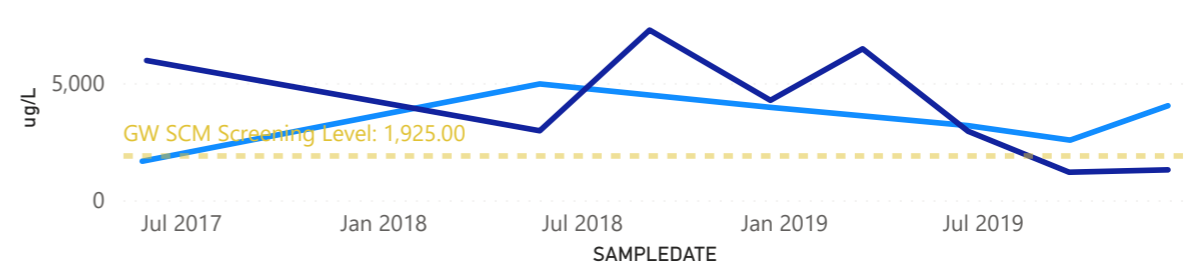
TPH-DRO (ug/L)

Well ● MW-34_S-IN ● MW-35_D-IN



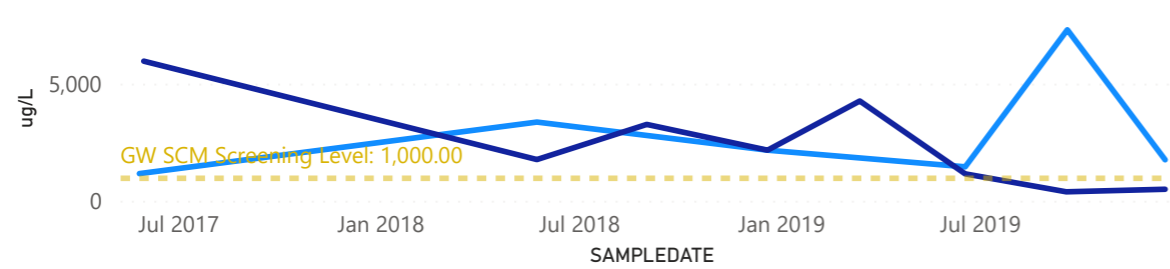
Manganese (ug/L)

Well ● MW-34_S-IN ● MW-35_D-IN



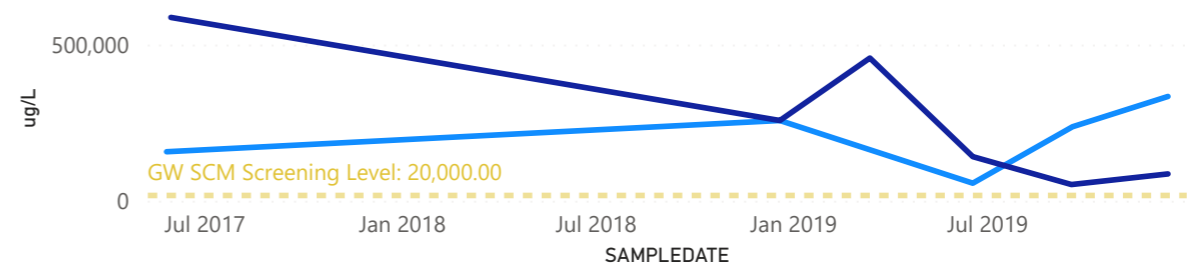
TPH-GRO

Well ● MW-34_S-IN ● MW-35_D-IN



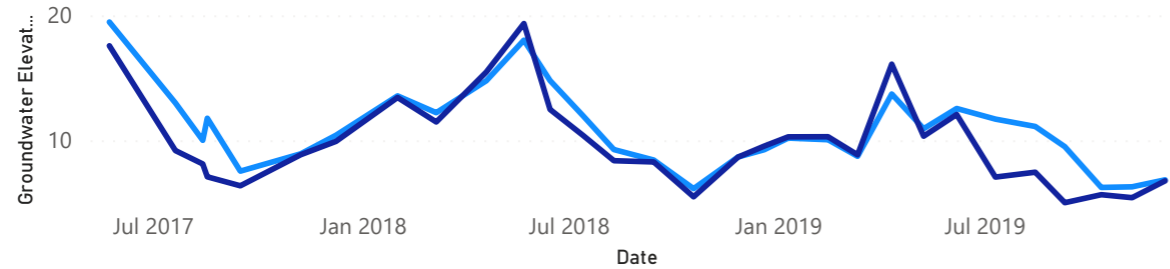
Alkalinity (ug/L)

Well ● MW-34_S-IN ● MW-35_D-IN



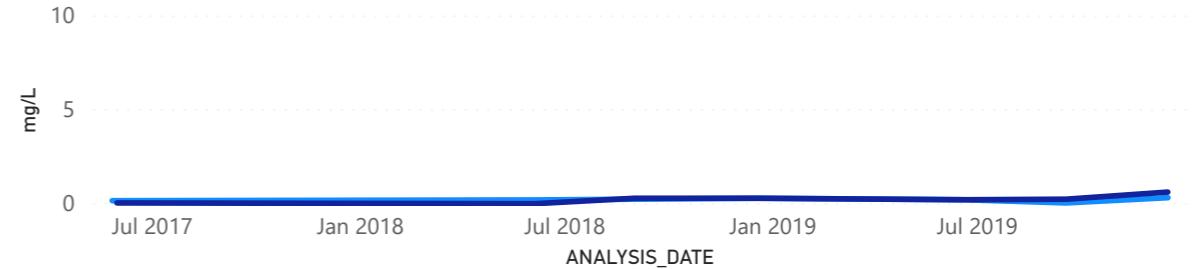
Groundwater Elevation (ft-NAVD88)

Well ● MW-34_S-IN ● MW-35_D-IN



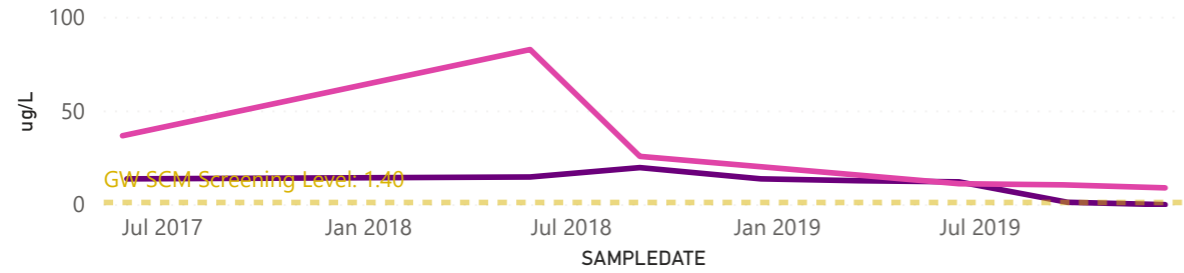
Dissolved Oxygen (mg/L)

