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Apex Laboratories
Philip Nerenberg
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RE: A6C1076
Lab ID: 1604078

April 27, 2016

Attention Philip Nerenberg:

Fremont Analytical, Inc. received 4 sample(s) on 4/9/2016 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Ridgeway", written in a cursive style.

Mike Ridgeway
President

DoD/ELAP Certification #L2371, ISO/ICC 17025:2005
ORELAP Certification: WA 100009-007 (NELAP Recognized)

Original

www.fremontanalytical.com



Date: 04/28/2016

CLIENT: Apex Laboratories
Project: A6C1076
Lab Order: 1604078

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1604078-001	5237-160328-DC-SED075G	03/28/2016 12:50 PM	04/09/2016 12:34 PM
1604078-002	5237-160328-DC-SED075	03/28/2016 12:50 PM	04/09/2016 12:34 PM
1604078-003	5237-160328-DC-SED087G	03/28/2016 2:45 PM	04/09/2016 12:34 PM
1604078-004	5237-160328-DC-SED087	03/28/2016 2:45 PM	04/09/2016 12:34 PM

CLIENT: Apex Laboratories

Project: A6C1076

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

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

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

III. ANALYSES AND EXCEPTIONS:

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

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

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



Analytical Report

WO#: 1604078
Date Reported: 4/27/2016

Client: Apex Laboratories

Collection Date: 3/28/2016 12:50:00 PM

Project: A6C1076

Lab ID: 1604078-001

Matrix: Sediment

Client Sample ID: 5237-160328-DC-SED075G

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

Batch ID: 13429

Analyst: BC

Aliphatic Hydrocarbon (C5-C6)	ND	2.39	QH	mg/Kg	1	4/12/2016 5:56:22 PM
Aliphatic Hydrocarbon (C6-C8)	ND	2.39	H	mg/Kg	1	4/12/2016 5:56:22 PM
Aliphatic Hydrocarbon (C8-C10)	ND	2.39	H	mg/Kg	1	4/12/2016 5:56:22 PM
Aliphatic Hydrocarbon (C10-C12)	ND	2.39	H	mg/Kg	1	4/12/2016 5:56:22 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.39	H	mg/Kg	1	4/12/2016 5:56:22 PM
Aromatic Hydrocarbon (C10-C12)	ND	2.39	H	mg/Kg	1	4/12/2016 5:56:22 PM
Aromatic Hydrocarbon (C12-C13)	ND	2.39	H	mg/Kg	1	4/12/2016 5:56:22 PM
Surr: 1,4-Difluorobenzene	92.4	65-140	H	%Rec	1	4/12/2016 5:56:22 PM
Surr: Bromofluorobenzene	80.6	65-140	H	%Rec	1	4/12/2016 5:56:22 PM

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Analytical Report

WO#: 1604078
Date Reported: 4/27/2016

Client: Apex Laboratories

Collection Date: 3/28/2016 12:50:00 PM

Project: A6C1076

Lab ID: 1604078-002

Matrix: Sediment

Client Sample ID: 5237-160328-DC-SED075

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

Batch ID: 13403

Analyst: CM

Aliphatic Hydrocarbon (C8-C10)	ND	6.98		mg/Kg-dry	1	4/22/2016 9:51:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	6.98		mg/Kg-dry	1	4/22/2016 9:51:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	6.98		mg/Kg-dry	1	4/22/2016 9:51:00 PM
Aliphatic Hydrocarbon (C16-C21)	17.2	6.98		mg/Kg-dry	1	4/22/2016 9:51:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	6.98		mg/Kg-dry	1	4/22/2016 9:51:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	6.98		mg/Kg-dry	1	4/23/2016 9:52:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	6.98		mg/Kg-dry	1	4/23/2016 9:52:00 AM
Aromatic Hydrocarbon (C12-C16)	ND	6.98		mg/Kg-dry	1	4/23/2016 9:52:00 AM
Aromatic Hydrocarbon (C16-C21)	7.18	6.98		mg/Kg-dry	1	4/23/2016 9:52:00 AM
Aromatic Hydrocarbon (C21-C34)	ND	6.98		mg/Kg-dry	1	4/23/2016 9:52:00 AM
Surr: 1-Chlorooctadecane	24.5	60-140	S	%Rec	1	4/22/2016 9:51:00 PM
Surr: o-Terphenyl	62.7	60-140		%Rec	1	4/23/2016 9:52:00 AM

NOTES:

S - Outlying QC recoveries were associated with this sample. The method is in control as indicated by the LCS.

