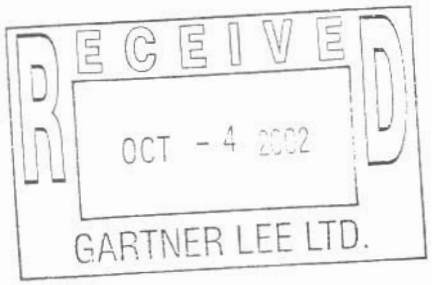
ALS Environmental

CHEMICAL ANALYSIS REPORT

Date:	September 19, 2002
ALS File No.	P8989
Report On:	22303 Polaris Soil Analysis
Report To:	**Gartner Lee Ltd.** Sperling Plaza Suite 490, 6400 Roberts Street Burnaby, BC V5G 4C9
Attention:	**Ms. Arlene Laudrum**
Received:	September 9, 2002



ALS ENVIRONMENTAL

per:

Brent C. Mack, B.Sc. - Project Chemist
Leanne Harris, B.Sc. - Project Chemist

ALS CANADA LTD.
1988 Triumph Street, Vancouver, BC Canada V5L 1K5
Phone: 604-253-4188 Fax: 604-253-6700 Website: www.alsenviro.com

REMARKS

Please note that the detection limits for some Polycyclic Aromatic Hydrocarbons were increased due to matrix interferences encountered during analysis.

File No. P8989

RESULTS OF ANALYSIS - Sediment/Soil

Sample ID	A1	A2	A3	A4	B1
Sample Date	02 09 06	02 09 06	02 09 06	02 09 06	02 09 06
Sample Time	15:30	15:40	15:50	16:00	16:10
ALS ID	*1*	*2*	*3*	*4*	*5*
Physical Tests					
Moisture %	6.5	2.8	15.7	2.3	2.4
Non-Halogenated Volatiles					
Benzene	-	-	<0.04	-	-
Ethylbenzene	-	-	<0.05	-	-
Styrene	-	-	<0.05	-	-
Toluene	-	-	<0.05	-	-
meta- & para-Xylene	-	-	<0.05	-	-
ortho-Xylene	-	-	<0.05	-	-
CWS Fraction 1 (C6-10)	-	-	<30	-	-
CWS Fraction 1-BTEX	-	-	<30	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	<0.02	-	<0.005	-	-
Acenaphthylene	<0.01	-	<0.005	-	-
Anthracene	<0.02	-	<0.01	-	-
Benz(a)anthracene	<0.02	-	<0.01	-	-
Benzo(a)pyrene	<0.02	-	<0.01	-	-
Benzo(b)fluoranthene	<0.03	-	<0.01	-	-
Benzo(g,h,i)perylene	<0.02	-	<0.01	-	-
Benzo(k)fluoranthene	<0.02	-	<0.01	-	-
Chrysene	<0.02	-	<0.01	-	-
Dibenz(a,h)anthracene	<0.01	-	<0.005	-	-
Fluoranthene	<0.02	-	<0.01	-	-
Fluorene	0.05	-	<0.01	-	-
Indeno(1,2,3-c,d)pyrene	<0.02	-	<0.01	-	-
Naphthalene	<0.05	-	<0.01	-	-
Phenanthrene	0.09	-	<0.01	-	-
Pyrene	<0.02	-	<0.01	-	-
2-Methylnaphthalene	0.18	-	<0.01	-	-
Extractable Hydrocarbons					
CWS Fraction 2 (C10-16)	218	<50	<50	<50	<50
CWS Fraction 3 (C16-34)	1240	93	<50	161	<50
CWS Fraction 4 (C34-50)	98	<50	<50	<50	<50

Remarks regarding the analyses appear at the beginning of this report.
CWS = CCME - Canada Wide Standards.
Results are expressed as milligrams per dry kilogram except where noted.
< = Less than the detection limit indicated.

File No. P8989

RESULTS OF ANALYSIS - Sediment/Soil

Sample ID	B2	B3	B4	B5	B6
Sample Date	02 09 06	02 09 06	02 09 06	02 09 06	02 09 06
Sample Time	16:20	16:30	16:40	16:50	17:00
ALS ID	*6*	*7*	*8*	*9*	*10*
Physical Tests					
Moisture %	2.2	5.4	2.1	17.8	5.4
Non-Halogenated Volatiles					
Benzene	<0.04	-	-	<0.04	-
Ethylbenzene	<0.05	-	-	<0.05	-
Styrene	<0.05	-	-	<0.05	-
Toluene	<0.05	-	-	<0.05	-
meta- & para-Xylene	<0.05	-	-	<0.05	-
ortho-Xylene	<0.05	-	-	<0.05	-
CWS Fraction 1 (C6-10)	<30	-	-	<30	-
CWS Fraction 1-BTEX	<30	-	-	<30	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	<0.005	-	-	<0.005	-
Acenaphthylene	<0.005	-	-	<0.005	-
Anthracene	<0.01	-	-	<0.01	-
Benz(a)anthracene	<0.01	-	-	<0.01	-
Benzo(a)pyrene	<0.01	-	-	<0.01	-
Benzo(b)fluoranthene	<0.01	-	-	<0.01	-
Benzo(g,h,i)perylene	<0.01	-	-	<0.01	-
Benzo(k)fluoranthene	<0.01	-	-	<0.01	-
Chrysene	<0.01	-	-	<0.01	-
Dibenz(a,h)anthracene	<0.005	-	-	<0.005	-
Fluoranthene	<0.01	-	-	<0.01	-
Fluorene	<0.01	-	-	<0.01	-
Indeno(1,2,3-c,d)pyrene	<0.01	-	-	<0.01	-
Naphthalene	<0.01	-	-	<0.01	-
Phenanthrene	<0.01	-	-	<0.01	-
Pyrene	<0.01	-	-	<0.01	-
2-Methylnaphthalene	<0.01	-	-	<0.01	-
Extractable Hydrocarbons					
CWS Fraction 2 (C10-16)	<50	<50	<50	<50	112
CWS Fraction 3 (C16-34)	<50	115	64	<50	235
CWS Fraction 4 (C34-50)	<50	<50	<50	<50	<50

Remarks regarding the analyses appear at the beginning of this report.
CWS = CCME - Canada Wide Standards.
Results are expressed as milligrams per dry kilogram except where noted.
< = Less than the detection limit indicated.