Well ● MW-34_S-IN ● MW-35_D-IN



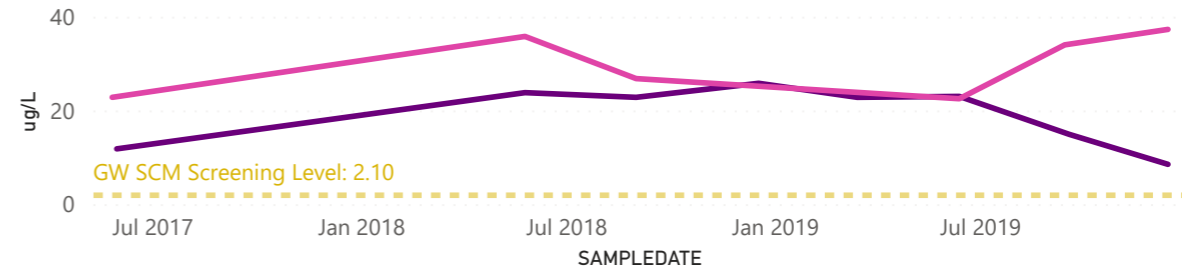
Benzene (ug/L)

Well ● MW-37_D-IN ● MW-38_S-IN



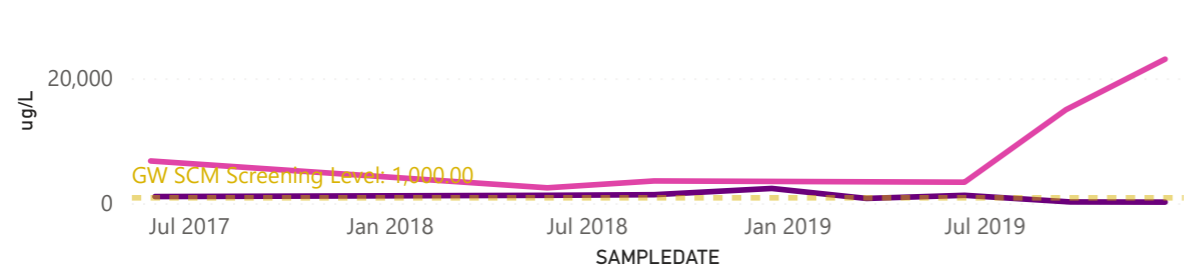
Arsenic (ug/L)

Well ● MW-37_D-IN ● MW-38_S-IN



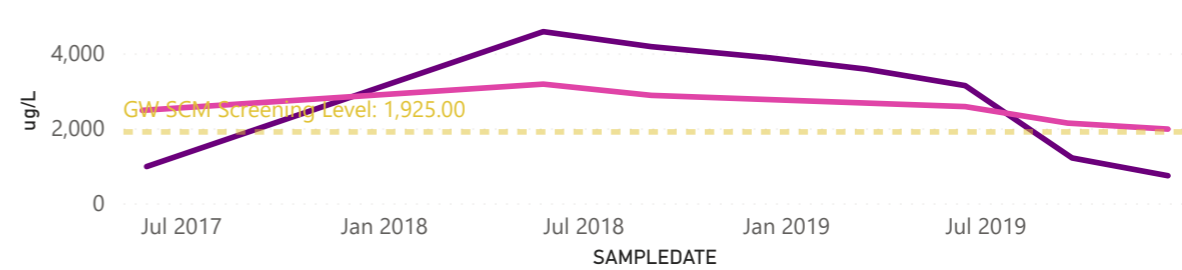
TPH-DRO (ug/L)

Well ● MW-37_D-IN ● MW-38_S-IN



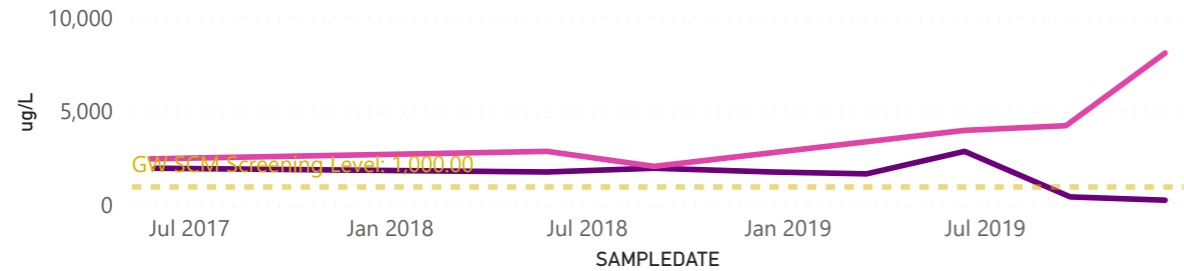
Manganese (ug/L)

