

Memo

Date: 11/20/2015
To: John Mason
From: Robyn Seymour

RE: Contamination Assessment Update
Frei Oil — 207 Highway Street - Horicon, WI
Cc: Mark Franz



Mr. Mason:

Seymour recently completed the installation and groundwater sampling of the monitoring wells as requested by WDNR. The objective of the work was to evaluate the groundwater impacts from contaminants previously identified during geoprobe sampling.

WELL INSTALLATION

On September 2, 2015 four monitoring wells were installed at the site. The well locations were selected based on the previously collected data. Three of the wells were installed near the former fuel storage area and the fourth well was installed near the railroad tracks where contamination was identified during the DOT sampling. No soil sampling was performed during the installation of the monitoring wells since earlier sampling had already characterized the distribution of contaminants in the soil. All of the wells were constructed as water table monitoring wells. The wells range in depth from 13.25 to 15.82 feet. Each of the wells is equipped with a 10-foot long screen.

RECENT MONITORING

On September 11th we visited the site to conduct the initial groundwater monitoring. Groundwater level data and groundwater samples were collected from all of the monitoring wells. Additionally, the tops of casing elevations of the monitoring wells were surveyed. The groundwater samples were analyzed for volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PAHs).

Groundwater level data from September 2015 indicate that the water table is present at a depth of approximately 7 feet below grade. Data contouring indicates that shallow groundwater flow at the site is east northeast toward the Rock River (see Figure 1). No free-phase product was noted "floating" on the groundwater in the monitoring wells. The horizontal water table gradient is approximately 0.0128 ft/ft.

The initial groundwater samples indicate that petroleum releases at the site have had limited impact to groundwater quality. Significant levels of VOCs were only identified in groundwater from 2 of the monitoring wells, MW-2 and MW-3. These wells are located near the former loading rack (MW-2), and along the south side of the former bulk fuel storage area (MW-3). Several petroleum-related VOCs were identified in the groundwater at each of these two locations, however, only benzene was

present above NR140 groundwater quality standards. A number of PAHs were identified in the groundwater samples collected from the monitoring wells but all of the compounds detected were below WDNR groundwater standards. In fact, the majority of the PAHs detected were present at concentrations below the limit of quantitation and levels had to be estimated by the laboratory.

The groundwater analytical indicates that the groundwater contamination is most severe in the west central portion of the property (see Figure 1). The contaminant levels appear to be highest in the area of the former loading rack. However, the well in this location, MW-2, is the most upgradient well and we do not know the water quality further west beneath the road ROW.

SITE ASSESSMENT STATUS

Soil Contamination

Soil exceeding WNDNR standards is present at the site. Soils containing petroleum-related compounds at levels which exceed the direct contact hazard level and groundwater protection RCL have been identified. Based on analysis of the direct contact risk and the recently collected groundwater quality data it appears that the residual soil contamination might be addressed through continuing obligations and GIS registry.

Groundwater Contamination

The initial groundwater monitoring data indicates that the groundwater contamination is limited in extent. Additionally, it appears that the groundwater containing petroleum-related contaminants at concentrations exceeding the NR140 Enforcement Standard (ES) is limited to the subject parcel and adjacent public right-of-ways. The initial groundwater data suggest that the four monitoring wells installed have adequately defined the extent of contamination.

RECOMMENDATIONS

- 1) Conduct three additional rounds of groundwater monitoring (quarterly) to collect the minimum information required for contaminant trend analysis. With the data from September 2015 this would provide four appropriately spaced sampling events.

Please call if you have any questions.

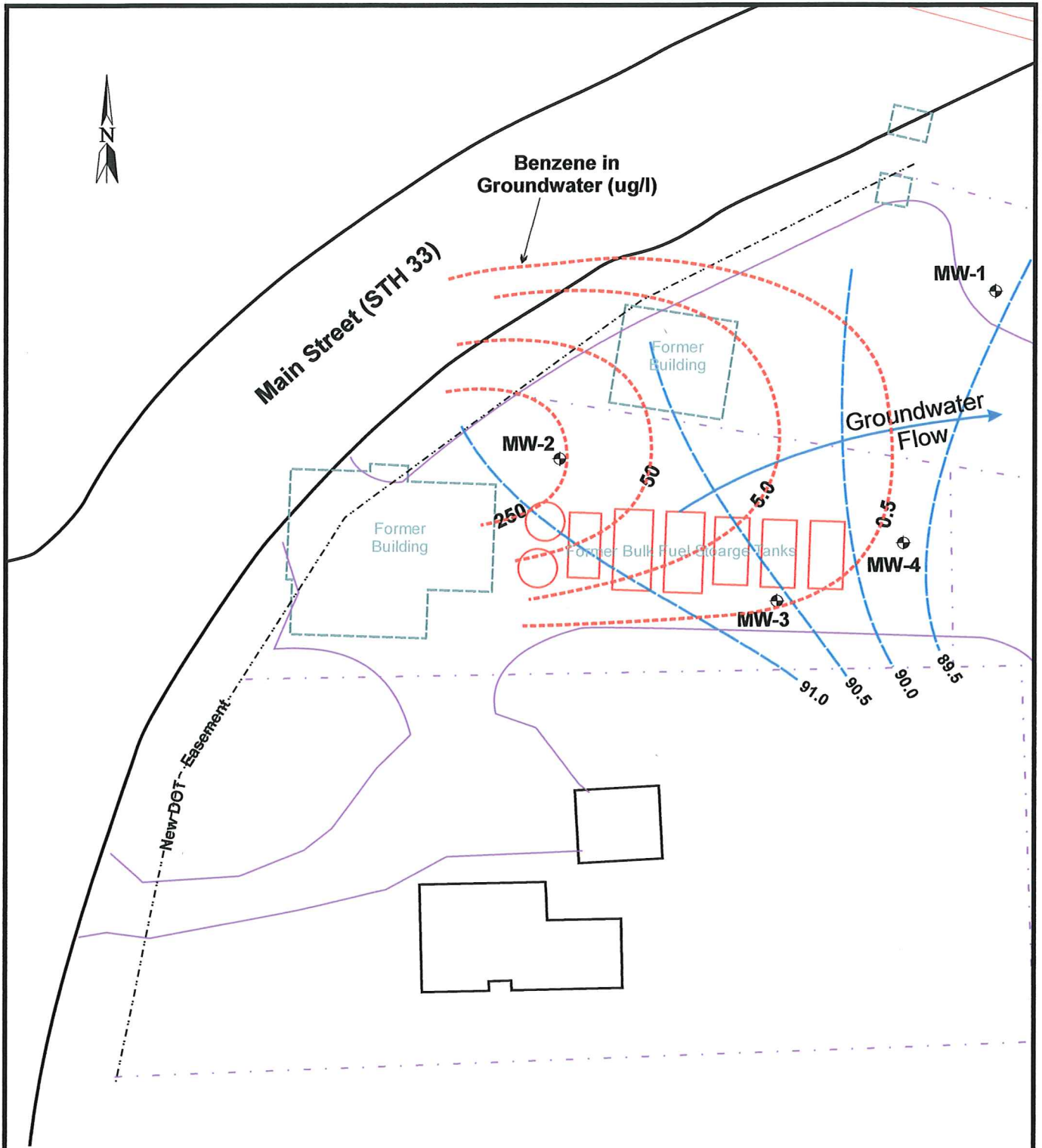
Attached: Table 1 - Summary of Groundwater Monitoring Data (09/11/15)
 Figure 1 - Groundwater Monitoring Data (Sept. 2015)
 Laboratory Report

TABLE 1
SUMMARY OF GROUNDWATER MONTIRING DATA (09/11/15)
Frei Oil
207 Highway Street - Horicon, WI

