

Appendix 5

**CLIENT NAME: IYON KECHIKA CONTRACTING, BC
(403)**

ATTENTION TO: Derek Loots

PROJECT NO:

AGAT WORK ORDER: 13Y773588

SOIL ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Oct 23, 2013

PAGES (INCLUDING COVER): 4

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

***NOTES**

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories (V1)

Member of: Association of Professional Engineers, Geologists and Geophysicists
of Alberta (APEGGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested

Page 1 of 4



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 13Y773588

PROJECT NO:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: IYON KECIKA CONTRACTING

ATTENTION TO: Derek Loots

British Columbia Metals Schedule 4 and 5					DATE RECEIVED: 2013-10-22	DATE REPORTED: 2013-10-23
Parameter	Unit	SAMPLE DESCRIPTION:		Sample #2 Soil	Sample #1 Soil	RDL
		G / S	DATE SAMPLED:			
Antimony	µg/g			4871142	4871235	0.05
Arsenic	µg/g			0.31	0.27	0.1
Barium	µg/g			3.5	3.2	0.5
Beryllium	µg/g			70.8	58.9	0.02
Boron (Hot Water Soluble)	µg/g			0.21	0.18	0.1
Cadmium	µg/g			<0.1	<0.1	0.01
Chromium	µg/g			0.16	0.12	1
Cobalt	µg/g			12	9	0.1
Copper	µg/g			3.9	3.2	0.2
Lead	µg/g			6.5	5.2	0.1
Mercury	µg/g			4.7	3.6	0.01
Molybdenum	µg/g			0.01	0.01	0.05
Nickel	µg/g			0.29	0.28	0.5
Selenium	µg/g			13.7	11.9	0.1
Silver	µg/g			0.2	0.3	0.05
Thallium	µg/g			<0.05	0.12	0.05
Tin	µg/g			<0.05	<0.05	0.05
Vanadium	µg/g			0.13	0.08	1
Zinc	µg/g			14	10	1
pH 1:2	pH units			31	28	0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
4871142-4871235 Results are based on the dry weight of the sample

Certified By:

Quality Assurance

CLIENT NAME: IYON KECHIKA CONTRACTING

AGAT WORK ORDER: 13Y773588

PROJECT NO:

ATTENTION TO: Derek Loots

Soil Analysis

RPT Date: Oct 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

British Columbia Metals Schedule 4 and 5

Antimony	4871142	4871142	0.31	0.27	13.8%	< 0.05	98%	70%	130%	96%	85%	115%			
Arsenic	4871142	4871142	3.5	3.3	5.9%	< 0.1	99%	70%	130%	99%	90%	110%			
Barium	4871142	4871142	70.8	62.7	12.1%	< 0.5	102%	70%	130%	97%	90%	110%			
Beryllium	4871142	4871142	0.21	0.18	15.4%	< 0.02	109%	70%	130%	106%	90%	110%			
Boron (Hot Water Soluble)	4871142	4871142	<0.1	<0.1	0.0%	< 0.1	88%	70%	130%	95%	90%	110%			
Cadmium	4871142	4871142	0.16	0.14	13.3%	< 0.01	94%	70%	130%	96%	90%	110%			
Chromium	4871142	4871142	12	10	18.2%	< 1	104%	70%	130%	102%	90%	110%			
Cobalt	4871142	4871142	3.9	3.4	13.7%	< 0.1	109%	70%	130%	103%	90%	110%			
Copper	4871142	4871142	6.5	5.6	14.9%	< 0.2	102%	70%	130%	104%	90%	110%			
Lead	4871142	4871142	4.7	3.8	21.2%	< 0.1	99%	70%	130%	104%	90%	110%			
Mercury	4871142	4871142	0.01	0.02	NA	< 0.01	120%	70%	130%	107%	90%	110%			
Molybdenum	4871142	4871142	0.29	0.27	7.1%	< 0.05	96%	70%	130%	99%	90%	110%			
Nickel	4871142	4871142	13.7	12.3	10.8%	< 0.5	106%	70%	130%	103%	90%	110%			
Selenium	4871142	4871142	0.2	<0.1	NA	< 0.1				107%	85%	115%			
Silver	4871142	4871142	<0.05	0.05	NA	< 0.05	101%	70%	130%	98%	90%	110%			
Thallium	4871142	4871142	<0.05	<0.05	0.0%	< 0.05	95%	70%	130%	106%	90%	110%			
Tin	4871142	4871142	0.13	0.13	0.0%	< 0.05				107%	90%	110%			
Vanadium	4871142	4871142	14	11	24.0%	< 1	103%	70%	130%	99%	90%	110%			
Zinc	4871142	4871142	31	28	10.2%	< 1	103%	70%	130%	108%	90%	110%			
pH 1:2	4871142	4871142	7.8	7.8	0.0%	< 0.1	99%	90%	110%	100%	95%	105%			

Certified By:





Method Summary

CLIENT NAME: IYON KECHIKA CONTRACTING

AGAT WORK ORDER: 13Y773588

PROJECT NO:

ATTENTION TO: Derek Loots

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6105, LAB-181-4011	BC MOE Lab Manual C (Boron, HWS) and EPA 6010C	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual B (pH, Electrometric, Soil)	PH METER



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 134773588

OCT 22 PM 2:14

RECEIVING BASICS:

*Complete CoC as well where required

Date and Time: 22-OCT-13 2:14

Courier: Novex

Received by: DAMIAN LACROIX

Relinquished by: Novex

Branch Received From: WHITENORSE

Company: Iyon Kechika Contracting

Consultant: N/A

Client left without count verified: N/A

CoC INFORMATION:

Received: Yes ☒ No ☐ Emailed to PM

Completed in full: Yes ☒ No ☐ If NO, why: _____

TURNAROUND TIME: RUSH

COC Numbers: N/A

SAMPLE QUANTITIES:

Coolers: 1 Bottles/Jars: _____ Bags: 2

TIME SENSITIVE ISSUES:

Earliest Date Sampled: _____

Microbiology Test: _____

Hydrocarbons Test: _____

Samples are received >5 days after sampling: Yes No

Time Sensitive Test (circle): BOD, Chlorine, Colour, Dissolved Oxygen, Ortho-Phosphate, Nitrate/Nitrite, pH, Turbidity

ALREADY EXCEEDED?

Yes No

Expiry: _____

Expiry: _____

SPECIALTY ISSUES:

Legal Samples: Yes No

International Samples: Yes No

**Proper tape/labels applied: Yes No

Hazardous Samples:

Why hazardous: _____

Precaution taken: _____

SAMPLE REQUIREMENTS:

*Complete while logging in by login staff.

Correct bottles used for testing: Yes No

If No, explain: _____

Correct amount of sample for analysis: Yes No

If No, explain: _____

Are all samples labeled correctly: Yes No

If No, explain: _____

NON-CONFORMANCES:

3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's) *use jars when available

(1) 4 + 4 + 4 = 4 °C (2) _____ + _____ = _____ °C (3) _____ + _____ = _____ °C (4) _____ + _____ = _____ °C

Was ice or ice pack present: Yes ☒ No ☐

Additional integrity issues:

1) No CoC, No Sample date

2) No sample ID, No Contact info

3) _____

Account Project Manager: Angela Bond Have they been notified of the above issues: Yes ☒ No ☐

Whom spoken to: Khaled Athabadi Date and Time: 22-OCT-13 @ 2:14pm

ADDITIONAL NOTES:

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - Branch: Whitewater

Received by: Lindsay

Date & Time: Oct 21/2013 12:15 am / pm
Relinquished by: _____
Client left without count verified: Yes / No

RECEIVING BASICS

Company/Consultant: Iyan Kechika Contracting
Custody Seal Intact: Yes / No / NA

COC INFORMATION

COC received: Yes No Emailed to CPM

TAT: 24hr 24-48hr 48-72hr Reg Other _____

COC Complete? Yes / No *If NO why: NRC

COC Numbers: _____

TIME SENSITIVE ISSUES

Earliest Date Sampled: _____

ALREADY EXCEEDED? Yes No

Microbiology/Time Sensitive Test*: _____

Expiry: _____

Hydrocarbon Test: _____

Expiry: _____

Are samples received more than 5 days after sampling: Yes No

*Residual Chlorine, Dissolved Oxygen, Turbidity, BOD, Nitrate/Nitrite, Microtox

SAMPLE INTEGRITY

Hazardous Samples

Why hazardous: _____

Precaution taken: _____

Damaged: Yes / No If YES why? No Bubble Wrap Frozen Courier Other: _____

Temperature (to be recorded from bottles/jars only)

N/A Only Soil Bags received

(1) (Bottle/Jar) 1.6 + 2.2 + 9.9 = 13.7 °C (2) (Bottle/Jar) _____ + _____ + _____ = _____ °C (3) (Bottle/Jar) _____ + _____ + _____ = _____ °C

(4) (Bottle/Jar) _____ + _____ + _____ = _____ °C (5) (Bottle/Jar) _____ + _____ + _____ = _____ °C (6) (Bottle/Jar) _____ + _____ + _____ = _____ °C

(If more than 6 coolers are received use another sheet of paper and attach)

Coolant used: Icepack(Top / Bottom / Side)

Bagged Ice (Top / Bottom / Side)

Free Ice

None

Coolant added by Branch? Yes / No

Samples repacked by Branch? Yes / No

Additional integrity issues (Indicate issues below and on the CoC next to the sample ID):

Account Project Manager: _____ have they been notified of the above issues: Yes No

Whom spoken to: _____ Date and Time: _____ CPM Initial: _____

Your P.O. #: 700266127
Your C.O.C. #: G032676

Attention: Richard Wells
FRANZ ENVIRONMENTAL INC.
FRANZEN-VAN
1080 MAINLAND STREET
SUITE 308
VANCOUVER, BC
CANADA V6B 2T4

Report Date: 2013/10/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B399357
Received: 2013/10/28, 09:40

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	6	2013/10/28	2013/10/29	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	6	N/A	2013/10/29	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	6	2013/10/28	2013/10/28	BBY8SOP-00030	CCME Soil Tier 1
Moisture	6	N/A	2013/10/29	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	6	2013/10/28	2013/10/28	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	6	N/A	2013/10/29	BBY WI-00033	CCME Guidelines
PAH in Soil by GC/MS (SIM)	6	2013/10/28	2013/10/28	BBY8SOP-00022	EPA 8270D
Total LMW, HMW, Total PAH Calc	6	N/A	2013/10/29	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	6	N/A	2013/10/29	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	6	2013/10/28	2013/10/28	BBY8SOP-00029	BC Env Lab Manual

* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

29 Oct 2013 16:26:59 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
Email: CIreland@maxxam.ca
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	HY1525	HY1526	HY1527	HY1528	HY1529	HY1530	
Sampling Date	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	
UNITS	311-6	312-6	313-6	314-6	315-1	00069-DUP4	RDL
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	10
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	11	<10	10
Reached Baseline at C50	mg/kg	YES	YES	YES	YES	YES	N/A
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	114	109	109	129	113	115
							7251833

PHYSICAL TESTING (SOIL)

Maxxam ID	HY1525	HY1526	HY1527	HY1528	HY1529	HY1530	
Sampling Date	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	
UNITS	311-6	312-6	313-6	314-6	315-1	00069-DUP4	RDL
Physical Properties							
Moisture	%	4.2	5.1	6.5	7.2	7.1	0.30
		7251590	7250264	7250263	7250264	7250264	7250264

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	HY1525	HY1526	HY1527	HY1528	HY1529	HY1530	
Sampling Date	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	
UNITS	311-6	312-6	313-6	314-6	315-1	00089-DUP4	RDL QC Batch
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	<10	10 7251163
Volatiles							
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10 7251828
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050 7251828
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251828
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.011	<0.010	0.010 7251828
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040 7251828
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040 7251828
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030 7251828
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040 7251828
(C6-C10)	mg/kg	<10	<10	<10	<10	<10	10 7251828
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	95	95	94	93	94	94 7251828
4-BROMOFLUOROBENZENE (sur.)	%	97	99	97	103	100	100 7251828
D10-ETHYLBENZENE (sur.)	%	109	107	109	116	115	112 7251828
D4-1,2-DICHLOROETHANE (sur.)	%	106	103	103	106	109	106 7251828

LEPH & HEPH FOR CSR IN SOIL (SOIL)

Maxxam ID	HY1525	HY1526	HY1527	HY1528	HY1529	HY1530	
Sampling Date	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	
UNITS	311-6	312-6	313-6	314-6	315-1	00069-DUP4	QC Batch
Polycyclic Aromatics							
Naphthalene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Fluorene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Chrysene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251347
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	92	76	91	93	90	7251347
D8-ACENAPHTHYLENE (sur.)	%	91	77	91	91	91	7251347
D8-NAPHTHALENE (sur.)	%	96	80	95	95	94	7251347
TERPHENYL-D14 (sur.)	%	92	76	91	95	91	7251347
Calculated Parameters							
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	<100	100 7251164
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	<100	100 7251164
Hydrocarbons							
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	<100	100 7251340
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	<100	100 7251340
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	109	92	105	109	105	7251340

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	HY1525	HY1526	HY1527	HY1528	HY1529	HY1530	
Sampling Date	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	2013/10/25	
UNITS	311-g	312-g	313-g	314-g	315-1	00069-DUP4	QC Batch
Calculated Parameters							
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.31	0.31	0.31	0.31	0.10 7250401
Benzolaprene equivalency	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	0.10 7250401
Polycyclic Aromatics							
Naphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010 7251353
2-Methylnaphthalene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050 7251353
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050 7251353
Fluorene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Phenanthrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040 7251353
Fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Benzo(a)anthracene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Chrysene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Benzo(b&l)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Benzo(a)pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7251353
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251353
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251353
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7251353
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7250402
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7250402
Total PAH	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050 7250402
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	92	76	91	93	96	90 7251353
D8-ACENAPHTHYLENE (sur.)	%	91	77	91	91	92	91 7251353
D8-NAPHTHALENE (sur.)	%	96	80	95	95	97	94 7251353
TERPHENYL-D14 (sur.)	%	92	76	91	95	94	91 7251353

N/A = Not Applicable
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.

Your P.O. #: 700266127
Sampler Initials: CM

Package 1 1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7250263	Moisture	2013/10/29					<0.30	%	8.5	20
7250264	Moisture	2013/10/29					<0.30	%	0.9	20
7251340	O-TERPHENYL (sur.)	2013/10/28	103	50 - 130	96	50 - 130	102	%		
7251340	EPH (C10-C19)	2013/10/28	89	50 - 130	94	50 - 130	<100	mg/kg	NC	40
7251340	EPH (C19-C32)	2013/10/28	93	50 - 130	97	50 - 130	<100	mg/kg	NC	40
7251347	D10-ANTHRACENE (sur.)	2013/10/28	85	60 - 130	87	60 - 130	86	%		
7251347	D8-ACENAPHTHYLENE (sur.)	2013/10/28	87	50 - 130	89	50 - 130	87	%		
7251347	D8-NAPHTHALENE (sur.)	2013/10/28	90	50 - 130	92	50 - 130	88	%		
7251347	TERPHENYL-D14 (sur.)	2013/10/28	87	60 - 130	88	60 - 130	87	%		
7251347	Naphthalene	2013/10/28	82	50 - 130	93	50 - 130	<0.050	mg/kg	NC	50
7251347	2-Methylnaphthalene	2013/10/28	84	50 - 130	96	50 - 130	<0.050	mg/kg	NC	50
7251347	Acenaphthylene	2013/10/28	82	50 - 130	92	50 - 130	<0.050	mg/kg	NC	50
7251347	Acenaphthene	2013/10/28	83	50 - 130	93	50 - 130	<0.050	mg/kg	NC	50
7251347	Fluorene	2013/10/28	84	50 - 130	94	50 - 130	<0.050	mg/kg	NC	50
7251347	Phenanthrene	2013/10/28	76	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7251347	Anthracene	2013/10/28	84	60 - 130	95	60 - 130	<0.050	mg/kg	NC	50
7251347	Fluoranthene	2013/10/28	81	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50
7251347	Pyrene	2013/10/28	79	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7251347	Benzo(a)anthracene	2013/10/28	71	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50
7251347	Chrysene	2013/10/28	72	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50
7251347	Benzo(b&j)fluoranthene	2013/10/28	77	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50
7251347	Benzo(k)fluoranthene	2013/10/28	70	60 - 130	76	60 - 130	<0.050	mg/kg	NC	50
7251347	Benzo(a)pyrene	2013/10/28	81	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50
7251347	Indeno(1,2,3-cd)pyrene	2013/10/28	81	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50
7251347	Dibenz(a,h)anthracene	2013/10/28	80	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50
7251347	Benzo(g,h,i)perylene	2013/10/28	78	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7251353	D10-ANTHRACENE (sur.)	2013/10/28	85	60 - 130	87	60 - 130	86	%		
7251353	D8-ACENAPHTHYLENE (sur.)	2013/10/28	87	50 - 130	89	50 - 130	87	%		
7251353	D8-NAPHTHALENE (sur.)	2013/10/28	90	50 - 130	92	50 - 130	88	%		
7251353	TERPHENYL-D14 (sur.)	2013/10/28	87	60 - 130	88	60 - 130	87	%		
7251353	Naphthalene	2013/10/28	82	50 - 130	93	50 - 130	<0.010	mg/kg	NC	50
7251353	2-Methylnaphthalene	2013/10/28	84	50 - 130	96	50 - 130	<0.020	mg/kg	NC	50
7251353	Acenaphthylene	2013/10/28	82	50 - 130	92	50 - 130	<0.0050	mg/kg	NC	50
7251353	Acenaphthene	2013/10/28	83	50 - 130	93	50 - 130	<0.0050	mg/kg	NC	50
7251353	Fluorene	2013/10/28	84	50 - 130	94	50 - 130	<0.020	mg/kg	NC	50
7251353	Phenanthrene	2013/10/28	76	60 - 130	88	60 - 130	<0.020	mg/kg	NC	50
7251353	Anthracene	2013/10/28	84	60 - 130	95	60 - 130	<0.0040	mg/kg	NC	50
7251353	Fluoranthene	2013/10/28	81	60 - 130	90	60 - 130	<0.020	mg/kg	NC	50
7251353	Pyrene	2013/10/28	79	60 - 130	88	60 - 130	<0.020	mg/kg	NC	50