Sample Moisture (Percent Moisture)

Batch ID: R28687

Analyst: SB

Percent Moisture	36.8	0.500		wt%	1	4/11/2016 10:17:14 AM
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Analytical Report

WO#: 1604078
Date Reported: 4/27/2016

Client: Apex Laboratories

Collection Date: 3/28/2016 2:45:00 PM

Project: A6C1076

Lab ID: 1604078-003

Matrix: Sediment

Client Sample ID: 5237-160328-DC-SED087G

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

Batch ID: 13429

Analyst: BC

Aliphatic Hydrocarbon (C5-C6)	ND	1.91	QH	mg/Kg	1	4/12/2016 6:31:36 PM
Aliphatic Hydrocarbon (C6-C8)	ND	1.91	H	mg/Kg	1	4/12/2016 6:31:36 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.91	H	mg/Kg	1	4/12/2016 6:31:36 PM
Aliphatic Hydrocarbon (C10-C12)	ND	1.91	H	mg/Kg	1	4/12/2016 6:31:36 PM
Aromatic Hydrocarbon (C8-C10)	ND	1.91	H	mg/Kg	1	4/12/2016 6:31:36 PM
Aromatic Hydrocarbon (C10-C12)	ND	1.91	H	mg/Kg	1	4/12/2016 6:31:36 PM
Aromatic Hydrocarbon (C12-C13)	ND	1.91	H	mg/Kg	1	4/12/2016 6:31:36 PM
Surr: 1,4-Difluorobenzene	97.9	65-140	H	%Rec	1	4/12/2016 6:31:36 PM
Surr: Bromofluorobenzene	82.2	65-140	H	%Rec	1	4/12/2016 6:31:36 PM

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Analytical Report

WO#: 1604078
Date Reported: 4/27/2016

Client: Apex Laboratories

Collection Date: 3/28/2016 2:45:00 PM

Project: A6C1076

Lab ID: 1604078-004

Matrix: Sediment

Client Sample ID: 5237-160328-DC-SED087

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

Batch ID: 13403

Analyst: CM

Aliphatic Hydrocarbon (C8-C10)	ND	6.19		mg/Kg-dry	1	4/22/2016 10:37:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	6.19		mg/Kg-dry	1	4/22/2016 10:37:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	6.19		mg/Kg-dry	1	4/22/2016 10:37:00 PM
Aliphatic Hydrocarbon (C16-C21)	14.8	6.19		mg/Kg-dry	1	4/22/2016 10:37:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	6.19		mg/Kg-dry	1	4/22/2016 10:37:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	6.19		mg/Kg-dry	1	4/23/2016 10:37:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	6.19		mg/Kg-dry	1	4/23/2016 10:37:00 AM
Aromatic Hydrocarbon (C12-C16)	ND	6.19		mg/Kg-dry	1	4/23/2016 10:37:00 AM
Aromatic Hydrocarbon (C16-C21)	9.26	6.19		mg/Kg-dry	1	4/23/2016 10:37:00 AM
Aromatic Hydrocarbon (C21-C34)	ND	6.19		mg/Kg-dry	1	4/23/2016 10:37:00 AM
Surr: 1-Chlorooctadecane	40.7	60-140	S	%Rec	1	4/22/2016 10:37:00 PM
Surr: o-Terphenyl	63.4	60-140		%Rec	1	4/23/2016 10:37:00 AM

NOTES:

S - Outlying QC recoveries were associated with this sample. The method is in control as indicated by the LCS.