Well ● MW-37_D-IN ● MW-38_S-IN



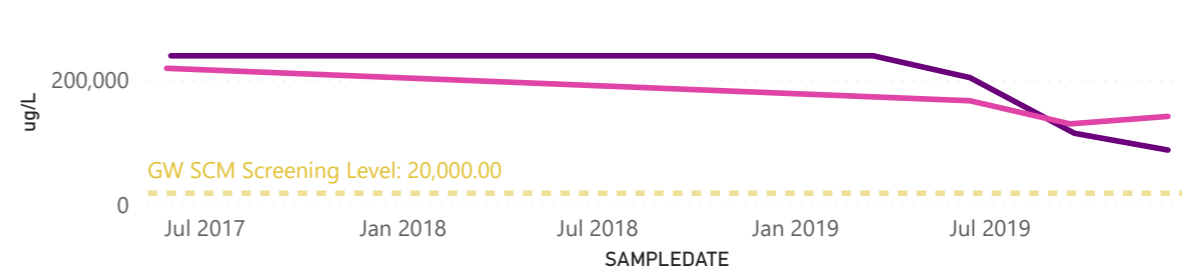
TPH-GRO

Well ● MW-37_D-IN ● MW-38_S-IN



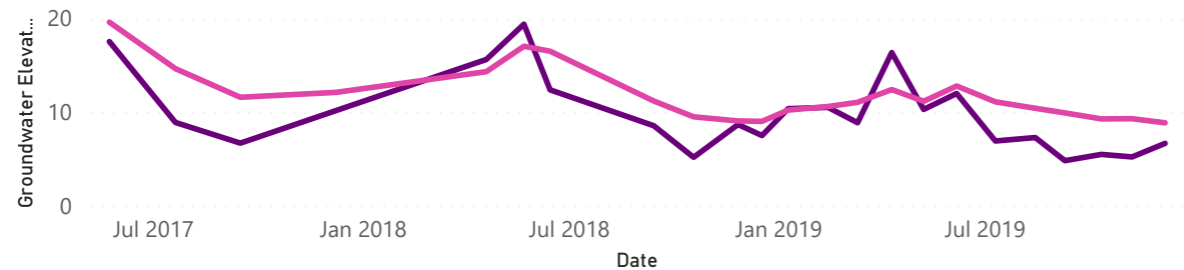
Alkalinity (ug/L)

Well ● MW-37_D-IN ● MW-38_S-IN



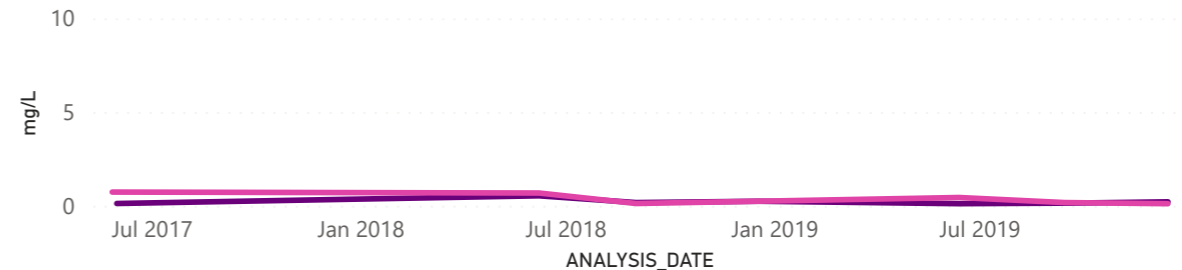
Groundwater Elevation (ft-NAVD88)

Well ● MW-37_D-IN ● MW-38_S-IN



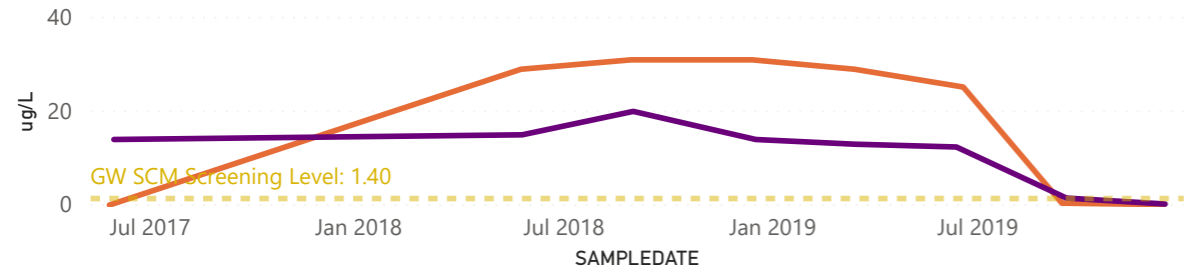
Dissolved Oxygen (mg/L)

Well ● MW-37_D-IN ● MW-38_S-IN



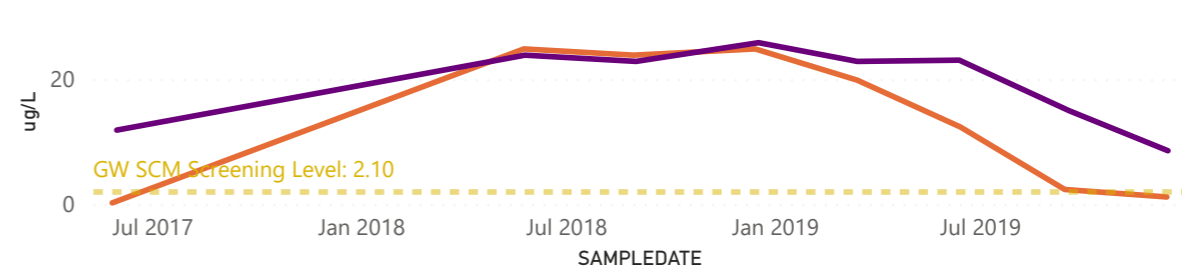
Benzene (ug/L)

Well ● MW-26_D-OU ● MW-37_D-IN



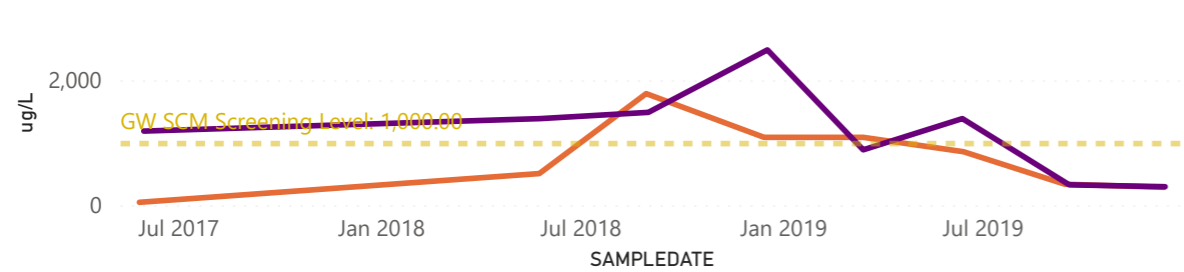
Arsenic (ug/L)

Well ● MW-26_D-OU ● MW-37_D-IN



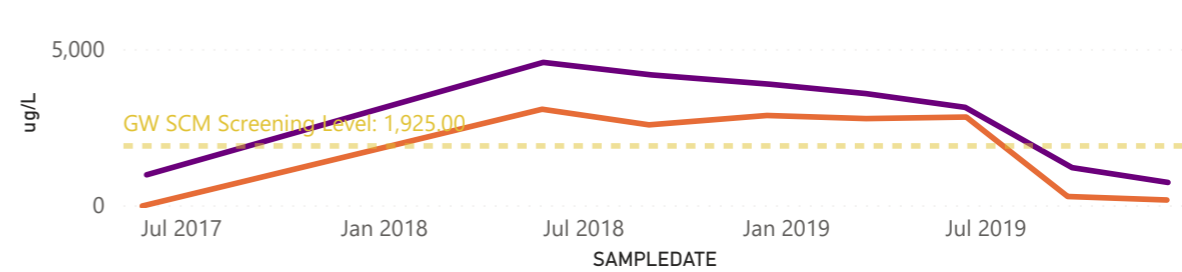
TPH-DRO (ug/L)