Sample I.D.	MW-1	MW-2	MW-3	MW-4	NR140	
Groundwater Depth	7.33	6.93	5.60	5.88		
GW Elevation	89.56	90.83	90.58	89.64		
VOCs					ES	PAL
Benzene	<0.50	252	1.1	<0.50	5	0.5
1,2 Dichloroethane	<0.17	<0.17	<0.17	<0.17	5	0.5
Ethylbenzene	<0.50	63.8	2.2	<0.50	700	140
Methyl-tert-butyl ether	<0.17	<0.17	<0.17	0.50(J)	60	12
Toluene	<0.50	4.5	<0.50	<0.50	800	160
1,3,5 Trimethylbenzenes	<0.50	7.0	1.3	<0.50	ns	ns
1,2,4 Trimethylbenzenes	<0.50	26.0	4.5	<0.50	ns	ns
Total Trimethylbenzenes	<1.00	33.0	5.8	<1.00	480	96
Xylenes, -m, -p	<1.0	141	4.5	<1.0	ns	ns
Xylene, -o	<0.50	1.6	<0.50	<0.50	ns	ns
Total Xylenes	<1.5	142.6	4.5	<1.5	2000	400
Naphthalene	<2.5	4.5	8.3	<2.5	100	10
n-butylbenzene	<0.50	<0.50	0.64	<0.50	ns	ns
Isopropylbenzene	<0.14	1.4	0.52	<0.14	ns	ns
n-propylbenzene	<0.50	2.9	0.68	<0.50	ns	ns
PAHs						
Acenaphthrene	<0.0048	0.072	0.076	<0.0052	ns	ns
Acenaphthylene	<0.0048	0.033(J)	0.026(J)	<0.0052	ns	ns
Anthracene	<0.0039	0.012(J)	<0.0037	<0.0043	3000	600
Benzo(a)anthracene	<0.0050	<0.0048	<0.0048	<0.0054	ns	ns
Benzo(a)pyrene	<0.0043	<0.0041	<0.0041	<0.0047	0.2	0.02
Benzo(b)fluoranthene	<0.0052	<0.0049	<0.0049	<0.056	0.2	0.02
Benzo(g,h,i)perylene	<0.0034	<0.0032	<0.0032	<0.037	ns	ns
Benzo(k)fluoranthene	<0.0055	<0.0052	<0.0052	<0.0059	ns	ns
Chrysene	0.010(J)	0.0060(J)	0.0066(J)	0.010(J)	0.2	0.02
Dibenzo(a,h)anthracene	<0.0054	<0.0051	<0.0051	<0.059	ns	ns
Fluoranthene	<0.0091	<0.0087	<0.0087	<0.0099	400	80
Fluorene	<0.0039	0.029(J)	0.042(J)	<0.0043	400	80
Indeno(1,2,3-cd)pyrene	<0.0035	<0.0033	<0.0033	<0.0038	ns	ns
1-Methylnaphthalene	0.010(J)	0.033(J)	0.052	0.017(J)	ns	ns
2-Methylnaphthalene	0.0051(J)	0.034(J)	0.045(J)	0.0083(J)	ns	ns
Naphthalene	0.0070(J)	0.071	0.028(J)	0.0084(J)	100	10
Phenanthrene	0.016(J)	0.014(J)	0.013(J)	0.022(J)	ns	ns
Pyrene	0.0079(J)	0.0092(J)	<0.0071	0.013(J)	250	50

- All results are reported in ug/l
- na = not analyzed
- ns = no standard established

- NR140 ES = Enforcement Standard (exceedances shaded)
- NR140 PAL = Preventative Action Limit (exceedances bold)
- (J) = Values estimated by lab; below limit of quantitation



LEGEND

MW-1 - Monitoring Well

0 40' 80'

1 INCH = 40 FEET
SCALE IS APPROXIMATE

FILE/PATH: D:\PROJECTS\FREI-OIL\basemap.cdr
 DATE: 09/28/2015
 PREPARED: MDF APPROVED:
 SOURCE: FIELD MEASUREMENTS
 WDOT /BT2 Maps

SEYMOUR ENVIRONMENTAL SERVICES, INC.

GROUNDWATER MONITORING DATA (Sept. 15)
 FREI OIL PROPERTY
 207 Highway Street
 Horicon, Wisconsin

FIGURE
 1



Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

September 22, 2015

Robyn Seymour
Seymour Environmental Services, INC.
2531 Dyreson Road
Mc Farland, WI 53558

RE: Project: 10692.00 FREI OIL
Pace Project No.: 40121042

Dear Robyn Seymour:

Enclosed are the analytical results for sample(s) received by the laboratory on September 15, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334

North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

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SAMPLE SUMMARY

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40121042001	MW-1	Water	09/11/15 10:25	09/15/15 08:00
40121042002	MW-2	Water	09/11/15 10:50	09/15/15 08:00
40121042003	MW-3	Water	09/11/15 11:15	09/15/15 08:00
40121042004	MW-4	Water	09/11/15 11:35	09/15/15 08:00

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SAMPLE ANALYTE COUNT

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40121042001	MW-1	EPA 8270 by HVI	TPO	20	PASI-G
		EPA 8260	LAP	64	PASI-G
40121042002	MW-2	EPA 8270 by HVI	TPO	20	PASI-G
		EPA 8260	LAP	64	PASI-G
40121042003	MW-3	EPA 8270 by HVI	TPO	20	PASI-G
		EPA 8260	LAP	64	PASI-G
40121042004	MW-4	EPA 8270 by HVI	TPO	20	PASI-G
		EPA 8260	LAP	64	PASI-G

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PROJECT NARRATIVE

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

Method: EPA 8270 by HVI
Description: 8270 MSSV PAH by HVI
Client: SEYMOUR ENVIRONMENTAL SERVICES, INC.
Date: September 22, 2015

General Information:

4 samples were analyzed for EPA 8270 by HVI. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

Method: EPA 8260
Description: 8260 MSV
Client: SEYMOUR ENVIRONMENTAL SERVICES, INC.
Date: September 22, 2015

General Information:

4 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

- pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- MW-1 (Lab ID: 40121042001)
 - MW-4 (Lab ID: 40121042004)

