



ANALYTICAL REPORT

Lab Number:	L2330527
Client:	Polaris Applied Science, Inc 11232 120th Ave NE Suite 200 Kirkland, WA 98033
ATTN:	Greg Challenger
Phone:	(206) 369-5686
Project Name:	WESTERN MARINER OIL SPILL NRDA
Project Number:	Not Specified
Report Date:	07/03/23

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Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2330527-01	WMSED01	SEDIMENT	ALASKA	03/23/23 08:24	06/01/23
L2330527-02	WMSED02	SEDIMENT	ALASKA	03/23/23 08:30	06/01/23
L2330527-03	WMSED03	SEDIMENT	ALASKA	03/23/23 08:44	06/01/23
L2330527-04	WMSED04	SEDIMENT	ALASKA	03/23/23 09:24	06/01/23
L2330527-05	WMSED05	SEDIMENT	ALASKA	03/23/23 09:30	06/01/23
L2330527-06	WMSED06	SEDIMENT	ALASKA	03/23/23 09:34	06/01/23
L2330527-07	WMSED07	SEDIMENT	ALASKA	03/23/23 10:05	06/01/23
L2330527-08	WMSED08	SEDIMENT	ALASKA	03/24/23 09:02	06/01/23
L2330527-09	WMSED09	SEDIMENT	ALASKA	03/24/23 09:27	06/01/23
L2330527-10	WMSED10	SEDIMENT	ALASKA	03/24/23 10:15	06/01/23
L2330527-11	WMSED11	SEDIMENT	ALASKA	03/24/23 10:51	06/01/23

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Alkylated PAHs

L2330527: The sediment samples were frozen upon receipt in order to arrest the holding time.

Saturated Hydrocarbons

L2330527: The sediment samples were frozen upon receipt in order to arrest the holding time.

Total Organic Carbon

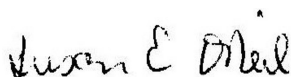
L2330527: The sediment samples were frozen upon receipt in order to arrest the holding time.

The WG1796295-3 Laboratory Duplicate RPD for total organic carbon (rep1) (33%) performed on L2330527-06, is outside the acceptance criteria of 25%. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG1796295-4 MS recovery for total organic carbon (rep2) (53%) performed on L2330527-06, is outside the 75-125% acceptance criteria, possibly due to sample matrix. The associated SRM recoveries are within criteria, indicating the sample batch was in control, and all sample results were accepted.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Susan O'Neil

Title: Technical Director/Representative

Date: 07/03/23

ORGANICS

SEMIVOLATILES

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-01
Client ID: WMSED01
Sample Location: ALASKA

Date Collected: 03/23/23 08:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 09:10
Analyst: CNC
Percent Solids: 77%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	5.45		ug/kg	0.963	0.191	1
C1-Decalins	13.2		ug/kg	0.963	0.191	1
C2-Decalins	29.2		ug/kg	0.963	0.191	1
C3-Decalins	25.7		ug/kg	0.963	0.191	1
C4-Decalins	35.0		ug/kg	0.963	0.191	1
Naphthalene	1.26	J	ug/kg	1.92	0.553	1
C1-Naphthalenes	2.05		ug/kg	1.92	0.553	1
C2-Naphthalenes	4.96		ug/kg	1.92	0.553	1
C3-Naphthalenes	6.67		ug/kg	1.92	0.553	1
C4-Naphthalenes	8.61		ug/kg	1.92	0.553	1
2-Methylnaphthalene	2.04		ug/kg	1.92	0.496	1
1-Methylnaphthalene	1.13	J	ug/kg	1.92	0.606	1
Benzothiophene	ND		ug/kg	1.92	0.603	1
C1-Benzo(b)thiophenes	ND		ug/kg	1.92	0.603	1
C2-Benzo(b)thiophenes	0.778	J	ug/kg	1.92	0.603	1
C3-Benzo(b)thiophenes	2.22		ug/kg	1.92	0.603	1
C4-Benzo(b)thiophenes	ND		ug/kg	1.92	0.603	1
Biphenyl	1.42	J	ug/kg	1.92	0.595	1
2,6-Dimethylnaphthalene	3.10		ug/kg	1.92	0.458	1
Dibenzofuran	ND		ug/kg	1.92	0.606	1
Acenaphthylene	1.25	J	ug/kg	1.92	0.367	1
Acenaphthene	0.526	J	ug/kg	1.92	0.339	1
2,3,5-Trimethylnaphthalene	1.02	J	ug/kg	1.92	0.315	1
Fluorene	ND		ug/kg	1.92	0.514	1
C1-Fluorenes	1.86	J	ug/kg	1.92	0.514	1
C2-Fluorenes	6.27		ug/kg	1.92	0.514	1
C3-Fluorenes	11.2		ug/kg	1.92	0.514	1
Dibenzothiophene	ND		ug/kg	1.92	0.531	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS**

Lab ID: L2330527-01

Date Collected: 03/23/23 08:24

Client ID: WMSED01

Date Received: 06/01/23

Sample Location: ALASKA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.92	0.531	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.92	0.531	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.92	0.531	1
C1-Dibenzothiophenes BS	0.747	J	ug/kg	1.92	0.531	1
C2-Dibenzothiophenes	ND		ug/kg	1.92	0.531	1
C3-Dibenzothiophenes	ND		ug/kg	1.92	0.531	1
C4-Dibenzothiophenes	ND		ug/kg	1.92	0.531	1
Phenanthrene	0.668	J	ug/kg	1.92	0.638	1
3-Methylphenanthrene (3MP)	1.12	J	ug/kg	1.92	0.638	1
2-Methylphenanthrene (2MP)	ND		ug/kg	1.92	0.638	1
2-Methylanthracene (2MA)	ND		ug/kg	1.92	0.638	1
9/4-Methylphenanthrene (9MP)	0.918	J	ug/kg	1.92	0.638	1
C1-Phenanthrenes/Anthracenes	3.27		ug/kg	1.92	0.638	1
C2-Phenanthrenes/Anthr BS	5.52		ug/kg	1.92	0.638	1
C3-Phenanthrenes/Anthracenes	6.45		ug/kg	1.92	0.638	1
C4-Phenanthrenes/Anthracenes	4.36		ug/kg	1.92	0.638	1
Retene	ND		ug/kg	1.92	0.472	1
Anthracene	ND		ug/kg	1.92	0.397	1
Carbazole	ND		ug/kg	1.92	0.630	1
1-Methylphenanthrene	0.706	J	ug/kg	1.92	0.508	1
Fluoranthene	ND		ug/kg	1.92	0.612	1
Benzo(b)fluorene	ND		ug/kg	1.92	0.558	1
Pyrene	1.58	J	ug/kg	1.92	0.506	1
C1-Fluoranthenes/Pyrenes	3.61		ug/kg	1.92	0.506	1
C2-Fluoranthenes/Pyrenes	2.16		ug/kg	1.92	0.506	1
C3-Fluoranthenes/Pyrenes	1.61	J	ug/kg	1.92	0.506	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.92	0.506	1
Naphthobenzothiophenes	ND		ug/kg	1.92	0.539	1
C1-Naphthobenzothiophenes	ND		ug/kg	1.92	0.539	1
C2-Naphthobenzothiophenes	ND		ug/kg	1.92	0.539	1
C3-Naphthobenzothiophenes	ND		ug/kg	1.92	0.539	1
C4-Naphthobenzothiophenes	ND		ug/kg	1.92	0.539	1
Benz(a)anthracene	ND		ug/kg	1.92	0.392	1
Chrysene/Triphenylene	ND		ug/kg	1.92	0.389	1
C1-Chrysenes	ND		ug/kg	1.92	0.389	1
C2-Chrysenes BS	ND		ug/kg	1.92	0.389	1
C3-Chrysenes	ND		ug/kg	1.92	0.389	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-01
Client ID: WMSED01
Sample Location: ALASKA

Date Collected: 03/23/23 08:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	1.92	0.389	1
Benzo(b)fluoranthene	ND		ug/kg	1.92	0.501	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.92	0.382	1
Benzo(a)fluoranthene	ND		ug/kg	1.92	0.382	1
Benzo(e)pyrene	ND		ug/kg	1.92	0.397	1
Benzo(a)pyrene	ND		ug/kg	1.92	0.550	1
Perylene	1.92		ug/kg	1.92	0.372	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.92	0.522	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.92	0.520	1
Benzo(g,h,i)perylene	ND		ug/kg	1.92	0.511	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	62		50-130
Phenanthrene-d10	88		50-130
Benzo(a)pyrene-d12	99		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-02
Client ID: WMSED02
Sample Location: ALASKA

Date Collected: 03/23/23 08:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 10:34
Analyst: CNC
Percent Solids: 72%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	1.62	J	ug/kg	0.998	0.198	1
C1-Decalins	4.13		ug/kg	0.998	0.198	1
C2-Decalins	8.12		ug/kg	0.998	0.198	1
C3-Decalins	6.36		ug/kg	0.998	0.198	1
C4-Decalins	7.00		ug/kg	0.998	0.198	1
Naphthalene	ND		ug/kg	2.00	0.574	1
C1-Naphthalenes	ND		ug/kg	2.00	0.574	1
C2-Naphthalenes	1.96	J	ug/kg	2.00	0.574	1
C3-Naphthalenes	2.15		ug/kg	2.00	0.574	1
C4-Naphthalenes	2.52		ug/kg	2.00	0.574	1
2-Methylnaphthalene	ND		ug/kg	2.00	0.515	1
1-Methylnaphthalene	ND		ug/kg	2.00	0.629	1
Benzothiophene	ND		ug/kg	2.00	0.625	1
C1-Benzo(b)thiophenes	ND		ug/kg	2.00	0.625	1
C2-Benzo(b)thiophenes	0.649	J	ug/kg	2.00	0.625	1
C3-Benzo(b)thiophenes	1.76	J	ug/kg	2.00	0.625	1
C4-Benzo(b)thiophenes	ND		ug/kg	2.00	0.625	1
Biphenyl	ND		ug/kg	2.00	0.617	1
2,6-Dimethylnaphthalene	0.947	J	ug/kg	2.00	0.474	1
Dibenzofuran	ND		ug/kg	2.00	0.628	1
Acenaphthylene	0.759	J	ug/kg	2.00	0.381	1
Acenaphthene	ND		ug/kg	2.00	0.352	1
2,3,5-Trimethylnaphthalene	ND		ug/kg	2.00	0.326	1
Fluorene	ND		ug/kg	2.00	0.532	1
C1-Fluorenes	0.622	J	ug/kg	2.00	0.532	1
C2-Fluorenes	2.15		ug/kg	2.00	0.532	1
C3-Fluorenes	3.93		ug/kg	2.00	0.532	1
Dibenzothiophene	ND		ug/kg	2.00	0.550	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS**