File No. P8989

RESULTS OF ANALYSIS - Sediment/Soil

Sample ID	B7
Sample Date	02 09 06
Sample Time	17:10
ALS ID	*11*
Physical Tests	
Moisture %	4.8
Extractable Hydrocarbons	
CWS Fraction 2 (C10-16)	50
CWS Fraction 3 (C16-34)	140
CWS Fraction 4 (C34-50)	<50

Remarks regarding the analyses appear at the beginning of this report.
CWS = CCME - Canada Wide Standards.
Results are expressed as milligrams per dry kilogram except where noted.
< = Less than the detection limit indicated.

File No. P8989

Appendix 1 - QUALITY CONTROL - Replicates

Sediment/Soil		B3	B3
		02 09 06 16:30	QC # 303989
Physical Tests			
Moisture	%	5.4	4.9
Extractable Hydrocarbons			
CWS Fraction 2 (C10-16)		<50	<50
CWS Fraction 3 (C16-34)		115	110
CWS Fraction 4 (C34-50)		<50	<50

Remarks regarding the analyses appear at the beginning of this report.
CWS = CCME - Canada Wide Standards.
Results are expressed as milligrams per dry kilogram except where noted.
< = Less than the detection limit indicated.

Appendix 2 - METHODOLOGY

Outlines of the methodologies utilized for the analysis of the samples submitted are as follows

Moisture in Sediment/Soil

This analysis is carried out gravimetrically by drying the sample at 103 C for a minimum of six hours.

Recommended Holding Time:
Sample: 14 days
Reference: Puget
For more detail see ALS Environmental "Collection & Sampling Guide"

Polycyclic Aromatic Hydrocarbons in Sediment/Soil

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Methods 3545, 3630 & 8270, published by the United States Environmental Protection Agency (EPA). The procedure uses an automated system (Accelerated Solvent Extractor - ASE) to extract a subsample of the sediment/soil with a 1:1 mixture of hexane and acetone. The extract is then solvent exchanged to toluene and undergoes a silica gel clean-up to remove sample components that could potentially interfere with the analysis. The final extract is analysed by capillary column gas chromatography with mass spectrometric detection (GC/MS).

Recommended Holding Time:
Sample: 14 days Extract: 40 days
Reference: EPA
For more detail see ALS Environmental "Collection & Sampling Guide"

Petroleum Hydrocarbons in Sediment/Soil (Canada-Wide Standard)

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2000." The various extraction fractions are analysed as follows:

CWS Fractions 1 and 1-BTEX:

This procedure involves the extraction of a subsample of the sediment/soil with methanol. Aliquots of the methanol extract are then analysed by capillary column gas chromatography with flame-ionization detection (GC/FID) for CWS Fraction 1, and by capillary column gas chromatography with mass spectrometric detection (GC/MS) for the BTEX compounds.

CWS Fractions 2, 2-PAH, 3, 3-PAH, 4 and 4G-SG:

The procedure uses an automated system at high temperature and pressure

Appendix 2 - METHODOLOGY - Continued

(Accelerated Solvent Extractor - ASE) or a Soxhlet system to extract a subsample of the sediment/soil with a 1:1 mixture of hexane and acetone. The extract is concentrated and undergoes a silica-gel clean-up to remove polar material. The final extract is analysed by high temperature capillary column gas chromatography with flame ionization detection (GC/FID). CWS Fractions 4G and 4G-SG (Gravimetric Heavy Hydrocarbons) are analysed gravimetrically.

Reported results may include any or all of the following:

CWS Fraction 1 (C6-10):
sum of all petroleum hydrocarbon compounds that elute between nC6 and nC10 obtained by GC/FID analysis

CWS Fraction 1-BTEX:
CWS Fraction 1 (C6-10), minus BTEX compounds

CWS Fraction 2 (C10-16):
sum of all petroleum hydrocarbon compounds that elute between nC10 and nC16 obtained by GC/FID analysis

CWS Fraction 2-PAH:
CWS Fraction 2 (C10-16), minus selected PAH compounds (Naphthalene)

CWS Fraction 3 (C16-34):
sum of all petroleum hydrocarbon compounds that elute between nC16 and nC34 obtained by GC/FID analysis

CWS Fraction 3-PAH:
CWS Fraction 3 (C16-34), minus selected PAH compounds

CWS Fraction 4 (C34-50):
sum of all petroleum hydrocarbon compounds that elute between nC34 and nC50 obtained by GC/FID analysis

CWS Fraction 4G (GHH):
Results obtained by gravimetric analysis.