Sample Moisture (Percent Moisture)

Batch ID: R28687

Analyst: SB

Percent Moisture	27.2	0.500		wt%	1	4/11/2016 10:17:14 AM
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Work Order: 1604078
 CLIENT: Apex Laboratories
 Project: A6C1076

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID ALI ICB	SampType: ICB	Units: mg/Kg	Prep Date: 4/21/2016	RunNo: 28953							
Client ID: ICB	Batch ID: R28953		Analysis Date: 4/21/2016	SeqNo: 544719							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	27.1	5.00									
Aliphatic Hydrocarbon (C10-C12)	14.1	5.00									
Aliphatic Hydrocarbon (C12-C16)	16.1	5.00									
Aliphatic Hydrocarbon (C16-C21)	96.9	5.00									
Aliphatic Hydrocarbon (C21-C34)	25.0	5.00									
Surr: 1-Chlorooctadecane	31.2		40.00		78.1	60	140				

Sample ID ALI ICV	SampType: ICV	Units: mg/Kg	Prep Date: 4/22/2016	RunNo: 28953							
Client ID: ICV	Batch ID: R28953		Analysis Date: 4/22/2016	SeqNo: 544720							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	186	5.00	200.0	0	92.8	80	120				
Aliphatic Hydrocarbon (C10-C12)	93.7	5.00	100.0	0	93.7	80	120				
Aliphatic Hydrocarbon (C12-C16)	91.1	5.00	100.0	0	91.1	80	120				
Aliphatic Hydrocarbon (C16-C21)	115	5.00	100.0	0	115	80	120				
Aliphatic Hydrocarbon (C21-C34)	85.5	5.00	100.0	0	85.5	80	120				
Surr: 1-Chlorooctadecane	37.9		40.00		94.8	60	140				

Sample ID ARO ICB	SampType: ICB	Units: mg/Kg	Prep Date: 4/22/2016	RunNo: 28953							
Client ID: ICB	Batch ID: R28953		Analysis Date: 4/22/2016	SeqNo: 544721							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	5.00									
Aromatic Hydrocarbon (C10-C12)	ND	5.00									
Aromatic Hydrocarbon (C12-C16)	ND	5.00									
Aromatic Hydrocarbon (C16-C21)	21.4	5.00									
Aromatic Hydrocarbon (C21-C34)	41.1	5.00									
Surr: o-Terphenyl	30.6		40.00		76.6	60	140				

Work Order: 1604078
 CLIENT: Apex Laboratories
 Project: A6C1076

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID ARO ICV	SampType: ICV	Units: mg/Kg				Prep Date: 4/22/2016	RunNo: 28953				
Client ID: ICV	Batch ID: R28953					Analysis Date: 4/22/2016	SeqNo: 544722				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	94.4	5.00	100.0	0	94.4	80	120				
Aromatic Hydrocarbon (C10-C12)	92.1	5.00	100.0	0	92.1	80	120				
Aromatic Hydrocarbon (C12-C16)	97.5	5.00	100.0	0	97.5	80	120				
Aromatic Hydrocarbon (C16-C21)	111	5.00	100.0	0	111	80	120				
Aromatic Hydrocarbon (C21-C34)	82.7	5.00	100.0	0	82.7	80	120				
Surr: o-Terphenyl	34.7		40.00		86.7	60	140				

Sample ID ALI CCVA	SampType: CCV	Units: mg/Kg				Prep Date: 4/22/2016	RunNo: 28989				
Client ID: CCV	Batch ID: 13403					Analysis Date: 4/22/2016	SeqNo: 545602				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	202	5.00	200.0	0	101	80	120				
Aliphatic Hydrocarbon (C10-C12)	101	5.00	100.0	0	101	80	120				
Aliphatic Hydrocarbon (C12-C16)	100	5.00	100.0	0	100	80	120				
Aliphatic Hydrocarbon (C16-C21)	107	5.00	100.0	0	107	80	120				
Aliphatic Hydrocarbon (C21-C34)	96.0	5.00	100.0	0	96.0	80	120				
Surr: 1-Chlorooctadecane	36.6		40.00		91.5	60	140				

Sample ID ARO CCVA	SampType: CCV	Units: mg/Kg				Prep Date: 4/22/2016	RunNo: 28989				
Client ID: CCV	Batch ID: 13403					Analysis Date: 4/22/2016	SeqNo: 545638				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	104	5.00	100.0	0	104	80	120				
Aromatic Hydrocarbon (C10-C12)	100	5.00	100.0	0	100	80	120				
Aromatic Hydrocarbon (C12-C16)	105	5.00	100.0	0	105	80	120				
Aromatic Hydrocarbon (C16-C21)	97.9	5.00	100.0	0	97.9	80	120				
Aromatic Hydrocarbon (C21-C34)	82.1	5.00	100.0	0	82.1	80	120				
Surr: o-Terphenyl	34.7		40.00		86.7	60	140				