Well ● MW-26_D-OU ● MW-37_D-IN



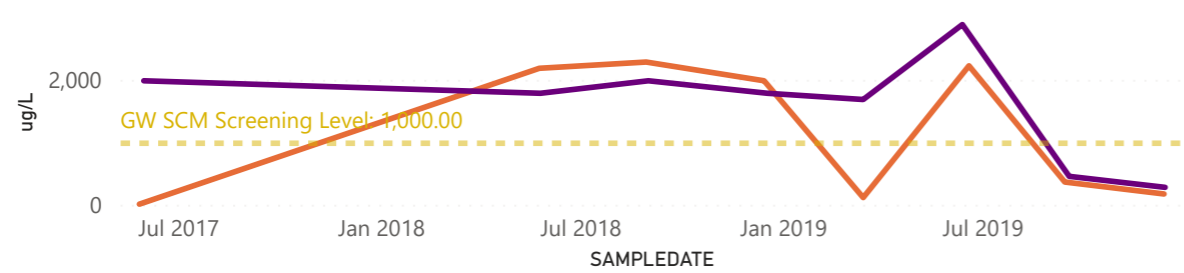
Manganese (ug/L)

Well ● MW-26_D-OU ● MW-37_D-IN



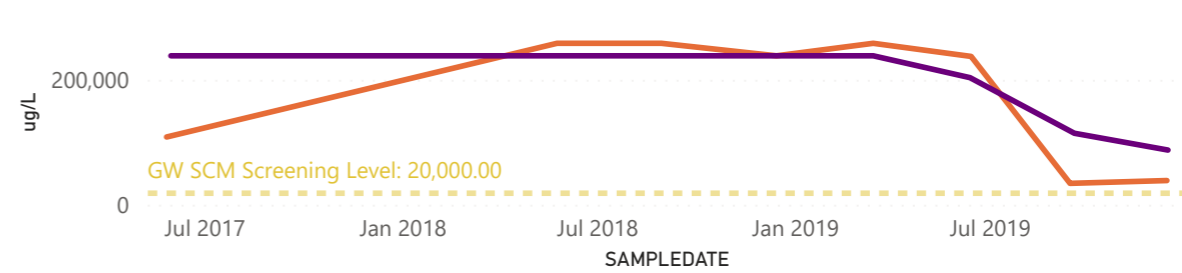
TPH-GRO

Well ● MW-26_D-OU ● MW-37_D-IN



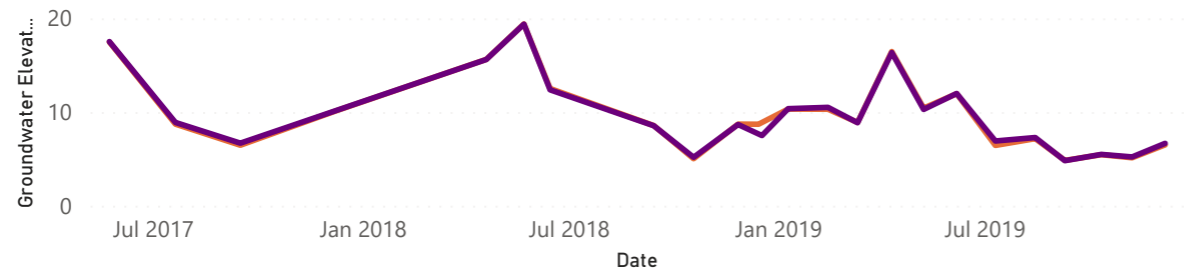
Alkalinity (ug/L)

Well ● MW-26_D-OU ● MW-37_D-IN



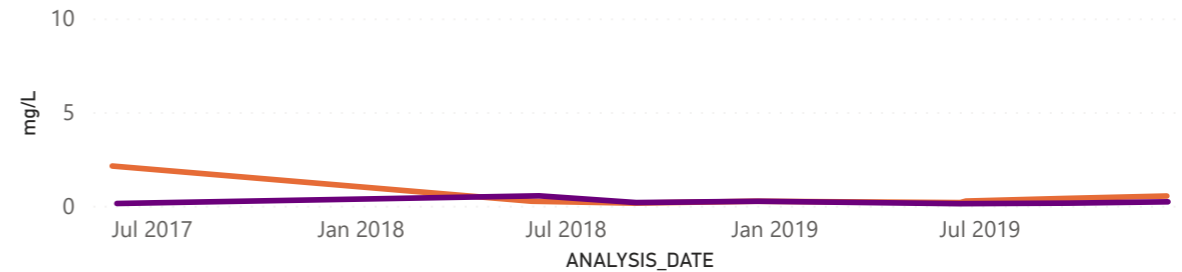
Groundwater Elevation (ft-NAVD88)

Well ● MW-26_D-OU ● MW-37_D-IN



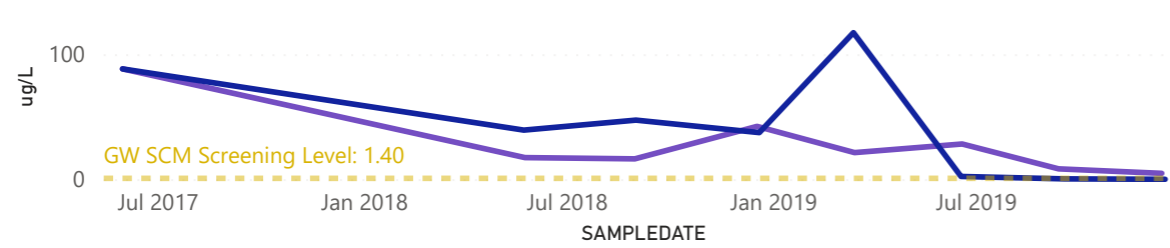
Dissolved Oxygen (mg/L)