CWS Fraction 4G-SG (GHH + SG):
Results obtained by gravimetric analysis after silica gel clean-up

Recommended Holding Time:

Sample: 7 days for CWS Fraction 1
14 days for CWS Fractions 2, 3, 4, 4G & 4G-SG
Extract: 7 days for all CWS Fractions
Reference: CCME
For more detail see ALS Environmental "Collection & Sampling Guide"

Volatile Organic Compounds and Volatile Hydrocarbons in Sediment/Soil

This analysis involves the extraction of a subsample of the sediment/soil with methanol. Aliquots of the methanol extract are then analyzed for Volatile Hydrocarbons (VH) by capillary column gas chromatography with flame-ionization detection (GC/FID) and for specific Volatile Organic

Appendix 2 - METHODOLOGY - Continued

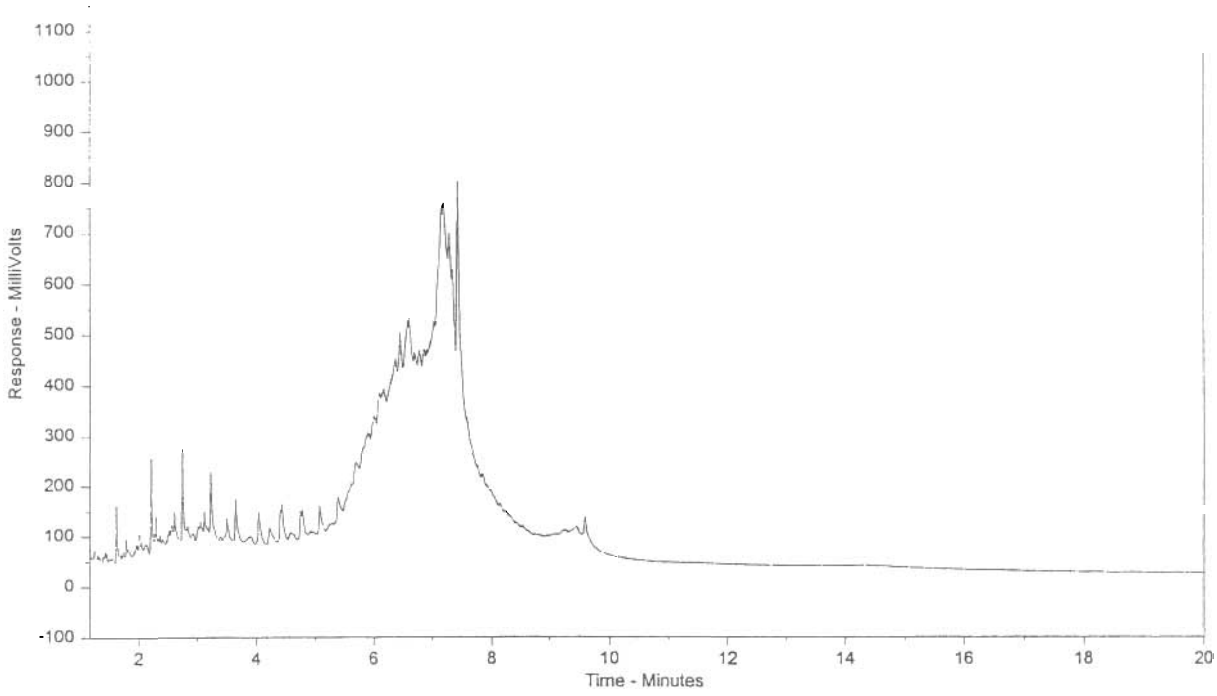
Compounds (VOC) by capillary column gas chromatography with mass spectrometric detection (GC/MS). The methanol extraction and VH analysis are carried out in accordance with the British Columbia Ministry of Environment, Lands and Parks (BCMELP) Analytical Method for Contaminated Sites "Volatile Hydrocarbons in Solids by GC/FID" (Version 2.1 July 1999). The VOC analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 8260, published by the United States Environmental Protection Agency (EPA).

Recommended Holding Time:
Sample: 7 days Extract: 40 days
Reference: BCMELP
For more detail see ALS Environmental "Collection & Sampling Guide"

End of Report

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
ASL Sample ID: **P8989-T--1**
File Name: i:\chrom\gc05\data\gc05_14septcws.0020.RAW
Run Information: 9/15/2002 2:32:59 AM



-nC10----------nC16----------nC34----------nC50----------
<---Gasoline---| <----------Heavy Oils----------->
|----------Diesel----------|

Sample Amount = 10.0 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

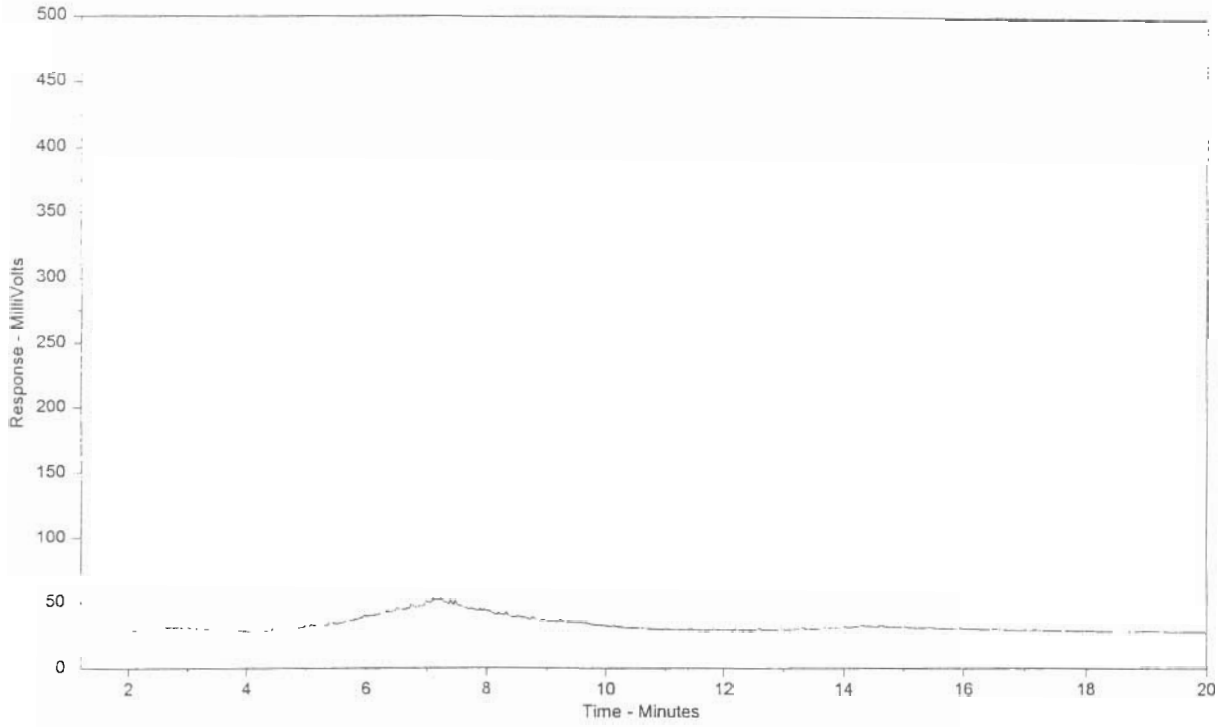
The Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and of four n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