Work Order: 1604078
 CLIENT: Apex Laboratories
 Project: A6C1076

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID LCS-13403	SampType: LCS	Units: mg/Kg				Prep Date: 4/6/2016	RunNo: 28989				
Client ID: LCSS	Batch ID: 13403					Analysis Date: 4/22/2016	SeqNo: 545604				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	77.9	5.00	100.0	0	77.9	70	130				
Aliphatic Hydrocarbon (C10-C12)	46.5	5.00	50.00	0	93.0	70	130				
Aliphatic Hydrocarbon (C12-C16)	43.5	5.00	50.00	0	86.9	70	130				
Aliphatic Hydrocarbon (C16-C21)	44.7	5.00	50.00	0	89.5	70	130				
Aliphatic Hydrocarbon (C21-C34)	43.2	5.00	50.00	0	86.4	70	130				
Surr: 1-Chlorooctadecane	16.5		20.00		82.3	60	140				

Sample ID MB-13403	SampType: MBLK	Units: mg/Kg				Prep Date: 4/6/2016	RunNo: 28989				
Client ID: MBLKS	Batch ID: 13403					Analysis Date: 4/22/2016	SeqNo: 545603				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	5.00									
Aliphatic Hydrocarbon (C10-C12)	ND	5.00									
Aliphatic Hydrocarbon (C12-C16)	ND	5.00									
Aliphatic Hydrocarbon (C16-C21)	ND	5.00									
Aliphatic Hydrocarbon (C21-C34)	ND	5.00									
Surr: 1-Chlorooctadecane	12.2		20.00		61.2	60	140				

Sample ID 1604081-004ADUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 4/6/2016	RunNo: 28989				
Client ID: BATCH	Batch ID: 13403					Analysis Date: 4/23/2016	SeqNo: 545612				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	6.35						0		30	
Aliphatic Hydrocarbon (C10-C12)	ND	6.35						0		30	
Aliphatic Hydrocarbon (C12-C16)	ND	6.35						0		30	
Aliphatic Hydrocarbon (C16-C21)	22.2	6.35						13.69	47.4	30	R
Aliphatic Hydrocarbon (C21-C34)	ND	6.35						0		30	
Surr: 1-Chlorooctadecane	13.6		25.41		53.6	60	140		0		S



Work Order: 1604078
CLIENT: Apex Laboratories
Project: A6C1076

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID 1604081-004ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 4/6/2016	RunNo: 28989							
Client ID: BATCH	Batch ID: 13403		Analysis Date: 4/23/2016	SeqNo: 545612							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

S - Outlying QC recoveries were associated with this sample. The method is in control as indicated by the LCS.
R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID ALI CCVB	SampType: CCV	Units: mg/Kg	Prep Date: 4/23/2016	RunNo: 28989							
Client ID: CCV	Batch ID: 13403		Analysis Date: 4/23/2016	SeqNo: 545613							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	210	5.00	200.0	0	105	80	120				
Aliphatic Hydrocarbon (C10-C12)	105	5.00	100.0	0	105	80	120				
Aliphatic Hydrocarbon (C12-C16)	103	5.00	100.0	0	103	80	120				
Aliphatic Hydrocarbon (C16-C21)	104	5.00	100.0	0	104	80	120				
Aliphatic Hydrocarbon (C21-C34)	114	5.00	100.0	0	114	80	120				
Surr: 1-Chlorooctadecane	47.2		40.00		118	60	140				