Well ● MW-26_D-OU ● MW-37_D-IN



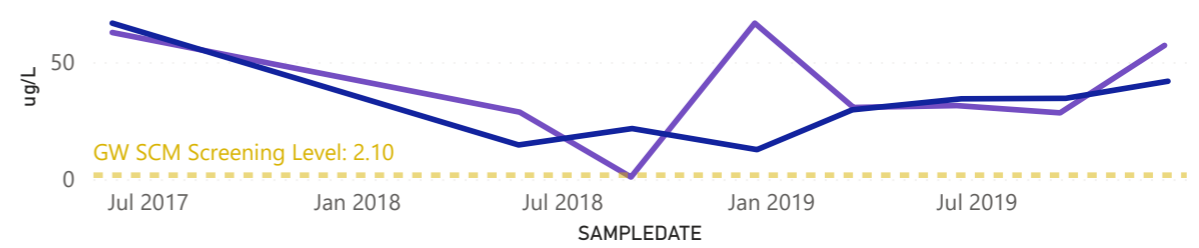
Benzene (ug/L)

Well ● MW-27_D-OU ● MW-35_D-IN



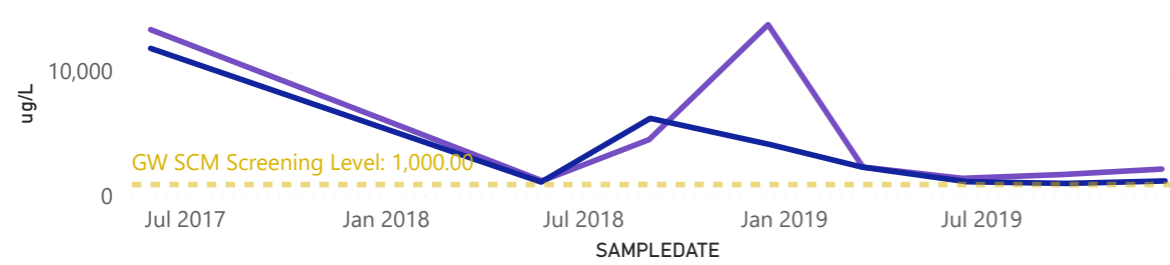
Arsenic (ug/L)

Well ● MW-27_D-OU ● MW-35_D-IN



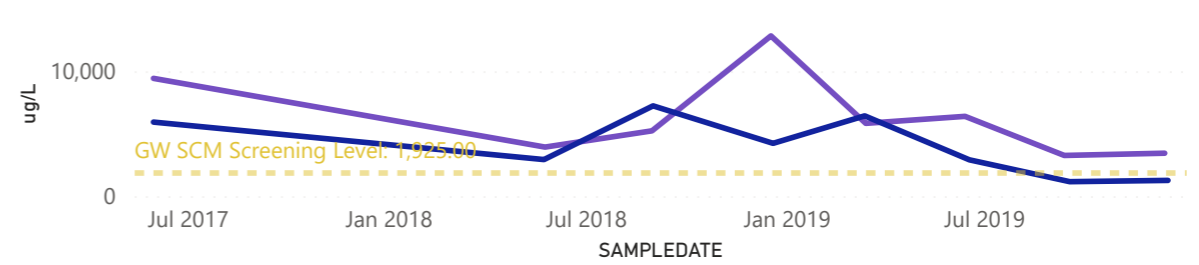
TPH-DRO (ug/L)

Well ● MW-27_D-OU ● MW-35_D-IN



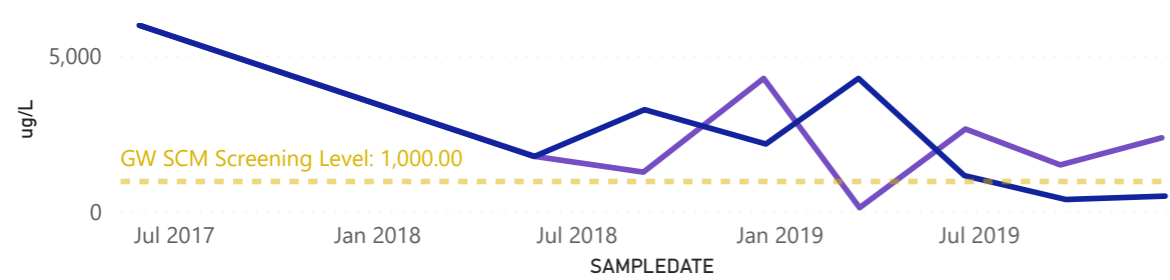
Manganese (ug/L)

Well ● MW-27_D-OU ● MW-35_D-IN



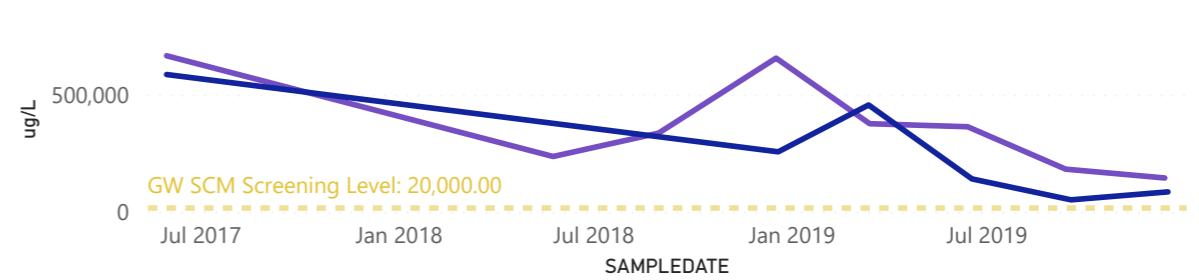
TPH-GRO

Well ● MW-27_D-OU ● MW-35_D-IN



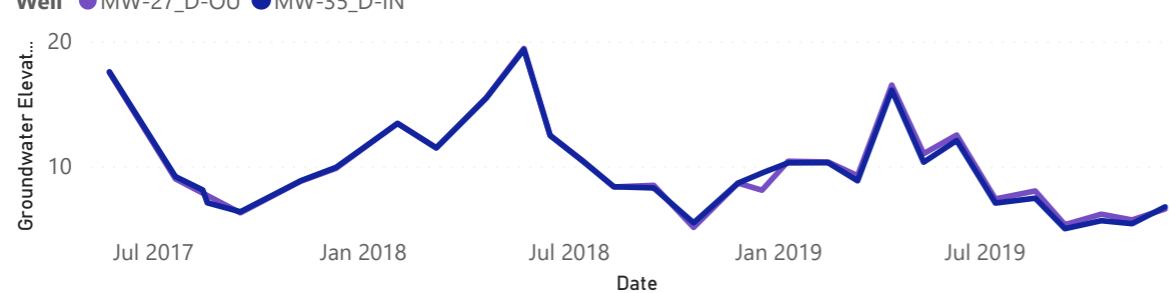
Alkalinity (ug/L)