Lab ID: L2330527-02

Date Collected: 03/23/23 08:30

Client ID: WMSED02

Date Received: 06/01/23

Sample Location: ALASKA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	2.00	0.550	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	2.00	0.550	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	2.00	0.550	1
C1-Dibenzothiophenes BS	ND		ug/kg	2.00	0.550	1
C2-Dibenzothiophenes	ND		ug/kg	2.00	0.550	1
C3-Dibenzothiophenes	ND		ug/kg	2.00	0.550	1
C4-Dibenzothiophenes	ND		ug/kg	2.00	0.550	1
Phenanthrene	ND		ug/kg	2.00	0.661	1
3-Methylphenanthrene (3MP)	ND		ug/kg	2.00	0.661	1
2-Methylphenanthrene (2MP)	ND		ug/kg	2.00	0.661	1
2-Methylanthracene (2MA)	ND		ug/kg	2.00	0.661	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	2.00	0.661	1
C1-Phenanthrenes/Anthracenes	1.35	J	ug/kg	2.00	0.661	1
C2-Phenanthrenes/Anthr BS	1.79	J	ug/kg	2.00	0.661	1
C3-Phenanthrenes/Anthracenes	1.90	J	ug/kg	2.00	0.661	1
C4-Phenanthrenes/Anthracenes	1.64	J	ug/kg	2.00	0.661	1
Retene	1.18	J	ug/kg	2.00	0.490	1
Anthracene	ND		ug/kg	2.00	0.411	1
Carbazole	ND		ug/kg	2.00	0.653	1
1-Methylphenanthrene	ND		ug/kg	2.00	0.527	1
Fluoranthene	ND		ug/kg	2.00	0.634	1
Benzo(b)fluorene	ND		ug/kg	2.00	0.578	1
Pyrene	0.647	J	ug/kg	2.00	0.525	1
C1-Fluoranthenes/Pyrenes	1.62	J	ug/kg	2.00	0.525	1
C2-Fluoranthenes/Pyrenes	0.862	J	ug/kg	2.00	0.525	1
C3-Fluoranthenes/Pyrenes	ND		ug/kg	2.00	0.525	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	2.00	0.525	1
Naphthobenzothiophenes	ND		ug/kg	2.00	0.558	1
C1-Naphthobenzothiophenes	ND		ug/kg	2.00	0.558	1
C2-Naphthobenzothiophenes	ND		ug/kg	2.00	0.558	1
C3-Naphthobenzothiophenes	ND		ug/kg	2.00	0.558	1
C4-Naphthobenzothiophenes	ND		ug/kg	2.00	0.558	1
Benz(a)anthracene	ND		ug/kg	2.00	0.407	1
Chrysene/Triphenylene	ND		ug/kg	2.00	0.403	1
C1-Chrysenes	ND		ug/kg	2.00	0.403	1
C2-Chrysenes BS	ND		ug/kg	2.00	0.403	1
C3-Chrysenes	ND		ug/kg	2.00	0.403	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-02
Client ID: WMSED02
Sample Location: ALASKA

Date Collected: 03/23/23 08:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	2.00	0.403	1
Benzo(b)fluoranthene	ND		ug/kg	2.00	0.519	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	2.00	0.396	1
Benzo(a)fluoranthene	ND		ug/kg	2.00	0.396	1
Benzo(e)pyrene	ND		ug/kg	2.00	0.412	1
Benzo(a)pyrene	ND		ug/kg	2.00	0.570	1
Perylene	1.39	J	ug/kg	2.00	0.385	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	2.00	0.542	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	2.00	0.539	1
Benzo(g,h,i)perylene	ND		ug/kg	2.00	0.530	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	56		50-130
Phenanthrene-d10	79		50-130
Benzo(a)pyrene-d12	91		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-04
Client ID: WMSED04
Sample Location: ALASKA

Date Collected: 03/23/23 09:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 11:58
Analyst: CNC
Percent Solids: 71%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	1.03	J	ug/kg	1.04	0.206	1
C1-Decalins	1.79		ug/kg	1.04	0.206	1
C2-Decalins	7.49		ug/kg	1.04	0.206	1
C3-Decalins	12.8		ug/kg	1.04	0.206	1
C4-Decalins	27.3		ug/kg	1.04	0.206	1
Naphthalene	0.679	J	ug/kg	2.07	0.595	1
C1-Naphthalenes	0.799	J	ug/kg	2.07	0.595	1
C2-Naphthalenes	11.1		ug/kg	2.07	0.595	1
C3-Naphthalenes	3.07		ug/kg	2.07	0.595	1
C4-Naphthalenes	5.15		ug/kg	2.07	0.595	1
2-Methylnaphthalene	0.548	J	ug/kg	2.07	0.534	1
1-Methylnaphthalene	ND		ug/kg	2.07	0.653	1
Benzothiophene	ND		ug/kg	2.07	0.649	1
C1-Benzo(b)thiophenes	ND		ug/kg	2.07	0.649	1
C2-Benzo(b)thiophenes	0.655	J	ug/kg	2.07	0.649	1
C3-Benzo(b)thiophenes	2.98		ug/kg	2.07	0.649	1
C4-Benzo(b)thiophenes	ND		ug/kg	2.07	0.649	1
Biphenyl	1.03	J	ug/kg	2.07	0.640	1
2,6-Dimethylnaphthalene	17.9		ug/kg	2.07	0.492	1
Dibenzofuran	ND		ug/kg	2.07	0.652	1
Acenaphthylene	0.763	J	ug/kg	2.07	0.395	1
Acenaphthene	ND		ug/kg	2.07	0.365	1
2,3,5-Trimethylnaphthalene	0.444	J	ug/kg	2.07	0.339	1
Fluorene	ND		ug/kg	2.07	0.552	1
C1-Fluorenes	1.30	J	ug/kg	2.07	0.552	1
C2-Fluorenes	5.14		ug/kg	2.07	0.552	1
C3-Fluorenes	8.30		ug/kg	2.07	0.552	1
Dibenzothiophene	ND		ug/kg	2.07	0.571	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-04
Client ID: WMSED04
Sample Location: ALASKA

Date Collected: 03/23/23 09:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	2.07	0.571	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	2.07	0.571	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	2.07	0.571	1
C1-Dibenzothiophenes BS	0.895	J	ug/kg	2.07	0.571	1
C2-Dibenzothiophenes	ND		ug/kg	2.07	0.571	1
C3-Dibenzothiophenes	ND		ug/kg	2.07	0.571	1
C4-Dibenzothiophenes	ND		ug/kg	2.07	0.571	1
Phenanthrene	ND		ug/kg	2.07	0.686	1
3-Methylphenanthrene (3MP)	ND		ug/kg	2.07	0.686	1
2-Methylphenanthrene (2MP)	ND		ug/kg	2.07	0.686	1
2-Methylanthracene (2MA)	ND		ug/kg	2.07	0.686	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	2.07	0.686	1
C1-Phenanthrenes/Anthracenes	2.52		ug/kg	2.07	0.686	1
C2-Phenanthrenes/Anthr BS	4.95		ug/kg	2.07	0.686	1
C3-Phenanthrenes/Anthracenes	6.01		ug/kg	2.07	0.686	1
C4-Phenanthrenes/Anthracenes	4.31		ug/kg	2.07	0.686	1
Retene	ND		ug/kg	2.07	0.508	1
Anthracene	ND		ug/kg	2.07	0.427	1
Carbazole	ND		ug/kg	2.07	0.678	1
1-Methylphenanthrene	ND		ug/kg	2.07	0.547	1
Fluoranthene	ND		ug/kg	2.07	0.658	1
Benzo(b)fluorene	ND		ug/kg	2.07	0.600	1
Pyrene	1.62	J	ug/kg	2.07	0.545	1
C1-Fluoranthenes/Pyrenes	2.91		ug/kg	2.07	0.545	1
C2-Fluoranthenes/Pyrenes	2.16		ug/kg	2.07	0.545	1
C3-Fluoranthenes/Pyrenes	2.42		ug/kg	2.07	0.545	1
C4-Fluoranthenes/Pyrenes	1.62	J	ug/kg	2.07	0.545	1
Naphthobenzothiophenes	ND		ug/kg	2.07	0.580	1
C1-Naphthobenzothiophenes	ND		ug/kg	2.07	0.580	1
C2-Naphthobenzothiophenes	ND		ug/kg	2.07	0.580	1
C3-Naphthobenzothiophenes	ND		ug/kg	2.07	0.580	1
C4-Naphthobenzothiophenes	ND		ug/kg	2.07	0.580	1
Benz(a)anthracene	ND		ug/kg	2.07	0.422	1
Chrysene/Triphenylene	ND		ug/kg	2.07	0.419	1
C1-Chrysenes	0.554	J	ug/kg	2.07	0.419	1
C2-Chrysenes BS	ND		ug/kg	2.07	0.419	1
C3-Chrysenes	ND		ug/kg	2.07	0.419	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-04
Client ID: WMSED04
Sample Location: ALASKA

Date Collected: 03/23/23 09:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	2.07	0.419	1
Benzo(b)fluoranthene	ND		ug/kg	2.07	0.539	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	2.07	0.411	1
Benzo(a)fluoranthene	ND		ug/kg	2.07	0.411	1
Benzo(e)pyrene	ND		ug/kg	2.07	0.427	1
Benzo(a)pyrene	ND		ug/kg	2.07	0.591	1
Perylene	2.76		ug/kg	2.07	0.400	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	2.07	0.562	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	2.07	0.560	1
Benzo(g,h,i)perylene	0.788	J	ug/kg	2.07	0.550	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	58		50-130
Phenanthrene-d10	83		50-130
Benzo(a)pyrene-d12	92		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-05
Client ID: WMSED05
Sample Location: ALASKA

Date Collected: 03/23/23 09:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 02:13
Analyst: CNC
Percent Solids: 82%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	ND		ug/kg	0.885	0.176	1
C1-Decalins	ND		ug/kg	0.885	0.176	1
C2-Decalins	ND		ug/kg	0.885	0.176	1
C3-Decalins	ND		ug/kg	0.885	0.176	1
C4-Decalins	ND		ug/kg	0.885	0.176	1
Naphthalene	ND		ug/kg	1.77	0.509	1
C1-Naphthalenes	ND		ug/kg	1.77	0.509	1
C2-Naphthalenes	ND		ug/kg	1.77	0.509	1
C3-Naphthalenes	ND		ug/kg	1.77	0.509	1
C4-Naphthalenes	ND		ug/kg	1.77	0.509	1
2-Methylnaphthalene	ND		ug/kg	1.77	0.457	1
1-Methylnaphthalene	ND		ug/kg	1.77	0.558	1
Benzothiophene	ND		ug/kg	1.77	0.555	1
C1-Benzo(b)thiophenes	ND		ug/kg	1.77	0.555	1
C2-Benzo(b)thiophenes	ND		ug/kg	1.77	0.555	1
C3-Benzo(b)thiophenes	1.07	J	ug/kg	1.77	0.555	1
C4-Benzo(b)thiophenes	ND		ug/kg	1.77	0.555	1
Biphenyl	ND		ug/kg	1.77	0.547	1
2,6-Dimethylnaphthalene	ND		ug/kg	1.77	0.421	1
Dibenzofuran	ND		ug/kg	1.77	0.558	1
Acenaphthylene	ND		ug/kg	1.77	0.338	1
Acenaphthene	ND		ug/kg	1.77	0.312	1
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.77	0.290	1
Fluorene	ND		ug/kg	1.77	0.472	1
C1-Fluorenes	ND		ug/kg	1.77	0.472	1
C2-Fluorenes	ND		ug/kg	1.77	0.472	1
C3-Fluorenes	ND		ug/kg	1.77	0.472	1
Dibenzothiophene	ND		ug/kg	1.77	0.488	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS**