Sample ID ARO CCVB	SampType: CCV	Units: mg/Kg	Prep Date: 4/23/2016	RunNo: 28989							
Client ID: CCV	Batch ID: 13403		Analysis Date: 4/23/2016	SeqNo: 545647							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	94.2	5.00	100.0	0	94.2	80	120				
Aromatic Hydrocarbon (C10-C12)	91.0	5.00	100.0	0	91.0	80	120				
Aromatic Hydrocarbon (C12-C16)	95.8	5.00	100.0	0	95.8	80	120				
Aromatic Hydrocarbon (C16-C21)	117	5.00	100.0	0	117	80	120				
Aromatic Hydrocarbon (C21-C34)	102	5.00	100.0	0	102	80	120				
Surr: o-Terphenyl	33.0		40.00		82.6	60	140				



Work Order: 1604078
CLIENT: Apex Laboratories
Project: A6C1076

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID LCS-13403	SampType: LCS	Units: mg/Kg				Prep Date: 4/6/2016	RunNo: 28989				
Client ID: LCSS	Batch ID: 13403					Analysis Date: 4/23/2016	SeqNo: 546204				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	43.0	5.00	50.00	0	86.0	70	130				
Aromatic Hydrocarbon (C10-C12)	45.1	5.00	50.00	0	90.3	70	130				
Aromatic Hydrocarbon (C12-C16)	47.6	5.00	50.00	0	95.2	70	130				
Aromatic Hydrocarbon (C16-C21)	53.3	5.00	50.00	0	107	70	130				
Aromatic Hydrocarbon (C21-C34)	38.0	5.00	50.00	0	75.9	70	130				
Surr: o-Terphenyl	16.5		20.00		82.4	60	140				

Sample ID MB-13403	SampType: MBLK	Units: mg/Kg				Prep Date: 4/6/2016	RunNo: 28989				
Client ID: MBLKS	Batch ID: 13403					Analysis Date: 4/23/2016	SeqNo: 546205				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	5.00									
Aromatic Hydrocarbon (C10-C12)	ND	5.00									
Aromatic Hydrocarbon (C12-C16)	ND	5.00									
Aromatic Hydrocarbon (C16-C21)	ND	5.00									
Aromatic Hydrocarbon (C21-C34)	ND	5.00									
Surr: o-Terphenyl	15.1		20.00		75.6	60	140				

Sample ID 1604081-004ADUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 4/6/2016	RunNo: 28989				
Client ID: BATCH	Batch ID: 13403					Analysis Date: 4/23/2016	SeqNo: 546202				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	6.35						0		30	
Aromatic Hydrocarbon (C10-C12)	ND	6.35						0		30	
Aromatic Hydrocarbon (C12-C16)	ND	6.35						0		30	
Aromatic Hydrocarbon (C16-C21)	10.6	6.35						8.481	22.1	30	
Aromatic Hydrocarbon (C21-C34)	ND	6.35						0		30	
Surr: o-Terphenyl	16.6		25.41		65.3	60	140		0		



Date: 4/27/2016

Work Order: 1604078
 CLIENT: Apex Laboratories
 Project: A6C1076

QC SUMMARY REPORT
Extractable Petroleum Hydrocarbons by NWEPH

Sample ID	ARO CCVC	SampType:	CCV	Units:	mg/Kg	Prep Date:	4/23/2016	RunNo:	28989		
Client ID:	CCV	Batch ID:	13403			Analysis Date:	4/23/2016	SeqNo:	546203		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aromatic Hydrocarbon (C8-C10)	104	5.00	100.0	0	104	80	120				
Aromatic Hydrocarbon (C10-C12)	102	5.00	100.0	0	102	80	120				
Aromatic Hydrocarbon (C12-C16)	107	5.00	100.0	0	107	80	120				
Aromatic Hydrocarbon (C16-C21)	120	5.00	100.0	0	120	80	120				
Aromatic Hydrocarbon (C21-C34)	89.3	5.00	100.0	0	89.3	80	120				
Surr: o-Terphenyl	38.3		40.00		95.7	60	140				



Work Order: 1604078
CLIENT: Apex Laboratories
Project: A6C1076

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID ICB-R28814	SampType: ICB	Units: mg/Kg				Prep Date: 4/12/2016	RunNo: 28814				
Client ID: ICB	Batch ID: R28814					Analysis Date: 4/12/2016	SeqNo: 546560				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	14.7	2.00		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.00		0	0						
Aliphatic Hydrocarbon (C8-C10)	4.02	2.00		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.00		0	0						
Aromatic Hydrocarbon (C8-C10)	66.6	2.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.00		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.00		0	0						
Surr: 1,4-Difluorobenzene	46.5		50.00		93.0	65	140				
Surr: Bromofluorobenzene	38.8		50.00		77.6	65	140				