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: MSV/30147

- LO: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
- LCS (Lab ID: 1221082)
 - Chloroform
 - Trichlorofluoromethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-1 Lab ID: 40121042001 Collected: 09/11/15 10:25 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI		Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510							
Acenaphthene	<0.0048	ug/L	0.049	0.0048	1	09/17/15 08:24	09/18/15 20:59	83-32-9	
Acenaphthylene	<0.0048	ug/L	0.049	0.0048	1	09/17/15 08:24	09/18/15 20:59	208-96-8	
Anthracene	<0.0039	ug/L	0.049	0.0039	1	09/17/15 08:24	09/18/15 20:59	120-12-7	
Benzo(a)anthracene	<0.0050	ug/L	0.049	0.0050	1	09/17/15 08:24	09/18/15 20:59	56-55-3	
Benzo(a)pyrene	<0.0043	ug/L	0.049	0.0043	1	09/17/15 08:24	09/18/15 20:59	50-32-8	
Benzo(b)fluoranthene	<0.0052	ug/L	0.049	0.0052	1	09/17/15 08:24	09/18/15 20:59	205-99-2	
Benzo(g,h,i)perylene	<0.0034	ug/L	0.049	0.0034	1	09/17/15 08:24	09/18/15 20:59	191-24-2	
Benzo(k)fluoranthene	<0.0055	ug/L	0.049	0.0055	1	09/17/15 08:24	09/18/15 20:59	207-08-9	
Chrysene	0.010J	ug/L	0.049	0.0041	1	09/17/15 08:24	09/18/15 20:59	218-01-9	
Dibenz(a,h)anthracene	<0.0054	ug/L	0.049	0.0054	1	09/17/15 08:24	09/18/15 20:59	53-70-3	
Fluoranthene	<0.0091	ug/L	0.049	0.0091	1	09/17/15 08:24	09/18/15 20:59	206-44-0	
Fluorene	<0.0039	ug/L	0.049	0.0039	1	09/17/15 08:24	09/18/15 20:59	86-73-7	
Indeno(1,2,3-cd)pyrene	<0.0035	ug/L	0.049	0.0035	1	09/17/15 08:24	09/18/15 20:59	193-39-5	
1-Methylnaphthalene	0.010J	ug/L	0.049	0.0030	1	09/17/15 08:24	09/18/15 20:59	90-12-0	
2-Methylnaphthalene	0.0051J	ug/L	0.049	0.0027	1	09/17/15 08:24	09/18/15 20:59	91-57-6	
Naphthalene	0.0070J	ug/L	0.049	0.0044	1	09/17/15 08:24	09/18/15 20:59	91-20-3	
Phenanthrene	0.016J	ug/L	0.049	0.0074	1	09/17/15 08:24	09/18/15 20:59	85-01-8	
Pyrene	0.0079J	ug/L	0.049	0.0075	1	09/17/15 08:24	09/18/15 20:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%	40-130		1	09/17/15 08:24	09/18/15 20:59	321-60-8	
Terphenyl-d14 (S)	66	%	26-135		1	09/17/15 08:24	09/18/15 20:59	1718-51-0	
8260 MSV		Analytical Method: EPA 8260							
Benzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		09/17/15 14:31	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		09/17/15 14:31	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		09/17/15 14:31	74-83-9	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	104-51-8	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 14:31	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		09/17/15 14:31	98-06-6	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		09/17/15 14:31	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		09/17/15 14:31	67-66-3	L3
Chloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	74-87-3	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		09/17/15 14:31	106-43-4	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		09/17/15 14:31	96-12-8	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	124-48-1	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		09/17/15 14:31	106-93-4	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		09/17/15 14:31	74-95-3	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	95-50-1	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	541-73-1	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	106-46-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-1 Lab ID: 40121042001 Collected: 09/11/15 10:25 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		09/17/15 14:31	75-71-8	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		09/17/15 14:31	75-34-3	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		09/17/15 14:31	107-06-2	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		09/17/15 14:31	75-35-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 14:31	156-59-2	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 14:31	156-60-5	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		09/17/15 14:31	78-87-5	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	142-28-9	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		09/17/15 14:31	594-20-7	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		09/17/15 14:31	563-58-6	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	10061-01-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		09/17/15 14:31	10061-02-6	
Diisopropyl ether	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	108-20-3	
Ethylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		09/17/15 14:31	87-68-3	
Isopropylbenzene (Cumene)	<0.14	ug/L	1.0	0.14	1		09/17/15 14:31	98-82-8	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	99-87-6	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		09/17/15 14:31	75-09-2	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		09/17/15 14:31	1634-04-4	
Naphthalene	<2.5	ug/L	5.0	2.5	1		09/17/15 14:31	91-20-3	
n-Propylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	103-65-1	
Styrene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	100-42-5	
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		09/17/15 14:31	630-20-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		09/17/15 14:31	79-34-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	108-88-3	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		09/17/15 14:31	87-61-6	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 14:31	120-82-1	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	71-55-6	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		09/17/15 14:31	79-00-5	
Trichloroethene	<0.33	ug/L	1.0	0.33	1		09/17/15 14:31	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		09/17/15 14:31	75-69-4	L3
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	96-18-4	
1,2,4-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	95-63-6	
1,3,5-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	108-67-8	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		09/17/15 14:31	75-01-4	
m&p-Xylene	<1.0	ug/L	2.0	1.0	1		09/17/15 14:31	179601-23-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:31	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		09/17/15 14:31	460-00-4	pH
Dibromofluoromethane (S)	91	%	70-130		1		09/17/15 14:31	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		09/17/15 14:31	2037-26-5	

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-2 Lab ID: 40121042002 Collected: 09/11/15 10:50 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI		Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510							
Acenaphthene	0.072	ug/L	0.046	0.0046	1	09/17/15 08:24	09/18/15 21:17	83-32-9	
Acenaphthylene	0.033J	ug/L	0.046	0.0046	1	09/17/15 08:24	09/18/15 21:17	208-96-8	
Anthracene	0.012J	ug/L	0.046	0.0037	1	09/17/15 08:24	09/18/15 21:17	120-12-7	
Benzo(a)anthracene	<0.0048	ug/L	0.046	0.0048	1	09/17/15 08:24	09/18/15 21:17	56-55-3	
Benzo(a)pyrene	<0.0041	ug/L	0.046	0.0041	1	09/17/15 08:24	09/18/15 21:17	50-32-8	
Benzo(b)fluoranthene	<0.0049	ug/L	0.046	0.0049	1	09/17/15 08:24	09/18/15 21:17	205-99-2	
Benzo(g,h,i)perylene	<0.0032	ug/L	0.046	0.0032	1	09/17/15 08:24	09/18/15 21:17	191-24-2	
Benzo(k)fluoranthene	<0.0052	ug/L	0.046	0.0052	1	09/17/15 08:24	09/18/15 21:17	207-08-9	
Chrysene	0.0060J	ug/L	0.046	0.0039	1	09/17/15 08:24	09/18/15 21:17	218-01-9	
Dibenz(a,h)anthracene	<0.0051	ug/L	0.046	0.0051	1	09/17/15 08:24	09/18/15 21:17	53-70-3	
Fluoranthene	<0.0087	ug/L	0.046	0.0087	1	09/17/15 08:24	09/18/15 21:17	206-44-0	
Fluorene	0.029J	ug/L	0.046	0.0037	1	09/17/15 08:24	09/18/15 21:17	86-73-7	
Indeno(1,2,3-cd)pyrene	<0.0033	ug/L	0.046	0.0033	1	09/17/15 08:24	09/18/15 21:17	193-39-5	
1-Methylnaphthalene	0.033J	ug/L	0.046	0.0029	1	09/17/15 08:24	09/18/15 21:17	90-12-0	
2-Methylnaphthalene	0.034J	ug/L	0.046	0.0025	1	09/17/15 08:24	09/18/15 21:17	91-57-6	
Naphthalene	0.071	ug/L	0.046	0.0042	1	09/17/15 08:24	09/18/15 21:17	91-20-3	
Phenanthrene	0.014J	ug/L	0.046	0.0071	1	09/17/15 08:24	09/18/15 21:17	85-01-8	
Pyrene	0.0092J	ug/L	0.046	0.0071	1	09/17/15 08:24	09/18/15 21:17	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%	40-130		1	09/17/15 08:24	09/18/15 21:17	321-60-8	
Terphenyl-d14 (S)	66	%	26-135		1	09/17/15 08:24	09/18/15 21:17	1718-51-0	
8260 MSV		Analytical Method: EPA 8260							
Benzene	252	ug/L	1.0	0.50	1		09/17/15 14:53	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		09/17/15 14:53	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		09/17/15 14:53	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		09/17/15 14:53	74-83-9	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	104-51-8	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 14:53	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		09/17/15 14:53	98-06-6	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		09/17/15 14:53	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		09/17/15 14:53	67-66-3	L3
Chloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	74-87-3	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		09/17/15 14:53	106-43-4	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		09/17/15 14:53	96-12-8	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	124-48-1	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		09/17/15 14:53	106-93-4	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		09/17/15 14:53	74-95-3	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	95-50-1	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	541-73-1	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	106-46-7	