Lab ID: L2330527-05

Date Collected: 03/23/23 09:30

Client ID: WMSED05

Date Received: 06/01/23

Sample Location: ALASKA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.77	0.488	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.77	0.488	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.77	0.488	1
C1-Dibenzothiophenes BS	ND		ug/kg	1.77	0.488	1
C2-Dibenzothiophenes	ND		ug/kg	1.77	0.488	1
C3-Dibenzothiophenes	ND		ug/kg	1.77	0.488	1
C4-Dibenzothiophenes	ND		ug/kg	1.77	0.488	1
Phenanthrene	ND		ug/kg	1.77	0.587	1
3-Methylphenanthrene (3MP)	ND		ug/kg	1.77	0.587	1
2-Methylphenanthrene (2MP)	ND		ug/kg	1.77	0.587	1
2-Methylanthracene (2MA)	ND		ug/kg	1.77	0.587	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.77	0.587	1
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.77	0.587	1
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.77	0.587	1
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.77	0.587	1
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.77	0.587	1
Retene	ND		ug/kg	1.77	0.434	1
Anthracene	ND		ug/kg	1.77	0.365	1
Carbazole	ND		ug/kg	1.77	0.579	1
1-Methylphenanthrene	ND		ug/kg	1.77	0.468	1
Fluoranthene	ND		ug/kg	1.77	0.563	1
Benzo(b)fluorene	ND		ug/kg	1.77	0.513	1
Pyrene	0.615	J	ug/kg	1.77	0.466	1
C1-Fluoranthenes/Pyrenes	0.652	J	ug/kg	1.77	0.466	1
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.77	0.466	1
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.77	0.466	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.77	0.466	1
Naphthobenzothiophenes	ND		ug/kg	1.77	0.495	1
C1-Naphthobenzothiophenes	ND		ug/kg	1.77	0.495	1
C2-Naphthobenzothiophenes	ND		ug/kg	1.77	0.495	1
C3-Naphthobenzothiophenes	ND		ug/kg	1.77	0.495	1
C4-Naphthobenzothiophenes	ND		ug/kg	1.77	0.495	1
Benz(a)anthracene	ND		ug/kg	1.77	0.361	1
Chrysene/Triphenylene	ND		ug/kg	1.77	0.358	1
C1-Chrysenes	ND		ug/kg	1.77	0.358	1
C2-Chrysenes BS	ND		ug/kg	1.77	0.358	1
C3-Chrysenes	ND		ug/kg	1.77	0.358	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-05
Client ID: WMSED05
Sample Location: ALASKA

Date Collected: 03/23/23 09:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	1.77	0.358	1
Benzo(b)fluoranthene	ND		ug/kg	1.77	0.460	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.77	0.351	1
Benzo(a)fluoranthene	ND		ug/kg	1.77	0.351	1
Benzo(e)pyrene	ND		ug/kg	1.77	0.365	1
Benzo(a)pyrene	ND		ug/kg	1.77	0.506	1
Perylene	ND		ug/kg	1.77	0.342	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.77	0.480	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.77	0.478	1
Benzo(g,h,i)perylene	ND		ug/kg	1.77	0.470	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	59		50-130
Phenanthrene-d10	87		50-130
Benzo(a)pyrene-d12	98		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-06
Client ID: WMSED06
Sample Location: ALASKA

Date Collected: 03/23/23 09:34
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 03:36
Analyst: CNC
Percent Solids: 82%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	ND		ug/kg	0.898	0.178	1
C1-Decalins	ND		ug/kg	0.898	0.178	1
C2-Decalins	ND		ug/kg	0.898	0.178	1
C3-Decalins	ND		ug/kg	0.898	0.178	1
C4-Decalins	ND		ug/kg	0.898	0.178	1
Naphthalene	ND		ug/kg	1.80	0.516	1
C1-Naphthalenes	ND		ug/kg	1.80	0.516	1
C2-Naphthalenes	ND		ug/kg	1.80	0.516	1
C3-Naphthalenes	ND		ug/kg	1.80	0.516	1
C4-Naphthalenes	ND		ug/kg	1.80	0.516	1
2-Methylnaphthalene	ND		ug/kg	1.80	0.463	1
1-Methylnaphthalene	ND		ug/kg	1.80	0.566	1
Benzothiophene	ND		ug/kg	1.80	0.562	1
C1-Benzo(b)thiophenes	ND		ug/kg	1.80	0.562	1
C2-Benzo(b)thiophenes	ND		ug/kg	1.80	0.562	1
C3-Benzo(b)thiophenes	0.928	J	ug/kg	1.80	0.562	1
C4-Benzo(b)thiophenes	ND		ug/kg	1.80	0.562	1
Biphenyl	ND		ug/kg	1.80	0.555	1
2,6-Dimethylnaphthalene	ND		ug/kg	1.80	0.427	1
Dibenzofuran	ND		ug/kg	1.80	0.565	1
Acenaphthylene	ND		ug/kg	1.80	0.342	1
Acenaphthene	ND		ug/kg	1.80	0.316	1
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.80	0.294	1
Fluorene	ND		ug/kg	1.80	0.479	1
C1-Fluorenes	ND		ug/kg	1.80	0.479	1
C2-Fluorenes	ND		ug/kg	1.80	0.479	1
C3-Fluorenes	ND		ug/kg	1.80	0.479	1
Dibenzothiophene	ND		ug/kg	1.80	0.495	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS**

Lab ID: L2330527-06

Date Collected: 03/23/23 09:34

Client ID: WMSED06

Date Received: 06/01/23

Sample Location: ALASKA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.80	0.495	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.80	0.495	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.80	0.495	1
C1-Dibenzothiophenes BS	ND		ug/kg	1.80	0.495	1
C2-Dibenzothiophenes	ND		ug/kg	1.80	0.495	1
C3-Dibenzothiophenes	ND		ug/kg	1.80	0.495	1
C4-Dibenzothiophenes	ND		ug/kg	1.80	0.495	1
Phenanthrene	ND		ug/kg	1.80	0.595	1
3-Methylphenanthrene (3MP)	ND		ug/kg	1.80	0.595	1
2-Methylphenanthrene (2MP)	ND		ug/kg	1.80	0.595	1
2-Methylanthracene (2MA)	ND		ug/kg	1.80	0.595	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.80	0.595	1
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.80	0.595	1
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.80	0.595	1
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.80	0.595	1
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.80	0.595	1
Retene	ND		ug/kg	1.80	0.440	1
Anthracene	ND		ug/kg	1.80	0.370	1
Carbazole	ND		ug/kg	1.80	0.587	1
1-Methylphenanthrene	ND		ug/kg	1.80	0.474	1
Fluoranthene	ND		ug/kg	1.80	0.570	1
Benzo(b)fluorene	ND		ug/kg	1.80	0.520	1
Pyrene	ND		ug/kg	1.80	0.472	1
C1-Fluoranthenes/Pyrenes	0.625	J	ug/kg	1.80	0.472	1
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.80	0.472	1
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.80	0.472	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.80	0.472	1
Naphthobenzothiophenes	ND		ug/kg	1.80	0.502	1
C1-Naphthobenzothiophenes	ND		ug/kg	1.80	0.502	1
C2-Naphthobenzothiophenes	ND		ug/kg	1.80	0.502	1
C3-Naphthobenzothiophenes	ND		ug/kg	1.80	0.502	1
C4-Naphthobenzothiophenes	ND		ug/kg	1.80	0.502	1
Benz(a)anthracene	ND		ug/kg	1.80	0.366	1
Chrysene/Triphenylene	ND		ug/kg	1.80	0.363	1
C1-Chrysenes	ND		ug/kg	1.80	0.363	1
C2-Chrysenes BS	ND		ug/kg	1.80	0.363	1
C3-Chrysenes	ND		ug/kg	1.80	0.363	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-06
Client ID: WMSED06
Sample Location: ALASKA

Date Collected: 03/23/23 09:34
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	1.80	0.363	1
Benzo(b)fluoranthene	ND		ug/kg	1.80	0.467	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.80	0.356	1
Benzo(a)fluoranthene	ND		ug/kg	1.80	0.356	1
Benzo(e)pyrene	ND		ug/kg	1.80	0.370	1
Benzo(a)pyrene	ND		ug/kg	1.80	0.512	1
Perylene	0.457	J	ug/kg	1.80	0.346	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.80	0.487	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.80	0.485	1
Benzo(g,h,i)perylene	ND		ug/kg	1.80	0.477	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	64		50-130
Phenanthrene-d10	86		50-130
Benzo(a)pyrene-d12	96		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-07
Client ID: WMSED07
Sample Location: ALASKA

Date Collected: 03/23/23 10:05
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 13:22
Analyst: CNC
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	ND		ug/kg	0.925	0.184	1
C1-Decalins	ND		ug/kg	0.925	0.184	1
C2-Decalins	ND		ug/kg	0.925	0.184	1
C3-Decalins	ND		ug/kg	0.925	0.184	1
C4-Decalins	ND		ug/kg	0.925	0.184	1
Naphthalene	ND		ug/kg	1.85	0.532	1
C1-Naphthalenes	ND		ug/kg	1.85	0.532	1
C2-Naphthalenes	1.34	J	ug/kg	1.85	0.532	1
C3-Naphthalenes	0.748	J	ug/kg	1.85	0.532	1
C4-Naphthalenes	ND		ug/kg	1.85	0.532	1
2-Methylnaphthalene	ND		ug/kg	1.85	0.477	1
1-Methylnaphthalene	ND		ug/kg	1.85	0.583	1
Benzothiophene	ND		ug/kg	1.85	0.579	1
C1-Benzo(b)thiophenes	ND		ug/kg	1.85	0.579	1
C2-Benzo(b)thiophenes	ND		ug/kg	1.85	0.579	1
C3-Benzo(b)thiophenes	1.16	J	ug/kg	1.85	0.579	1
C4-Benzo(b)thiophenes	ND		ug/kg	1.85	0.579	1
Biphenyl	ND		ug/kg	1.85	0.571	1
2,6-Dimethylnaphthalene	0.656	J	ug/kg	1.85	0.440	1
Dibenzofuran	ND		ug/kg	1.85	0.582	1
Acenaphthylene	ND		ug/kg	1.85	0.353	1
Acenaphthene	ND		ug/kg	1.85	0.326	1
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.85	0.302	1
Fluorene	ND		ug/kg	1.85	0.493	1
C1-Fluorenes	ND		ug/kg	1.85	0.493	1
C2-Fluorenes	ND		ug/kg	1.85	0.493	1
C3-Fluorenes	ND		ug/kg	1.85	0.493	1
Dibenzothiophene	ND		ug/kg	1.85	0.510	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS**