Well ● MW-27_D-OU ● MW-35_D-IN



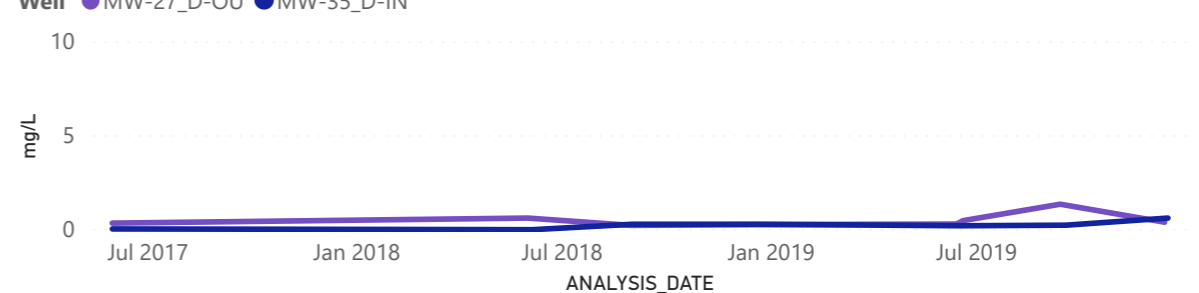
Groundwater Elevation (ft-NAVD88)

Well ● MW-27_D-OU ● MW-35_D-IN



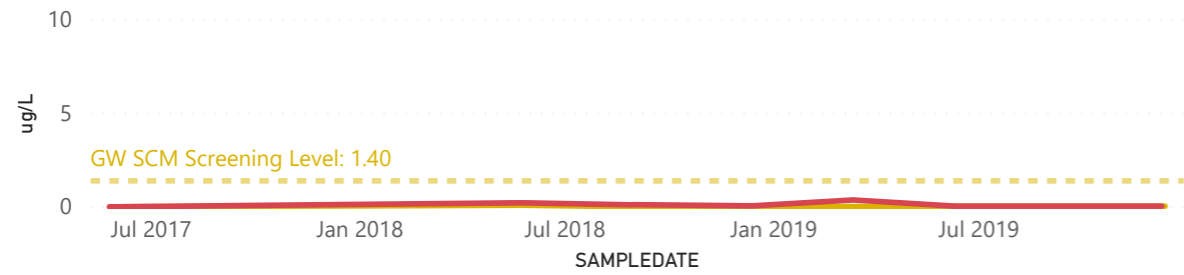
Dissolved Oxygen (mg/L)

Well ● MW-27_D-OU ● MW-35_D-IN



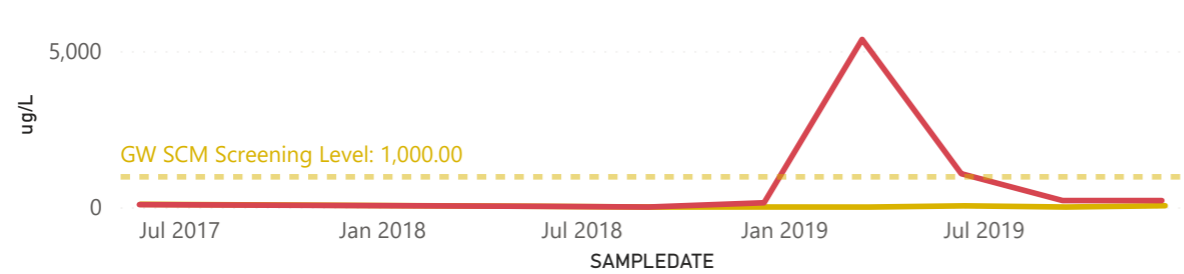
Benzene (ug/L)

Well ● MW-40_D-IN ● MW-42_D-OU



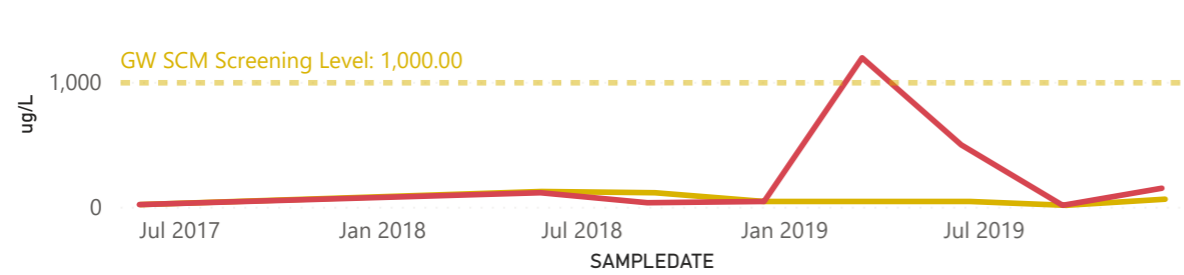
TPH-DRO (ug/L)

Well ● MW-40_D-IN ● MW-42_D-OU



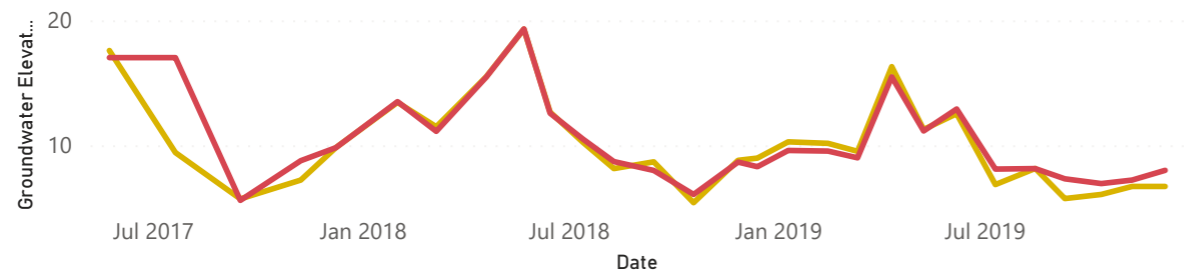
TPH-GRO

Well ● MW-40_D-IN ● MW-42_D-OU



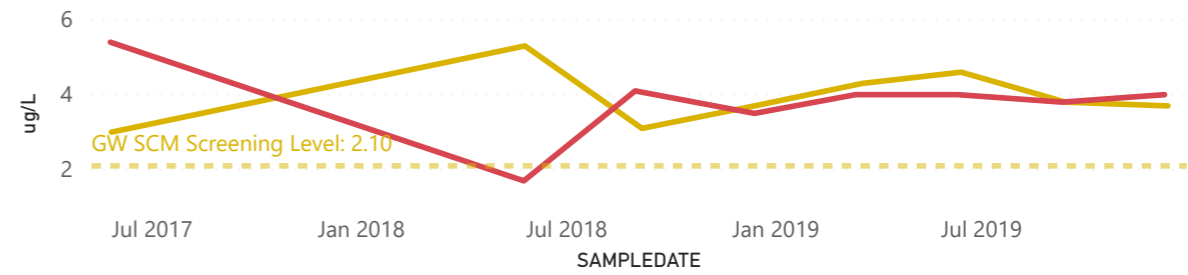
Groundwater Elevation (ft-NAVD88)