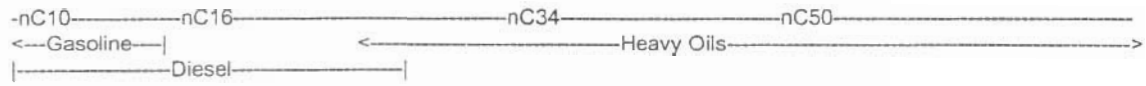
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
ASL Sample ID: **P8989-T--2**
File Name: i:\chrom\gc05\data\gc05_14septcws.0021.RAW
Run Information: 9/15/2002 3:03:16 AM





Sample Amount = 10.0 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

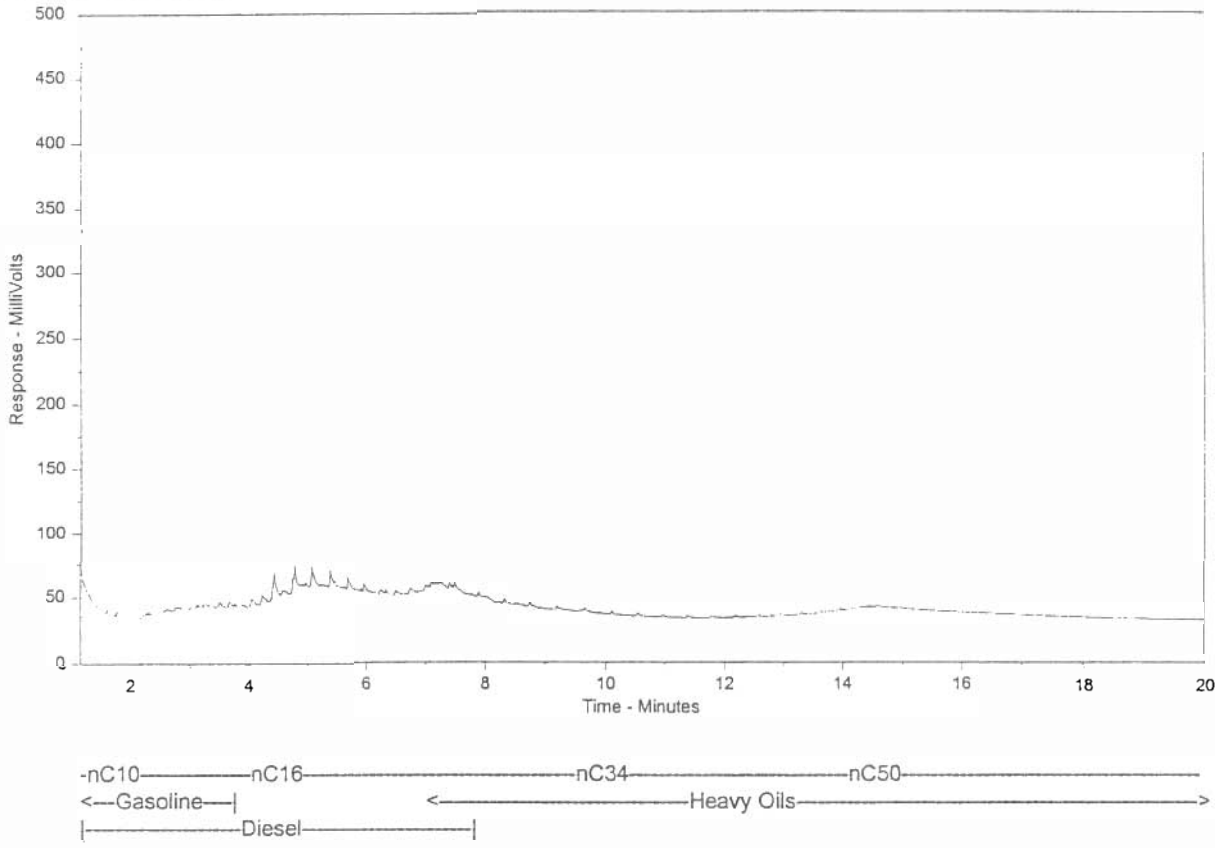
The Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and of four n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
ASL Sample ID: P8989-T--4#Rp
File Name: I:\Chrom\gc05\data\gc05_14septcws.0042.RAW
Run Information: 9/16/2002 9:46:46 PM