Lab ID: L2330527-07

Date Collected: 03/23/23 10:05

Client ID: WMSED07

Date Received: 06/01/23

Sample Location: ALASKA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.85	0.510	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.85	0.510	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.85	0.510	1
C1-Dibenzothiophenes BS	ND		ug/kg	1.85	0.510	1
C2-Dibenzothiophenes	ND		ug/kg	1.85	0.510	1
C3-Dibenzothiophenes	ND		ug/kg	1.85	0.510	1
C4-Dibenzothiophenes	ND		ug/kg	1.85	0.510	1
Phenanthrene	ND		ug/kg	1.85	0.613	1
3-Methylphenanthrene (3MP)	ND		ug/kg	1.85	0.613	1
2-Methylphenanthrene (2MP)	ND		ug/kg	1.85	0.613	1
2-Methylanthracene (2MA)	ND		ug/kg	1.85	0.613	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.85	0.613	1
C1-Phenanthrenes/Anthracenes	0.620	J	ug/kg	1.85	0.613	1
C2-Phenanthrenes/Anthr BS	1.03	J	ug/kg	1.85	0.613	1
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.85	0.613	1
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.85	0.613	1
Retene	ND		ug/kg	1.85	0.454	1
Anthracene	ND		ug/kg	1.85	0.381	1
Carbazole	ND		ug/kg	1.85	0.605	1
1-Methylphenanthrene	ND		ug/kg	1.85	0.488	1
Fluoranthene	ND		ug/kg	1.85	0.588	1
Benzo(b)fluorene	ND		ug/kg	1.85	0.536	1
Pyrene	ND		ug/kg	1.85	0.486	1
C1-Fluoranthenes/Pyrenes	0.640	J	ug/kg	1.85	0.486	1
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.85	0.486	1
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.85	0.486	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.85	0.486	1
Naphthobenzothiophenes	ND		ug/kg	1.85	0.517	1
C1-Naphthobenzothiophenes	ND		ug/kg	1.85	0.517	1
C2-Naphthobenzothiophenes	ND		ug/kg	1.85	0.517	1
C3-Naphthobenzothiophenes	ND		ug/kg	1.85	0.517	1
C4-Naphthobenzothiophenes	ND		ug/kg	1.85	0.517	1
Benz(a)anthracene	ND		ug/kg	1.85	0.377	1
Chrysene/Triphenylene	ND		ug/kg	1.85	0.374	1
C1-Chrysenes	ND		ug/kg	1.85	0.374	1
C2-Chrysenes BS	ND		ug/kg	1.85	0.374	1
C3-Chrysenes	ND		ug/kg	1.85	0.374	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-07
Client ID: WMSED07
Sample Location: ALASKA

Date Collected: 03/23/23 10:05
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	1.85	0.374	1
Benzo(b)fluoranthene	ND		ug/kg	1.85	0.481	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.85	0.367	1
Benzo(a)fluoranthene	ND		ug/kg	1.85	0.367	1
Benzo(e)pyrene	ND		ug/kg	1.85	0.382	1
Benzo(a)pyrene	ND		ug/kg	1.85	0.528	1
Perylene	0.402	J	ug/kg	1.85	0.357	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.85	0.502	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.85	0.500	1
Benzo(g,h,i)perylene	ND		ug/kg	1.85	0.491	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	64		50-130
Phenanthrene-d10	88		50-130
Benzo(a)pyrene-d12	100		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-08
Client ID: WMSED08
Sample Location: ALASKA

Date Collected: 03/24/23 09:02
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 14:45
Analyst: CNC
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	ND		ug/kg	0.935	0.186	1
C1-Decalins	ND		ug/kg	0.935	0.186	1
C2-Decalins	ND		ug/kg	0.935	0.186	1
C3-Decalins	ND		ug/kg	0.935	0.186	1
C4-Decalins	ND		ug/kg	0.935	0.186	1
Naphthalene	ND		ug/kg	1.87	0.537	1
C1-Naphthalenes	ND		ug/kg	1.87	0.537	1
C2-Naphthalenes	ND		ug/kg	1.87	0.537	1
C3-Naphthalenes	0.672	J	ug/kg	1.87	0.537	1
C4-Naphthalenes	ND		ug/kg	1.87	0.537	1
2-Methylnaphthalene	ND		ug/kg	1.87	0.482	1
1-Methylnaphthalene	ND		ug/kg	1.87	0.589	1
Benzothiophene	ND		ug/kg	1.87	0.585	1
C1-Benzo(b)thiophenes	ND		ug/kg	1.87	0.585	1
C2-Benzo(b)thiophenes	ND		ug/kg	1.87	0.585	1
C3-Benzo(b)thiophenes	0.985	J	ug/kg	1.87	0.585	1
C4-Benzo(b)thiophenes	ND		ug/kg	1.87	0.585	1
Biphenyl	0.800	J	ug/kg	1.87	0.578	1
2,6-Dimethylnaphthalene	ND		ug/kg	1.87	0.444	1
Dibenzofuran	ND		ug/kg	1.87	0.589	1
Acenaphthylene	ND		ug/kg	1.87	0.357	1
Acenaphthene	ND		ug/kg	1.87	0.330	1
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.87	0.306	1
Fluorene	ND		ug/kg	1.87	0.499	1
C1-Fluorenes	ND		ug/kg	1.87	0.499	1
C2-Fluorenes	ND		ug/kg	1.87	0.499	1
C3-Fluorenes	ND		ug/kg	1.87	0.499	1
Dibenzothiophene	ND		ug/kg	1.87	0.515	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS****Lab ID:** L2330527-08**Date Collected:** 03/24/23 09:02**Client ID:** WMSED08**Date Received:** 06/01/23**Sample Location:** ALASKA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.87	0.515	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.87	0.515	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.87	0.515	1
C1-Dibenzothiophenes BS	ND		ug/kg	1.87	0.515	1
C2-Dibenzothiophenes	ND		ug/kg	1.87	0.515	1
C3-Dibenzothiophenes	ND		ug/kg	1.87	0.515	1
C4-Dibenzothiophenes	ND		ug/kg	1.87	0.515	1
Phenanthrene	ND		ug/kg	1.87	0.619	1
3-Methylphenanthrene (3MP)	ND		ug/kg	1.87	0.619	1
2-Methylphenanthrene (2MP)	ND		ug/kg	1.87	0.619	1
2-Methylanthracene (2MA)	ND		ug/kg	1.87	0.619	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.87	0.619	1
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.87	0.619	1
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.87	0.619	1
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.87	0.619	1
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.87	0.619	1
Retene	ND		ug/kg	1.87	0.459	1
Anthracene	ND		ug/kg	1.87	0.385	1
Carbazole	ND		ug/kg	1.87	0.612	1
1-Methylphenanthrene	ND		ug/kg	1.87	0.494	1
Fluoranthene	ND		ug/kg	1.87	0.594	1
Benzo(b)fluorene	ND		ug/kg	1.87	0.541	1
Pyrene	ND		ug/kg	1.87	0.492	1
C1-Fluoranthenes/Pyrenes	0.581	J	ug/kg	1.87	0.492	1
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.87	0.492	1
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.87	0.492	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.87	0.492	1
Naphthobenzothiophenes	ND		ug/kg	1.87	0.523	1
C1-Naphthobenzothiophenes	ND		ug/kg	1.87	0.523	1
C2-Naphthobenzothiophenes	ND		ug/kg	1.87	0.523	1
C3-Naphthobenzothiophenes	ND		ug/kg	1.87	0.523	1
C4-Naphthobenzothiophenes	ND		ug/kg	1.87	0.523	1
Benz(a)anthracene	ND		ug/kg	1.87	0.381	1
Chrysene/Triphenylene	ND		ug/kg	1.87	0.378	1
C1-Chrysenes	ND		ug/kg	1.87	0.378	1
C2-Chrysenes BS	ND		ug/kg	1.87	0.378	1
C3-Chrysenes	ND		ug/kg	1.87	0.378	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-08
Client ID: WMSED08
Sample Location: ALASKA

Date Collected: 03/24/23 09:02
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	1.87	0.378	1
Benzo(b)fluoranthene	ND		ug/kg	1.87	0.486	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.87	0.371	1
Benzo(a)fluoranthene	ND		ug/kg	1.87	0.371	1
Benzo(e)pyrene	ND		ug/kg	1.87	0.386	1
Benzo(a)pyrene	ND		ug/kg	1.87	0.534	1
Perylene	ND		ug/kg	1.87	0.361	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.87	0.507	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.87	0.505	1
Benzo(g,h,i)perylene	ND		ug/kg	1.87	0.497	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	63		50-130
Phenanthrene-d10	87		50-130
Benzo(a)pyrene-d12	96		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-09
Client ID: WMSED09
Sample Location: ALASKA

Date Collected: 03/24/23 09:27
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/30/23 16:09
Analyst: CNC
Percent Solids: 73%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	1.25	J	ug/kg	1.31	0.260	1
C1-Decalins	ND		ug/kg	1.31	0.260	1
C2-Decalins	ND		ug/kg	1.31	0.260	1
C3-Decalins	ND		ug/kg	1.31	0.260	1
C4-Decalins	ND		ug/kg	1.31	0.260	1
Naphthalene	ND		ug/kg	2.61	0.751	1
C1-Naphthalenes	ND		ug/kg	2.61	0.751	1
C2-Naphthalenes	8.99		ug/kg	2.61	0.751	1
C3-Naphthalenes	1.21	J	ug/kg	2.61	0.751	1
C4-Naphthalenes	ND		ug/kg	2.61	0.751	1
2-Methylnaphthalene	ND		ug/kg	2.61	0.674	1
1-Methylnaphthalene	ND		ug/kg	2.61	0.823	1
Benzothiophene	ND		ug/kg	2.61	0.818	1
C1-Benzo(b)thiophenes	ND		ug/kg	2.61	0.818	1
C2-Benzo(b)thiophenes	ND		ug/kg	2.61	0.818	1
C3-Benzo(b)thiophenes	2.04	J	ug/kg	2.61	0.818	1
C4-Benzo(b)thiophenes	ND		ug/kg	2.61	0.818	1
Biphenyl	ND		ug/kg	2.61	0.807	1
2,6-Dimethylnaphthalene	15.0		ug/kg	2.61	0.621	1
Dibenzofuran	ND		ug/kg	2.61	0.823	1
Acenaphthylene	ND		ug/kg	2.61	0.498	1
Acenaphthene	ND		ug/kg	2.61	0.460	1
2,3,5-Trimethylnaphthalene	ND		ug/kg	2.61	0.427	1
Fluorene	ND		ug/kg	2.61	0.697	1
C1-Fluorenes	ND		ug/kg	2.61	0.697	1
C2-Fluorenes	ND		ug/kg	2.61	0.697	1
C3-Fluorenes	ND		ug/kg	2.61	0.697	1
Dibenzothiophene	ND		ug/kg	2.61	0.720	1