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7251353	Benzo(a)anthracene	2013/10/28	71	60 - 130	78	60 - 130	<0.020	mg/kg	NC	50
7251353	Chrysene	2013/10/28	72	60 - 130	82	60 - 130	<0.020	mg/kg	NC	50
7251353	Benzo(b)fluoranthene	2013/10/28	77	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50
7251353	Benzo(k)fluoranthene	2013/10/28	70	60 - 130	76	60 - 130	<0.020	mg/kg	NC	50
7251353	Benzo(a)pyrene	2013/10/28	81	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7251353	Indeno(1,2,3-cd)pyrene	2013/10/28	81	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50
7251353	Dibenz(a,h)anthracene	2013/10/28	80	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50
7251353	Benzo(g,h,i)perylene	2013/10/28	78	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7251353	Benzo(b)fluoranthene	2013/10/28					<0.020	mg/kg	NC	N/A
7251590	Moisture	2013/10/29					<0.30	%	3.9	20
7251828	1,4-Difluorobenzene (sur.)	2013/10/28	93	70 - 130	93	70 - 130	97	%		
7251828	4-BROMOFLUOROBENZENE (sur.)	2013/10/28	98	70 - 130	96	70 - 130	96	%		
7251828	D10-ETHYLBENZENE (sur.)	2013/10/28	115	50 - 130	106	50 - 130	117	%		
7251828	D4-1,2-DICHLOROETHANE (sur.)	2013/10/28	107	70 - 130	101	70 - 130	103	%		
7251828	Benzene	2013/10/29	116	60 - 140	102	60 - 140	<0.0050	mg/kg	NC	40
7251828	Toluene	2013/10/29	115	60 - 140	102	60 - 140	<0.020	mg/kg	NC	40
7251828	Ethylbenzene	2013/10/29	118	60 - 140	106	60 - 140	<0.010	mg/kg	NC	40
7251828	m & p-Xylene	2013/10/29	116	60 - 140	106	60 - 140	<0.040	mg/kg	NC	40
7251828	o-Xylene	2013/10/29	115	60 - 140	105	60 - 140	<0.040	mg/kg	NC	40
7251828	(C6-C10)	2013/10/29			98	60 - 140	<10	mg/kg	NC	40
7251828	Methyl-tert-butylether(MTBE)	2013/10/29					<0.10	mg/kg	NC	40
7251828	Styrene	2013/10/29					<0.030	mg/kg	NC	40
7251828	Xylenes (Total)	2013/10/29					<0.040	mg/kg	NC	40
7251833	O-TERPHENYL (sur.)	2013/10/28	110	50 - 130	89	50 - 130	87	%		
7251833	F2 (C10-C16 Hydrocarbons)	2013/10/28	110	50 - 130	91	80 - 120	<10	mg/kg	NC	40
7251833	F3 (C16-C34 Hydrocarbons)	2013/10/28	118	50 - 130	98	80 - 120	<10	mg/kg	NC	40
7251833	F4 (C34-C60 Hydrocarbons)	2013/10/28	112	50 - 130	95	80 - 120	<10	mg/kg	NC	40
7251833	Reached Baseline at C50	2013/10/28					YES, RDL=N/A	mg/kg	NC	50

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.


Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B399357

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Data Validation Coordinator



Rob Reinert, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam

4236 Canada Way, Burnaby, B.C. Canada V5G 1W4 Tel: 604 731 7876 Fax: 604 731 5886

CHAIN OF CUSTODY RECORD

Page 1 of 1
G 032676

Maxxam Job#: B398668

Report To: B399357

Involved To: Request Report Yes ☐ No ☐

Company Name: Maxxam
Contact Name: Brad Klaver
Address: 681-800 Burnaby Street
Vancouver BC V6Z 2V6
Phone / Fax: 604 731 7876
E-mail: brad.klaver@maxxam.com

Company Name: Richard Wells/John Taylor
Contact Name: Richard Wells
Address: 1410 - 777 Highway St
Vancouver BC V6Z 1S4
Phone / Fax: 604 685-2111
E-mail: rtaylor@web.ca
rwells@franzbc.com

Project #: TA 700266127
Project #: TA 700266127
Project #: TA 700266127
Project #: TA 700266127
Project #: TA 700266127
Project #: TA 700266127

REGULATORY REQUIREMENTS SERVICE REQUESTED:

☒ GSR ☐ Regular Turn Around Time (TAT) (5 days for most tests)
☒ CCME ☐ RUSH (Please contact the lab)
☐ BC Water Quality ☐ 1 Day ☐ 2 Day ☐ 3 Day
Other: ☐ Date Required: ☐
BRINKING WATER
Special Instructions: ☐
Return Cooler: ☐ Ship Sample Bottles (please specify): ☐

ANALYSIS REQUESTED

Sample ID	Sample Type	Lab Identification	Date/Time Sampled	Analysis Requested	Analysis Results	Analysis Comments
1	311-6	HY1525	Soil	13/10/25		
2	312-6	HY1526				
3	313-6	HY1527				
4	314-6	HY1528				
5	315-6	HY1529				
6	00069- Dup 4	HY1530				
7						
8						
9						
10						
11						
12						

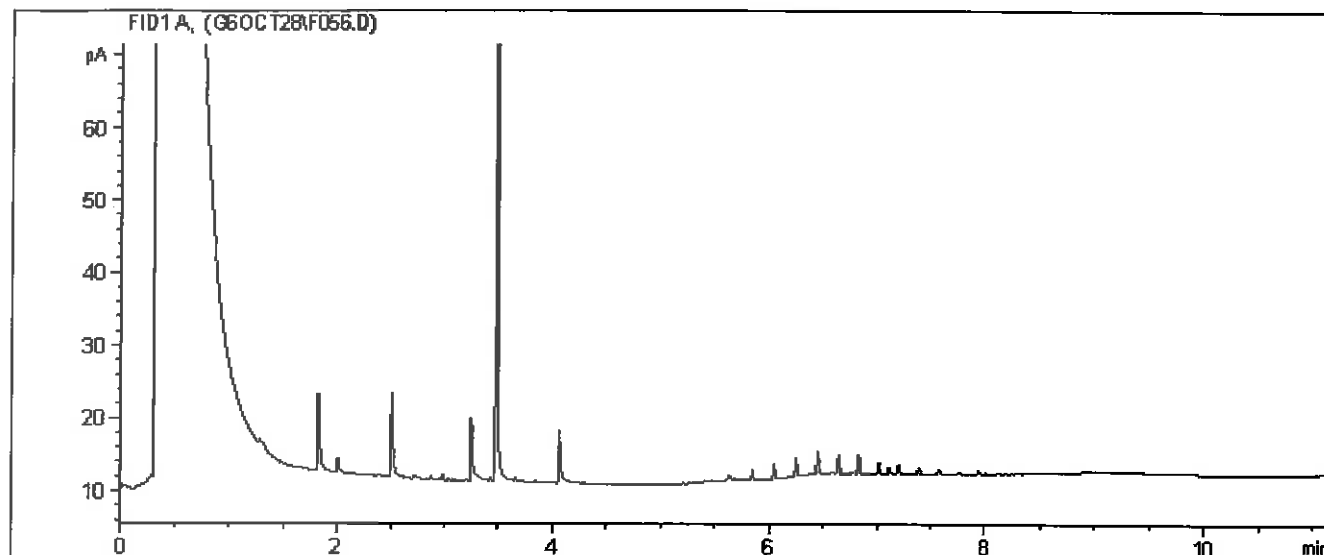
Relinquished by: Maxxam Date: 13/10/2025 Time: 13:00
Received by: Richard Wells Date: 13/10/2025 Time: 13:00
Signature: Richard Wells Signature: Richard Wells
Does source supply multiple households? YES ☐ NO ☐
Samples rec'd from a Drinking Water Source? YES ☐ NO ☐
Quarantine Seal: 111 Yes ☐ No ☐
What: Maxxam Where: Maxxam

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1525

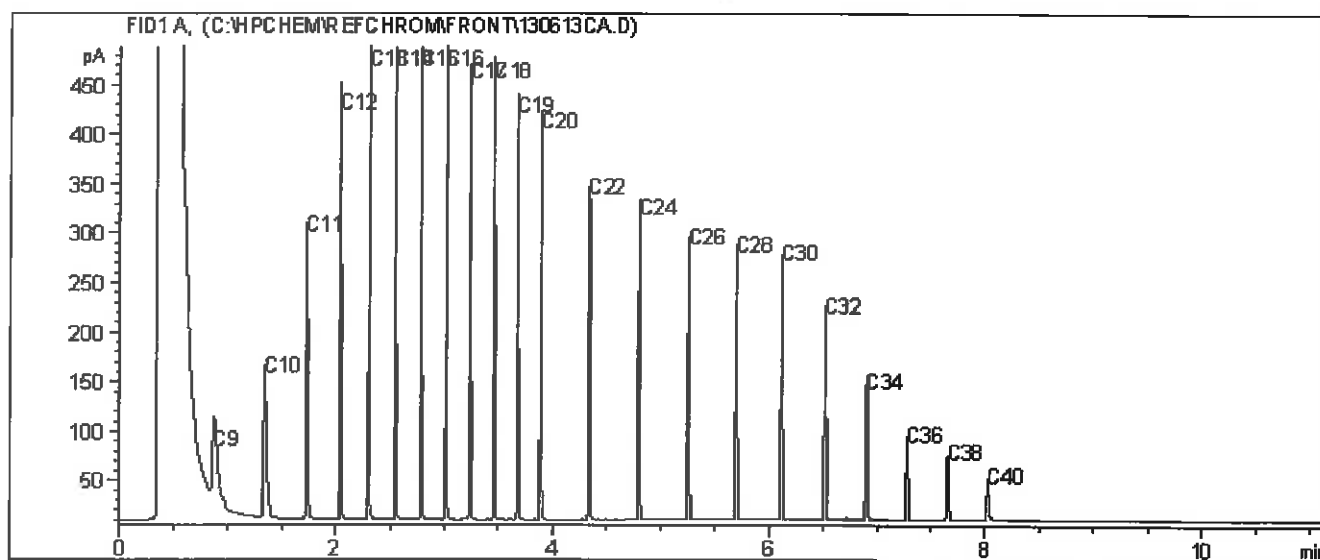
FRANZ ENVIRONMENTAL INC.

Client ID: 311-6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

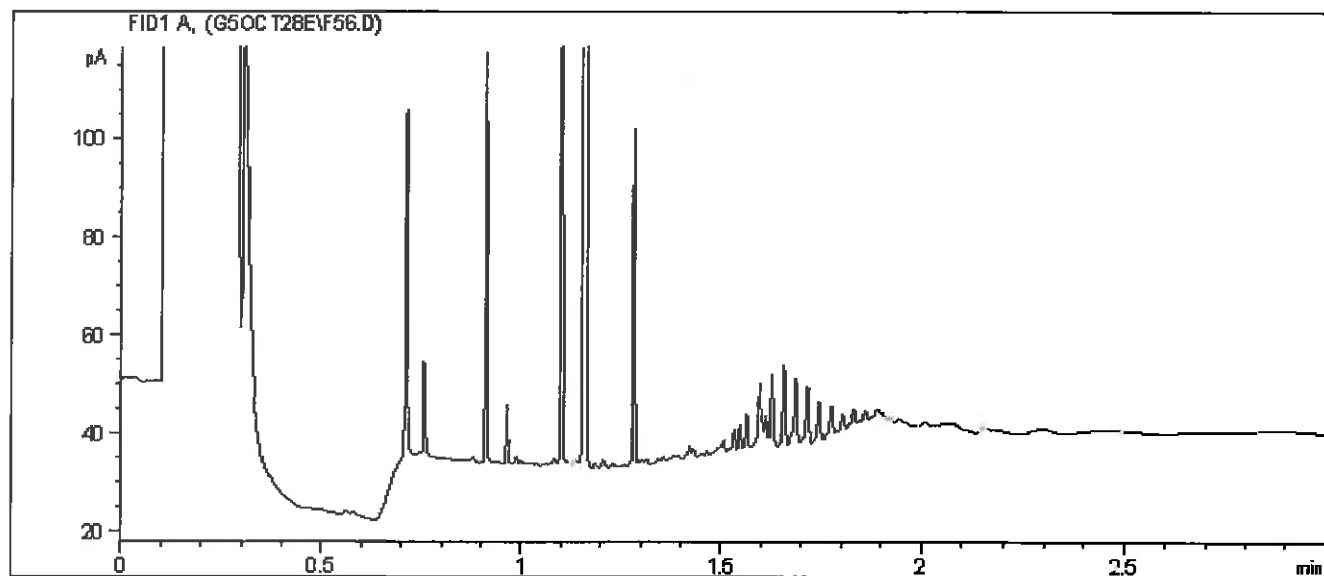
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1526

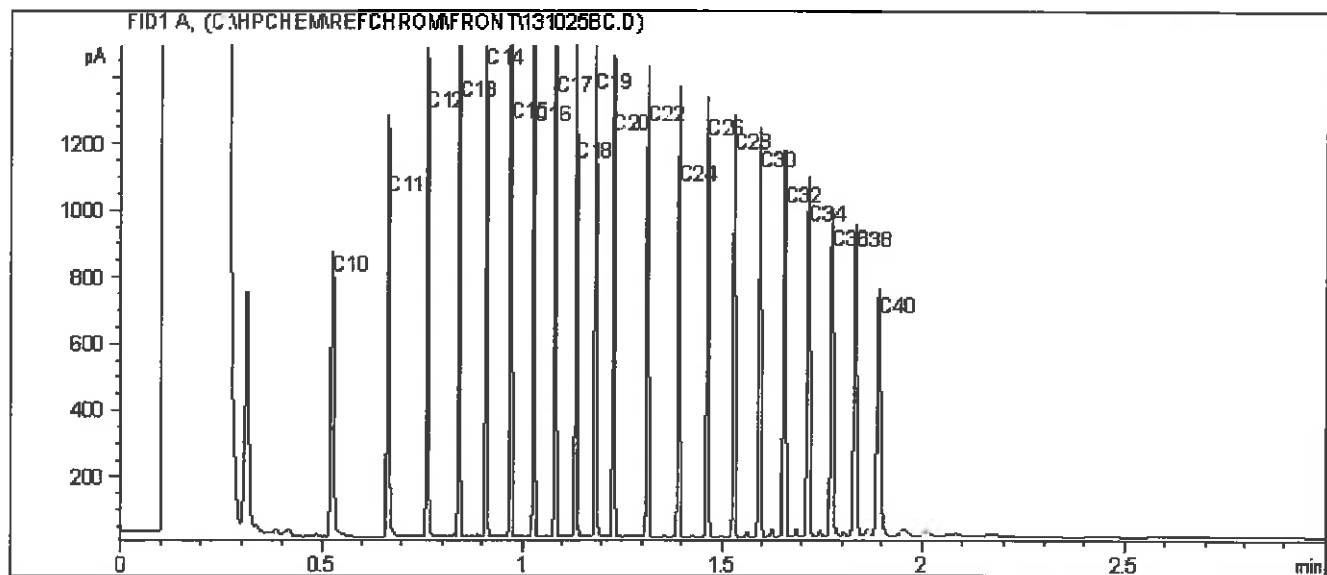
FRANZ ENVIRONMENTAL INC.

Client ID: 312-6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

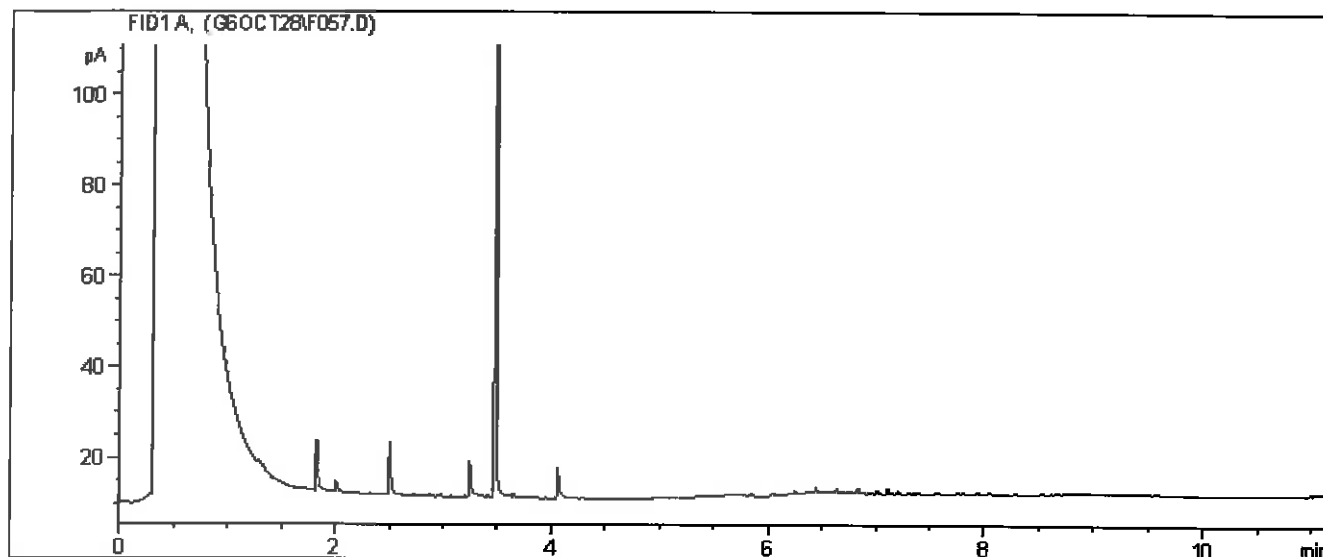
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1526

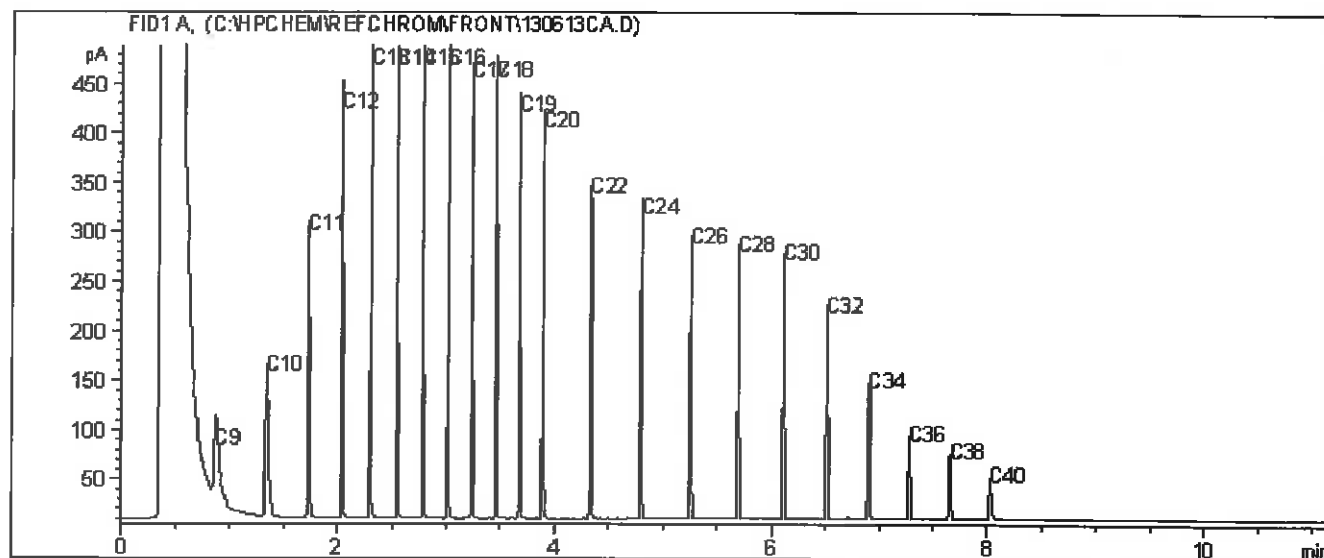
FRANZ ENVIRONMENTAL INC.