Sample ID ICV-17311	SampType: ICV	Units: mg/Kg				Prep Date: 4/12/2016	RunNo: 28814				
Client ID: ICV	Batch ID: R28814					Analysis Date: 4/12/2016	SeqNo: 541585				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	894	2.00	600.0	0	149	70	130				S
Aliphatic Hydrocarbon (C6-C8)	182	2.00	200.0	0	91.2	70	130				
Aliphatic Hydrocarbon (C8-C10)	218	2.00	200.0	0	109	70	130				
Aliphatic Hydrocarbon (C10-C12)	244	2.00	200.0	0	122	70	130				
Aromatic Hydrocarbon (C8-C10)	984	2.00	800.0	0	123	70	130				
Aromatic Hydrocarbon (C10-C12)	254	2.00	200.0	0	127	70	130				
Aromatic Hydrocarbon (C12-C13)	184	2.00	200.0	0	91.9	70	130				
Surr: 1,4-Difluorobenzene	53.0		50.00		106	65	140				
Surr: Bromofluorobenzene	58.7		50.00		117	65	140				

Sample ID CCV-A-13429	SampType: CCV	Units: mg/Kg				Prep Date: 4/12/2016	RunNo: 28816				
Client ID: CCV	Batch ID: R28816					Analysis Date: 4/12/2016	SeqNo: 541680				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	657	2.00	600.0	0	109	80	120				Q
Aliphatic Hydrocarbon (C6-C8)	185	2.00	200.0	0	92.6	80	120				

Work Order: 1604078
 CLIENT: Apex Laboratories
 Project: A6C1076

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID	CCV-A-13429	SampType:	CCV	Units:	mg/Kg	Prep Date:	4/12/2016	RunNo:	28816		
Client ID:	CCV	Batch ID:	R28816	Analysis Date:	4/12/2016	SeqNo:	541680				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	199	2.00	200.0	0	99.4	80	120				
Aliphatic Hydrocarbon (C10-C12)	197	2.00	200.0	0	98.4	80	120				
Aromatic Hydrocarbon (C8-C10)	873	2.00	800.0	0	109	80	120				
Aromatic Hydrocarbon (C10-C12)	342	2.00	200.0	0	171	80	120				S
Aromatic Hydrocarbon (C12-C13)	301	2.00	200.0	0	150	80	120				S
Surr: 1,4-Difluorobenzene	51.6		50.00		103	65	140				
Surr: Bromofluorobenzene	54.7		50.00		109	65	140				

NOTES:

S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.
 Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID	LCS-13429	SampType:	LCS	Units:	mg/Kg	Prep Date:	4/11/2016	RunNo:	28816		
Client ID:	LCSS	Batch ID:	13429	Analysis Date:	4/12/2016	SeqNo:	541681				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	24.8	2.00	30.00	0	82.7	70	130				Q
Aliphatic Hydrocarbon (C6-C8)	8.19	2.00	10.00	0	81.9	70	130				
Aliphatic Hydrocarbon (C8-C10)	8.46	2.00	10.00	0	84.6	70	130				
Aliphatic Hydrocarbon (C10-C12)	11.8	2.00	10.00	0	118	70	130				
Aromatic Hydrocarbon (C8-C10)	37.5	2.00	40.00	0	93.6	70	130				
Aromatic Hydrocarbon (C10-C12)	14.9	2.00	10.00	0	149	70	130				S
Aromatic Hydrocarbon (C12-C13)	12.9	2.00	10.00	0	129	70	130				
Surr: 1,4-Difluorobenzene	2.02		2.500		80.6	65	140				
Surr: Bromofluorobenzene	2.33		2.500		93.1	65	140				

NOTES:

S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.
 Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Work Order: 1604078
 CLIENT: Apex Laboratories
 Project: A6C1076