Well ● MW-40_D-IN ● MW-42_D-OU



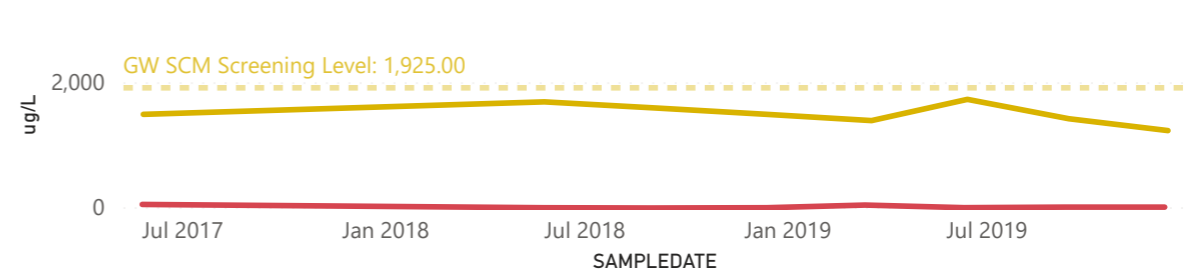
Arsenic (ug/L)

Well ● MW-40_D-IN ● MW-42_D-OU



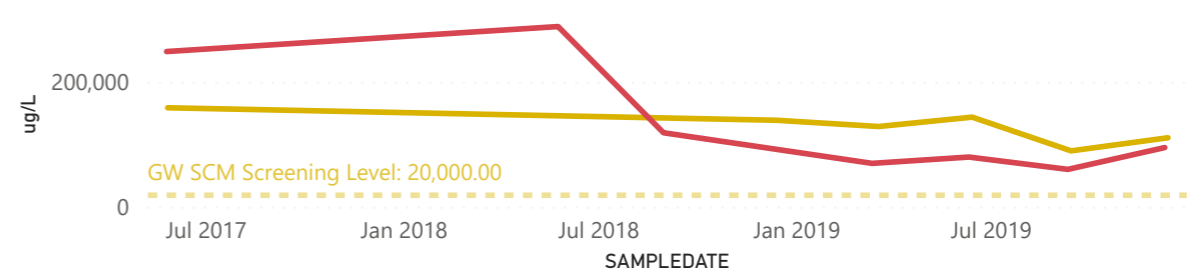
Manganese (ug/L)

Well ● MW-40_D-IN ● MW-42_D-OU



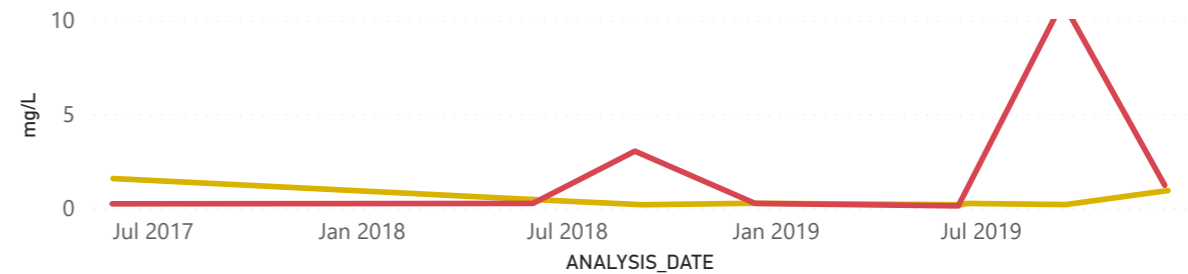
Alkalinity (ug/L)

Well ● MW-40_D-IN ● MW-42_D-OU



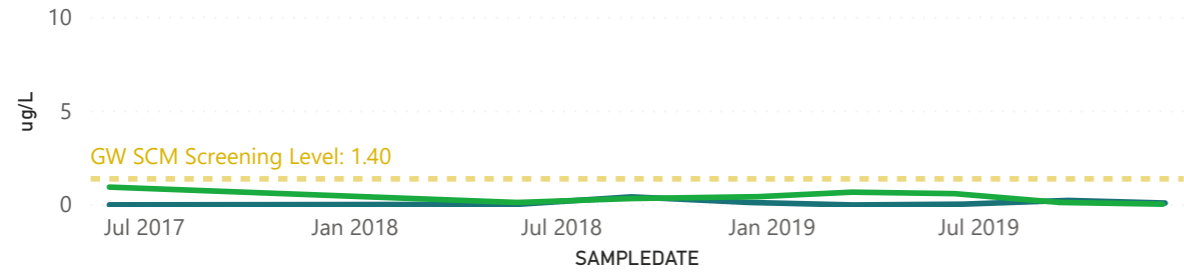
Dissolved Oxygen (mg/L)

Well ● MW-40_D-IN ● MW-42_D-OU



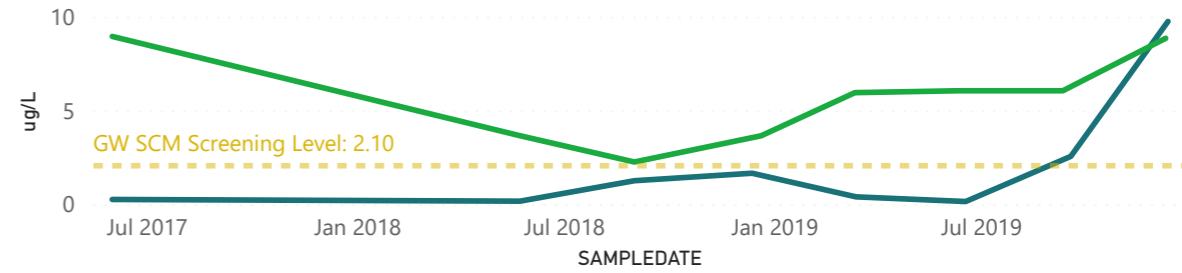
Benzene (ug/L)