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-2 Lab ID: 40121042002 Collected: 09/11/15 10:50 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		09/17/15 14:53	75-71-8	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		09/17/15 14:53	75-34-3	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		09/17/15 14:53	107-06-2	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		09/17/15 14:53	75-35-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 14:53	156-59-2	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 14:53	156-60-5	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		09/17/15 14:53	78-87-5	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	142-28-9	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		09/17/15 14:53	594-20-7	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		09/17/15 14:53	563-58-6	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	10061-01-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		09/17/15 14:53	10061-02-6	
Diisopropyl ether	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	108-20-3	
Ethylbenzene	63.8	ug/L	1.0	0.50	1		09/17/15 14:53	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		09/17/15 14:53	87-68-3	
Isopropylbenzene (Cumene)	1.4	ug/L	1.0	0.14	1		09/17/15 14:53	98-82-8	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	99-87-6	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		09/17/15 14:53	75-09-2	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		09/17/15 14:53	1634-04-4	
Naphthalene	4.5J	ug/L	5.0	2.5	1		09/17/15 14:53	91-20-3	
n-Propylbenzene	2.9	ug/L	1.0	0.50	1		09/17/15 14:53	103-65-1	
Styrene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	100-42-5	
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		09/17/15 14:53	630-20-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		09/17/15 14:53	79-34-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	127-18-4	
Toluene	4.5	ug/L	1.0	0.50	1		09/17/15 14:53	108-88-3	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		09/17/15 14:53	87-61-6	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 14:53	120-82-1	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	71-55-6	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		09/17/15 14:53	79-00-5	
Trichloroethene	<0.33	ug/L	1.0	0.33	1		09/17/15 14:53	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		09/17/15 14:53	75-69-4	L3
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 14:53	96-18-4	
1,2,4-Trimethylbenzene	26.0	ug/L	1.0	0.50	1		09/17/15 14:53	95-63-6	
1,3,5-Trimethylbenzene	7.0	ug/L	1.0	0.50	1		09/17/15 14:53	108-67-8	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		09/17/15 14:53	75-01-4	
m&p-Xylene	141	ug/L	2.0	1.0	1		09/17/15 14:53	179601-23-1	
o-Xylene	1.6	ug/L	1.0	0.50	1		09/17/15 14:53	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		09/17/15 14:53	460-00-4	
Dibromofluoromethane (S)	88	%	70-130		1		09/17/15 14:53	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		09/17/15 14:53	2037-26-5	

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-3 Lab ID: 40121042003 Collected: 09/11/15 11:15 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI		Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510							
Acenaphthene	0.076	ug/L	0.046	0.0046	1	09/17/15 08:24	09/18/15 15:28	83-32-9	
Acenaphthylene	0.026J	ug/L	0.046	0.0046	1	09/17/15 08:24	09/18/15 15:28	208-96-8	
Anthracene	<0.0037	ug/L	0.046	0.0037	1	09/17/15 08:24	09/18/15 15:28	120-12-7	
Benzo(a)anthracene	<0.0048	ug/L	0.046	0.0048	1	09/17/15 08:24	09/18/15 15:28	56-55-3	
Benzo(a)pyrene	<0.0041	ug/L	0.046	0.0041	1	09/17/15 08:24	09/18/15 15:28	50-32-8	
Benzo(b)fluoranthene	<0.0049	ug/L	0.046	0.0049	1	09/17/15 08:24	09/18/15 15:28	205-99-2	
Benzo(g,h,i)perylene	<0.0032	ug/L	0.046	0.0032	1	09/17/15 08:24	09/18/15 15:28	191-24-2	
Benzo(k)fluoranthene	<0.0052	ug/L	0.046	0.0052	1	09/17/15 08:24	09/18/15 15:28	207-08-9	
Chrysene	0.0066J	ug/L	0.046	0.0039	1	09/17/15 08:24	09/18/15 15:28	218-01-9	
Dibenz(a,h)anthracene	<0.0051	ug/L	0.046	0.0051	1	09/17/15 08:24	09/18/15 15:28	53-70-3	
Fluoranthene	<0.0087	ug/L	0.046	0.0087	1	09/17/15 08:24	09/18/15 15:28	206-44-0	
Fluorene	0.042J	ug/L	0.046	0.0037	1	09/17/15 08:24	09/18/15 15:28	86-73-7	
Indeno(1,2,3-cd)pyrene	<0.0033	ug/L	0.046	0.0033	1	09/17/15 08:24	09/18/15 15:28	193-39-5	
1-Methylnaphthalene	0.052	ug/L	0.046	0.0029	1	09/17/15 08:24	09/18/15 15:28	90-12-0	
2-Methylnaphthalene	0.045J	ug/L	0.046	0.0025	1	09/17/15 08:24	09/18/15 15:28	91-57-6	
Naphthalene	0.028J	ug/L	0.046	0.0042	1	09/17/15 08:24	09/18/15 15:28	91-20-3	
Phenanthrene	0.013J	ug/L	0.046	0.0071	1	09/17/15 08:24	09/18/15 15:28	85-01-8	
Pyrene	<0.0071	ug/L	0.046	0.0071	1	09/17/15 08:24	09/18/15 15:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%	40-130		1	09/17/15 08:24	09/18/15 15:28	321-60-8	
Terphenyl-d14 (S)	85	%	26-135		1	09/17/15 08:24	09/18/15 15:28	1718-51-0	
8260 MSV		Analytical Method: EPA 8260							
Benzene	1.1	ug/L	1.0	0.50	1		09/17/15 08:20	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		09/17/15 08:20	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		09/17/15 08:20	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		09/17/15 08:20	74-83-9	
n-Butylbenzene	0.64J	ug/L	1.0	0.50	1		09/17/15 08:20	104-51-8	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 08:20	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		09/17/15 08:20	98-06-6	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		09/17/15 08:20	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		09/17/15 08:20	67-66-3	L3
Chloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	74-87-3	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		09/17/15 08:20	106-43-4	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		09/17/15 08:20	96-12-8	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	124-48-1	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		09/17/15 08:20	106-93-4	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		09/17/15 08:20	74-95-3	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	95-50-1	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	541-73-1	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	106-46-7	

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-3 Lab ID: 40121042003 Collected: 09/11/15 11:15 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		09/17/15 08:20	75-71-8	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		09/17/15 08:20	75-34-3	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		09/17/15 08:20	107-06-2	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		09/17/15 08:20	75-35-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 08:20	156-59-2	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 08:20	156-60-5	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		09/17/15 08:20	78-87-5	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	142-28-9	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		09/17/15 08:20	594-20-7	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		09/17/15 08:20	563-58-6	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	10061-01-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		09/17/15 08:20	10061-02-6	
Diisopropyl ether	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	108-20-3	
Ethylbenzene	2.2	ug/L	1.0	0.50	1		09/17/15 08:20	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		09/17/15 08:20	87-68-3	
Isopropylbenzene (Cumene)	0.52J	ug/L	1.0	0.14	1		09/17/15 08:20	98-82-8	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	99-87-6	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		09/17/15 08:20	75-09-2	
Methyl-tert-butyl ether	<0.17	ug/L	1.0	0.17	1		09/17/15 08:20	1634-04-4	
Naphthalene	8.3	ug/L	5.0	2.5	1		09/17/15 08:20	91-20-3	
n-Propylbenzene	0.68J	ug/L	1.0	0.50	1		09/17/15 08:20	103-65-1	
Styrene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	100-42-5	
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		09/17/15 08:20	630-20-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		09/17/15 08:20	79-34-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	108-88-3	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		09/17/15 08:20	87-61-6	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 08:20	120-82-1	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	71-55-6	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		09/17/15 08:20	79-00-5	
Trichloroethene	<0.33	ug/L	1.0	0.33	1		09/17/15 08:20	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		09/17/15 08:20	75-69-4	L3
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	96-18-4	
1,2,4-Trimethylbenzene	4.5	ug/L	1.0	0.50	1		09/17/15 08:20	95-63-6	
1,3,5-Trimethylbenzene	1.3	ug/L	1.0	0.50	1		09/17/15 08:20	108-67-8	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		09/17/15 08:20	75-01-4	
m&p-Xylene	4.5	ug/L	2.0	1.0	1		09/17/15 08:20	179601-23-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		09/17/15 08:20	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-130		1		09/17/15 08:20	460-00-4	
Dibromofluoromethane (S)	90	%	70-130		1		09/17/15 08:20	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		09/17/15 08:20	2037-26-5	