Sample Amount = 10.4 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

The Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and of four n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
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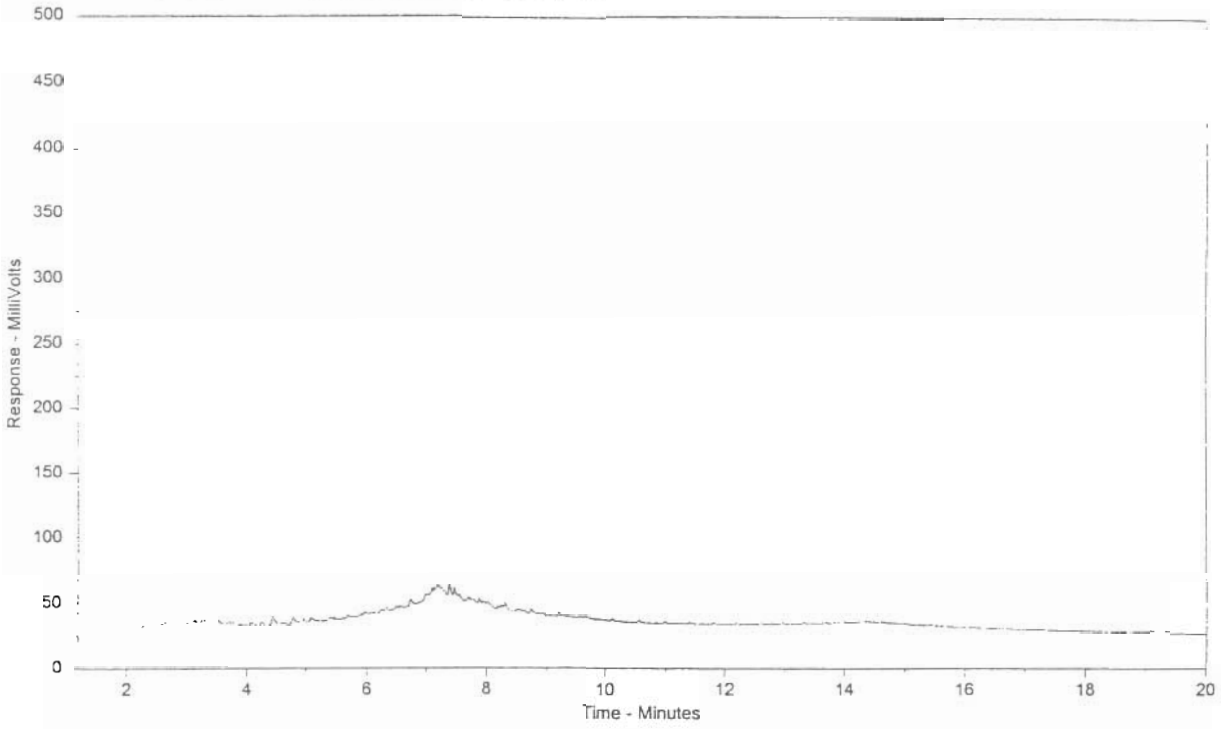
Run Information: 9/15/2002 5:04:06 AM



-nC10----------nC16----------nC34----------nC50----------
<---Gasoline---| <----------Heavy Oils----------->
|----------Diesel----------|

Sample Amount = 9.6 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
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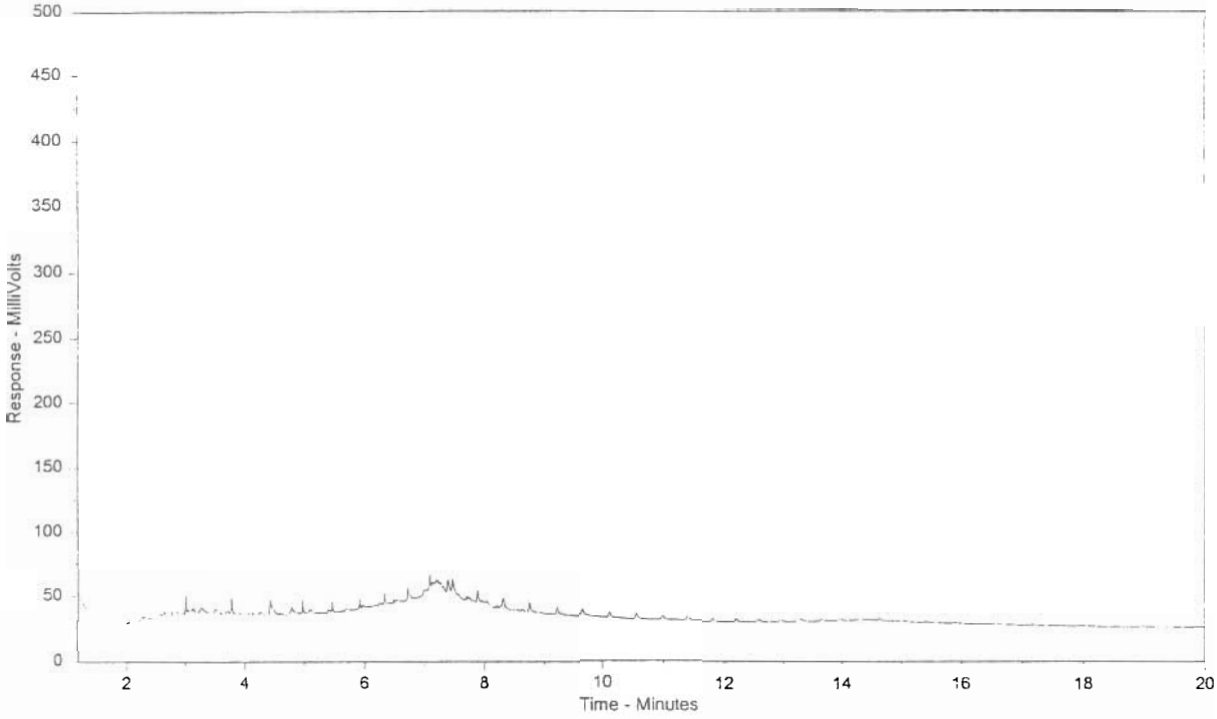
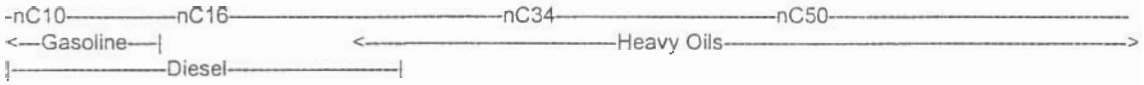
Run Information: 9/15/2002 7:34:59 AM