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**SAMPLE RESULTS**

Lab ID: L2330527-09

Date Collected: 03/24/23 09:27

Client ID: WMSED09

Date Received: 06/01/23

Sample Location: ALASKA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	2.61	0.720	1
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	2.61	0.720	1
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	2.61	0.720	1
C1-Dibenzothiophenes BS	ND		ug/kg	2.61	0.720	1
C2-Dibenzothiophenes	ND		ug/kg	2.61	0.720	1
C3-Dibenzothiophenes	ND		ug/kg	2.61	0.720	1
C4-Dibenzothiophenes	ND		ug/kg	2.61	0.720	1
Phenanthrene	ND		ug/kg	2.61	0.865	1
3-Methylphenanthrene (3MP)	ND		ug/kg	2.61	0.865	1
2-Methylphenanthrene (2MP)	ND		ug/kg	2.61	0.865	1
2-Methylanthracene (2MA)	ND		ug/kg	2.61	0.865	1
9/4-Methylphenanthrene (9MP)	ND		ug/kg	2.61	0.865	1
C1-Phenanthrenes/Anthracenes	1.23	J	ug/kg	2.61	0.865	1
C2-Phenanthrenes/Anthr BS	2.31	J	ug/kg	2.61	0.865	1
C3-Phenanthrenes/Anthracenes	ND		ug/kg	2.61	0.865	1
C4-Phenanthrenes/Anthracenes	1.61	J	ug/kg	2.61	0.865	1
Retene	ND		ug/kg	2.61	0.641	1
Anthracene	ND		ug/kg	2.61	0.538	1
Carbazole	ND		ug/kg	2.61	0.854	1
1-Methylphenanthrene	ND		ug/kg	2.61	0.690	1
Fluoranthene	ND		ug/kg	2.61	0.830	1
Benzo(b)fluorene	ND		ug/kg	2.61	0.757	1
Pyrene	ND		ug/kg	2.61	0.687	1
C1-Fluoranthenes/Pyrenes	1.20	J	ug/kg	2.61	0.687	1
C2-Fluoranthenes/Pyrenes	ND		ug/kg	2.61	0.687	1
C3-Fluoranthenes/Pyrenes	ND		ug/kg	2.61	0.687	1
C4-Fluoranthenes/Pyrenes	ND		ug/kg	2.61	0.687	1
Naphthobenzothiophenes	ND		ug/kg	2.61	0.731	1
C1-Naphthobenzothiophenes	ND		ug/kg	2.61	0.731	1
C2-Naphthobenzothiophenes	ND		ug/kg	2.61	0.731	1
C3-Naphthobenzothiophenes	ND		ug/kg	2.61	0.731	1
C4-Naphthobenzothiophenes	ND		ug/kg	2.61	0.731	1
Benz(a)anthracene	ND		ug/kg	2.61	0.532	1
Chrysene/Triphenylene	ND		ug/kg	2.61	0.528	1
C1-Chrysenes	ND		ug/kg	2.61	0.528	1
C2-Chrysenes BS	ND		ug/kg	2.61	0.528	1
C3-Chrysenes	ND		ug/kg	2.61	0.528	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-09
Client ID: WMSED09
Sample Location: ALASKA

Date Collected: 03/24/23 09:27
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		ug/kg	2.61	0.528	1
Benzo(b)fluoranthene	ND		ug/kg	2.61	0.679	1
Benzo(j)+(k)fluoranthene	ND		ug/kg	2.61	0.518	1
Benzo(a)fluoranthene	ND		ug/kg	2.61	0.518	1
Benzo(e)pyrene	ND		ug/kg	2.61	0.539	1
Benzo(a)pyrene	ND		ug/kg	2.61	0.746	1
Perylene	1.79	J	ug/kg	2.61	0.504	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	2.61	0.709	1
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	2.61	0.706	1
Benzo(g,h,i)perylene	ND		ug/kg	2.61	0.694	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	62		50-130
Phenanthrene-d10	86		50-130
Benzo(a)pyrene-d12	93		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
 Analytical Date: 06/29/23 22:02
 Analyst: CNC

Extraction Method: ALPHA OP-013
 Extraction Date: 06/23/23 10:36
 Cleanup Method: EPA 3611B
 Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01-02,04-09 Batch: WG1795295-1					
cis/trans-Decalin	ND		ug/kg	0.500	0.099
C1-Decalins	ND		ug/kg	0.500	0.099
C2-Decalins	ND		ug/kg	0.500	0.099
C3-Decalins	ND		ug/kg	0.500	0.099
C4-Decalins	ND		ug/kg	0.500	0.099
Naphthalene	ND		ug/kg	1.00	0.287
C1-Naphthalenes	ND		ug/kg	1.00	0.287
C2-Naphthalenes	ND		ug/kg	1.00	0.287
C3-Naphthalenes	ND		ug/kg	1.00	0.287
C4-Naphthalenes	ND		ug/kg	1.00	0.287
2-Methylnaphthalene	ND		ug/kg	1.00	0.258
1-Methylnaphthalene	ND		ug/kg	1.00	0.315
Benzothiophene	ND		ug/kg	1.00	0.313
C1-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C2-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C3-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C4-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
Biphenyl	ND		ug/kg	1.00	0.309
2,6-Dimethylnaphthalene	ND		ug/kg	1.00	0.238
Dibenzofuran	ND		ug/kg	1.00	0.315
Acenaphthylene	ND		ug/kg	1.00	0.191
Acenaphthene	ND		ug/kg	1.00	0.176
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.00	0.164
Fluorene	ND		ug/kg	1.00	0.267
C1-Fluorenes	ND		ug/kg	1.00	0.267
C2-Fluorenes	ND		ug/kg	1.00	0.267
C3-Fluorenes	ND		ug/kg	1.00	0.267
Dibenzothiophene	ND		ug/kg	1.00	0.276
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.00	0.276

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/29/23 22:02
Analyst: CNC

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01-02,04-09 Batch: WG1795295-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.00	0.276
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.00	0.276
C1-Dibenzothiophenes BS	ND		ug/kg	1.00	0.276
C2-Dibenzothiophenes	0.360	J	ug/kg	1.00	0.276
C3-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C4-Dibenzothiophenes	ND		ug/kg	1.00	0.276
Phenanthrene	ND		ug/kg	1.00	0.331
3-Methylphenanthrene (3MP)	ND		ug/kg	1.00	0.331
2-Methylphenanthrene (2MP)	ND		ug/kg	1.00	0.331
2-Methylanthracene (2MA)	ND		ug/kg	1.00	0.331
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.00	0.331
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.00	0.331
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
Retene	ND		ug/kg	1.00	0.245
Anthracene	ND		ug/kg	1.00	0.206
Carbazole	ND		ug/kg	1.00	0.327
1-Methylphenanthrene	ND		ug/kg	1.00	0.264
Fluoranthene	ND		ug/kg	1.00	0.318
Benzo(b)fluorene	ND		ug/kg	1.00	0.290
Pyrene	0.315	J	ug/kg	1.00	0.263
C1-Fluoranthenes/Pyrenes	0.387	J	ug/kg	1.00	0.263
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C1-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C2-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E-SIM(M)
Analytical Date: 06/29/23 22:02
Analyst: CNC

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01-02,04-09 Batch: WG1795295-1					
C3-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C4-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
Benz(a)anthracene	ND		ug/kg	1.00	0.204
Chrysene/Triphenylene	ND		ug/kg	1.00	0.202
C1-Chrysenes	ND		ug/kg	1.00	0.202
C2-Chrysenes BS	ND		ug/kg	1.00	0.202
C3-Chrysenes	ND		ug/kg	1.00	0.202
C4-Chrysenes	ND		ug/kg	1.00	0.202
Benzo(b)fluoranthene	ND		ug/kg	1.00	0.260
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(a)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(e)pyrene	ND		ug/kg	1.00	0.206
Benzo(a)pyrene	ND		ug/kg	1.00	0.285
Perylene	ND		ug/kg	1.00	0.193
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.00	0.271
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.00	0.270
Benzo(g,h,i)perylene	ND		ug/kg	1.00	0.266

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	60		50-130
Phenanthrene-d10	82		50-130
Benzo(a)pyrene-d12	96		50-130



Lab Control Sample Analysis

Batch Quality Control

Project Name: WESTERN MARINER OIL SPILL NRDA

Lab Number: L2330527

Project Number: Not Specified

Report Date: 07/03/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01-02,04-09 Batch: WG1795295-2 WG1795295-3								
Naphthalene	61		65		50-130	6		30
2-Methylnaphthalene	61		66		50-130	8		30
Acenaphthylene	61		64		50-130	5		30
Acenaphthene	69		72		50-130	4		30
Fluorene	78		82		50-130	5		30
Phenanthrene	83		86		50-130	4		30
Anthracene	77		80		50-130	4		30
Fluoranthene	87		90		50-130	3		30
Pyrene	88		92		50-130	4		30
Benz(a)anthracene	78		81		50-130	4		30
Chrysene/Triphenylene	74		78		50-130	5		30
Benzo(b)fluoranthene	81		84		50-130	4		30
Benzo(j)+(k)fluoranthene	81		85		50-130	5		30
Benzo(a)pyrene	72		74		50-130	3		30
Indeno(1,2,3-cd)pyrene	82		85		50-130	4		30
Dibenz(a,h)+(a,c)anthracene	87		91		50-130	4		30
Benzo(g,h,i)perylene	80		83		50-130	4		30

Lab Control Sample Analysis**Batch Quality Control****Project Name:** WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01-02,04-09 Batch: WG1795295-2 WG1795295-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	67		68		50-130
Phenanthrene-d10	87		89		50-130
Benzo(a)pyrene-d12	96		97		50-130

PETROLEUM HYDROCARBONS

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-01
Client ID: WMSED01
Sample Location: ALASKA

Date Collected: 03/23/23 08:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/27/23 22:17
Analyst: AMV
Percent Solids: 77%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.128	0.038	1
n-Decane (C10)	ND		mg/kg	0.128	0.041	1
n-Undecane (C11)	ND		mg/kg	0.128	0.038	1
n-Dodecane (C12)	ND		mg/kg	0.128	0.028	1
n-Tridecane (C13)	ND		mg/kg	0.128	0.035	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.128	0.019	1
n-Tetradecane (C14)	0.022	J	mg/kg	0.128	0.019	1
2,6,10-Trimethyltridecane (1470)	0.037	J	mg/kg	0.128	0.015	1
n-Pentadecane (C15)	0.040	J	mg/kg	0.128	0.015	1
n-Hexadecane (C16)	0.033	J	mg/kg	0.128	0.019	1
Norpristane (1650)	0.057	J	mg/kg	0.128	0.042	1
n-Heptadecane (C17)	ND		mg/kg	0.128	0.042	1
Pristane	0.094	J	mg/kg	0.128	0.027	1
n-Octadecane (C18)	0.324	C	mg/kg	0.128	0.026	1
Phytane	0.078	J	mg/kg	0.128	0.016	1
n-Nonadecane (C19)	ND		mg/kg	0.128	0.033	1
n-Eicosane (C20)	0.035	J	mg/kg	0.128	0.018	1
n-Heneicosane (C21)	0.027	J	mg/kg	0.128	0.015	1
n-Docosane (C22)	0.016	J	mg/kg	0.128	0.013	1
n-Tricosane (C23)	0.036	J	mg/kg	0.128	0.016	1
n-Tetracosane (C24)	ND		mg/kg	0.128	0.022	1
n-Pentacosane (C25)	0.125	JC	mg/kg	0.128	0.068	1
n-Hexacosane (C26)	ND		mg/kg	0.128	0.019	1
n-Heptacosane (C27)	0.117	J	mg/kg	0.128	0.015	1
n-Octacosane (C28)	0.032	J	mg/kg	0.128	0.028	1
n-Nonacosane (C29)	ND		mg/kg	0.128	0.086	1
n-Triacontane (C30)	ND		mg/kg	0.128	0.015	1
n-Hentriacontane (C31)	0.038	J	mg/kg	0.128	0.018	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-01
Client ID: WMSED01
Sample Location: ALASKA