Well ● MW-30_S-IN ● MW-32_D-IN



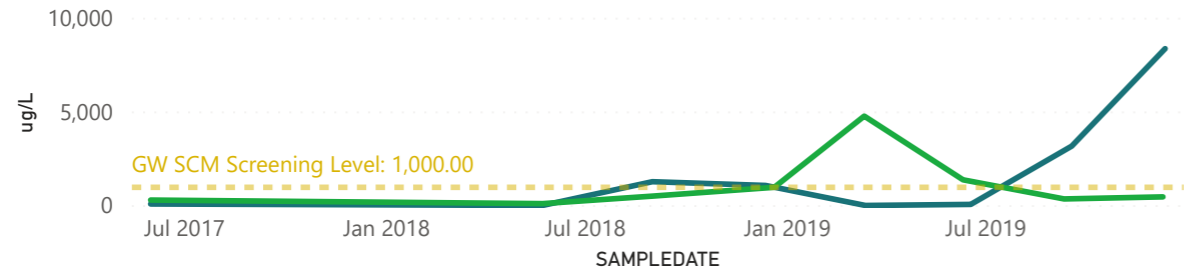
Arsenic (ug/L)

Well ● MW-30_S-IN ● MW-32_D-IN



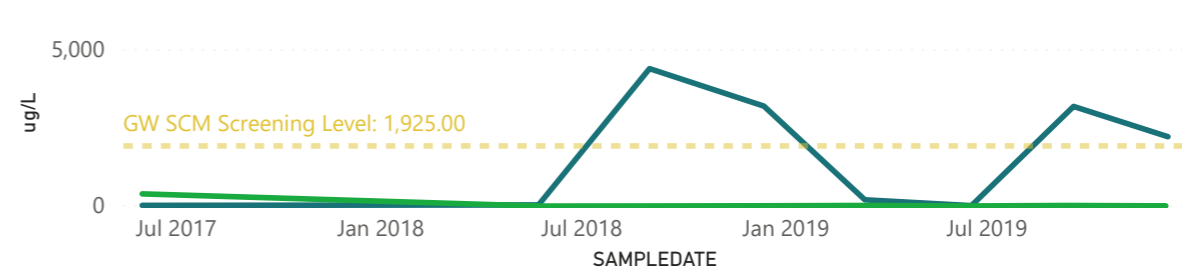
TPH-DRO (ug/L)

Well ● MW-30_S-IN ● MW-32_D-IN



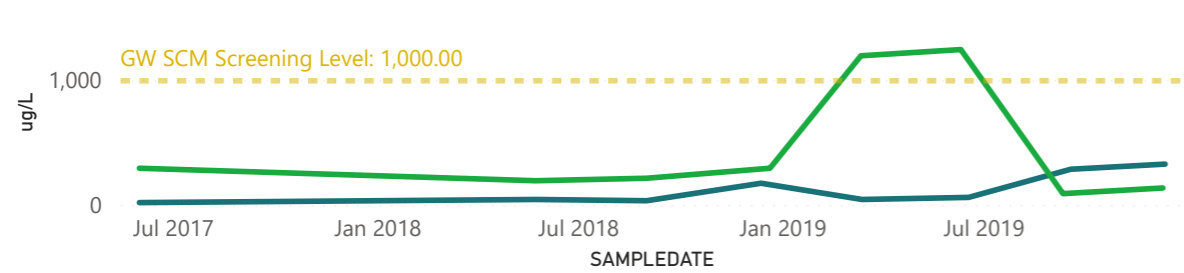
Manganese (ug/L)

Well ● MW-30_S-IN ● MW-32_D-IN



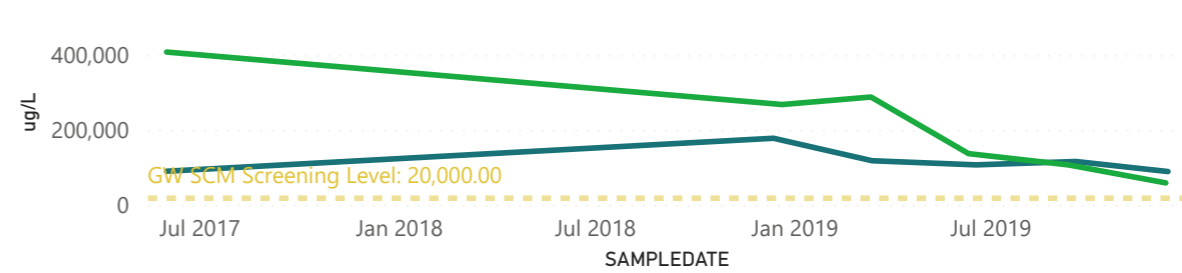
TPH-GRO

Well ● MW-30_S-IN ● MW-32_D-IN



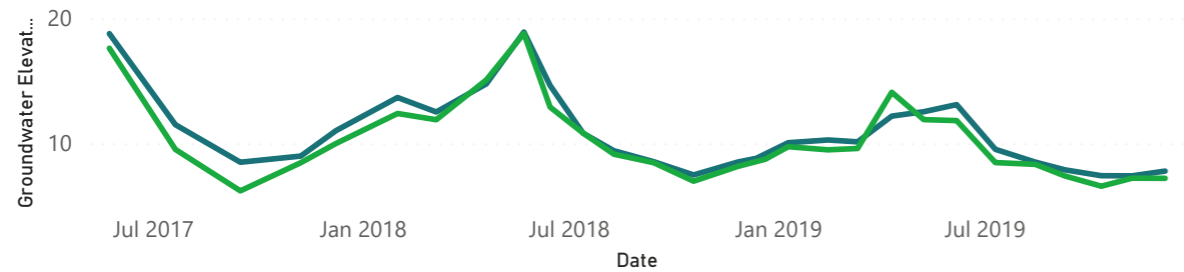
Alkalinity (ug/L)

Well ● MW-30_S-IN ● MW-32_D-IN



Groundwater Elevation (ft-NAVD88)

Well ● MW-30_S-IN ● MW-32_D-IN



Dissolved Oxygen (mg/L)

Well ● MW-30_S-IN ● MW-32_D-IN