Client ID: 312-6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

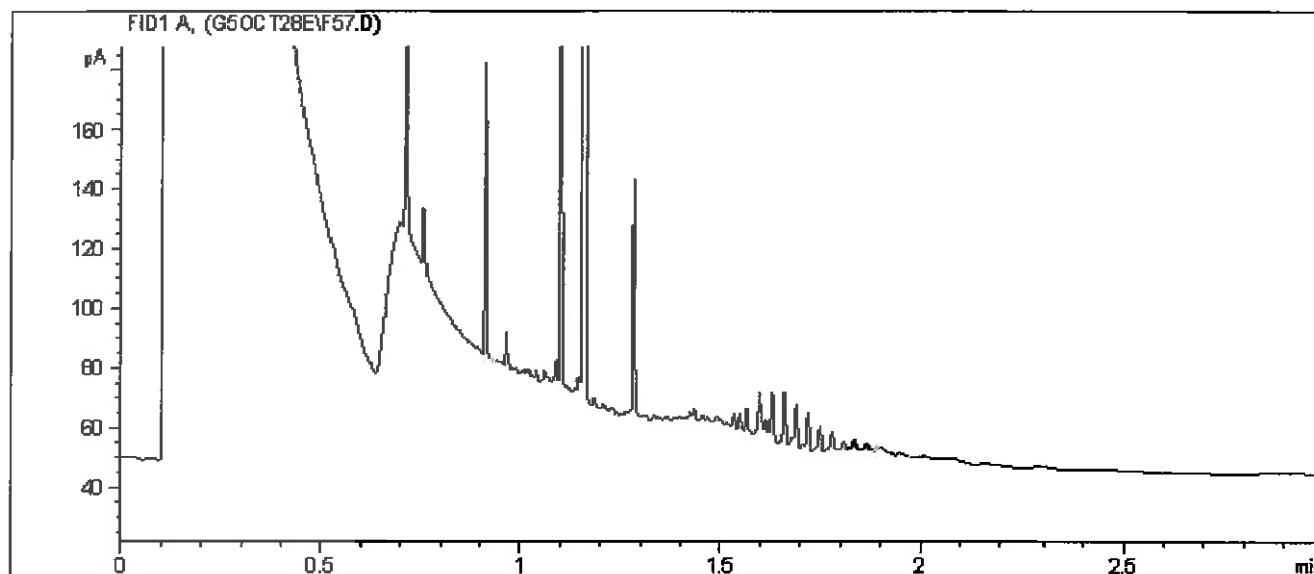
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1527

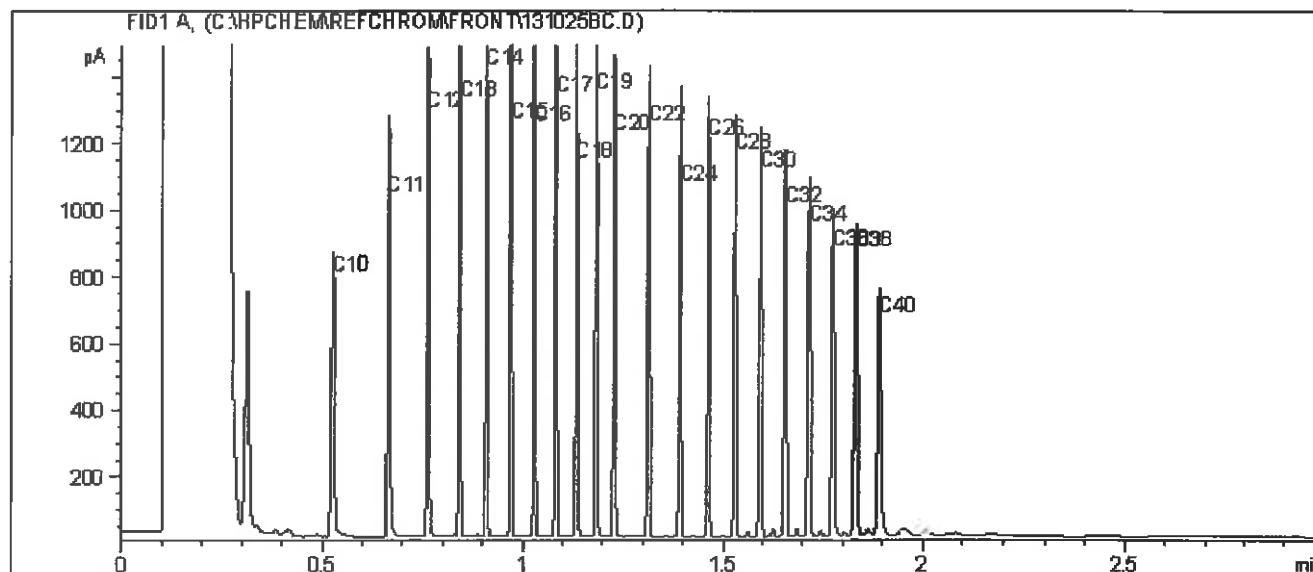
FRANZ ENVIRONMENTAL INC.

Client ID: 313-6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

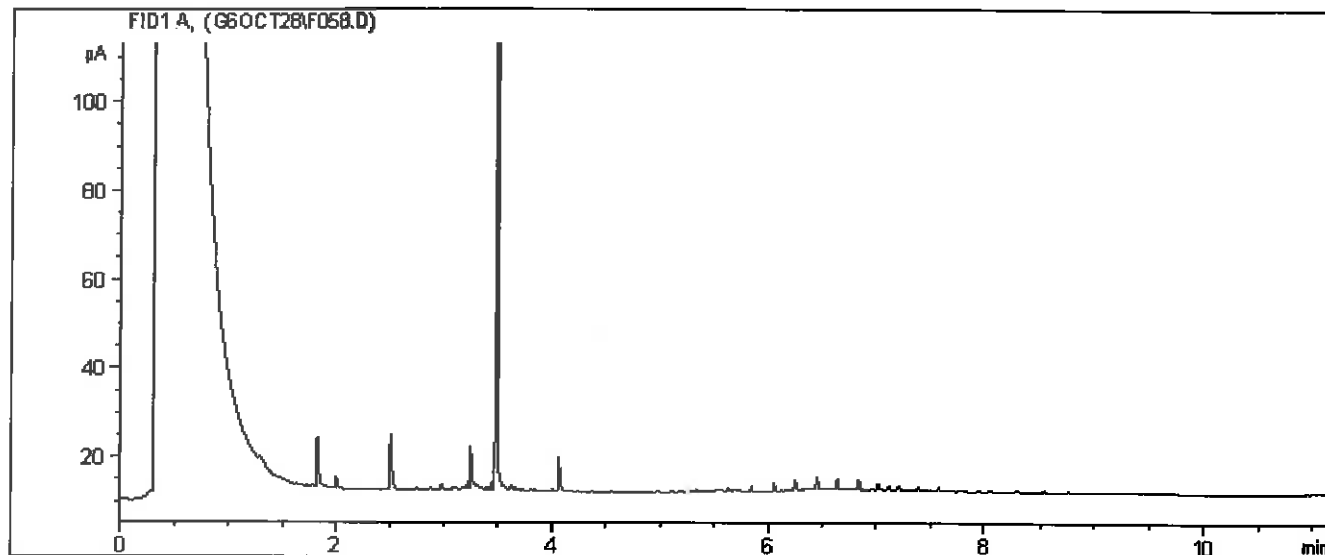
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1527

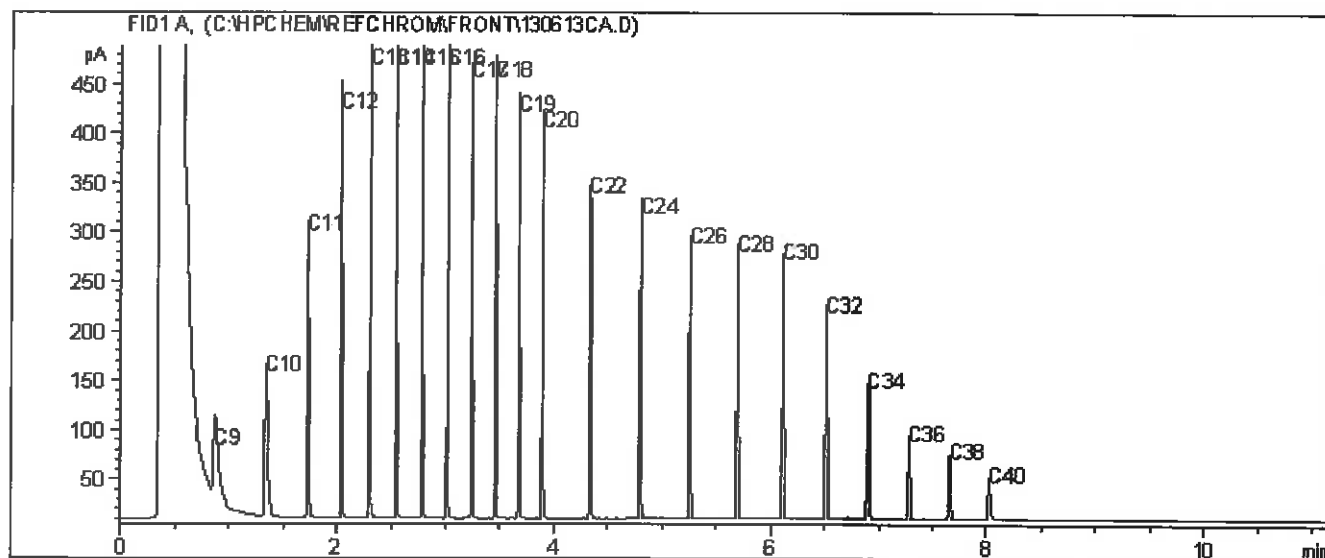
FRANZ ENVIRONMENTAL INC.

Client ID: 313-6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

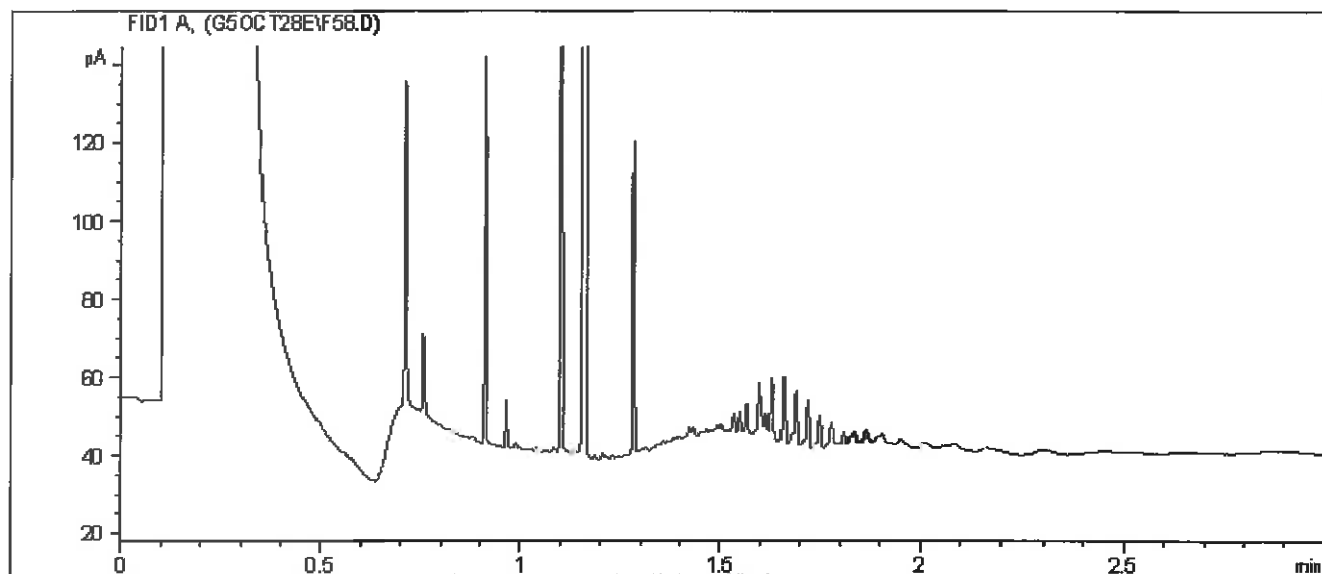
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1528

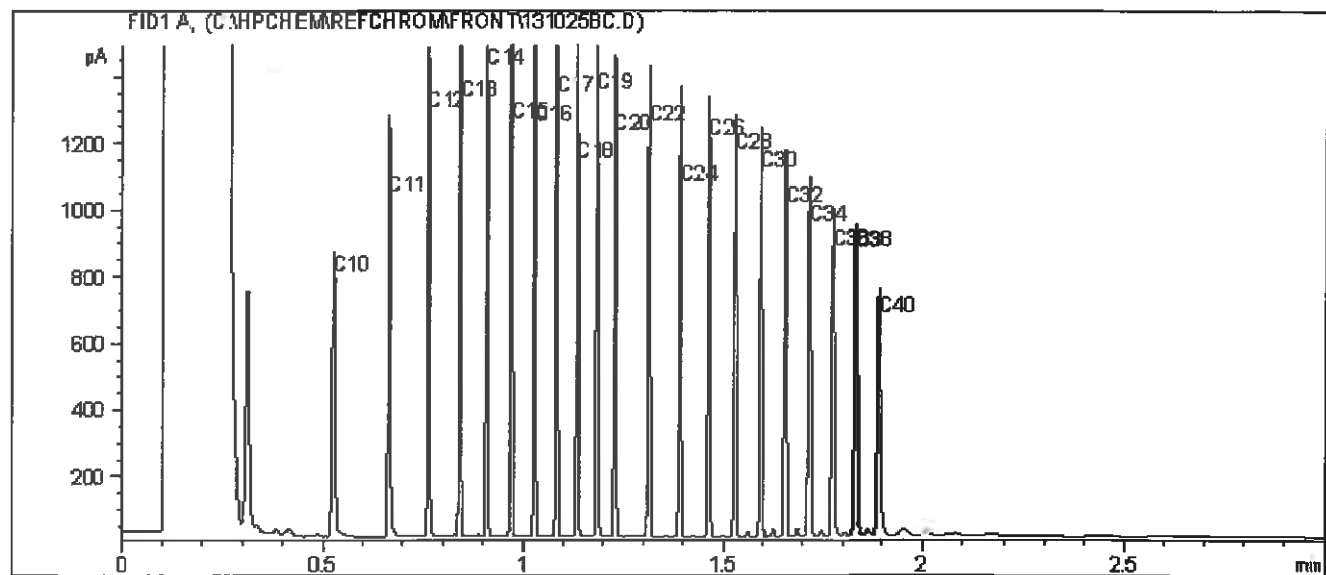
FRANZ ENVIRONMENTAL INC.