Sample Amount = 10.7 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

The Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and of four n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
ASL Sample ID: P8989-T--8
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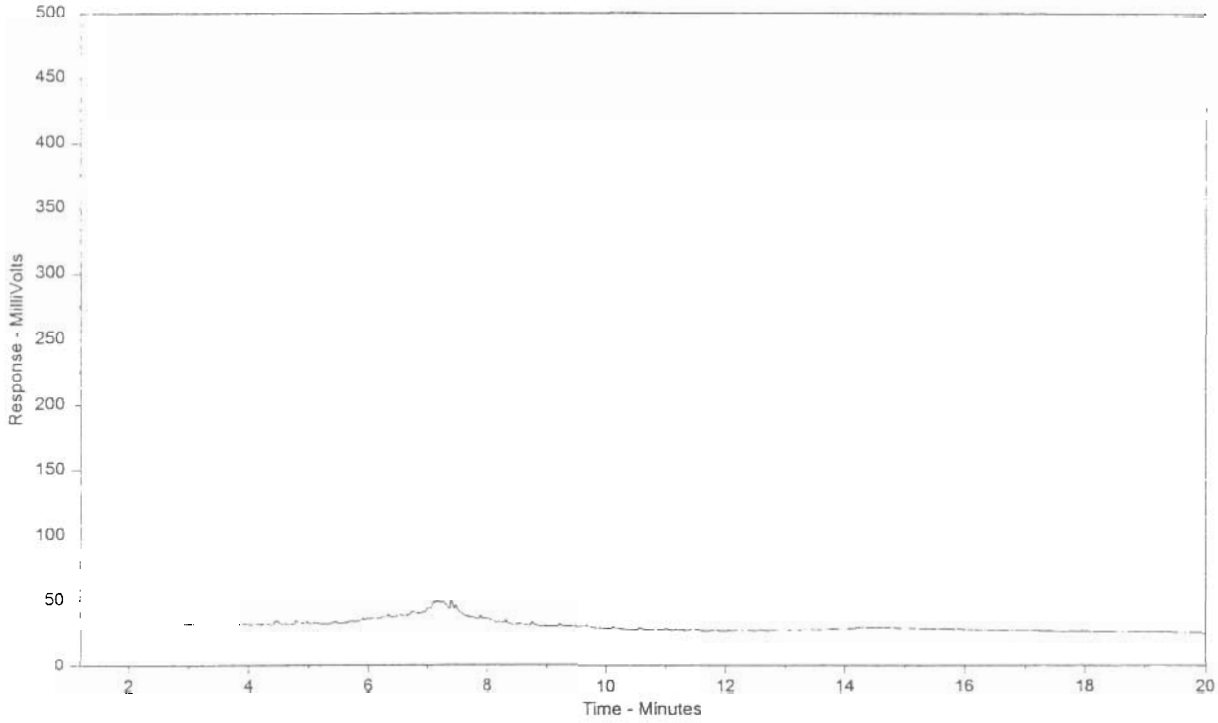
Run Information: 9/15/2002 8:05:13 AM



-nC10----------nC16----------nC34----------nC50----------
<---Gasoline---| <----------Heavy Oils----------->
|----------Diesel----------|

Sample Amount = 11.4 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

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Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
ASL Sample ID: P8989-T--10
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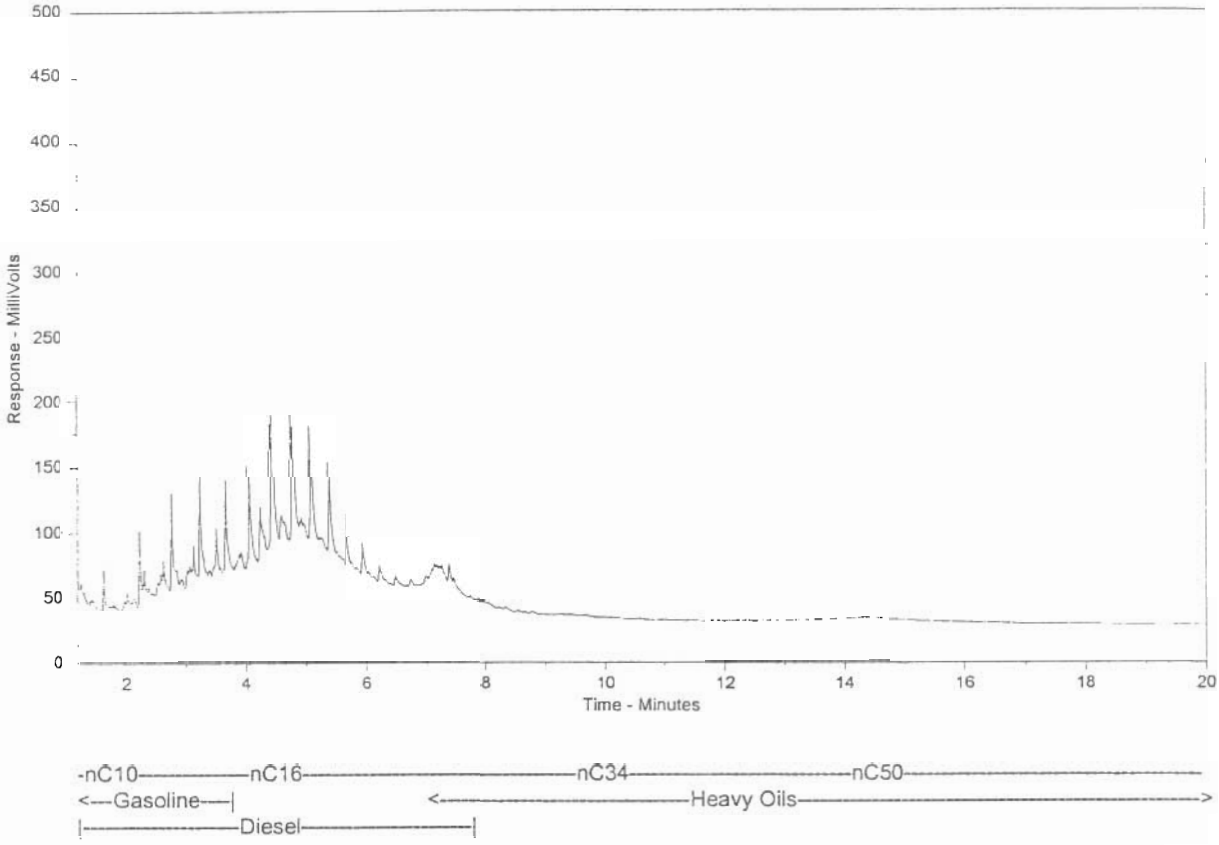
Run Information: 9/15/2002 9:05:40 AM