Date Collected: 03/23/23 08:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.128	0.016	1
n-Tritriacontane (C33)	0.136		mg/kg	0.128	0.018	1
n-Tettratriacontane (C34)	ND		mg/kg	0.128	0.020	1
n-Pentatriacontane (C35)	0.070	J	mg/kg	0.128	0.022	1
n-Hexatriacontane (C36)	ND		mg/kg	0.128	0.026	1
n-Heptatriacontane (C37)	ND		mg/kg	0.128	0.029	1
n-Octatriacontane (C38)	ND		mg/kg	0.128	0.030	1
n-Nonatriacontane (C39)	ND		mg/kg	0.128	0.042	1
n-Tetracontane (C40)	ND		mg/kg	0.128	0.042	1
Total Petroleum Hydrocarbons (C9-C44)	26.5		mg/kg	4.24	0.932	1
Total Saturated Hydrocarbons	1.32	JB	mg/kg	0.128	0.013	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	92		50-130
d50-Tetracosane	87		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-02
Client ID: WMSED02
Sample Location: ALASKA

Date Collected: 03/23/23 08:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/27/23 23:44
Analyst: AMV
Percent Solids: 72%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.133	0.040	1
n-Decane (C10)	ND		mg/kg	0.133	0.042	1
n-Undecane (C11)	ND		mg/kg	0.133	0.040	1
n-Dodecane (C12)	ND		mg/kg	0.133	0.029	1
n-Tridecane (C13)	ND		mg/kg	0.133	0.037	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.133	0.020	1
n-Tetradecane (C14)	ND		mg/kg	0.133	0.020	1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.133	0.016	1
n-Pentadecane (C15)	ND		mg/kg	0.133	0.016	1
n-Hexadecane (C16)	ND		mg/kg	0.133	0.020	1
Norpristane (1650)	ND		mg/kg	0.133	0.044	1
n-Heptadecane (C17)	ND		mg/kg	0.133	0.044	1
Pristane	0.031	J	mg/kg	0.133	0.028	1
n-Octadecane (C18)	0.277	C	mg/kg	0.133	0.027	1
Phytane	0.020	J	mg/kg	0.133	0.017	1
n-Nonadecane (C19)	ND		mg/kg	0.133	0.034	1
n-Eicosane (C20)	ND		mg/kg	0.133	0.019	1
n-Heneicosane (C21)	ND		mg/kg	0.133	0.016	1
n-Docosane (C22)	ND		mg/kg	0.133	0.014	1
n-Tricosane (C23)	0.057	J	mg/kg	0.133	0.017	1
n-Tetracosane (C24)	0.027	J	mg/kg	0.133	0.022	1
n-Pentacosane (C25)	0.129	J	mg/kg	0.133	0.070	1
n-Hexacosane (C26)	ND		mg/kg	0.133	0.020	1
n-Heptacosane (C27)	0.125	J	mg/kg	0.133	0.016	1
n-Octacosane (C28)	ND		mg/kg	0.133	0.029	1
n-Nonacosane (C29)	ND		mg/kg	0.133	0.089	1
n-Triacontane (C30)	ND		mg/kg	0.133	0.015	1
n-Hentriacontane (C31)	0.039	J	mg/kg	0.133	0.019	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-02
Client ID: WMSED02
Sample Location: ALASKA

Date Collected: 03/23/23 08:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.133	0.017	1
n-Tritriacontane (C33)	0.174		mg/kg	0.133	0.019	1
n-Tetratriacontane (C34)	0.024	J	mg/kg	0.133	0.021	1
n-Pentatriacontane (C35)	0.094	J	mg/kg	0.133	0.023	1
n-Hexatriacontane (C36)	0.030	J	mg/kg	0.133	0.027	1
n-Heptatriacontane (C37)	0.049	J	mg/kg	0.133	0.030	1
n-Octatriacontane (C38)	ND		mg/kg	0.133	0.031	1
n-Nonatriacontane (C39)	ND		mg/kg	0.133	0.043	1
n-Tetracontane (C40)	ND		mg/kg	0.133	0.043	1
Total Petroleum Hydrocarbons (C9-C44)	13.6		mg/kg	4.39	0.966	1
Total Saturated Hydrocarbons	1.08	JB	mg/kg	0.133	0.014	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	83		50-130
d50-Tetracosane	79		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-04
Client ID: WMSED04
Sample Location: ALASKA

Date Collected: 03/23/23 09:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/28/23 01:11
Analyst: AMV
Percent Solids: 71%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.138	0.041	1
n-Decane (C10)	ND		mg/kg	0.138	0.044	1
n-Undecane (C11)	ND		mg/kg	0.138	0.041	1
n-Dodecane (C12)	ND		mg/kg	0.138	0.030	1
n-Tridecane (C13)	ND		mg/kg	0.138	0.038	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.138	0.021	1
n-Tetradecane (C14)	ND		mg/kg	0.138	0.021	1
2,6,10-Trimethyltridecane (1470)	0.038	J	mg/kg	0.138	0.017	1
n-Pentadecane (C15)	0.028	J	mg/kg	0.138	0.017	1
n-Hexadecane (C16)	0.022	J	mg/kg	0.138	0.021	1
Norpristane (1650)	0.071	J	mg/kg	0.138	0.046	1
n-Heptadecane (C17)	0.051	J	mg/kg	0.138	0.046	1
Pristane	0.147		mg/kg	0.138	0.030	1
n-Octadecane (C18)	0.329	C	mg/kg	0.138	0.028	1
Phytane	0.120	J	mg/kg	0.138	0.017	1
n-Nonadecane (C19)	ND		mg/kg	0.138	0.036	1
n-Eicosane (C20)	0.022	J	mg/kg	0.138	0.020	1
n-Heneicosane (C21)	0.047	J	mg/kg	0.138	0.017	1
n-Docosane (C22)	0.025	J	mg/kg	0.138	0.014	1
n-Tricosane (C23)	0.073	J	mg/kg	0.138	0.018	1
n-Tetracosane (C24)	ND		mg/kg	0.138	0.023	1
n-Pentacosane (C25)	0.152		mg/kg	0.138	0.073	1
n-Hexacosane (C26)	ND		mg/kg	0.138	0.020	1
n-Heptacosane (C27)	0.271		mg/kg	0.138	0.017	1
n-Octacosane (C28)	ND		mg/kg	0.138	0.030	1
n-Nonacosane (C29)	ND		mg/kg	0.138	0.092	1
n-Triacontane (C30)	ND		mg/kg	0.138	0.016	1
n-Hentriacontane (C31)	0.061	J	mg/kg	0.138	0.020	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-04
Client ID: WMSED04
Sample Location: ALASKA

Date Collected: 03/23/23 09:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	0.031	J	mg/kg	0.138	0.017	1
n-Tritriacontane (C33)	0.110	J	mg/kg	0.138	0.019	1
n-Tetratriacontane (C34)	ND		mg/kg	0.138	0.022	1
n-Pentatriacontane (C35)	0.099	J	mg/kg	0.138	0.024	1
n-Hexatriacontane (C36)	ND		mg/kg	0.138	0.028	1
n-Heptatriacontane (C37)	ND		mg/kg	0.138	0.031	1
n-Octatriacontane (C38)	ND		mg/kg	0.138	0.032	1
n-Nonatriacontane (C39)	0.074	J	mg/kg	0.138	0.045	1
n-Tetracontane (C40)	ND		mg/kg	0.138	0.045	1
Total Petroleum Hydrocarbons (C9-C44)	51.2		mg/kg	4.56	1.00	1
Total Saturated Hydrocarbons	1.77	JB	mg/kg	0.138	0.014	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	87		50-130
d50-Tetracosane	82		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-05
Client ID: WMSED05
Sample Location: ALASKA

Date Collected: 03/23/23 09:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/28/23 02:38
Analyst: AMV
Percent Solids: 82%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.118	0.035	1
n-Decane (C10)	ND		mg/kg	0.118	0.038	1
n-Undecane (C11)	ND		mg/kg	0.118	0.035	1
n-Dodecane (C12)	ND		mg/kg	0.118	0.026	1
n-Tridecane (C13)	ND		mg/kg	0.118	0.032	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.118	0.018	1
n-Tetradecane (C14)	ND		mg/kg	0.118	0.018	1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.118	0.014	1
n-Pentadecane (C15)	ND		mg/kg	0.118	0.014	1
n-Hexadecane (C16)	ND		mg/kg	0.118	0.018	1
Norpristane (1650)	ND		mg/kg	0.118	0.039	1
n-Heptadecane (C17)	ND		mg/kg	0.118	0.039	1
Pristane	ND		mg/kg	0.118	0.025	1
n-Octadecane (C18)	0.255	C	mg/kg	0.118	0.024	1
Phytane	ND		mg/kg	0.118	0.015	1
n-Nonadecane (C19)	ND		mg/kg	0.118	0.030	1
n-Eicosane (C20)	ND		mg/kg	0.118	0.017	1
n-Heneicosane (C21)	ND		mg/kg	0.118	0.014	1
n-Docosane (C22)	ND		mg/kg	0.118	0.012	1
n-Tricosane (C23)	ND		mg/kg	0.118	0.015	1
n-Tetracosane (C24)	ND		mg/kg	0.118	0.020	1
n-Pentacosane (C25)	0.087	JC	mg/kg	0.118	0.063	1
n-Hexacosane (C26)	ND		mg/kg	0.118	0.017	1
n-Heptacosane (C27)	0.024	J	mg/kg	0.118	0.014	1
n-Octacosane (C28)	ND		mg/kg	0.118	0.025	1
n-Nonacosane (C29)	ND		mg/kg	0.118	0.079	1
n-Triacontane (C30)	ND		mg/kg	0.118	0.014	1
n-Hentriacontane (C31)	ND		mg/kg	0.118	0.017	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-05
Client ID: WMSED05
Sample Location: ALASKA

Date Collected: 03/23/23 09:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.118	0.015	1
n-Tritriacontane (C33)	ND		mg/kg	0.118	0.017	1
n-Tetratriacontane (C34)	ND		mg/kg	0.118	0.019	1
n-Pentatriacontane (C35)	ND		mg/kg	0.118	0.021	1
n-Hexatriacontane (C36)	ND		mg/kg	0.118	0.024	1
n-Heptatriacontane (C37)	ND		mg/kg	0.118	0.026	1
n-Octatriacontane (C38)	ND		mg/kg	0.118	0.028	1
n-Nonatriacontane (C39)	ND		mg/kg	0.118	0.038	1
n-Tetracontane (C40)	ND		mg/kg	0.118	0.038	1
Total Petroleum Hydrocarbons (C9-C44)	2.22	J	mg/kg	3.90	0.857	1
Total Saturated Hydrocarbons	0.366	JB	mg/kg	0.118	0.012	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	91		50-130
d50-Tetracosane	86		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-06
Client ID: WMSED06
Sample Location: ALASKA