Client ID: 314-6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

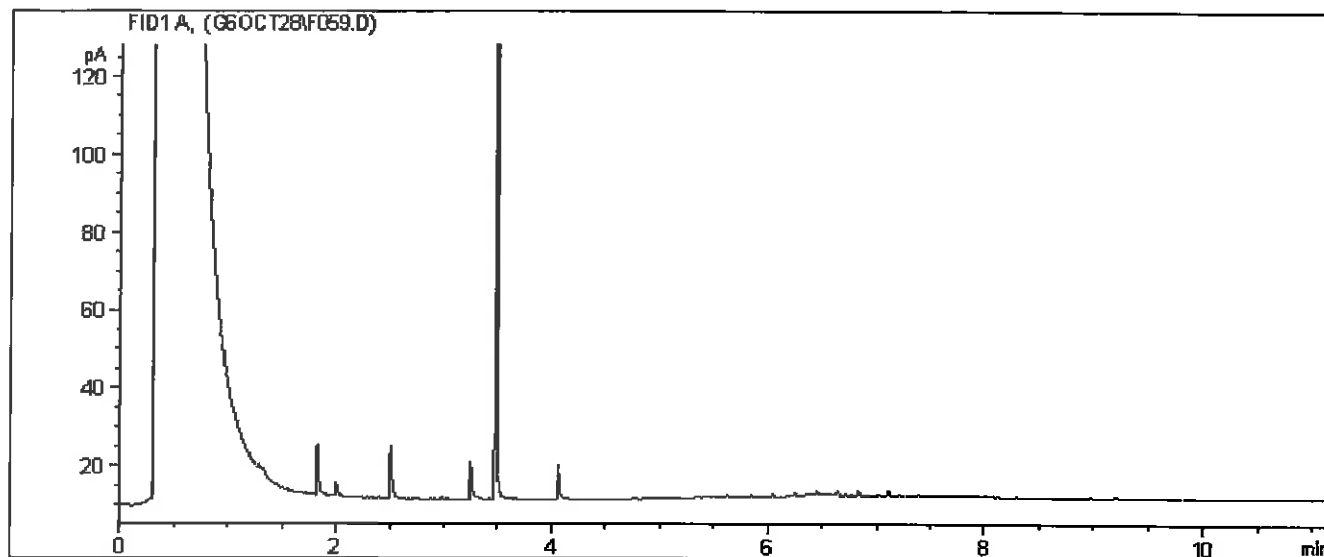
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1528

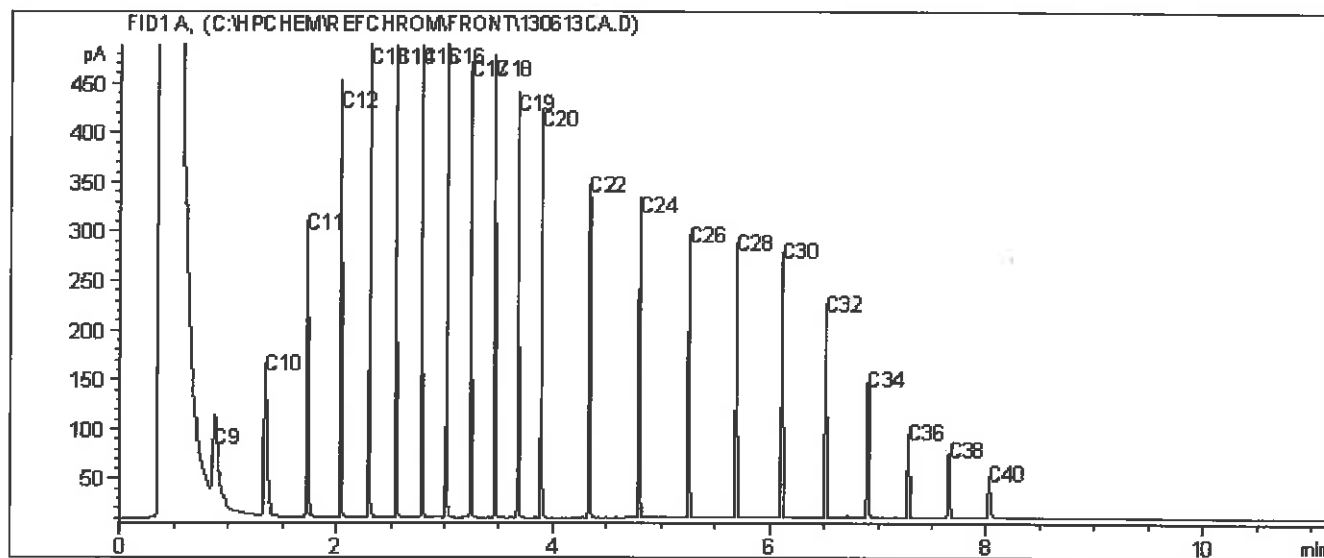
FRANZ ENVIRONMENTAL INC.

Client ID: 314-6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

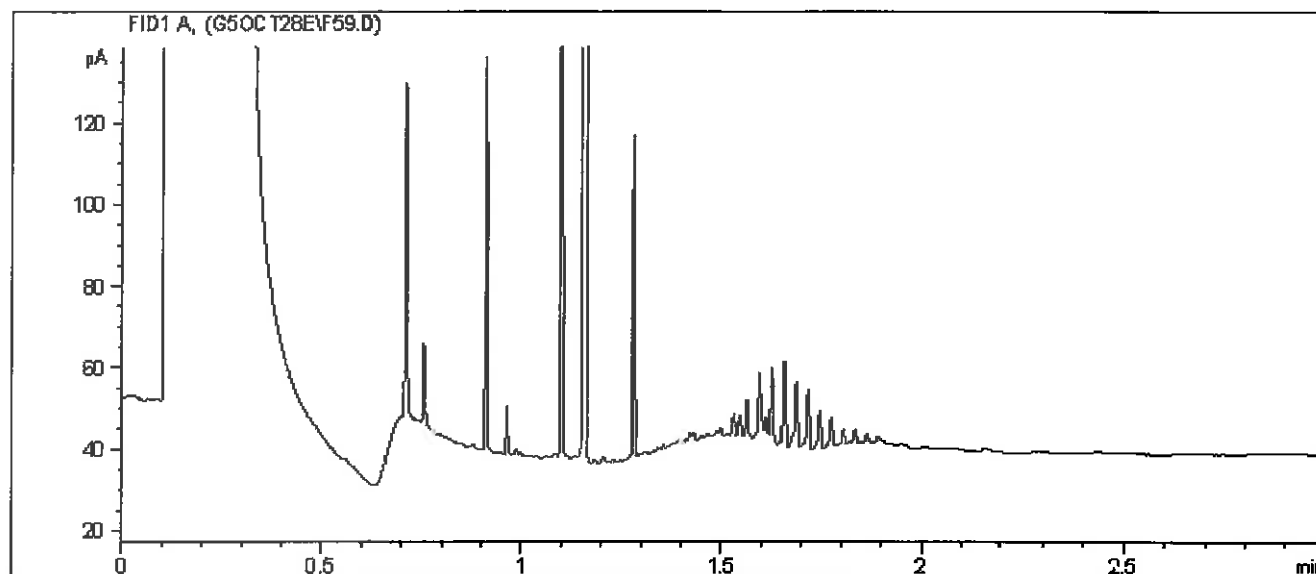
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

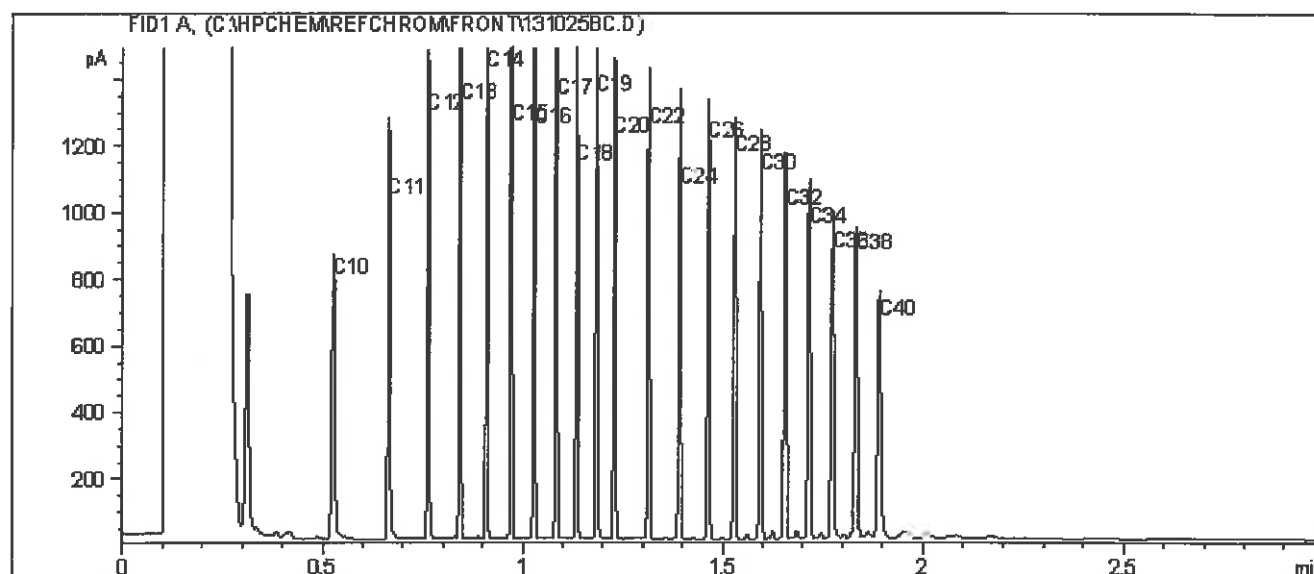
Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1528 Lab-Dup

Client ID: 314-6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

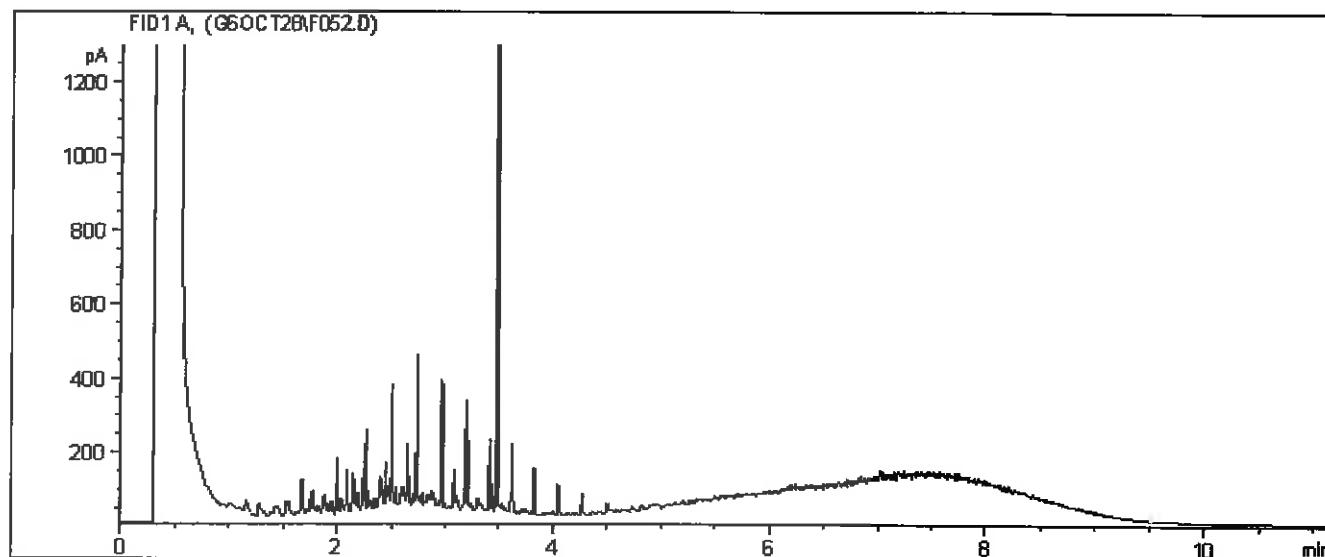
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1528 Lab-Dup

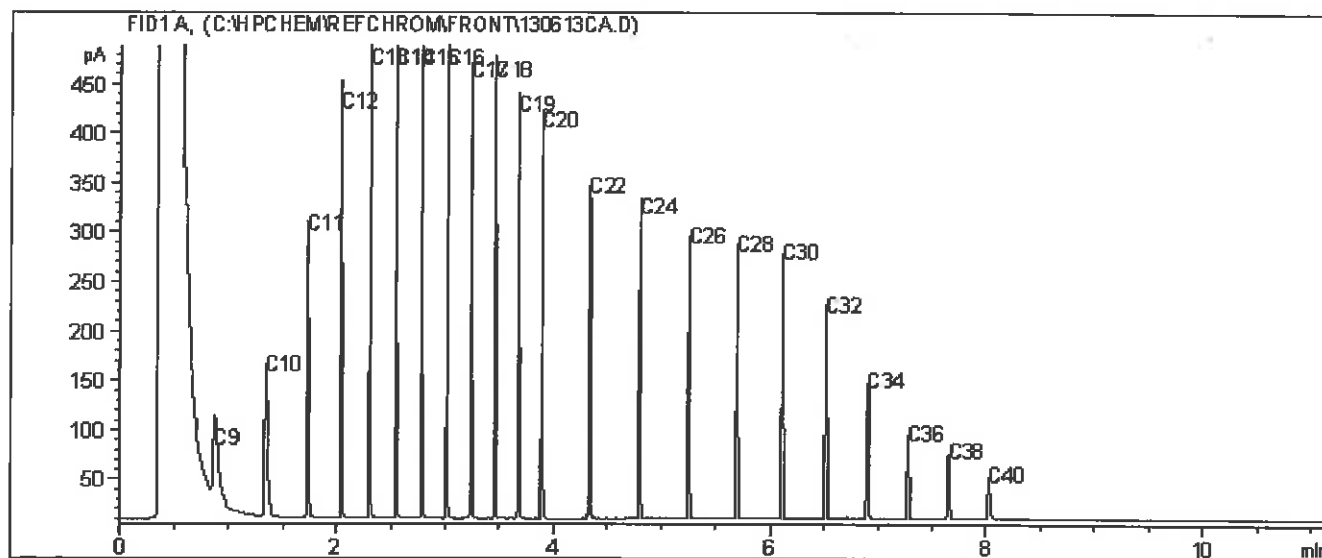
FRANZ ENVIRONMENTAL INC.

Client ID: 314-6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

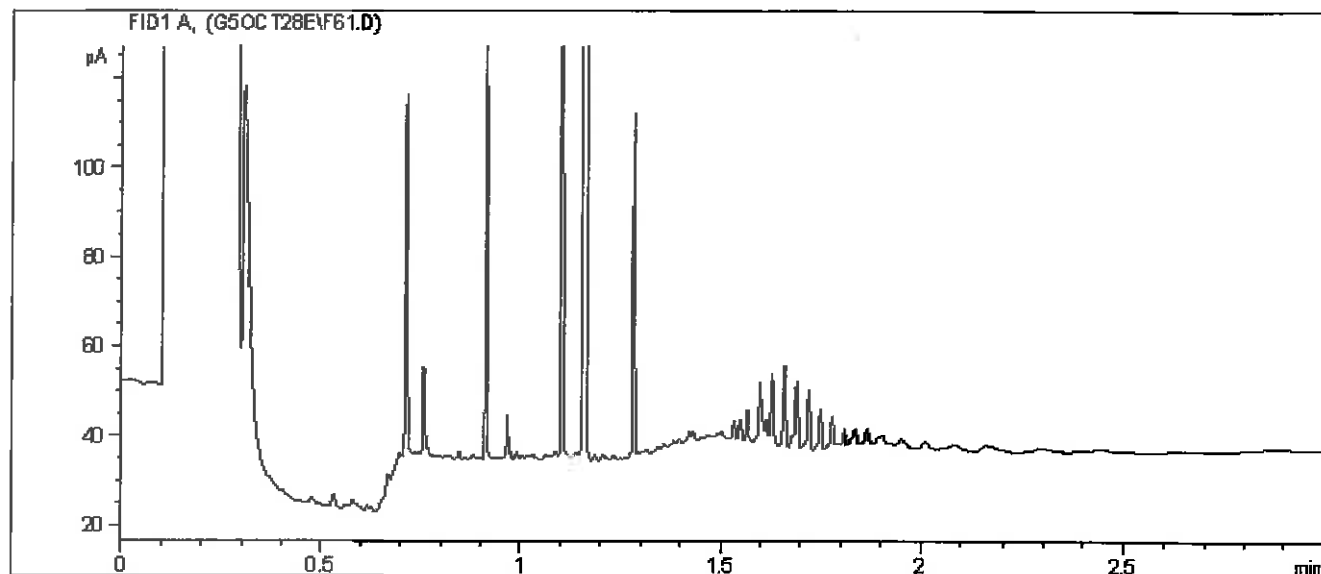
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1529

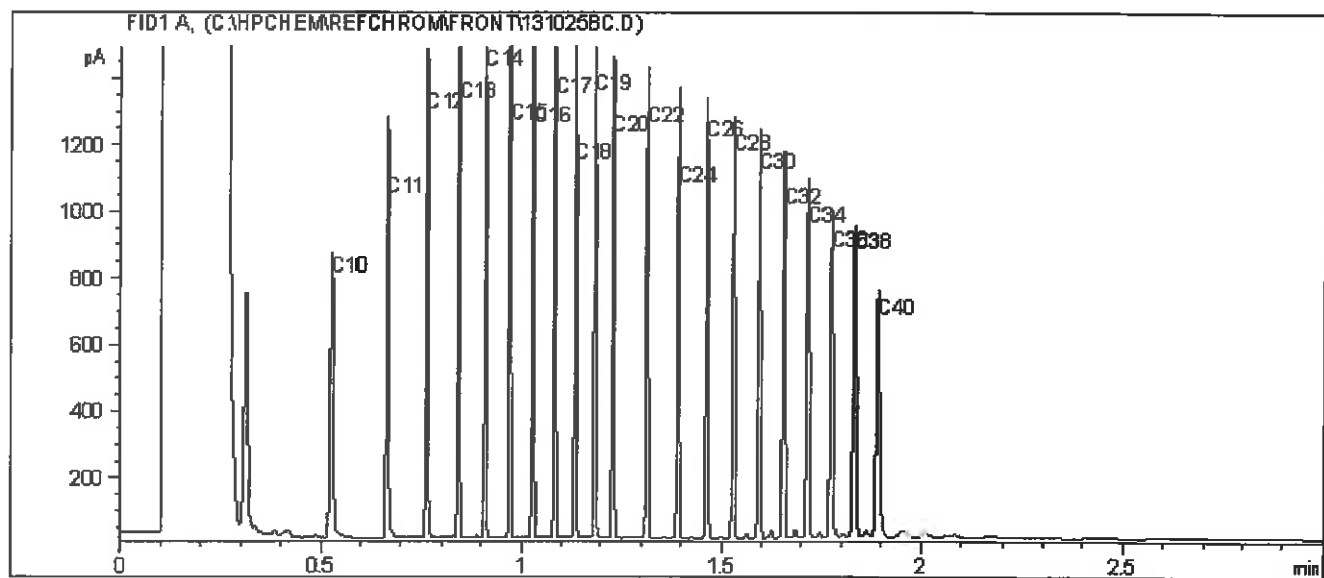
FRANZ ENVIRONMENTAL INC.