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-4 Lab ID: 40121042004 Collected: 09/11/15 11:35 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by HVI		Analytical Method: EPA 8270 by HVI Preparation Method: EPA 3510							
Acenaphthene	<0.0052	ug/L	0.053	0.0052	1	09/17/15 08:24	09/21/15 15:41	83-32-9	
Acenaphthylene	<0.0052	ug/L	0.053	0.0052	1	09/17/15 08:24	09/21/15 15:41	208-96-8	
Anthracene	<0.0043	ug/L	0.053	0.0043	1	09/17/15 08:24	09/21/15 15:41	120-12-7	
Benzo(a)anthracene	<0.0054	ug/L	0.053	0.0054	1	09/17/15 08:24	09/21/15 15:41	56-55-3	
Benzo(a)pyrene	<0.0047	ug/L	0.053	0.0047	1	09/17/15 08:24	09/21/15 15:41	50-32-8	
Benzo(b)fluoranthene	<0.0056	ug/L	0.053	0.0056	1	09/17/15 08:24	09/21/15 15:41	205-99-2	
Benzo(g,h,i)perylene	<0.0037	ug/L	0.053	0.0037	1	09/17/15 08:24	09/21/15 15:41	191-24-2	
Benzo(k)fluoranthene	<0.0059	ug/L	0.053	0.0059	1	09/17/15 08:24	09/21/15 15:41	207-08-9	
Chrysene	0.010J	ug/L	0.053	0.0045	1	09/17/15 08:24	09/21/15 15:41	218-01-9	
Dibenz(a,h)anthracene	<0.0059	ug/L	0.053	0.0059	1	09/17/15 08:24	09/21/15 15:41	53-70-3	
Fluoranthene	<0.0099	ug/L	0.053	0.0099	1	09/17/15 08:24	09/21/15 15:41	206-44-0	
Fluorene	<0.0043	ug/L	0.053	0.0043	1	09/17/15 08:24	09/21/15 15:41	86-73-7	
Indeno(1,2,3-cd)pyrene	<0.0038	ug/L	0.053	0.0038	1	09/17/15 08:24	09/21/15 15:41	193-39-5	
1-Methylnaphthalene	0.017J	ug/L	0.053	0.0033	1	09/17/15 08:24	09/21/15 15:41	90-12-0	
2-Methylnaphthalene	0.0083J	ug/L	0.053	0.0029	1	09/17/15 08:24	09/21/15 15:41	91-57-6	
Naphthalene	0.0084J	ug/L	0.053	0.0048	1	09/17/15 08:24	09/21/15 15:41	91-20-3	
Phenanthrene	0.022J	ug/L	0.053	0.0081	1	09/17/15 08:24	09/21/15 15:41	85-01-8	
Pyrene	0.013J	ug/L	0.053	0.0081	1	09/17/15 08:24	09/21/15 15:41	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	75	%	40-130		1	09/17/15 08:24	09/21/15 15:41	321-60-8	
Terphenyl-d14 (S)	70	%	26-135		1	09/17/15 08:24	09/21/15 15:41	1718-51-0	
8260 MSV		Analytical Method: EPA 8260							
Benzene	<0.50	ug/L	1.0	0.50	1		09/17/15 18:07	71-43-2	
Bromobenzene	<0.23	ug/L	1.0	0.23	1		09/17/15 15:14	108-86-1	
Bromochloromethane	<0.34	ug/L	1.0	0.34	1		09/17/15 15:14	74-97-5	
Bromodichloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	75-27-4	
Bromoform	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	75-25-2	
Bromomethane	<2.4	ug/L	5.0	2.4	1		09/17/15 15:14	74-83-9	
n-Butylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	104-51-8	
sec-Butylbenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 15:14	135-98-8	
tert-Butylbenzene	<0.18	ug/L	1.0	0.18	1		09/17/15 15:14	98-06-6	
Carbon tetrachloride	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	56-23-5	
Chlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	108-90-7	
Chloroethane	<0.37	ug/L	1.0	0.37	1		09/17/15 15:14	75-00-3	
Chloroform	<2.5	ug/L	5.0	2.5	1		09/17/15 15:14	67-66-3	L3
Chloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	74-87-3	
2-Chlorotoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	95-49-8	
4-Chlorotoluene	<0.21	ug/L	1.0	0.21	1		09/17/15 15:14	106-43-4	
1,2-Dibromo-3-chloropropane	<2.2	ug/L	5.0	2.2	1		09/17/15 15:14	96-12-8	
Dibromochloromethane	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	124-48-1	
1,2-Dibromoethane (EDB)	<0.18	ug/L	1.0	0.18	1		09/17/15 15:14	106-93-4	
Dibromomethane	<0.43	ug/L	1.0	0.43	1		09/17/15 15:14	74-95-3	
1,2-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	95-50-1	
1,3-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	541-73-1	
1,4-Dichlorobenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	106-46-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Sample: MW-4 Lab ID: 40121042004 Collected: 09/11/15 11:35 Received: 09/15/15 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
Dichlorodifluoromethane	<0.22	ug/L	1.0	0.22	1		09/17/15 15:14	75-71-8	
1,1-Dichloroethane	<0.24	ug/L	1.0	0.24	1		09/17/15 15:14	75-34-3	
1,2-Dichloroethane	<0.17	ug/L	1.0	0.17	1		09/17/15 15:14	107-06-2	
1,1-Dichloroethene	<0.41	ug/L	1.0	0.41	1		09/17/15 15:14	75-35-4	
cis-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 15:14	156-59-2	
trans-1,2-Dichloroethene	<0.26	ug/L	1.0	0.26	1		09/17/15 15:14	156-60-5	
1,2-Dichloropropane	<0.23	ug/L	1.0	0.23	1		09/17/15 15:14	78-87-5	
1,3-Dichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	142-28-9	
2,2-Dichloropropane	<0.48	ug/L	1.0	0.48	1		09/17/15 15:14	594-20-7	
1,1-Dichloropropene	<0.44	ug/L	1.0	0.44	1		09/17/15 15:14	563-58-6	
cis-1,3-Dichloropropene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	10061-01-5	
trans-1,3-Dichloropropene	<0.23	ug/L	1.0	0.23	1		09/17/15 15:14	10061-02-6	
Diisopropyl ether	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	108-20-3	
Ethylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	100-41-4	
Hexachloro-1,3-butadiene	<2.1	ug/L	5.0	2.1	1		09/17/15 15:14	87-68-3	
Isopropylbenzene (Cumene)	<0.14	ug/L	1.0	0.14	1		09/17/15 15:14	98-82-8	
p-Isopropyltoluene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	99-87-6	
Methylene Chloride	<0.23	ug/L	1.0	0.23	1		09/17/15 15:14	75-09-2	
Methyl-tert-butyl ether	0.50J	ug/L	1.0	0.17	1		09/17/15 15:14	1634-04-4	
Naphthalene	<2.5	ug/L	5.0	2.5	1		09/17/15 15:14	91-20-3	
n-Propylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	103-65-1	
Styrene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	100-42-5	
1,1,1,2-Tetrachloroethane	<0.18	ug/L	1.0	0.18	1		09/17/15 15:14	630-20-6	
1,1,2,2-Tetrachloroethane	<0.25	ug/L	1.0	0.25	1		09/17/15 15:14	79-34-5	
Tetrachloroethene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	127-18-4	
Toluene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	108-88-3	
1,2,3-Trichlorobenzene	<2.1	ug/L	5.0	2.1	1		09/17/15 15:14	87-61-6	
1,2,4-Trichlorobenzene	<2.2	ug/L	5.0	2.2	1		09/17/15 15:14	120-82-1	
1,1,1-Trichloroethane	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	71-55-6	
1,1,2-Trichloroethane	<0.20	ug/L	1.0	0.20	1		09/17/15 15:14	79-00-5	
Trichloroethene	<0.33	ug/L	1.0	0.33	1		09/17/15 15:14	79-01-6	
Trichlorofluoromethane	<0.18	ug/L	1.0	0.18	1		09/17/15 15:14	75-69-4	L3
1,2,3-Trichloropropane	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	96-18-4	
1,2,4-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	95-63-6	
1,3,5-Trimethylbenzene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	108-67-8	
Vinyl chloride	<0.18	ug/L	1.0	0.18	1		09/17/15 15:14	75-01-4	
m&p-Xylene	<1.0	ug/L	2.0	1.0	1		09/17/15 15:14	179601-23-1	
o-Xylene	<0.50	ug/L	1.0	0.50	1		09/17/15 15:14	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		09/17/15 15:14	460-00-4	pH
Dibromofluoromethane (S)	88	%	70-130		1		09/17/15 15:14	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		09/17/15 15:14	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