Date Collected: 03/23/23 09:34
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/28/23 04:05
Analyst: AMV
Percent Solids: 82%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.120	0.036	1
n-Decane (C10)	ND		mg/kg	0.120	0.038	1
n-Undecane (C11)	ND		mg/kg	0.120	0.036	1
n-Dodecane (C12)	ND		mg/kg	0.120	0.026	1
n-Tridecane (C13)	ND		mg/kg	0.120	0.033	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.120	0.018	1
n-Tetradecane (C14)	ND		mg/kg	0.120	0.018	1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.120	0.014	1
n-Pentadecane (C15)	ND		mg/kg	0.120	0.014	1
n-Hexadecane (C16)	ND		mg/kg	0.120	0.018	1
Norpristane (1650)	ND		mg/kg	0.120	0.040	1
n-Heptadecane (C17)	ND		mg/kg	0.120	0.040	1
Pristane	ND		mg/kg	0.120	0.026	1
n-Octadecane (C18)	0.257	C	mg/kg	0.120	0.024	1
Phytane	ND		mg/kg	0.120	0.015	1
n-Nonadecane (C19)	ND		mg/kg	0.120	0.031	1
n-Eicosane (C20)	ND		mg/kg	0.120	0.017	1
n-Heneicosane (C21)	ND		mg/kg	0.120	0.014	1
n-Docosane (C22)	ND		mg/kg	0.120	0.013	1
n-Tricosane (C23)	ND		mg/kg	0.120	0.015	1
n-Tetracosane (C24)	ND		mg/kg	0.120	0.020	1
n-Pentacosane (C25)	0.088	J	mg/kg	0.120	0.063	1
n-Hexacosane (C26)	ND		mg/kg	0.120	0.018	1
n-Heptacosane (C27)	0.026	J	mg/kg	0.120	0.014	1
n-Octacosane (C28)	ND		mg/kg	0.120	0.026	1
n-Nonacosane (C29)	ND		mg/kg	0.120	0.080	1
n-Triacontane (C30)	ND		mg/kg	0.120	0.014	1
n-Hentriacontane (C31)	ND		mg/kg	0.120	0.017	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-06
Client ID: WMSED06
Sample Location: ALASKA

Date Collected: 03/23/23 09:34
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.120	0.015	1
n-Tritriacontane (C33)	ND		mg/kg	0.120	0.017	1
n-Tettratriacontane (C34)	ND		mg/kg	0.120	0.019	1
n-Pentatriacontane (C35)	ND		mg/kg	0.120	0.021	1
n-Hexatriacontane (C36)	ND		mg/kg	0.120	0.024	1
n-Heptatriacontane (C37)	ND		mg/kg	0.120	0.027	1
n-Octatriacontane (C38)	ND		mg/kg	0.120	0.028	1
n-Nonatriacontane (C39)	ND		mg/kg	0.120	0.039	1
n-Tetracontane (C40)	ND		mg/kg	0.120	0.039	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	3.95	0.869	1
Total Saturated Hydrocarbons	0.371	JB	mg/kg	0.120	0.013	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	90		50-130
d50-Tetracosane	85		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-07
Client ID: WMSED07
Sample Location: ALASKA

Date Collected: 03/23/23 10:05
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/28/23 05:32
Analyst: AMV
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.123	0.037	1
n-Decane (C10)	ND		mg/kg	0.123	0.039	1
n-Undecane (C11)	ND		mg/kg	0.123	0.037	1
n-Dodecane (C12)	ND		mg/kg	0.123	0.027	1
n-Tridecane (C13)	ND		mg/kg	0.123	0.034	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.123	0.019	1
n-Tetradecane (C14)	ND		mg/kg	0.123	0.019	1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.123	0.015	1
n-Pentadecane (C15)	ND		mg/kg	0.123	0.015	1
n-Hexadecane (C16)	ND		mg/kg	0.123	0.019	1
Norpristane (1650)	ND		mg/kg	0.123	0.041	1
n-Heptadecane (C17)	ND		mg/kg	0.123	0.041	1
Pristane	ND		mg/kg	0.123	0.026	1
n-Octadecane (C18)	0.284	C	mg/kg	0.123	0.025	1
Phytane	ND		mg/kg	0.123	0.016	1
n-Nonadecane (C19)	ND		mg/kg	0.123	0.032	1
n-Eicosane (C20)	ND		mg/kg	0.123	0.017	1
n-Heneicosane (C21)	ND		mg/kg	0.123	0.015	1
n-Docosane (C22)	ND		mg/kg	0.123	0.013	1
n-Tricosane (C23)	ND		mg/kg	0.123	0.016	1
n-Tetracosane (C24)	ND		mg/kg	0.123	0.021	1
n-Pentacosane (C25)	0.096	J	mg/kg	0.123	0.065	1
n-Hexacosane (C26)	ND		mg/kg	0.123	0.018	1
n-Heptacosane (C27)	0.028	J	mg/kg	0.123	0.015	1
n-Octacosane (C28)	ND		mg/kg	0.123	0.026	1
n-Nonacosane (C29)	ND		mg/kg	0.123	0.082	1
n-Triacontane (C30)	ND		mg/kg	0.123	0.014	1
n-Hentriacontane (C31)	ND		mg/kg	0.123	0.018	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-07
Client ID: WMSED07
Sample Location: ALASKA

Date Collected: 03/23/23 10:05
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.123	0.016	1
n-Tritriacontane (C33)	ND		mg/kg	0.123	0.017	1
n-Tetratriacontane (C34)	ND		mg/kg	0.123	0.020	1
n-Pentatriacontane (C35)	ND		mg/kg	0.123	0.022	1
n-Hexatriacontane (C36)	ND		mg/kg	0.123	0.025	1
n-Heptatriacontane (C37)	ND		mg/kg	0.123	0.027	1
n-Octatriacontane (C38)	ND		mg/kg	0.123	0.029	1
n-Nonatriacontane (C39)	ND		mg/kg	0.123	0.040	1
n-Tetracontane (C40)	ND		mg/kg	0.123	0.040	1
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	4.07	0.895	1
Total Saturated Hydrocarbons	0.408	JB	mg/kg	0.123	0.013	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	91		50-130
d50-Tetracosane	86		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-08
Client ID: WMSED08
Sample Location: ALASKA

Date Collected: 03/24/23 09:02
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/28/23 07:00
Analyst: AMV
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.125	0.037	1
n-Decane (C10)	ND		mg/kg	0.125	0.040	1
n-Undecane (C11)	ND		mg/kg	0.125	0.037	1
n-Dodecane (C12)	ND		mg/kg	0.125	0.027	1
n-Tridecane (C13)	ND		mg/kg	0.125	0.034	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.125	0.019	1
n-Tetradecane (C14)	ND		mg/kg	0.125	0.019	1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.125	0.015	1
n-Pentadecane (C15)	ND		mg/kg	0.125	0.015	1
n-Hexadecane (C16)	ND		mg/kg	0.125	0.019	1
Norpristane (1650)	ND		mg/kg	0.125	0.041	1
n-Heptadecane (C17)	ND		mg/kg	0.125	0.041	1
Pristane	ND		mg/kg	0.125	0.027	1
n-Octadecane (C18)	0.278	C	mg/kg	0.125	0.025	1
Phytane	ND		mg/kg	0.125	0.016	1
n-Nonadecane (C19)	ND		mg/kg	0.125	0.032	1
n-Eicosane (C20)	ND		mg/kg	0.125	0.018	1
n-Heneicosane (C21)	ND		mg/kg	0.125	0.015	1
n-Docosane (C22)	ND		mg/kg	0.125	0.013	1
n-Tricosane (C23)	ND		mg/kg	0.125	0.016	1
n-Tetracosane (C24)	ND		mg/kg	0.125	0.021	1
n-Pentacosane (C25)	0.106	J	mg/kg	0.125	0.066	1
n-Hexacosane (C26)	ND		mg/kg	0.125	0.018	1
n-Heptacosane (C27)	0.031	J	mg/kg	0.125	0.015	1
n-Octacosane (C28)	ND		mg/kg	0.125	0.027	1
n-Nonacosane (C29)	ND		mg/kg	0.125	0.083	1
n-Triacontane (C30)	ND		mg/kg	0.125	0.014	1
n-Hentriacontane (C31)	ND		mg/kg	0.125	0.018	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-08
Client ID: WMSED08
Sample Location: ALASKA

Date Collected: 03/24/23 09:02
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.125	0.016	1
n-Tritriacontane (C33)	ND		mg/kg	0.125	0.018	1
n-Tetratriacontane (C34)	ND		mg/kg	0.125	0.020	1
n-Pentatriacontane (C35)	ND		mg/kg	0.125	0.022	1
n-Hexatriacontane (C36)	ND		mg/kg	0.125	0.025	1
n-Heptatriacontane (C37)	ND		mg/kg	0.125	0.028	1
n-Octatriacontane (C38)	ND		mg/kg	0.125	0.029	1
n-Nonatriacontane (C39)	ND		mg/kg	0.125	0.041	1
n-Tetracontane (C40)	ND		mg/kg	0.125	0.041	1
Total Petroleum Hydrocarbons (C9-C44)	3.56	J	mg/kg	4.11	0.905	1
Total Saturated Hydrocarbons	0.415	JB	mg/kg	0.125	0.013	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	90		50-130
d50-Tetracosane	85		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-09
Client ID: WMSED09
Sample Location: ALASKA

Date Collected: 03/24/23 09:27
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Matrix: Sediment
Analytical Method: 1,8015D(M)
Analytical Date: 06/28/23 08:27
Analyst: AMV
Percent Solids: 73%

Extraction Method: ALPHA OP-013
Extraction Date: 06/23/23 10:36
Cleanup Method: EPA 3611B
Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	ND		mg/kg	0.174	0.052	1
n-Decane (C10)	ND		mg/kg	0.174	0.056	1
n-Undecane (C11)	ND		mg/kg	0.174	0.052	1
n-Dodecane (C12)	ND		mg/kg	0.174	0.038	1
n-Tridecane (C13)	ND		mg/kg	0.174	0.048	1
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.174	0.026	1
n-Tetradecane (C14)	ND		mg/kg	0.174	0.026	1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.174	0.021	1
n-Pentadecane (C15)	0.027	J	mg/kg	0.174	0.021	1
n-Hexadecane (C16)	ND		mg/kg	0.174	0.026	1
Norpristane (1650)	ND		mg/kg	0.174	0.058	1
n-Heptadecane (C17)	ND		mg/kg	0.174	0.058	1
Pristane	ND		mg/kg	0.174	0.037	1
n-Octadecane (C18)	0.397	C	mg/kg	0.174	0.035	1
Phytane	ND		mg/kg	0.174	0.022	1
n-Nonadecane (C19)	ND		mg/kg	0.174	0.045	1
n-Eicosane (C20)	ND		mg/kg	0.174	0.025	1
n-Heneicosane (C21)	0.022	J	mg/kg	0.174	0.021	1
n-Docosane (C22)	0.022	J	mg/kg	0.174	0.018	1
n-Tricosane (C23)	0.042	J	mg/kg	0.174	0.022	1
n-Tetracosane (C24)	ND		mg/kg	0.174	0.029	1
n-Pentacosane (C25)	0.185		mg/kg	0.174	0.092	1
n-Hexacosane (C26)	ND		mg/kg	0.174	0.026	1
n-Heptacosane (C27)	0.238		mg/kg	0.174	0.021	1
n-Octacosane (C28)	0.039	J	mg/kg	0.174	0.037	1
n-Nonacosane (C29)	ND		mg/kg	0.174	0.116	1
n-Triacontane (C30)	ND		mg/kg	0.174	0.020	1
n-Hentriacontane (C31)	0.059	J	mg/kg	0.174	0.025	1

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-09
Client ID: WMSED09
Sample Location: ALASKA