Client ID: 315-1

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

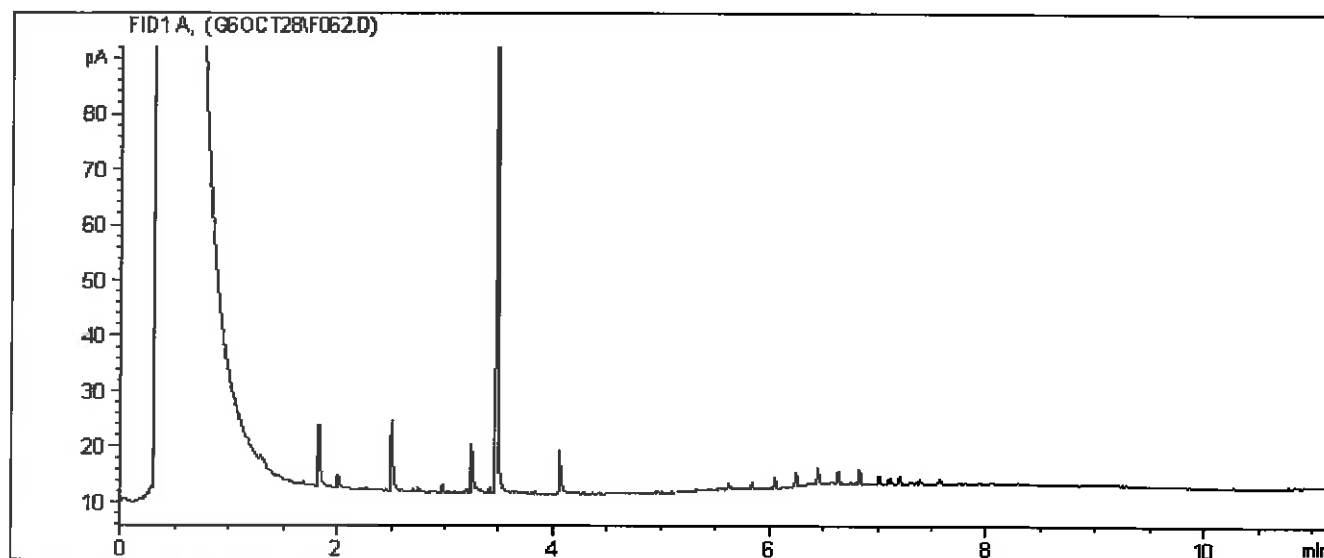
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1529

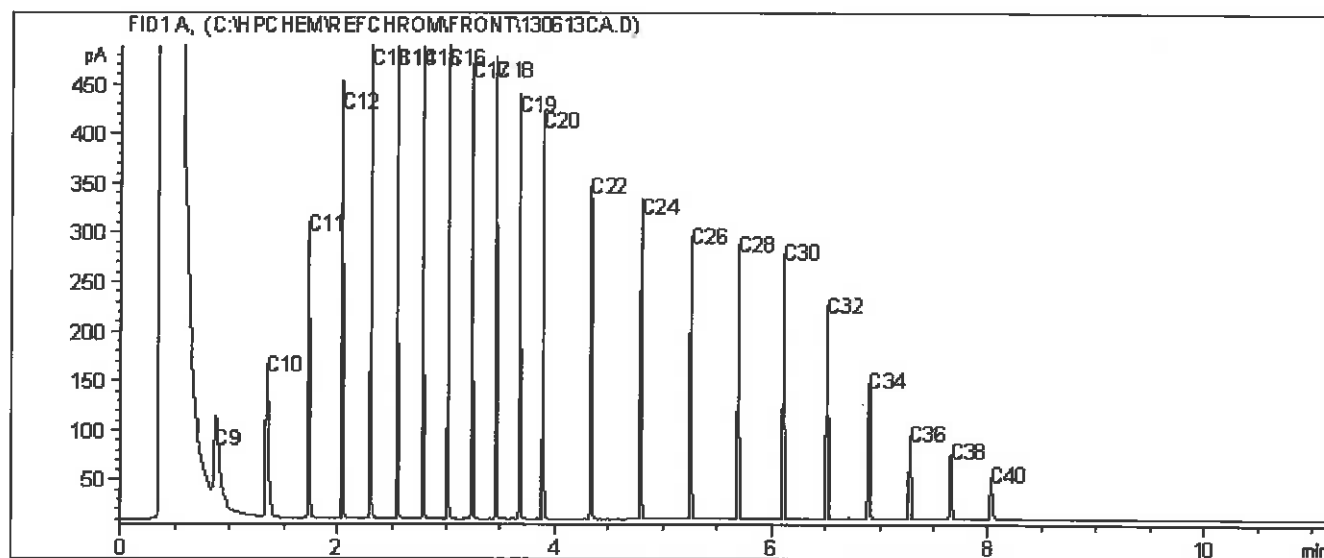
FRANZ ENVIRONMENTAL INC.

Client ID: 315-1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

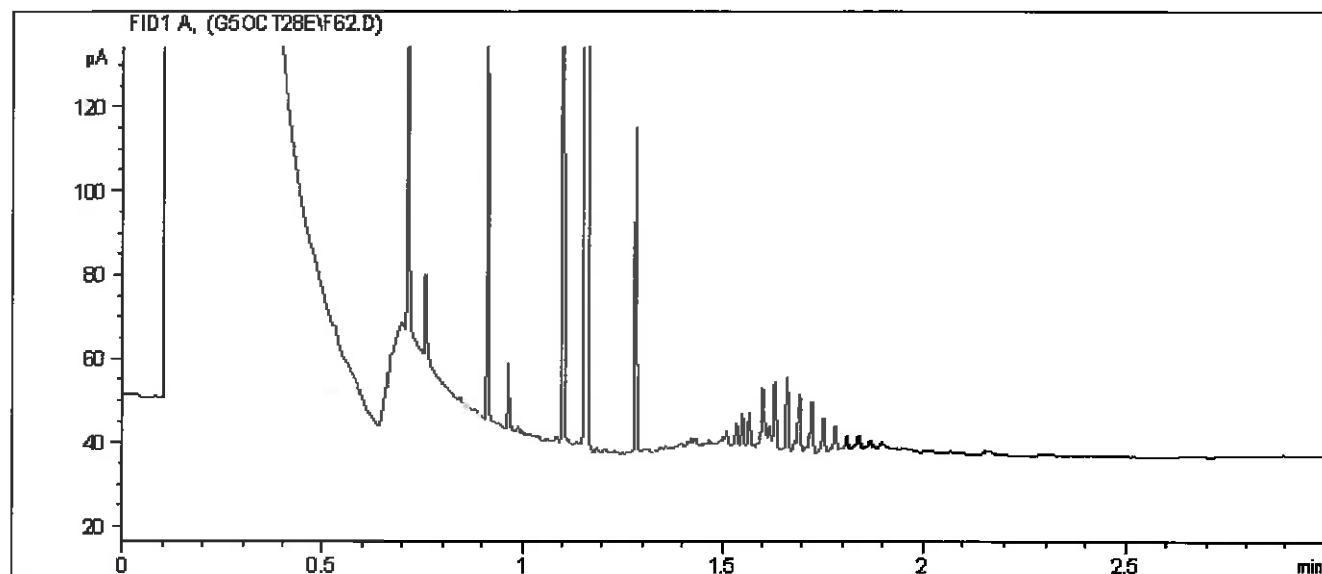
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1530

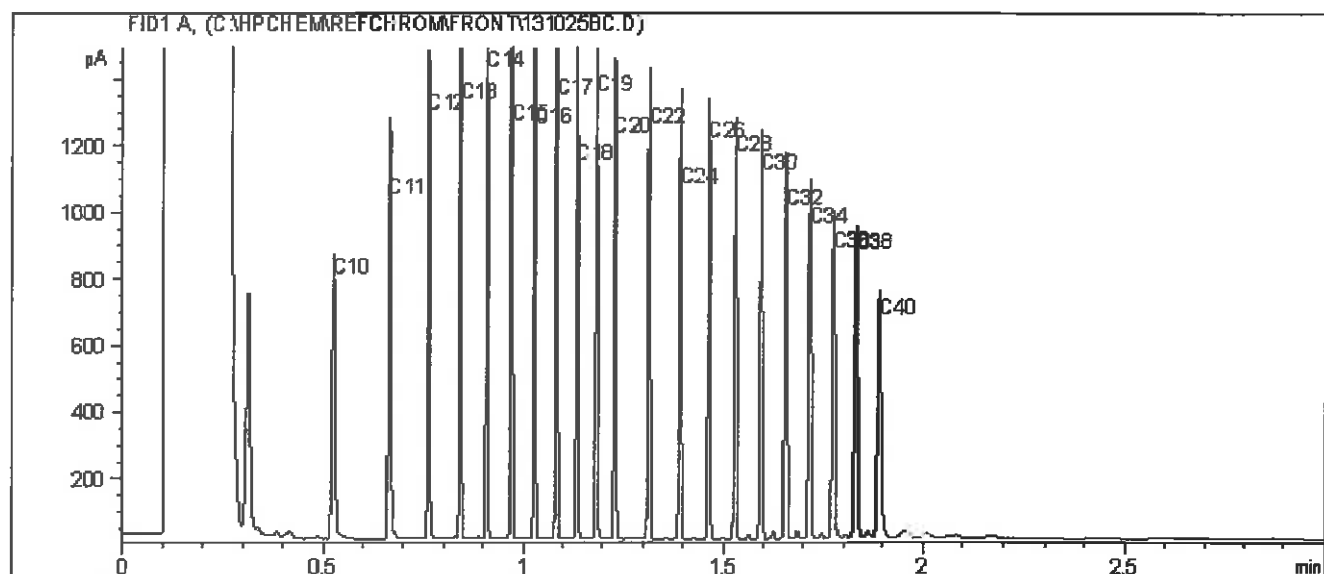
FRANZ ENVIRONMENTAL INC.

Client ID: 00069-DUP4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

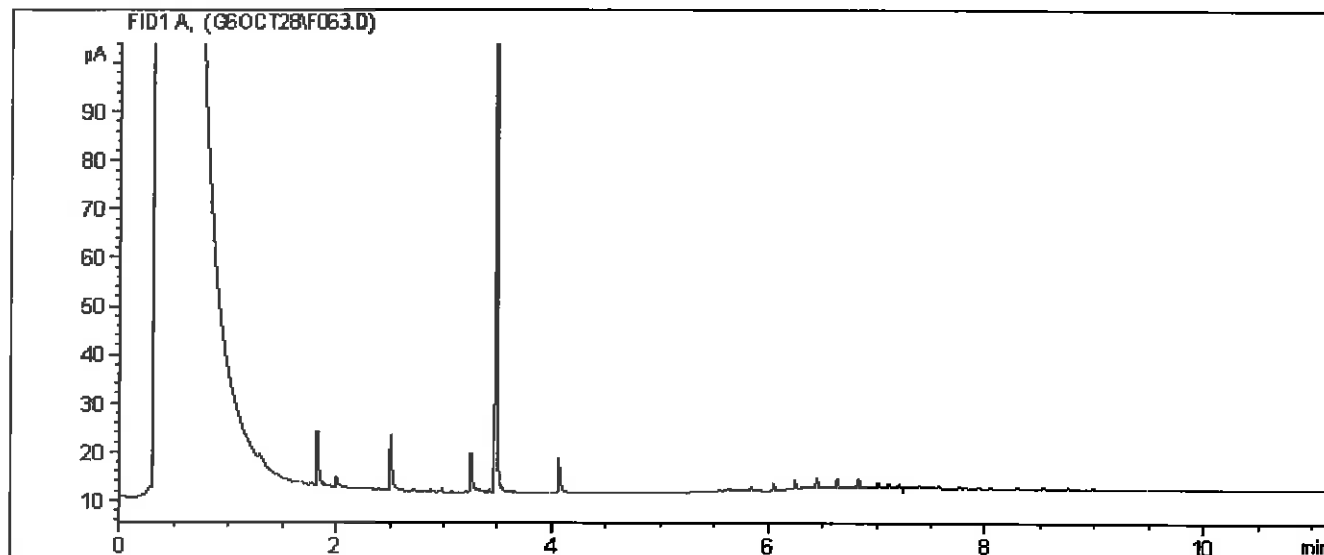
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/29
Maxxam Job #: B399357
Maxxam Sample: HY1530

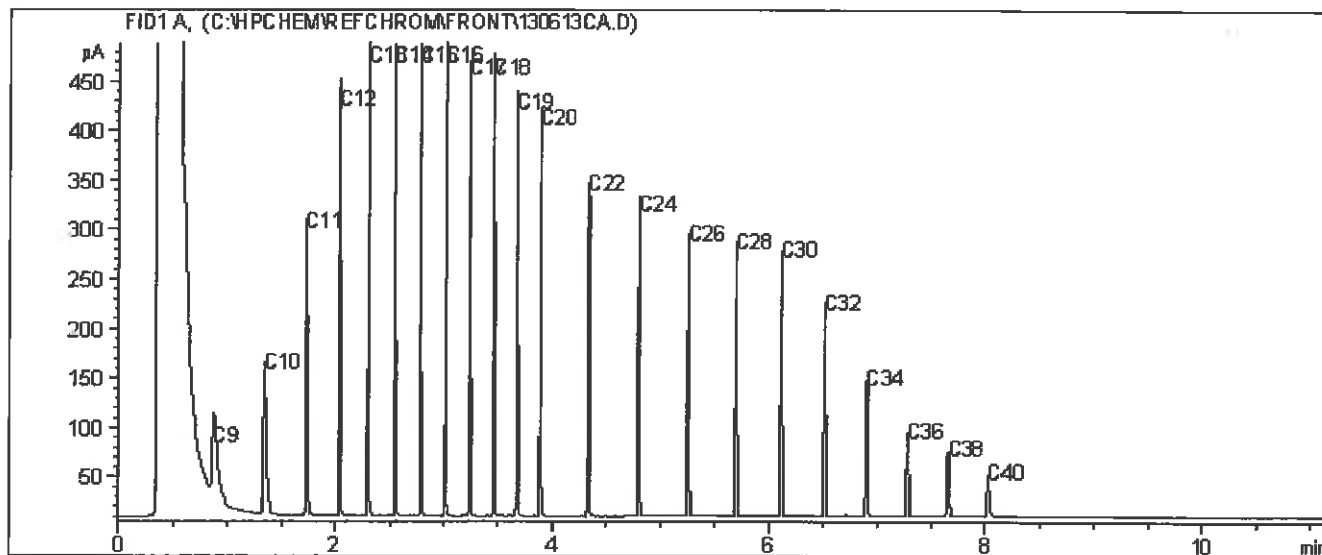
FRANZ ENVIRONMENTAL INC.

Client ID: 00069-DUP4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
 Your Project #: LOWER POST
 Site Location: LOWER POST
 Your C.O.C. #: G026580, G026579

Attention: John Taylor
 FRANZ/CORE 6
 FRANZ/CORE 6
 1410-777 Hornby Street
 Vancouver, BC
 Canada V6Z1S4

Report Date: 2014/02/03
Report #: R1509970
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B406383
Received: 2014/01/27, 08:30

Sample Matrix: Soil
 # Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	8	2014/01/27	2014/01/28	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	8	N/A	2014/01/28	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	2	2014/01/27	2014/01/30	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	5	2014/01/27	2014/01/31	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2014/01/27	2014/02/03	BBY8SOP-00030	CCME Soil Tier 1
Moisture	8	N/A	2014/01/28	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	2	2014/01/27	2014/01/31	BBY8SOP-00022	EPA 8270D
PAH in Soil by GC/MS (SIM) - CCME	6	2014/01/28	2014/01/31	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	2	N/A	2014/01/31	BBY WI-00033	CCME Guidelines
Benzo[a]pyrene Equivalency	6	N/A	2014/02/03	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	2	N/A	2014/01/31	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	6	N/A	2014/02/03	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	2	N/A	2014/01/31	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	6	N/A	2014/02/03	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	2	2014/01/27	2014/01/30	BBY8SOP-00029	BC Env Lab Manual
BC Hydrocarbons in Soil by GC/FID	6	2014/01/27	2014/01/31	BBY8SOP-00029	BC Env Lab Manual

* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

03 Feb 2014 17:23:47 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
 Email: Cireland@maxxam.ca
 Phone# (604) 638-5016



Maxxam Job #: B406383
Report Date: 2014/02/03

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

-2-

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B406383
Report Date: 2014/02/03

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IN5437	IN5438	IN5441	IN5442	
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	
UNITS	BH13-11-3	BH13-11-4	BH13-DUP3	BH13-DUP4	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	10
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	55	<10	10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	10
Reached Baseline at C50	mg/kg	YES	YES	YES	N/A
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	104	109	113	93
					7365668

Maxxam ID	IN5450	IN5451	IN5456	IN5457	
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	
UNITS	BH13-5-3	QC Batch	BH13-9-3	BH13-9-4	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	7365668	<10	10
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	7365668	<10	10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	7365668	<10	10
Reached Baseline at C50	mg/kg	YES	7365668	YES	N/A
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	94	7367011	105	105
					7367011

PHYSICAL TESTING (SOIL)

Maxxam ID	IN5437	IN5438	IN5441	IN5442	IN5450	IN5451	IN5456	IN5457	
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24	
UNITS	BH13-11-3	BH13-11-4	BH13-DUP3	BH13-DUP4	BH13-5-3	BH13-5-4	BH13-9-3	BH13-9-4	QC Batch
Physical Properties									
Moisture	%	7.3	10	15	17	12	19	8.7	19
									0.30
									7361624

N/A = Not Applicable
RDL = Reportable Detection Limit

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IN5437	IN5438	IN5441	IN5442	
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	
UNITS	BH13-11-3	BH13-11-4	BH13-DUP3	BH13-DUP4	QC Batch
Calculated Parameters					
LEPH (C10-C19 less PAH)	<100	<100	<100	<100	100
HEPH (C19-C32 less PAH)	<100	<100	<100	<100	100
Hydrocarbons					
EPH (C10-C19)	<100	<100	<100	<100	100
EPH (C19-C32)	<100	<100	<100	<100	100
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	102	107	96	105	7365693

Maxxam ID	IN5450	IN5451	IN5456	IN5457	
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	
UNITS	BH13-5-3	BH13-5-4	BH13-9-3	BH13-9-4	QC Batch
Calculated Parameters					
LEPH (C10-C19 less PAH)	<100	<100	<100	<100	100
HEPH (C19-C32 less PAH)	<100	<100	<100	<100	100
Hydrocarbons					
EPH (C10-C19)	<100	<100	<100	<100	100
EPH (C19-C32)	<100	<100	<100	<100	100
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	101	7367028	106	105	7367028