QC Batch: MSV/30147 Analysis Method: EPA 8260
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
 Associated Lab Samples: 40121042001, 40121042002, 40121042003, 40121042004

METHOD BLANK: 1221081 Matrix: Water
 Associated Lab Samples: 40121042001, 40121042002, 40121042003, 40121042004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.18	1.0	09/17/15 06:31	
1,1,1-Trichloroethane	ug/L	<0.50	1.0	09/17/15 06:31	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	1.0	09/17/15 06:31	
1,1,2-Trichloroethane	ug/L	<0.20	1.0	09/17/15 06:31	
1,1-Dichloroethane	ug/L	<0.24	1.0	09/17/15 06:31	
1,1-Dichloroethene	ug/L	<0.41	1.0	09/17/15 06:31	
1,1-Dichloropropene	ug/L	<0.44	1.0	09/17/15 06:31	
1,2,3-Trichlorobenzene	ug/L	<2.1	5.0	09/17/15 06:31	
1,2,3-Trichloropropane	ug/L	<0.50	1.0	09/17/15 06:31	
1,2,4-Trichlorobenzene	ug/L	<2.2	5.0	09/17/15 06:31	
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	09/17/15 06:31	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	5.0	09/17/15 06:31	
1,2-Dibromoethane (EDB)	ug/L	<0.18	1.0	09/17/15 06:31	
1,2-Dichlorobenzene	ug/L	<0.50	1.0	09/17/15 06:31	
1,2-Dichloroethane	ug/L	<0.17	1.0	09/17/15 06:31	
1,2-Dichloropropane	ug/L	<0.23	1.0	09/17/15 06:31	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	09/17/15 06:31	
1,3-Dichlorobenzene	ug/L	<0.50	1.0	09/17/15 06:31	
1,3-Dichloropropane	ug/L	<0.50	1.0	09/17/15 06:31	
1,4-Dichlorobenzene	ug/L	<0.50	1.0	09/17/15 06:31	
2,2-Dichloropropane	ug/L	<0.48	1.0	09/17/15 06:31	
2-Chlorotoluene	ug/L	<0.50	1.0	09/17/15 06:31	
4-Chlorotoluene	ug/L	<0.21	1.0	09/17/15 06:31	
Benzene	ug/L	<0.50	1.0	09/17/15 06:31	
Bromobenzene	ug/L	<0.23	1.0	09/17/15 06:31	
Bromochloromethane	ug/L	<0.34	1.0	09/17/15 06:31	
Bromodichloromethane	ug/L	<0.50	1.0	09/17/15 06:31	
Bromoform	ug/L	<0.50	1.0	09/17/15 06:31	
Bromomethane	ug/L	<2.4	5.0	09/17/15 06:31	
Carbon tetrachloride	ug/L	<0.50	1.0	09/17/15 06:31	
Chlorobenzene	ug/L	<0.50	1.0	09/17/15 06:31	
Chloroethane	ug/L	<0.37	1.0	09/17/15 06:31	
Chloroform	ug/L	<2.5	5.0	09/17/15 06:31	
Chloromethane	ug/L	<0.50	1.0	09/17/15 06:31	
cis-1,2-Dichloroethene	ug/L	<0.26	1.0	09/17/15 06:31	
cis-1,3-Dichloropropene	ug/L	<0.50	1.0	09/17/15 06:31	
Dibromochloromethane	ug/L	<0.50	1.0	09/17/15 06:31	
Dibromomethane	ug/L	<0.43	1.0	09/17/15 06:31	
Dichlorodifluoromethane	ug/L	<0.22	1.0	09/17/15 06:31	
Diisopropyl ether	ug/L	<0.50	1.0	09/17/15 06:31	
Ethylbenzene	ug/L	<0.50	1.0	09/17/15 06:31	

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: 10692.00 FREI OIL
Pace Project No.: 40121042

METHOD BLANK: 1221081 Matrix: Water
Associated Lab Samples: 40121042001, 40121042002, 40121042003, 40121042004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	<2.1	5.0	09/17/15 06:31	
Isopropylbenzene (Cumene)	ug/L	<0.14	1.0	09/17/15 06:31	
m&p-Xylene	ug/L	<1.0	2.0	09/17/15 06:31	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	09/17/15 06:31	
Methylene Chloride	ug/L	<0.23	1.0	09/17/15 06:31	
n-Butylbenzene	ug/L	<0.50	1.0	09/17/15 06:31	
n-Propylbenzene	ug/L	<0.50	1.0	09/17/15 06:31	
Naphthalene	ug/L	<2.5	5.0	09/17/15 06:31	
o-Xylene	ug/L	<0.50	1.0	09/17/15 06:31	
p-Isopropyltoluene	ug/L	<0.50	1.0	09/17/15 06:31	
sec-Butylbenzene	ug/L	<2.2	5.0	09/17/15 06:31	
Styrene	ug/L	<0.50	1.0	09/17/15 06:31	
tert-Butylbenzene	ug/L	<0.18	1.0	09/17/15 06:31	
Tetrachloroethene	ug/L	<0.50	1.0	09/17/15 06:31	
Toluene	ug/L	<0.50	1.0	09/17/15 06:31	
trans-1,2-Dichloroethene	ug/L	<0.26	1.0	09/17/15 06:31	
trans-1,3-Dichloropropene	ug/L	<0.23	1.0	09/17/15 06:31	
Trichloroethene	ug/L	<0.33	1.0	09/17/15 06:31	
Trichlorofluoromethane	ug/L	<0.18	1.0	09/17/15 06:31	
Vinyl chloride	ug/L	<0.18	1.0	09/17/15 06:31	
4-Bromofluorobenzene (S)	%	106	70-130	09/17/15 06:31	
Dibromofluoromethane (S)	%	92	70-130	09/17/15 06:31	
Toluene-d8 (S)	%	101	70-130	09/17/15 06:31	

LABORATORY CONTROL SAMPLE: 1221082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	55.9	112	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.7	99	70-130	
1,1,2-Trichloroethane	ug/L	50	57.6	115	70-130	
1,1-Dichloroethane	ug/L	50	55.7	111	70-130	
1,1-Dichloroethene	ug/L	50	50.4	101	70-130	
1,2,4-Trichlorobenzene	ug/L	50	51.4	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	44.9	90	50-150	
1,2-Dibromoethane (EDB)	ug/L	50	55.0	110	70-130	
1,2-Dichlorobenzene	ug/L	50	48.5	97	70-130	
1,2-Dichloroethane	ug/L	50	62.7	125	70-131	
1,2-Dichloropropane	ug/L	50	54.2	108	70-130	
1,3-Dichlorobenzene	ug/L	50	48.2	96	70-130	
1,4-Dichlorobenzene	ug/L	50	49.8	100	70-130	
Benzene	ug/L	50	51.1	102	70-130	
Bromodichloromethane	ug/L	50	61.9	124	70-130	
Bromoform	ug/L	50	57.8	116	68-130	
Bromomethane	ug/L	50	40.6	81	38-137	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