Sample Amount = 10.6 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

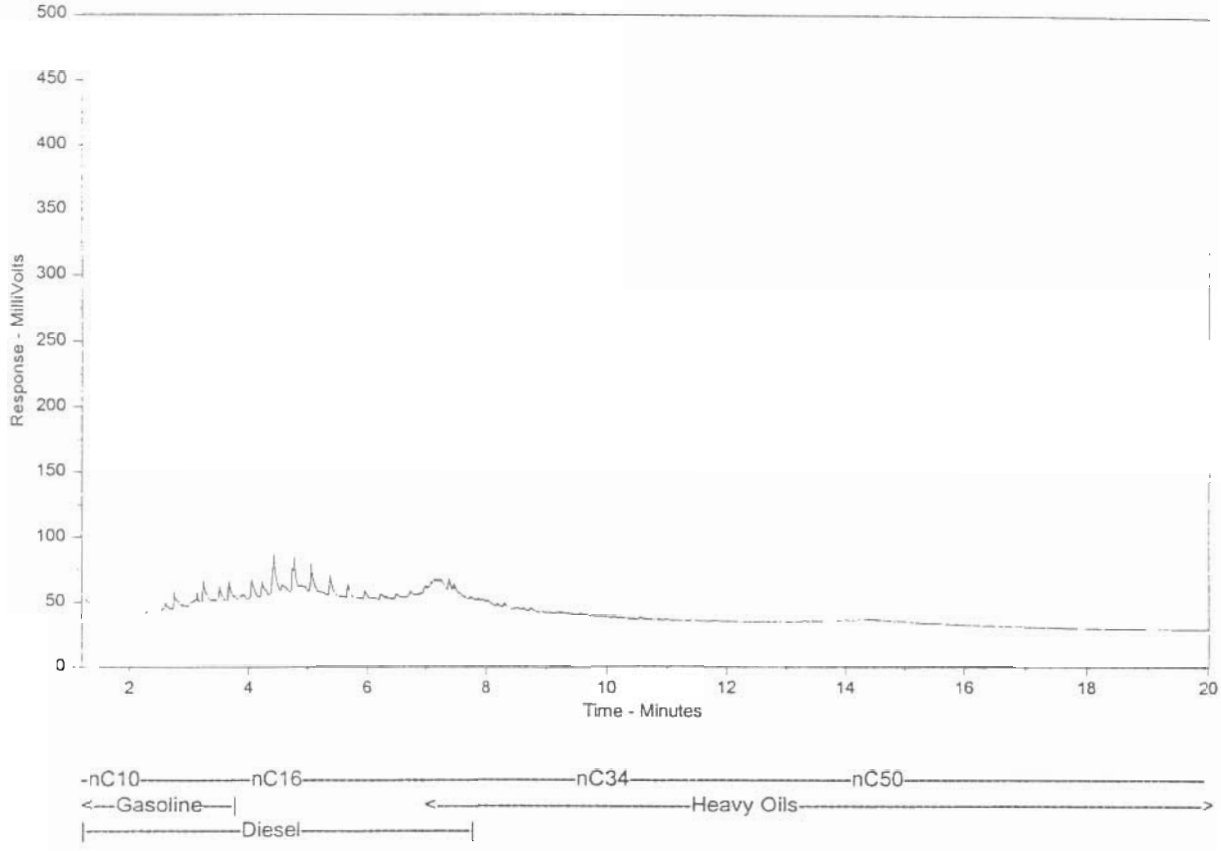
The Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and of four n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

ALS - Hydrocarbon Distribution Report - Canada-Wide Standard version

Client Sample ID:
ASL Sample ID: **P8989-T--11**
File Name: i:\chrom\gc05\data\gc05_14septcws.0034.RAW
Run Information: 9/15/2002 9:35:52 AM



Sample Amount = 11.2 (g or mL) Dilution Factor = 2.0

Canada-Wide Standard Method - Hydrocarbon Distribution Report

The Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products, and of four n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (October 2000 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

CLIENT: GARTNER LEE LIMITED

ADDRESS:

CITY: BURNABY PROV.: BC POSTAL CODE:

CONTACT: ARLENE LAUDRUM SAMPLER:

TELEPHONE: 604-299-4144 FAX:

PROJECT NAME/NO.: 22303

P.O. NO.: QUOTE NO.: POLARIS

DATE SUBMITTED: X ALS CONTACT: BRENT MAEK

ALS Environmental

1988 Triumph Street
Vancouver, BC
Canada V5L 1K5
TEL: 604-253-4188
TOLL FREE: 1-800-665-0243
FAX: 604-253-6700
www.alsenviro.com