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID MB-13429	SampType: MBLK	Units: mg/Kg	Prep Date: 4/11/2016	RunNo: 28816							
Client ID: MBLKS	Batch ID: 13429		Analysis Date: 4/12/2016	SeqNo: 541630							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C5-C6)	ND	2.00		0	0						Q
Aliphatic Hydrocarbon (C6-C8)	ND	2.00		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.00		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.00		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.00		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.00		0	0						
Surr: 1,4-Difluorobenzene	2.46		2.500		98.2	65	140				
Surr: Bromofluorobenzene	1.82		2.500		72.9	65	140				

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1604078-003ADUP	SampType: DUP	Units: mg/Kg	Prep Date: 4/11/2016	RunNo: 28816							
Client ID: 5237-160328-DC-SED08	Batch ID: 13429		Analysis Date: 4/12/2016	SeqNo: 541616							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C5-C6)	ND	1.91		0	0			0		25	QH
Aliphatic Hydrocarbon (C6-C8)	ND	1.91		0	0			0		25	H
Aliphatic Hydrocarbon (C8-C10)	ND	1.91		0	0			0		25	H
Aliphatic Hydrocarbon (C10-C12)	ND	1.91		0	0			0		25	H
Aromatic Hydrocarbon (C8-C10)	ND	1.91		0	0			0		25	H
Aromatic Hydrocarbon (C10-C12)	ND	1.91		0	0			0		25	H
Aromatic Hydrocarbon (C12-C13)	ND	1.91		0	0			0		25	H
Surr: 1,4-Difluorobenzene	2.48		2.385		104	65	140		0		H
Surr: Bromofluorobenzene	2.00		2.385		83.8	65	140		0	0	H

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Work Order: 1604078
CLIENT: Apex Laboratories
Project: A6C1076

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID 1604081-001AMS	SampType: MS	Units: mg/Kg	Prep Date: 4/11/2016	RunNo: 28816							
Client ID: BATCH	Batch ID: 13429		Analysis Date: 4/12/2016	SeqNo: 541621							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C5-C6)	20.4	1.59	23.89	0	85.4	70	130				Q
Aliphatic Hydrocarbon (C6-C8)	7.49	1.59	7.962	0	94.1	70	130				
Aliphatic Hydrocarbon (C8-C10)	6.74	1.59	7.962	0	84.6	70	130				
Aliphatic Hydrocarbon (C10-C12)	9.69	1.59	7.962	0	122	70	130				
Aromatic Hydrocarbon (C8-C10)	30.1	1.59	31.85	0	94.4	70	130				
Aromatic Hydrocarbon (C10-C12)	16.2	1.59	7.962	0	204	70	130				S
Aromatic Hydrocarbon (C12-C13)	8.95	1.59	7.962	0	112	70	130				
Surr: 1,4-Difluorobenzene	1.76		1.990		88.6	65	140				
Surr: Bromofluorobenzene	1.97		1.990		99.0	65	140				

NOTES:

S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.
Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1604081-001AMSD	SampType: MSD	Units: mg/Kg	Prep Date: 4/11/2016	RunNo: 28816							
Client ID: BATCH	Batch ID: 13429		Analysis Date: 4/12/2016	SeqNo: 541622							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C5-C6)	19.9	1.59	23.89	0	83.4	70	130	20.41	2.46	30	Q
Aliphatic Hydrocarbon (C6-C8)	6.68	1.59	7.962	0	83.9	70	130	7.492	11.5	30	
Aliphatic Hydrocarbon (C8-C10)	7.17	1.59	7.962	0	90.1	70	130	6.738	6.21	30	
Aliphatic Hydrocarbon (C10-C12)	10.3	1.59	7.962	0	129	70	130	9.690	6.16	30	
Aromatic Hydrocarbon (C8-C10)	30.6	1.59	31.85	0	96.1	70	130	30.08	1.69	30	
Aromatic Hydrocarbon (C10-C12)	18.0	1.59	7.962	0	226	70	130	16.24	10.3	30	S
Aromatic Hydrocarbon (C12-C13)	12.2	1.59	7.962	0	153	70	130	8.954	30.5	30	RS
Surr: 1,4-Difluorobenzene	1.69		1.990		84.9	65	140		0		
Surr: Bromofluorobenzene	1.93		1.990		96.9	65	140		0	0	

NOTES:

S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.
R - High RPD observed.
Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Work Order: 1604078
CLIENT: Apex Laboratories
Project: A6C1076

QC SUMMARY REPORT
Volatile Petroleum Hydrocarbons by NWVPH

Sample ID CCV-B-13429	SampType: CCV	Units: mg/Kg	Prep Date: 4/13/2016	RunNo: 28816							
Client ID: CCV	Batch ID: 13429		Analysis Date: 4/13/2016	SeqNo: 541628							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C5-C6)	494	2.00	600.0	0	82.4	80	120				
Aliphatic Hydrocarbon (C6-C8)	189	2.00	200.0	0	94.7	80	120				
Aliphatic Hydrocarbon (C8-C10)	161	2.00	200.0	0	80.4	80	120				
Aliphatic Hydrocarbon (C10-C12)	164	2.00	200.0	0	81.8	80	120				
Aromatic Hydrocarbon (C8-C10)	684	2.00	800.0	0	85.6	80	120				
Aromatic Hydrocarbon (C10-C12)	253	2.00	200.0	0	127	80	120				S
Aromatic Hydrocarbon (C12-C13)	220	2.00	200.0	0	110	80	120				
Surr: 1,4-Difluorobenzene	42.4		50.00		84.8	65	140				
Surr: Bromofluorobenzene	42.0		50.00		83.9	65	140				

NOTES:

S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Date: 4/27/2016

Work Order: 1604078
CLIENT: Apex Laboratories
Project: A6C1076

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID	1604078-002ADUP	SampType:	DUP	Units:	wt%	Prep Date:	4/11/2016	RunNo:	28687		
Client ID:	5237-160328-DC-SED07	Batch ID:	R28687			Analysis Date:	4/11/2016	SeqNo:	539603		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	40.5	0.500						36.85	9.52	20	

Client Name: **APEX**
 Logged by: **Erica Silva**

 Work Order Number: **1604078**
 Date Received: **4/9/2016 12:34:00 PM**

Chain of Custody

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

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°C * Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

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

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	2.1
Sample	2.9

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

Original

SUBCONTRACT ORDER

**Apex Laboratories
A6C1076**

11604078

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Fremont Analytical
3600 Fremont Avenue N.
Seattle, WA 98103
Phone : (206) 352-3790
Fax: (206) 352-7178

Sample Name: 5237-160328-DC-SED075G **Sedimen** **Sampled: 03/28/16 12:50** **Sediment 3 bgs** **(A6C1076-11)**

Analysis	Due	Expires	Comments
NWTPH-VPH (Sub) <i>Containers Supplied:</i> (B)40 mL VOA - 5035 (MeOH)	04/11/16 17:00	04/11/16 12:50	level IV DP needed

Sample Name: 5237-160328-DC-SED075 **Sedimen** **Sampled: 03/28/16 12:50** **Sediment 0 to 6 bgs** **(A6C1076-12)**

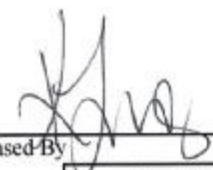

Analysis	Due	Expires	Comments
NWTPH-EPH (Sub) <i>Containers Supplied:</i> (F)4 oz Glass Jar	04/11/16 17:00	04/11/16 12:50	Level IV DP needed

Sample Name: 5237-160328-DC-SED087G **Sedimen** **Sampled: 03/28/16 14:45** **Sediment 3 bgs** **(A6C1076-21)**

Analysis	Due	Expires	Comments
NWTPH-VPH (Sub) <i>Containers Supplied:</i> (B)40 mL VOA - 5035 (MeOH)	04/11/16 17:00	04/11/16 14:45	level IV DP needed

Sample Name: 5237-160328-DC-SED087 **Sedimen** **Sampled: 03/28/16 14:45** **Sediment 0 to 6 bgs** **(A6C1076-22)**

Analysis	Due	Expires	Comments
NWTPH-EPH (Sub) <i>Containers Supplied:</i> (H)4 oz Glass Jar	04/11/16 17:00	04/11/16 14:45	Level IV DP needed

Released By:  Date: 4/8/16
Received By:  Date: 4/9/16

UPS (Shipper) UPS (Shipper)