LABORATORY CONTROL SAMPLE: 1221082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	59.1	118	70-130	
Chlorobenzene	ug/L	50	54.8	110	70-130	
Chloroethane	ug/L	50	50.7	101	70-136	
Chloroform	ug/L	50	65.3	131	70-130 LO	
Chloromethane	ug/L	50	51.2	102	48-144	
cis-1,2-Dichloroethene	ug/L	50	54.2	108	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.7	101	70-130	
Dibromochloromethane	ug/L	50	54.9	110	70-130	
Dichlorodifluoromethane	ug/L	50	68.8	138	33-157	
Ethylbenzene	ug/L	50	61.2	122	70-132	
Isopropylbenzene (Cumene)	ug/L	50	60.3	121	70-130	
m&p-Xylene	ug/L	100	115	115	70-131	
Methyl-tert-butyl ether	ug/L	50	50.4	101	48-141	
Methylene Chloride	ug/L	50	50.8	102	70-130	
o-Xylene	ug/L	50	54.5	109	70-131	
Styrene	ug/L	50	58.2	116	70-130	
Tetrachloroethene	ug/L	50	62.8	126	70-130	
Toluene	ug/L	50	59.2	118	70-130	
trans-1,2-Dichloroethene	ug/L	50	52.3	105	70-130	
trans-1,3-Dichloropropene	ug/L	50	47.5	95	70-130	
Trichloroethene	ug/L	50	61.9	124	70-130	
Trichlorofluoromethane	ug/L	50	77.7	155	50-150 LO	
Vinyl chloride	ug/L	50	48.5	97	65-142	
4-Bromofluorobenzene (S)	%			118	70-130	
Dibromofluoromethane (S)	%			100	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1222102 1222103

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		40121042003 Result	Spike Conc.	Spike Conc.	MS Result						MSD Result
1,1,1-Trichloroethane	ug/L	<0.50	50	50	54.9	49.5	110	99	70-130	10	20
1,1,2,2-Tetrachloroethane	ug/L	<0.25	50	50	49.7	47.1	99	94	70-130	5	20
1,1,2-Trichloroethane	ug/L	<0.20	50	50	56.2	54.8	112	110	70-130	2	20
1,1-Dichloroethane	ug/L	<0.24	50	50	51.8	47.9	104	96	70-134	8	20
1,1-Dichloroethene	ug/L	<0.41	50	50	50.0	45.8	100	92	70-139	9	20
1,2,4-Trichlorobenzene	ug/L	<2.2	50	50	54.5	51.9	109	104	70-130	5	20
1,2-Dibromo-3-chloropropane	ug/L	<2.2	50	50	47.3	45.9	95	92	50-150	3	20
1,2-Dibromoethane (EDB)	ug/L	<0.18	50	50	53.9	52.4	108	105	70-130	3	20
1,2-Dichlorobenzene	ug/L	<0.50	50	50	48.3	46.3	97	93	70-130	4	20
1,2-Dichloroethane	ug/L	<0.17	50	50	60.4	55.2	121	110	70-132	9	20
1,2-Dichloropropane	ug/L	<0.23	50	50	54.6	51.5	109	103	70-130	6	20
1,3-Dichlorobenzene	ug/L	<0.50	50	50	47.7	45.5	95	91	70-130	5	20
1,4-Dichlorobenzene	ug/L	<0.50	50	50	49.9	46.3	100	93	70-130	8	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

Parameter	Units	40121042003		1222102		1222103		% Rec	% Rec	% Rec	Limits	Max RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Benzene	ug/L	1.1	50	50	51.9	47.9	102	94	70-130	8	20			
Bromodichloromethane	ug/L	<0.50	50	50	61.3	54.2	123	108	70-132	12	20			
Bromoform	ug/L	<0.50	50	50	58.0	53.4	116	107	68-130	8	20			
Bromomethane	ug/L	<2.4	50	50	41.6	40.3	83	81	38-141	3	20			
Carbon tetrachloride	ug/L	<0.50	50	50	56.3	51.4	113	103	70-130	9	20			
Chlorobenzene	ug/L	<0.50	50	50	53.1	49.2	106	98	70-130	8	20			
Chloroethane	ug/L	<0.37	50	50	46.7	45.6	93	91	66-152	2	20			
Chloroform	ug/L	<2.5	50	50	55.0	50.5	110	101	70-130	9	20			
Chloromethane	ug/L	<0.50	50	50	48.8	47.8	98	96	44-151	2	20			
cis-1,2-Dichloroethene	ug/L	<0.26	50	50	47.8	48.3	96	97	70-130	1	20			
cis-1,3-Dichloropropene	ug/L	<0.50	50	50	49.2	46.6	98	93	70-130	5	20			
Dibromochloromethane	ug/L	<0.50	50	50	53.6	49.8	107	100	70-130	7	20			
Dichlorodifluoromethane	ug/L	<0.22	50	50	62.1	57.0	124	114	29-160	9	20			
Ethylbenzene	ug/L	2.2	50	50	61.8	57.7	119	111	70-132	7	20			
Isopropylbenzene (Cumene)	ug/L	0.52J	50	50	58.8	54.9	117	109	70-130	7	20			
m&p-Xylene	ug/L	4.5	100	100	116	109	112	105	70-131	7	20			
Methyl-tert-butyl ether	ug/L	<0.17	50	50	49.9	47.8	100	96	48-143	4	20			
Methylene Chloride	ug/L	<0.23	50	50	51.5	46.7	103	93	70-130	10	20			
o-Xylene	ug/L	<0.50	50	50	55.3	50.8	110	101	70-131	8	20			
Styrene	ug/L	<0.50	50	50	57.2	53.4	114	107	70-130	7	20			
Tetrachloroethene	ug/L	<0.50	50	50	61.0	57.5	122	115	70-130	6	20			
Toluene	ug/L	<0.50	50	50	57.3	53.8	115	108	70-130	6	20			
trans-1,2-Dichloroethene	ug/L	<0.26	50	50	50.1	46.0	100	92	70-132	9	20			
trans-1,3-Dichloropropene	ug/L	<0.23	50	50	47.3	43.9	95	88	70-130	7	20			
Trichloroethene	ug/L	<0.33	50	50	61.5	57.7	123	115	70-130	6	20			
Trichlorofluoromethane	ug/L	<0.18	50	50	74.5	67.6	149	135	50-153	10	20			
Vinyl chloride	ug/L	<0.18	50	50	46.8	44.5	94	89	60-155	5	20			
4-Bromofluorobenzene (S)	%						120	116	70-130					
Dibromofluoromethane (S)	%						98	97	70-130					
Toluene-d8 (S)	%						100	102	70-130					

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QUALITY CONTROL DATA

Project: 10692.00 FREI OIL
 Pace Project No.: 40121042

QC Batch: OEXT/28005 Analysis Method: EPA 8270 by HVI
 QC Batch Method: EPA 3510 Analysis Description: 8270 Water PAH by HVI
 Associated Lab Samples: 40121042001, 40121042002, 40121042003, 40121042004

METHOD BLANK: 1222132 Matrix: Water
 Associated Lab Samples: 40121042001, 40121042002, 40121042003, 40121042004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	<0.0031	0.050	09/17/15 14:37	
2-Methylnaphthalene	ug/L	<0.0028	0.050	09/17/15 14:37	
Acenaphthene	ug/L	<0.0050	0.050	09/17/15 14:37	
Acenaphthylene	ug/L	<0.0049	0.050	09/17/15 14:37	
Anthracene	ug/L	<0.0040	0.050	09/17/15 14:37	
Benzo(a)anthracene	ug/L	<0.0051	0.050	09/17/15 14:37	
Benzo(a)pyrene	ug/L	<0.0044	0.050	09/17/15 14:37	
Benzo(b)fluoranthene	ug/L	<0.0053	0.050	09/17/15 14:37	
Benzo(g,h,i)perylene	ug/L	<0.0035	0.050	09/17/15 14:37	
Benzo(k)fluoranthene	ug/L	<0.0056	0.050	09/17/15 14:37	
Chrysene	ug/L	<0.0042	0.050	09/17/15 14:37	
Dibenz(a,h)anthracene	ug/L	<0.0056	0.050	09/17/15 14:37	
Fluoranthene	ug/L	<0.0094	0.050	09/17/15 14:37	
Fluorene	ug/L	<0.0040	0.050	09/17/15 14:37	
Indeno(1,2,3-cd)pyrene	ug/L	<0.0036	0.050	09/17/15 14:37	
Naphthalene	ug/L	<0.0045	0.050	09/17/15 14:37	
Phenanthrene	ug/L	<0.0077	0.050	09/17/15 14:37	
Pyrene	ug/L	<0.0077	0.050	09/17/15 14:37	
2-Fluorobiphenyl (S)	%	68	40-130	09/17/15 14:37	
Terphenyl-d14 (S)	%	103	26-135	09/17/15 14:37	