Date Collected: 03/24/23 09:27
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.174	0.022	1
n-Tritriacontane (C33)	0.116	J	mg/kg	0.174	0.025	1
n-Tetratriacontane (C34)	ND		mg/kg	0.174	0.028	1
n-Pentatriacontane (C35)	0.103	J	mg/kg	0.174	0.030	1
n-Hexatriacontane (C36)	ND		mg/kg	0.174	0.035	1
n-Heptatriacontane (C37)	0.041	J	mg/kg	0.174	0.039	1
n-Octatriacontane (C38)	ND		mg/kg	0.174	0.041	1
n-Nonatriacontane (C39)	0.134	J	mg/kg	0.174	0.057	1
n-Tetracontane (C40)	ND		mg/kg	0.174	0.057	1
Total Petroleum Hydrocarbons (C9-C44)	27.0		mg/kg	5.75	1.26	1
Total Saturated Hydrocarbons	1.43	JB	mg/kg	0.174	0.018	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	89		50-130
d50-Tetracosane	84		50-130

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8015D(M)
 Analytical Date: 06/27/23 16:29
 Analyst: AMV

Extraction Method: ALPHA OP-013
 Extraction Date: 06/23/23 10:36
 Cleanup Method: EPA 3611B
 Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-02,04-09 Batch: WG1795295-1					
n-Nonane (C9)	ND		mg/kg	0.067	0.020
n-Decane (C10)	ND		mg/kg	0.067	0.021
n-Undecane (C11)	ND		mg/kg	0.067	0.020
n-Dodecane (C12)	ND		mg/kg	0.067	0.015
n-Tridecane (C13)	ND		mg/kg	0.067	0.018
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.067	0.010
n-Tetradecane (C14)	ND		mg/kg	0.067	0.010
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.067	0.008
n-Pentadecane (C15)	ND		mg/kg	0.067	0.008
n-Hexadecane (C16)	ND		mg/kg	0.067	0.010
Norpristane (1650)	ND		mg/kg	0.067	0.022
n-Heptadecane (C17)	ND		mg/kg	0.067	0.022
Pristane	ND		mg/kg	0.067	0.014
n-Octadecane (C18)	0.027	JC	mg/kg	0.067	0.013
Phytane	ND		mg/kg	0.067	0.008
n-Nonadecane (C19)	ND		mg/kg	0.067	0.017
n-Eicosane (C20)	ND		mg/kg	0.067	0.009
n-Heneicosane (C21)	ND		mg/kg	0.067	0.008
n-Docosane (C22)	0.007	J	mg/kg	0.067	0.007
n-Tricosane (C23)	0.017	J	mg/kg	0.067	0.008
n-Tetracosane (C24)	0.021	J	mg/kg	0.067	0.011
n-Pentacosane (C25)	0.065	J	mg/kg	0.067	0.035
n-Hexacosane (C26)	0.021	J	mg/kg	0.067	0.010
n-Heptacosane (C27)	0.020	J	mg/kg	0.067	0.008
n-Octacosane (C28)	0.015	J	mg/kg	0.067	0.014
n-Nonacosane (C29)	ND		mg/kg	0.067	0.044
n-Triacontane (C30)	0.009	J	mg/kg	0.067	0.008
n-Hentriacontane (C31)	ND		mg/kg	0.067	0.009
n-Dotriacontane (C32)	ND		mg/kg	0.067	0.008

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8015D(M)
 Analytical Date: 06/27/23 16:29
 Analyst: AMV

Extraction Method: ALPHA OP-013
 Extraction Date: 06/23/23 10:36
 Cleanup Method: EPA 3611B
 Cleanup Date: 06/27/23

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-02,04-09 Batch: WG1795295-1					
n-Tritriacontane (C33)	ND		mg/kg	0.067	0.009
n-Tetratriacontane (C34)	ND		mg/kg	0.067	0.011
n-Pentatriacontane (C35)	ND		mg/kg	0.067	0.012
n-Hexatriacontane (C36)	ND		mg/kg	0.067	0.013
n-Heptatriacontane (C37)	ND		mg/kg	0.067	0.015
n-Octatriacontane (C38)	ND		mg/kg	0.067	0.016
n-Nonatriacontane (C39)	ND		mg/kg	0.067	0.022
n-Tetracontane (C40)	ND		mg/kg	0.067	0.022
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	2.20	0.484
Total Saturated Hydrocarbons	0.200	J	mg/kg	0.067	0.007

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	91		50-130
d50-Tetracosane	85		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01-02,04-09 Batch: WG1795295-2 WG1795295-3								
Nonane (C9)	64		70		50-130	9		30
n-Decane (C10)	75		79		50-130	5		30
n-Dodecane (C12)	82		86		50-130	5		30
n-Tetradecane (C14)	82		86		50-130	5		30
n-Hexadecane (C16)	93		96		50-130	3		30
n-Octadecane (C18)	95		98		50-130	3		30
n-Nonadecane (C19)	91		94		50-130	3		30
n-Eicosane (C20)	91		93		50-130	2		30
n-Docosane (C22)	92		96		50-130	4		30
n-Tetracosane (C24)	95		97		50-130	2		30
n-Hexacosane (C26)	91		94		50-130	3		30
n-Octacosane (C28)	90		93		50-130	3		30
n-Triacontane (C30)	89		93		50-130	4		30
n-Hexatriacontane (C36)	79		80		50-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	93		95		50-130
d50-Tetracosane	87		89		50-130

INORGANICS & MISCELLANEOUS

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-01
Client ID: WMSED01
Sample Location: ALASKA

Date Collected: 03/23/23 08:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	1.05		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	1.04		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	1.05		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	76.8		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-02
Client ID: WMSED02
Sample Location: ALASKA

Date Collected: 03/23/23 08:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	1.14		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	1.02		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	1.08		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	72.4		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-04
Client ID: WMSED04
Sample Location: ALASKA

Date Collected: 03/23/23 09:24
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	2.59		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	3.27		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	2.93		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	71.1		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-05
Client ID: WMSED05
Sample Location: ALASKA

Date Collected: 03/23/23 09:30
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.749		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	0.613		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	0.681		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	82.2		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-06
Client ID: WMSED06
Sample Location: ALASKA

Date Collected: 03/23/23 09:34
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.731		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	0.721		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	0.726		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	82.0		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-07
Client ID: WMSED07
Sample Location: ALASKA

Date Collected: 03/23/23 10:05
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.286		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	0.267		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	0.276		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	78.9		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-08
Client ID: WMSED08
Sample Location: ALASKA

Date Collected: 03/24/23 09:02
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.696		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	0.567		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	0.632		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	78.9		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

SAMPLE RESULTS

Lab ID: L2330527-09
Client ID: WMSED09
Sample Location: ALASKA

Date Collected: 03/24/23 09:27
Date Received: 06/01/23
Field Prep: Not Specified

Sample Depth:
Matrix: Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	1.49		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	1.15		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	1.32		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
General Chemistry - Mansfield Lab										
Solids, Total	73.2		%	0.100	0.100	1	-	06/12/23 14:06	121,2540G	GRS



Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23

Method Blank Analysis

Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab for sample(s): 01-02,04-09 Batch: WG1796295-1										
Total Organic Carbon (Rep1)	ND		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Rep2)	ND		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP
Total Organic Carbon (Average)	ND		%	0.010	0.010	1	-	06/26/23 14:38	1,9060A	SPP

Lab Control Sample Analysis**Batch Quality Control****Project Name:** WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02,04-09 Batch: WG1796295-2								
Total Organic Carbon (Rep1)	106		-		75-125	-		25
Total Organic Carbon (Rep2)	104		-		75-125	-		25
Total Organic Carbon (Average)	105		-		75-125	-		25

Matrix Spike Analysis Batch Quality Control

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02,04-09 QC Batch ID: WG1796295-4 QC Sample: L2330527-06 Client ID: WMSED06												
Total Organic Carbon (Rep1)	0.731	1.12	1.71	87		-	-		75-125	-		25
Total Organic Carbon (Rep2)	0.721	0.833	1.16	53	Q	-	-		75-125	-		25

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L2330527
Report Date: 07/03/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-02,04-09 QC Batch ID: WG1790144-1 QC Sample: L2330527-01 Client ID: WMSED01						
Solids, Total	76.8	79.0	%	3		10
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-02,04-09 QC Batch ID: WG1796295-3 QC Sample: L2330527-06 Client ID: WMSED06						
Total Organic Carbon (Rep1)	0.731	0.522	%	33	Q	25
Total Organic Carbon (Rep2)	0.721	0.576	%	22		25
Total Organic Carbon (Average)	0.726	0.549	%	28	Q	25

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2330527-01A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-02A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-03A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		HOLD-8270(14)
L2330527-04A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-05A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-06A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-07A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-08A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-09A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		A2-SHC(14),A2-ALKPAH(14),A2-TS(7),A2-TOC-9060-2REPS(28)
L2330527-10A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		HOLD-8270(14)
L2330527-11A	Glass 250ml/8oz unpreserved	B	NA		2.3	Y	Absent		HOLD-8270(14)

Project Name: WESTERN MARINER OIL SPILL NRDA**Lab Number:** L2330527**Project Number:** Not Specified**Report Date:** 07/03/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

Data Qualifiers

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name: WESTERN MARINER OIL SPILL NRDA
Project Number: Not Specified

Lab Number: L2330527
Report Date: 07/03/23

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624.1:** m/p-xylene, o-xylene, Naphthalene**EPA 625.1:** alpha-Terpineol**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B****EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,****SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables).**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.**EPA 522, EPA 537.1.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1** Hg.**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

6/1/23

L2330527

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Lead Contact Information

Contact/Phone/Email:	Sarah Allan / 907-202-1859 / sarah.allan@noaa.gov
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Affiliation:	NOAA
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Survey/Project Name	Western Mariner Oil Spill NRDA
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Analyses requested

Maybill Number:

of containers

Maybill Number:

Lab Report #:

of Coolers:

Cooler Temp:

Comments

Sample ID

Sample Date

Sample Time

Matrix

Enter Analyses above, with preservative specified, if needed.
Enter x's in boxes below.

0527

mm/dd/yyyy

(24-hr local)

Sediment

-01	WMSED01	03/23/2023	8:24	Sediment
-02	WMSED02	03/23/2023	8:30	Sediment
-03	WMSED03	03/23/2023	8:44	Sediment
-04	WMSED04	03/23/2023	9:24	Sediment
-05	WMSED05	03/23/2023	9:30	Sediment
-06	WMSED06	03/23/2023	9:34	Sediment
-07	WMSED07	03/23/2023	10:05	Sediment
-08	WMSED08	03/24/2023	9:02	Sediment
-09	WMSED09	03/24/2023	9:27	Sediment
-10	WMSED10	03/24/2023	10:15	Sediment
-11	WMSED11	03/24/2023	10:51	Sediment

All sediment samples shipped to Alpha Analytical Lab in turquoise cooler.

Received by

Date _____

Time

Signature

Printed Name/Org.

Date _____

Time

Signature _____

Printed Name/Org.

03/24/2023	17:59
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11:00

Veronica W. Varela

Sarah Allan / NOAA
Veronica Varela / USFWS

3/24/2023

18:00

Veronica Varela
Fedy

Vernica W. Varela