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	IN5437	IN5438	IN5441	IN5442	IN5450	IN5456	IN5457		
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24	2014/01/24		
UNITS	BH13-11-3	BH13-11-4	BH13-DUP3	BH13-DUP4	BH13-5-3	BH13-9-3	BH13-9-4	RDL	QC Batch
Calculated Parameters									
F1 (C6-C10) - BTEX	<10	<10	<10	<10	<10	<10	<10	10	7361849
Volatiles									
Methyl-tert-butylether (MTBE)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	7362245
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7362245
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7362245
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7362245
m & p-Xylene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7362245
o-Xylene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7362245
Styrene	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	7362245
Xylenes (Total)	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7362245
(C6-C10)	<10	<10	<10	<10	<10	<10	<10	10	7362245
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	99	97	100	98	98	99	98		7362245
4-BROMOFLUOROBENZENE (sur.)	101	100	102	101	99	100	102		7362245
D10-ETHYLBENZENE (sur.)	78	76	78	79	79	78	78		7362245
D4-1,2-DICHLOROETHANE (sur.)	98	100	98	102	101	98	100		7362245

RDL = Reportable Detection Limit

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IN5437	IN5438	IN5441	IN5442		
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24		
UNITS	BH13-11-3	BH13-11-4	BH13-DUP3	BH13-DUP4	RDL	QC Batch
Calculated Parameters						
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.10	0.31	0.10	7361852
Benzo(a)pyrene equivalency	N/A	<0.10	0.10	<0.10	0.10	7361852
Polycyclic Aromatics						
Naphthalene	mg/kg	<0.010	0.010	<0.010	0.010	7367017
2-Methylnaphthalene	mg/kg	<0.020	<0.020	<0.020	<0.020	7365717
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	7365717
Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	7365717
Fluorene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Phenanthrene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	0.0040	7365717
Fluoranthene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Pyrene	mg/kg	<0.020	0.020	<0.030 ⁽¹⁾	0.030	7365717
Benzo(a)anthracene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Chrysene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Benzo(b&j)fluoranthene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Benzo(a)pyrene	mg/kg	<0.020	0.020	<0.020	0.020	7365717
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	<0.050	0.050	7365717
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	<0.050	0.050	7365717
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	<0.050	0.050	7365717
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	<0.050	0.050	7361550
High Molecular Weight PAH's	mg/kg	<0.050	0.050	<0.050	0.050	7361550
Total PAH	mg/kg	<0.050	0.050	<0.050	0.050	7361550
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	100	105	94	99	7365717
D8-ACENAPHTHYLENE (sur.)	%	86	91	79	89	7365717
D8-NAPHTHALENE (sur.)	%	94	97	91	96	7365717
TERPHENYL-D14 (sur.)	%	101	102	95	93	7365717

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) - RDL raised due to sample matrix interference.

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

Maxxam Job #: B406383
Report Date: 2014/02/03

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IN5450	IN5451	IN5456	IN5457	
Sampling Date	2014/01/24	2014/01/24	2014/01/24	2014/01/24	
UNITS	BH13-5-3	BH13-5-4	BH13-9-3	BH13-9-4	QC Batch
UNITS	RDL	RDL	RDL	RDL	QC Batch
Calculated Parameters					
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.10	0.10	0.10
Benzo(a)pyrene equivalency	N/A	<0.10	0.10	0.10	0.10
Polycyclic Aromatics					
Naphthalene	mg/kg	<0.010	0.010	0.010	0.010
2-Methylnaphthalene	mg/kg	<0.020	0.020	0.020	0.020
Acenaphthylene	mg/kg	<0.0050	0.0050	0.0050	0.0050
Acenaphthene	mg/kg	<0.0050	0.0050	0.0050	0.0050
Fluorene	mg/kg	<0.020	0.020	0.020	0.020
Phenanthrene	mg/kg	<0.020	0.020	0.020	0.020
Anthracene	mg/kg	<0.0040	0.0040	0.0040	0.0040
Fluoranthene	mg/kg	<0.020	0.020	0.020	0.020
Pyrene	mg/kg	<0.020	0.020	0.020	0.020
Benzo(a)anthracene	mg/kg	<0.020	0.020	0.020	0.020
Chrysene	mg/kg	<0.020	0.020	0.020	0.020
Benzo(b&j)fluoranthene	mg/kg	<0.020	0.020	0.020	0.020
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	0.020	0.020
Benzo(a)pyrene	mg/kg	<0.020	0.020	0.020	0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	0.050	0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	0.050	0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	0.050	0.050
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	0.050	0.050
High Molecular Weight PAH's	mg/kg	<0.050	0.050	0.050	0.050
Total PAH	mg/kg	<0.050	0.050	0.050	0.050
Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	99		100	7367017
D8-ACENAPHTHYLENE (sur.)	%	90		83	7367017
D8-NAPHTHALENE (sur.)	%	97		92	7367017
TERPHENYL-D14 (sur.)	%	101		97	7367017

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) - RDL raised due to sample matrix interference.

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

Package 1	1.0°C
-----------	-------

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7361624	Moisture	2014/01/28					<0.30	%	13.1	20
7362245	1,4-Difluorobenzene (sur.)	2014/01/28	101	70 - 130	103	70 - 130	100	%		
7362245	4-BROMOFLUOROBENZENE (sur.)	2014/01/28	104	70 - 130	102	70 - 130	98	%		
7362245	D10-ETHYLBENZENE (sur.)	2014/01/28	77	50 - 130	71	50 - 130	72	%		
7362245	D4-1,2-DICHLOROETHANE (sur.)	2014/01/28	97	70 - 130	101	70 - 130	97	%		
7362245	Benzene	2014/01/28	74	60 - 140	71	60 - 140	<0.0050	mg/kg	NC	40
7362245	Toluene	2014/01/28	72	60 - 140	68	60 - 140	<0.020	mg/kg	NC	40
7362245	Ethylbenzene	2014/01/28	71	60 - 140	67	60 - 140	<0.010	mg/kg	NC	40
7362245	m & p-Xylene	2014/01/28	70	60 - 140	67	60 - 140	<0.040	mg/kg	NC	40
7362245	o-Xylene	2014/01/28	69	60 - 140	65	60 - 140	<0.040	mg/kg	NC	40
7362245	(C6-C10)	2014/01/28			93	60 - 140	<10	mg/kg	NC	40
7362245	Methyl-tert-butylether (MTBE)	2014/01/28					<0.10	mg/kg	NC	40
7362245	Styrene	2014/01/28					<0.030	mg/kg	NC	40
7362245	Xylenes (Total)	2014/01/28					<0.040	mg/kg	NC	40
7365668	O-TERPHENYL (sur.)	2014/01/30	88	50 - 130	88	50 - 130	95	%		
7365668	F2 (C10-C18 Hydrocarbons)	2014/01/30	104	50 - 130	98	80 - 120	<10	mg/kg	NC	40
7365668	F3 (C16-C34 Hydrocarbons)	2014/01/30	99	50 - 130	97	80 - 120	<10	mg/kg	NC	40
7365668	F4 (C34-C50 Hydrocarbons)	2014/01/30	84	50 - 130	84	80 - 120	<10	mg/kg	NC	40
7365668	Reached Baseline at C50	2014/01/30					YES, RDL=N/A	mg/kg	NC	50
7365693	O-TERPHENYL (sur.)	2014/01/30	81	50 - 130	106	50 - 130	104	%		
7365693	EPH (C10-C19)	2014/01/30	94	50 - 130	91	50 - 130	<100	mg/kg	NC	40
7365693	EPH (C19-C32)	2014/01/30	89	50 - 130	94	50 - 130	<100	mg/kg	NC	40
7365717	D10-ANTHRACENE (sur.)	2014/01/30	91	60 - 130	106	60 - 130	103	%		
7365717	D8-ACENAPHTHYLENE (sur.)	2014/01/30	92	50 - 130	95	50 - 130	96	%		
7365717	D8-NAPHTHALENE (sur.)	2014/01/30	98	50 - 130	100	50 - 130	103	%		
7365717	TERPHENYL-D14 (sur.)	2014/01/30	88	60 - 130	99	60 - 130	99	%		
7365717	Naphthalene	2014/01/31	89	50 - 130	89	50 - 130	<0.010	mg/kg	NC	50
7365717	2-Methylnaphthalene	2014/01/31	90	50 - 130	88	50 - 130	<0.020	mg/kg	NC	50
7365717	Acenaphthylene	2014/01/31	90	50 - 130	89	50 - 130	<0.0050	mg/kg	NC	50
7365717	Acenaphthene	2014/01/31	92	50 - 130	91	50 - 130	<0.0050	mg/kg	NC	50
7365717	Fluorene	2014/01/31	89	50 - 130	91	50 - 130	<0.020	mg/kg	NC	50
7365717	Phenanthrene	2014/01/31	91	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7365717	Anthracene	2014/01/31	99	60 - 130	107	60 - 130	<0.0040	mg/kg	NC	50
7365717	Fluoranthene	2014/01/31	96	60 - 130	98	60 - 130	<0.020	mg/kg	NC	50
7365717	Pyrene	2014/01/31	92	60 - 130	95	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzo(a)anthracene	2014/01/31	83	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7365717	Chrysene	2014/01/31	84	60 - 130	87	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzo(b)fluoranthene	2014/01/31	70	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzo(k)fluoranthene	2014/01/31	86	60 - 130	88	60 - 130	<0.020	mg/kg	NC	50

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7365717	Benzo(a)pyrene	2014/01/31	88	60 - 130	94	60 - 130	<0.020	mg/kg	NC	50
7365717	Indeno(1,2,3-cd)pyrene	2014/01/31	84	60 - 130	98	60 - 130	<0.050	mg/kg	NC	50
7365717	Dibenz(a,h)anthracene	2014/01/31	88	60 - 130	99	60 - 130	<0.050	mg/kg	NC	50
7365717	Benzo(g,h,i)perylene	2014/01/31	80	60 - 130	98	60 - 130	<0.050	mg/kg	NC	50
7365717	Benzo(b)fluoranthene	2014/01/31					<0.020	mg/kg	NC	N/A
7367011	O-TERPHENYL (sur.)	2014/01/31	94	50 - 130	100	50 - 130	114	%		
7367011	F2 (C10-C16 Hydrocarbons)	2014/02/03	114	50 - 130	108	80 - 120	14, RDL=10	mg/kg	NC	40
7367011	F3 (C16-C34 Hydrocarbons)	2014/02/03	105	50 - 130	101	80 - 120	<10	mg/kg	NC	40
7367011	F4 (C34-C50 Hydrocarbons)	2014/02/03	91	50 - 130	85	80 - 120	<10	mg/kg	NC	40
7367011	Reached Baseline at C50	2014/02/03	YES	N/A	YES	N/A	YES, RDL=N/A	mg/kg	NC	50
7367017	D10-ANTHRACENE (sur.)	2014/01/31	98	60 - 130	106	60 - 130	114	%		
7367017	D8-ACENAPHTHYLENE (sur.)	2014/01/31	89	50 - 130	93	50 - 130	98	%		
7367017	D8-NAPHTHALENE (sur.)	2014/01/31	92	50 - 130	96	50 - 130	105	%		
7367017	TERPHENYL-D14 (sur.)	2014/01/31	98	60 - 130	104	60 - 130	111	%		
7367017	Naphthalene	2014/01/31	82	50 - 130	83	50 - 130	<0.010	mg/kg	NC	50
7367017	2-Methylnaphthalene	2014/01/31	86	50 - 130	88	50 - 130	<0.020	mg/kg	NC	50
7367017	Acenaphthylene	2014/01/31	84	50 - 130	83	50 - 130	<0.0050	mg/kg	NC	50
7367017	Acenaphthene	2014/01/31	85	50 - 130	84	50 - 130	<0.0050	mg/kg	NC	50
7367017	Fluorene	2014/01/31	87	50 - 130	85	50 - 130	<0.020	mg/kg	NC	50
7367017	Phenanthrene	2014/01/31	85	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7367017	Anthracene	2014/01/31	98	60 - 130	104	60 - 130	<0.0040	mg/kg	NC	50
7367017	Fluoranthene	2014/01/31	94	60 - 130	96	60 - 130	<0.020	mg/kg	NC	50
7367017	Pyrene	2014/01/31	91	60 - 130	91	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(a)anthracene	2014/01/31	81	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7367017	Chrysene	2014/01/31	84	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(b,k)fluoranthene	2014/01/31	71	60 - 130	71	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(k)fluoranthene	2014/01/31	94	60 - 130	96	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(a)pyrene	2014/01/31	84	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7367017	Indeno(1,2,3-cd)pyrene	2014/01/31	82	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50
7367017	Dibenz(a,h)anthracene	2014/01/31	83	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7367017	Benzo(g,h,i)perylene	2014/01/31	76	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50
7367017	Benzo(b)fluoranthene	2014/01/31					<0.020	mg/kg	NC	N/A
7367028	O-TERPHENYL (sur.)	2014/01/31	88	50 - 130	93	50 - 130	117	%		

FRANZ/CORE 6
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7367028	EPH (C10-C19)	2014/01/31	94	50 - 130	93	50 - 130	<100	mg/kg	NC	40
7367028	EPH (C19-C32)	2014/01/31	92	50 - 130	91	50 - 130	<100	mg/kg	NC	40

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B406383

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



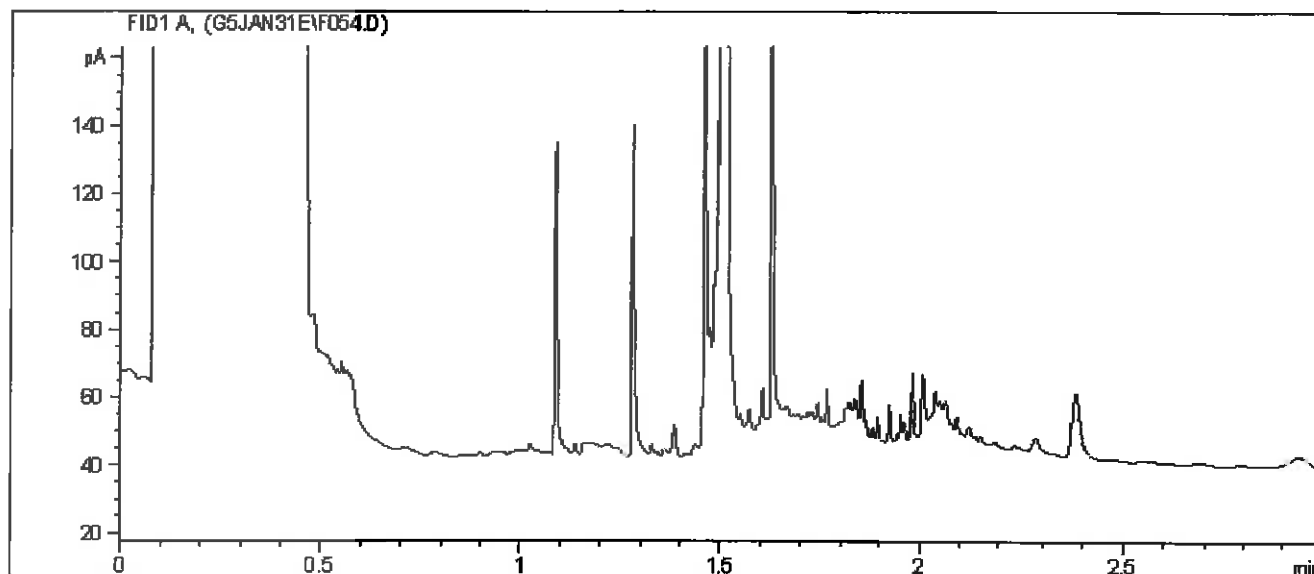
David Huang, BB Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

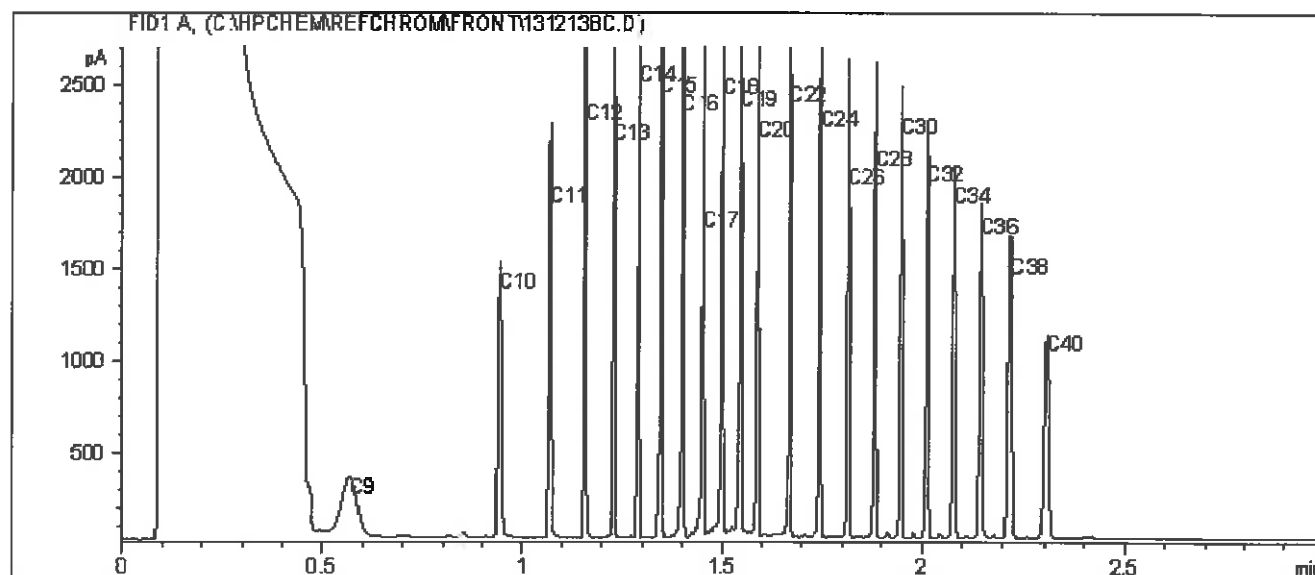
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5437