FOR LAB USE ONLY

LAB USE ONLY	SAMPLE IDENTIFICATION	DATE / TIME COLLECTED (Y M D)				MATRIX	F2, F3	NOTES
P8989								
1	A1	02	09	06	3:30 AM PM	SOIL	X	2 JARS
2	A2				3:40 AM PM		X	
3	A3				3:50 AM PM		X	
4	A4				4:00 AM PM		X	
5	B1				4:10 AM PM		X	
6	B2				4:20 AM PM		X	
7	B3				4:30 AM PM		X	
8	B4				4:40 AM PM		X	
9	B5				4:50 AM PM		X	
10	B6				5:00 AM PM		X	
11	B7				5:10 AM PM		X	
					: AM PM			
					: AM PM			
					: AM PM			
					: AM PM			
					: AM PM			

TURN AROUND REQUIRED:

☐ ROUTINE (7 - 10 WORKING DAYS) ☐ RUSH (SPECIFY DATE):

SPECIAL INSTRUCTIONS (BILLING DETAILS, QC REPORTING, ETC.):

EMAIL RESULTS TO alaudrum@gartnerlee.com

RELIQUISHED BY:	DATE SEPT 6/02	RECEIVED BY:	DATE
	TIME 5:30pm		TIME
RELIQUISHED BY:	DATE	RECEIVED BY:	DATE 2002
	TIME		TIME 11:2

FOR LAB USE ONLY

COOLER SEAL INTACT UPON RECEIPT? ☐ YES ☐ NO ☐ N/A

SAMPLE TEMPERATURE UPON RECEIPT: 2 °C

FROZEN? ☐ YES ☐ NO

CLIENT COPY

Appendix E

Acronyms

ACRONYM	DEFINITION
GLL	Gartner Lee Limited
Teck Cominco	Teck Cominco Ltd.
NWT Spill Hotline	Contact number servicing both the Northwest Territories and Nunavut
DFO	Federal Department of Fisheries and Oceans
ALS	Aurora Laboratory Services Ltd. of Vancouver, BC Accredited by the Canadian Association for Environmental Analytical Laboratories
Site	Polaris Mine, Little Cornwallis Island, Nunavut
Spill	The release of petroleum hydrocarbon impacted water to the environment in June 2002
"40 m Zone"	Hydrocarbon impacted area of beach
"60 m Zone"	The beach area to south of the 40 m Zone. No longer impacted by hydrocarbons.
"175 m Zone"	The beach area to north of the 40 m Zone. Small spotty hydrocarbon impacted areas on surface.
PHC	Petroleum hydrocarbons
PID	Photoionization detector used to measure concentrations of organic vapours
ppm	parts per million; equivalent to mg/kg and µg/g
PVC	Polyvinyl chloride
QA/QC	quality assurance/quality control

Federal Environmental Quality Terms

CCME	Canadian Council of Ministers of the Environment is the major inter-governmental forum in Canada for discussion and joint action on environmental issues of national and international concern.
CEQG	Canadian Environmental Quality Guidelines for air, and surface water and drinking water, sediment, soil and tissue residue developed by CCME
PHC CWS	Canada-wide standards for petroleum hydrocarbons in soil developed by CCME
SQG_{HH}	Soil Quality Guidelines for human health
SQG_{E}	Soil Quality Guidelines for the health of the environment
RL/PL	Sol quality guidelines for Residential or Parkland Land use activities
IL	Sol quality guidelines for Industrial Land use activities
ISQG	Interim Sediment Quality Guidelines for protection of aquatic life
PEL	Probable Effects Level for sediment quality; a concentration at which adverse biological effects frequently occur.
MWAL	Guidelines for the protection of marine water aquatic life

Chemical Compounds

LPH	Liquid Petroleum Hydrocarbon
LNAPL	Light non-aqueous phase liquids; includes LPH that float on water
NAPL	Non-aqueous phase liquids; includes LPH that float or sink
VPH	Volatile Petroleum Hydrocarbon; gasoline for example; encompasses the range of equivalent carbon numbers from C6 to C10.
BETX	Benzene, Ethylbenzene, Toluene and Xylene are volatile petroleum hydrocarbons
EPH	Extractable Petroleum Hydrocarbon; diesel for example
PAH	Polycyclic Aromatic Hydrocarbons
F1	PHC fraction in soil encompasses the range of equivalent carbon numbers from C6 to C10. Constituents include the volatile fraction of most hydrocarbons mixtures (including gasoline).
F2	PHC fraction in soil encompasses the range of equivalent carbon numbers from C11 through C16. Constituents are semi-volatile petroleum hydrocarbons and include constituents of gasoline and diesel fuels.
F3	PHC fraction in soil encompasses the range of equivalent carbon numbers from C17 through C34. Constituents include typical lubricating oils and greases, heavy fuel oils, road oils and asphalt.
F4	PHC fraction in soil encompasses ranges of equivalent carbon numbers from C35 through C50+. Constituents often make up a significant proportion of crude oils.
LEPH	Light Extractable Petroleum Hydrocarbon encompassing the range of equivalent carbon numbers from C10 through C19 less the contribution of PAH parameters for which guidelines exist
HEPH	Heavy Extractable Petroleum Hydrocarbon encompassing the range of equivalent carbon numbers from C19 through C32 less the contribution of PAH parameters for which guidelines exist
TEH	Total Extractable Hydrocarbon in soil is a summation of F2 and F3 or LEPH plus HEPH, encompassing the range of equivalent carbon numbers from C10 to C32
EPHw10-19	Extractable Hydrocarbons in water encompassing the ranges of equivalent carbon numbers C10 to C19.