LABORATORY CONTROL SAMPLE: 1222133

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	2	1.3	64	46-130	
2-Methylnaphthalene	ug/L	2	1.3	66	47-130	
Acenaphthene	ug/L	2	1.3	65	49-130	
Acenaphthylene	ug/L	2	1.4	70	44-130	
Anthracene	ug/L	2	1.3	64	53-130	
Benzo(a)anthracene	ug/L	2	1.6	78	49-130	
Benzo(a)pyrene	ug/L	2	1.8	90	47-130	
Benzo(b)fluoranthene	ug/L	2	1.6	78	54-133	
Benzo(g,h,i)perylene	ug/L	2	1.1	56	33-132	
Benzo(k)fluoranthene	ug/L	2	1.9	97	59-143	
Chrysene	ug/L	2	2.4	121	70-157	
Dibenz(a,h)anthracene	ug/L	2	1.0	52	24-130	
Fluoranthene	ug/L	2	2.1	103	59-130	
Fluorene	ug/L	2	1.4	68	49-130	
Indeno(1,2,3-cd)pyrene	ug/L	2	1.6	81	52-130	
Naphthalene	ug/L	2	1.2	61	45-130	

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QUALITY CONTROL DATA

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

LABORATORY CONTROL SAMPLE: 1222133

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	2	1.6	80	60-130	
Pyrene	ug/L	2	1.8	91	64-147	
2-Fluorobiphenyl (S)	%			61	40-130	
Terphenyl-d14 (S)	%			96	26-135	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1222134 1222135

Parameter	Units	1222134		1222135		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		40121135001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						MSD Result
1-Methylnaphthalene	ug/L	1.7	2	2	3.5	3.6	90	91	27-130	0	42
2-Methylnaphthalene	ug/L	1.2	2	2	3.1	3.0	94	87	33-130	4	37
Acenaphthene	ug/L	0.067J	2	2	1.5	1.6	70	75	32-130	7	35
Acenaphthylene	ug/L	0.23	2	2	1.7	1.8	71	80	34-130	10	29
Anthracene	ug/L	0.21	2	2	1.6	1.6	67	72	31-130	6	29
Benzo(a)anthracene	ug/L	0.033J	2	2	0.96	0.95	46	46	35-135	1	20
Benzo(a)pyrene	ug/L	0.040J	2	2	0.85	0.89	41	43	21-139	4	22
Benzo(b)fluoranthene	ug/L	0.044J	2	2	0.69	0.71	32	34	26-144	3	20
Benzo(g,h,i)perylene	ug/L	0.040J	2	2	0.79	0.74	38	35	10-142	6	20
Benzo(k)fluoranthene	ug/L	0.030J	2	2	0.89	0.93	43	45	21-155	5	20
Chrysene	ug/L	0.084J	2	2	1.2	1.2	55	56	46-157	2	20
Dibenz(a,h)anthracene	ug/L	<0.022	2	2	0.59	0.61	30	31	10-143	3	20
Fluoranthene	ug/L	0.086J	2	2	1.6	1.6	73	78	35-138	5	20
Fluorene	ug/L	0.35	2	2	1.9	1.9	78	76	28-130	2	27
Indeno(1,2,3-cd)pyrene	ug/L	0.023J	2	2	0.66	0.73	32	35	16-139	10	20
Naphthalene	ug/L	0.092J	2	2	2.2	2.0	104	95	35-130	9	39
Phenanthrene	ug/L	0.62	2	2	2.5	2.3	95	86	41-131	7	22
Pyrene	ug/L	0.17J	2	2	1.5	1.5	68	67	50-151	1	20
2-Fluorobiphenyl (S)	%						62	66	40-130		
Terphenyl-d14 (S)	%						44	44	26-135		

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QUALIFIERS

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above LOD.
J - Estimated concentration at or above the LOD and below the LOQ.
LOD - Limit of Detection adjusted for dilution factor and percent moisture.
LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
pH Post-analysis pH measurement indicates insufficient VOA sample preservation.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 10692.00 FREI OIL
Pace Project No.: 40121042

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40121042001	MW-1	EPA 3510	OEXT/28005	EPA 8270 by HVI	MSSV/8275
40121042002	MW-2	EPA 3510	OEXT/28005	EPA 8270 by HVI	MSSV/8275
40121042003	MW-3	EPA 3510	OEXT/28005	EPA 8270 by HVI	MSSV/8275
40121042004	MW-4	EPA 3510	OEXT/28005	EPA 8270 by HVI	MSSV/8275
40121042001	MW-1	EPA 8260	MSV/30147		
40121042002	MW-2	EPA 8260	MSV/30147		
40121042003	MW-3	EPA 8260	MSV/30147		
40121042004	MW-4	EPA 8260	MSV/30147		

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(Please Print Clearly)

Company Name: **SEYNORE ENVIRON**
 Branch/Location: **McFarland**
 Project Contact: **Robyn Seymour**
 Phone: **608-838-9120**
 Project Number: **10692.00**
 Project Name: **Fuel Oil**
 Project State: **WI**
 Sampled By (Print): **Mark R. Seymour**
 Sampled By (Sign): *Mark R. Seymour*
 PO #: _____
 Regulatory Program: _____



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 MN: 612-607-1700 WI: 920-469-2436
 FILTERED? (YES/NO)
 PRESERVATION (CODE)*
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Y/N	Pick Letter	ANALYZES REQUESTED
N	B	VOC
N	A	PAH

Quote #: _____
 Mail To Contact: **Robyn Seymour**
 Mail To Company: **Seynora Environ**
 Mail To Address: **2531 Dunes Rd McFarland, WI 53558**
 Invoice To Contact: _____
 Invoice To Company: _____
 Invoice To Address: _____
 Invoice To Phone: _____
 CLIENT COMMENTS: _____
 LAB COMMENTS (Lab Use Only): **2-100ml Ag A, 3-10ml B**

PAGE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX	ANALYZES REQUESTED		Y/N	PICK LETTER
					VOC	PAH		
001	MW-1	9/15	10:25	GW	X	X		
002	MW-2	10:50	GW		X	X		
003	MW-3	11:15	GW		X	X		
004	MW-4	11:35	GW		X	X		

Rush Turnaround Time Requested - Prelims (Rush FAT subject to approval/surcharge)
 Date Needed: _____
 Transmittal Prelim Rush Results by (complete what you want): _____
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____
 Samples on HOLD are subject to special pricing and release of liability

Relinquished By: *Mark R. Seymour* Date/Time: **9/19/16 pm**
 Relinquished By: *Quinn Lam* Date/Time: **9-15-16 0800**
 Relinquished By: _____ Date/Time: _____
 Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: _____
 Received By: *Sueann Kluge* Date/Time: **9-15-16 0800**
 Received By: _____ Date/Time: _____
 Received By: _____ Date/Time: _____

Page Project No. **40121042**
 Receipt Temp = **20.7°C**
 Sample Receipt Pff _____
 OK / Adjusted _____
 Cooler Custody Seal Present / Not Present _____
 Intact / Not Intact _____