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-11-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



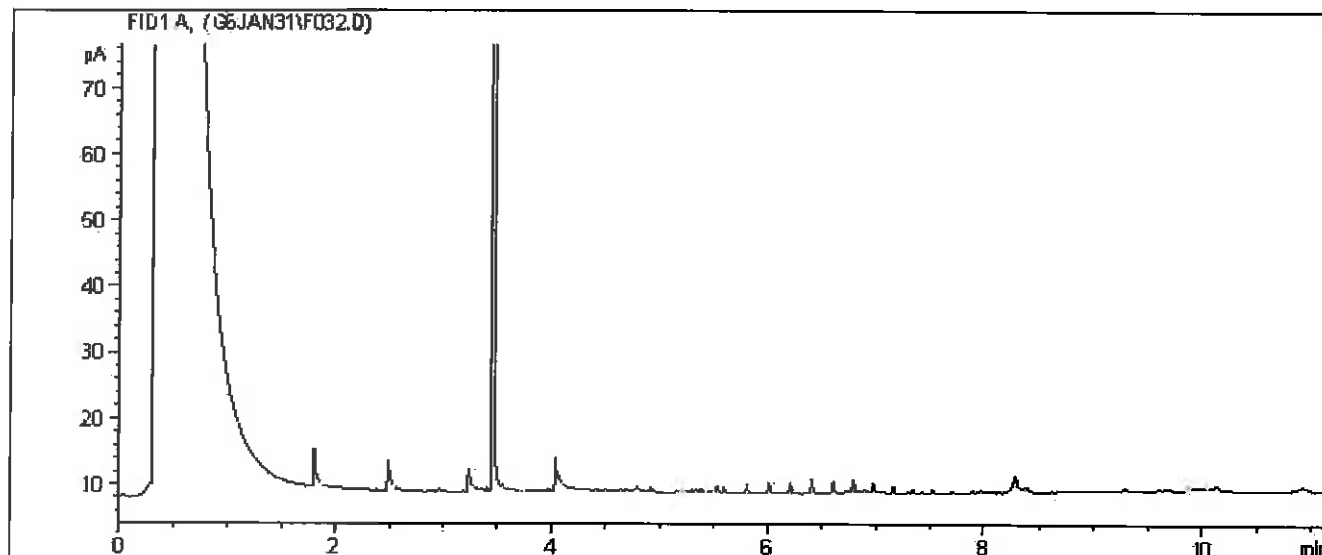
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

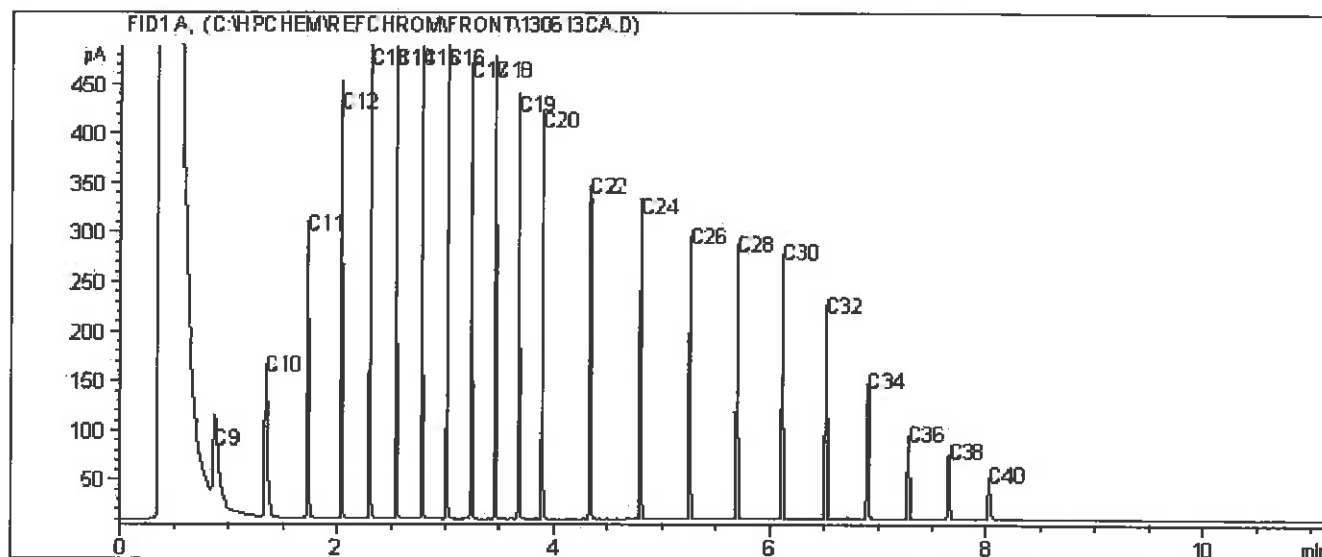
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5437

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-11-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

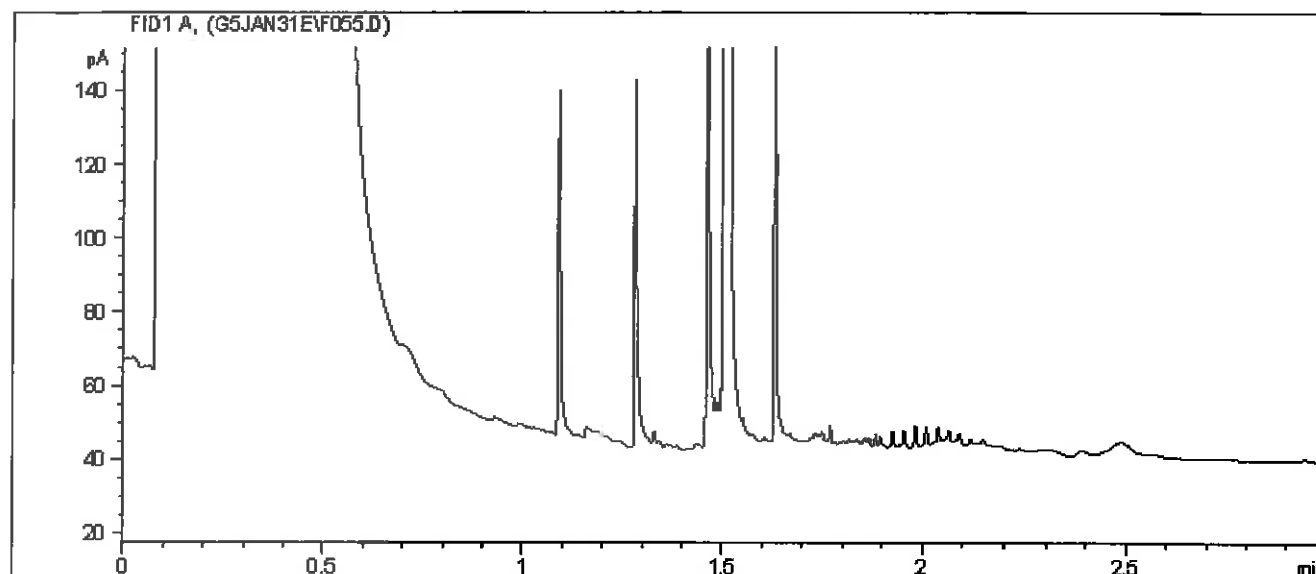
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

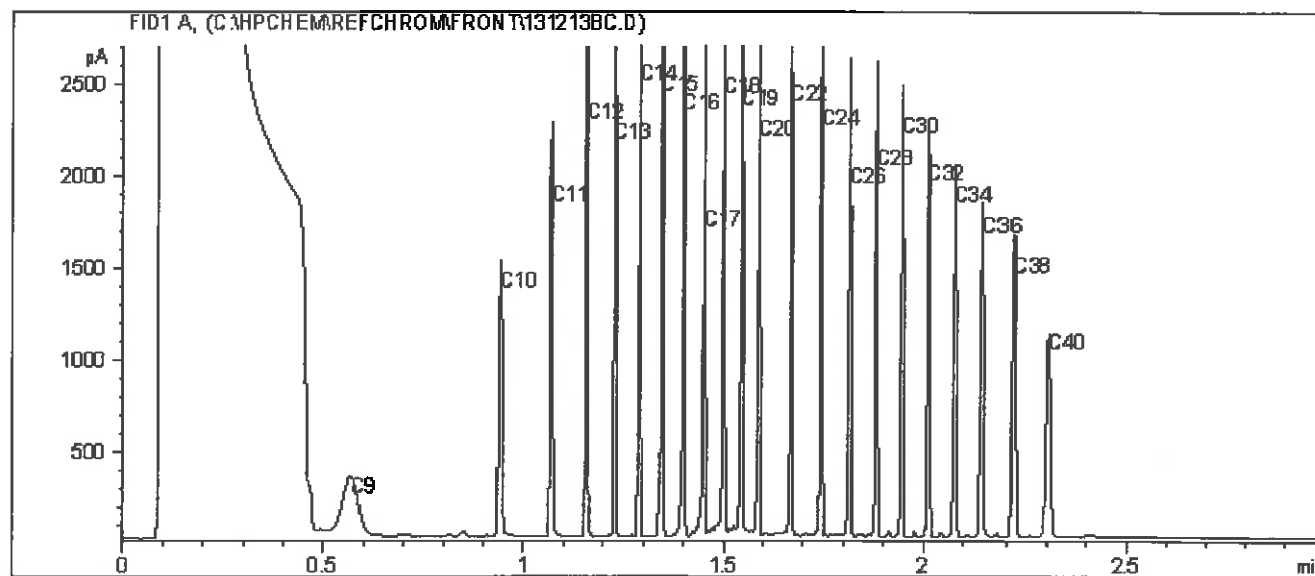
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5438

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-11-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



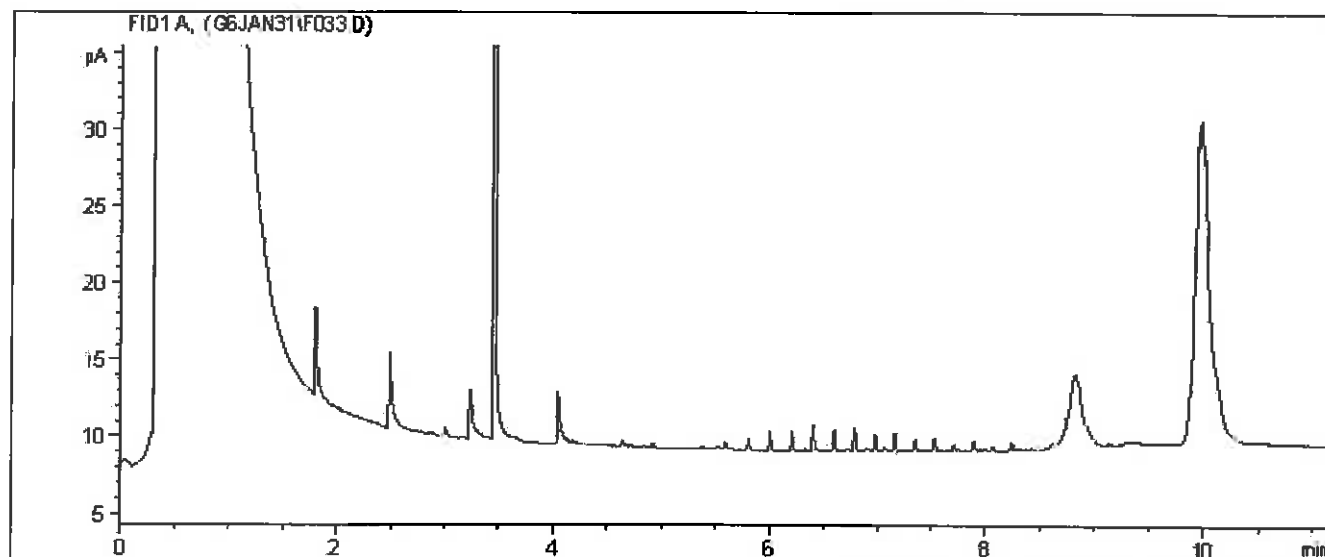
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

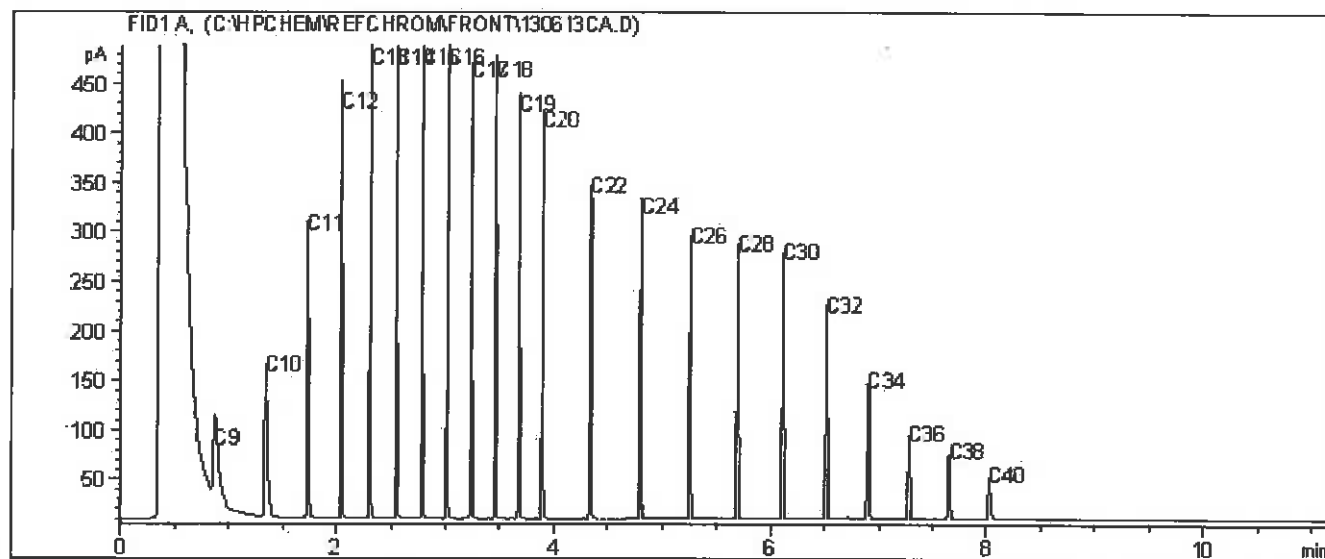
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5438

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-11-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

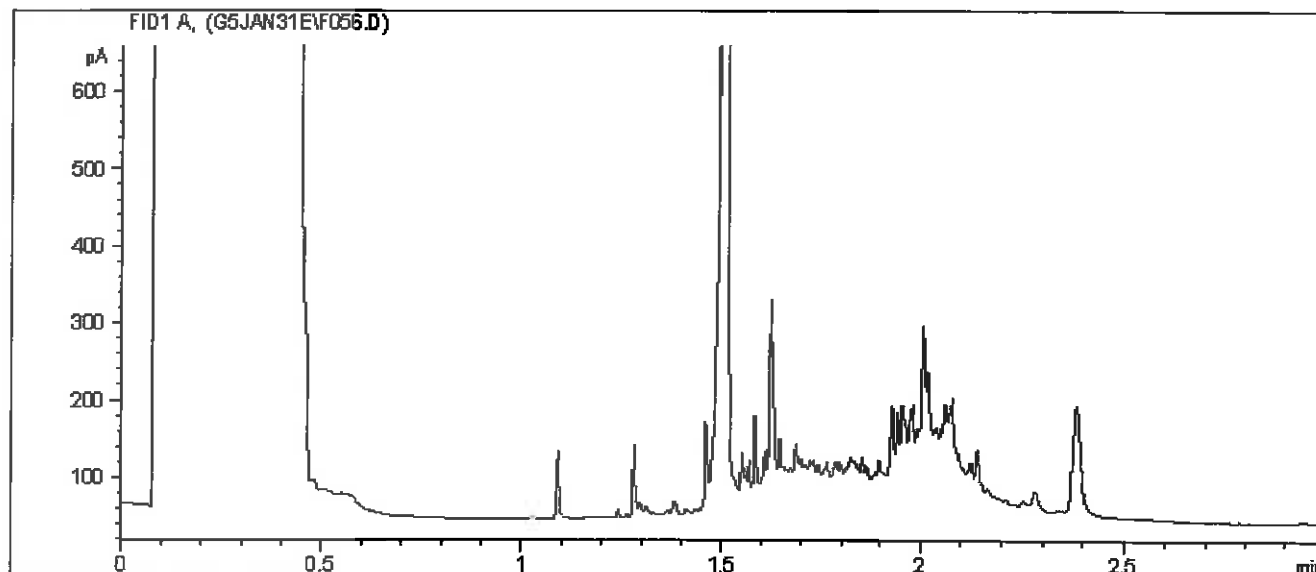
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

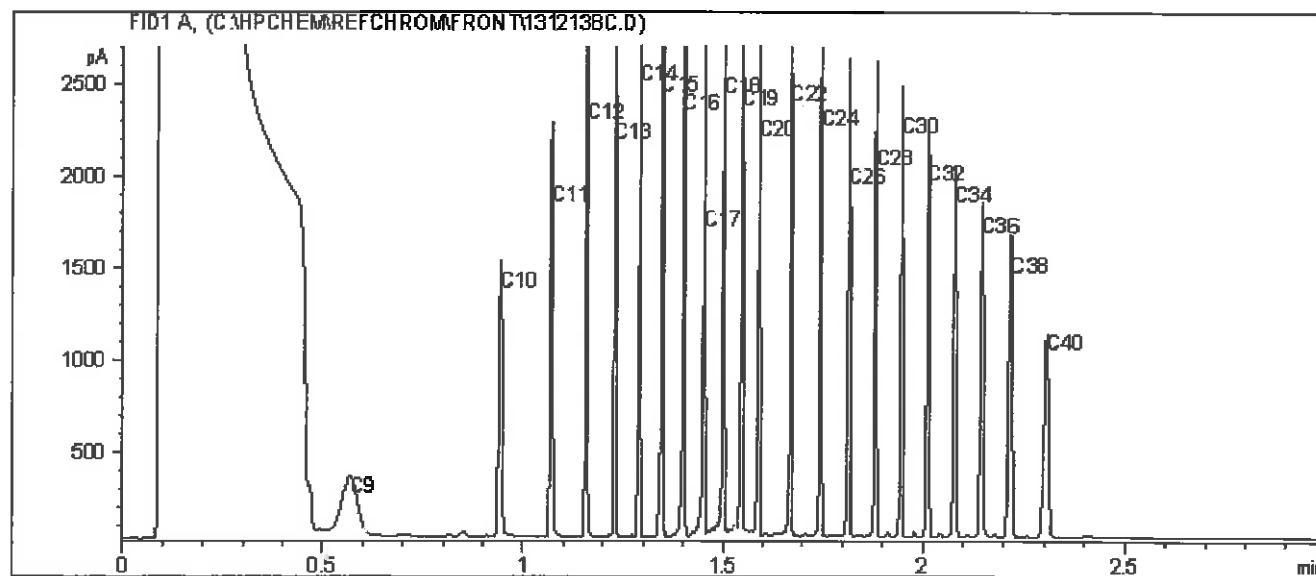
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5441

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-DUP3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



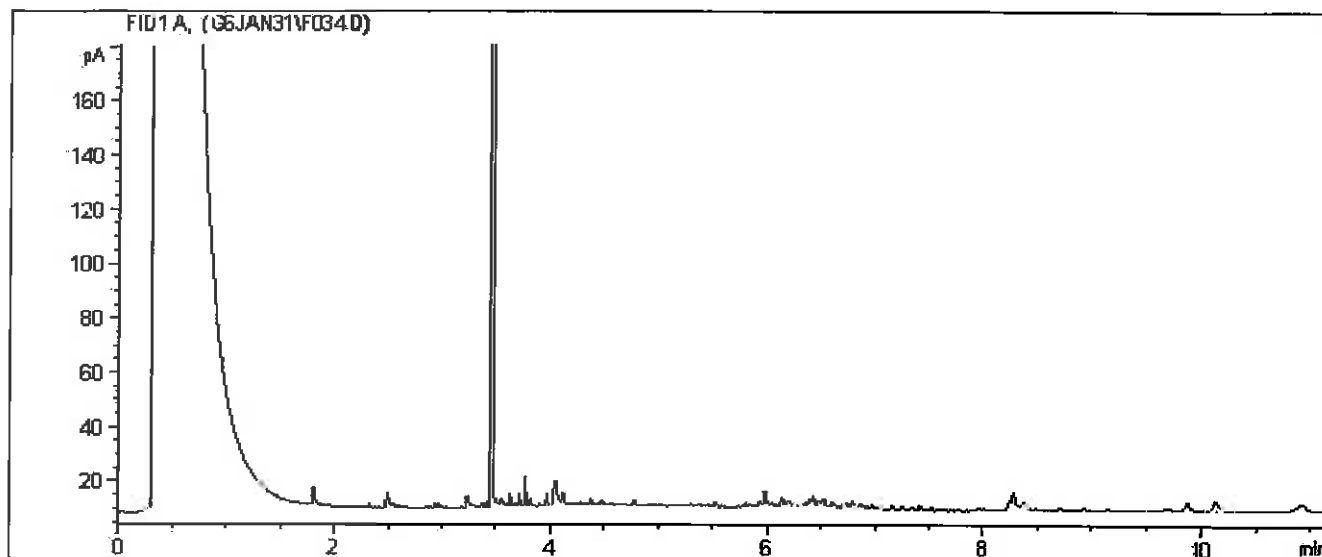
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

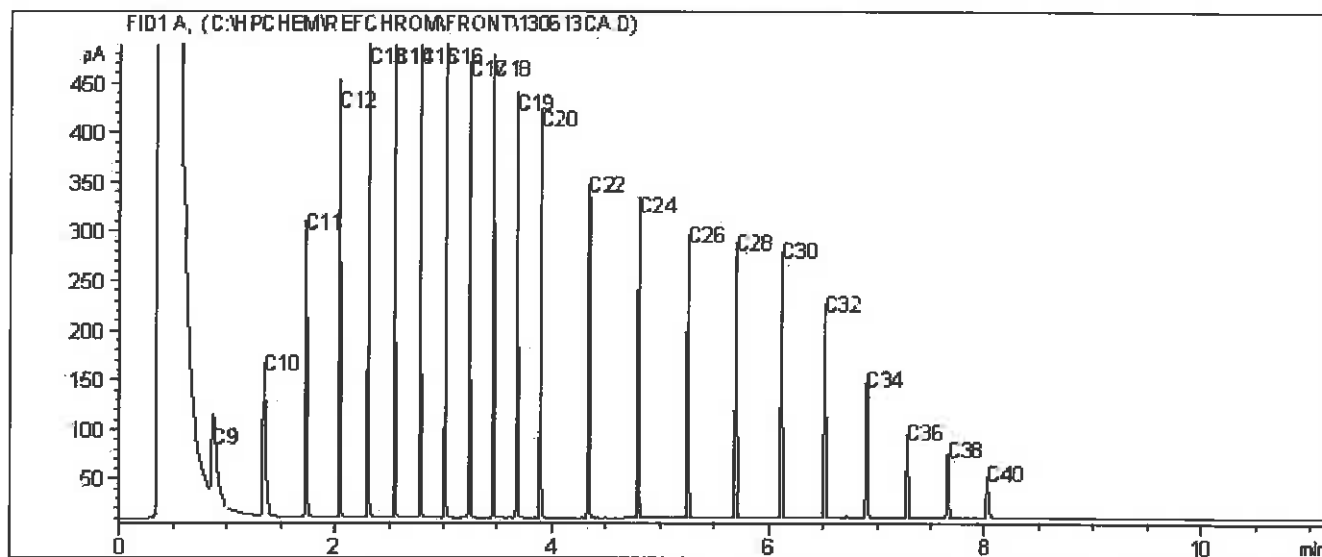
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5441

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-DUP3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution -- Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

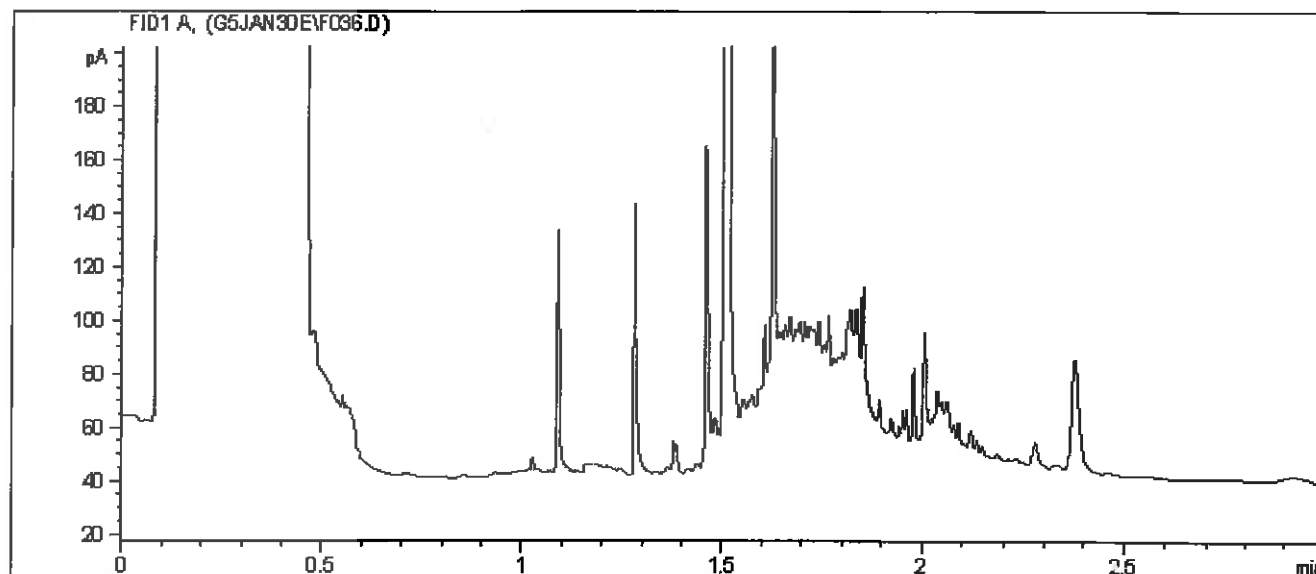
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

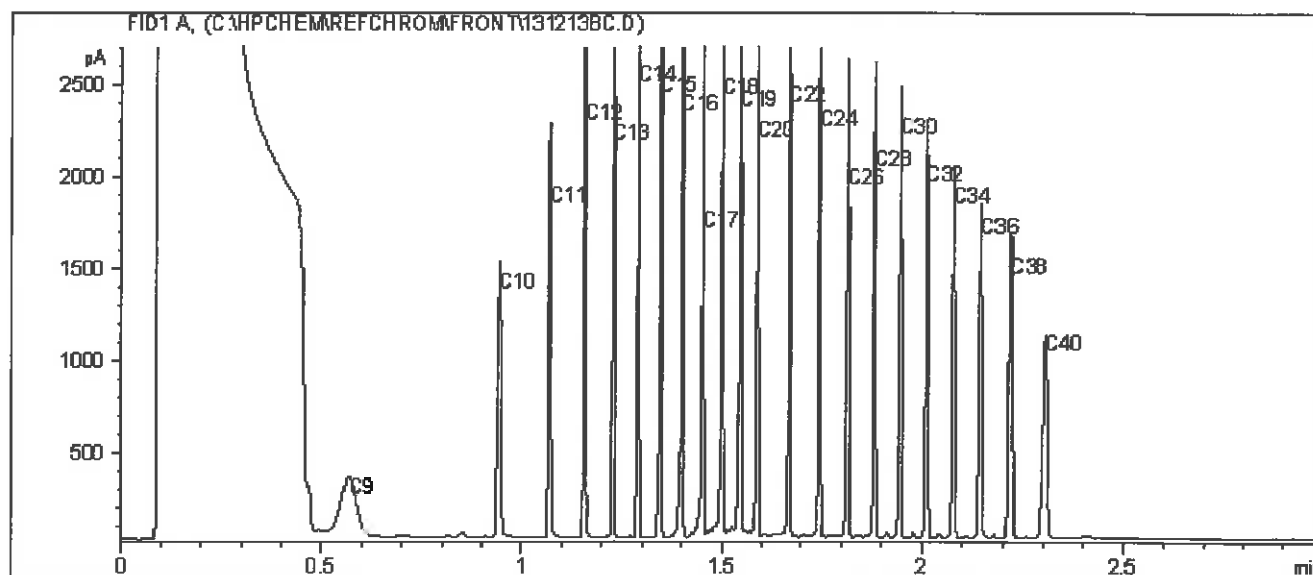
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5442

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-DUP4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



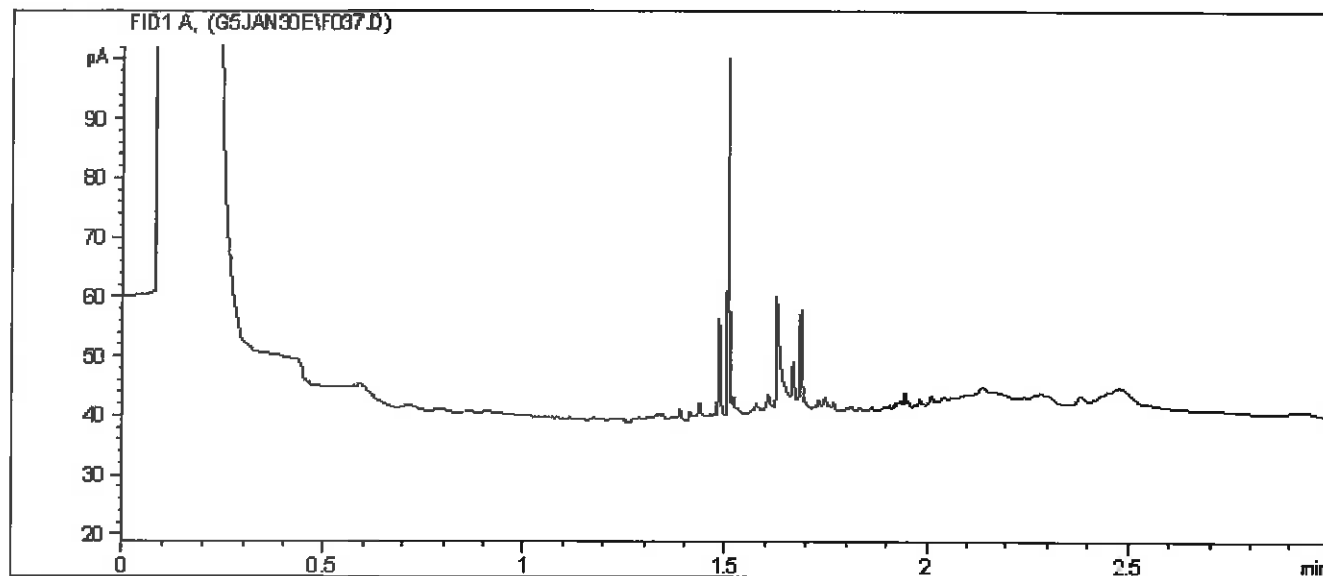
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

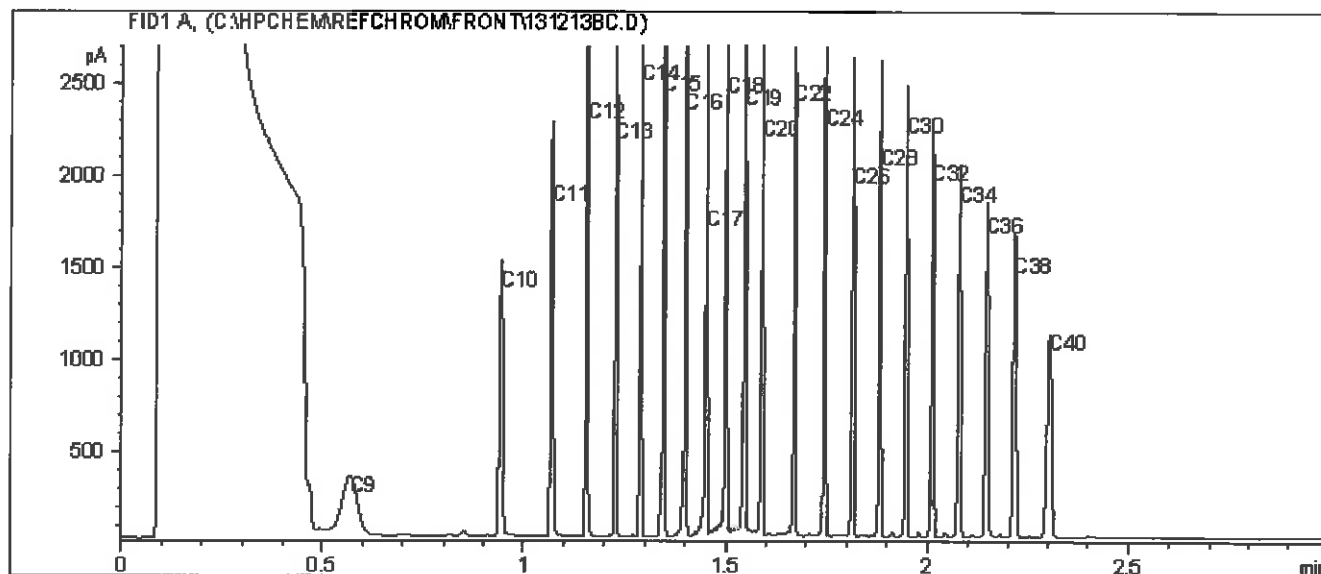
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5442 Lab-Dup

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-DUP4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



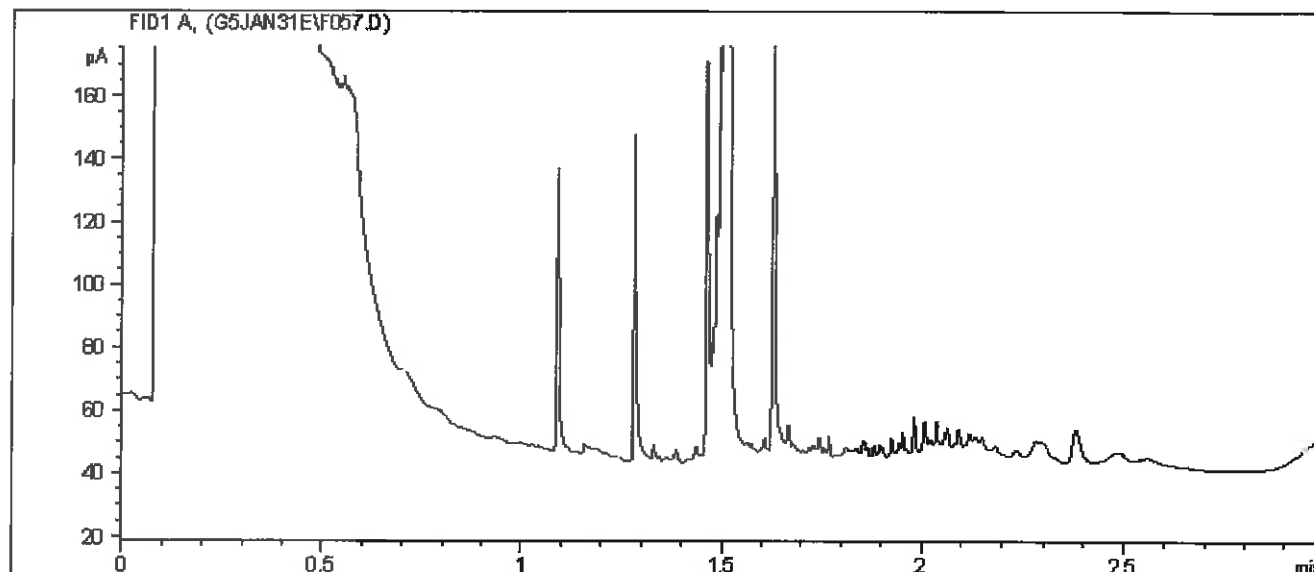
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

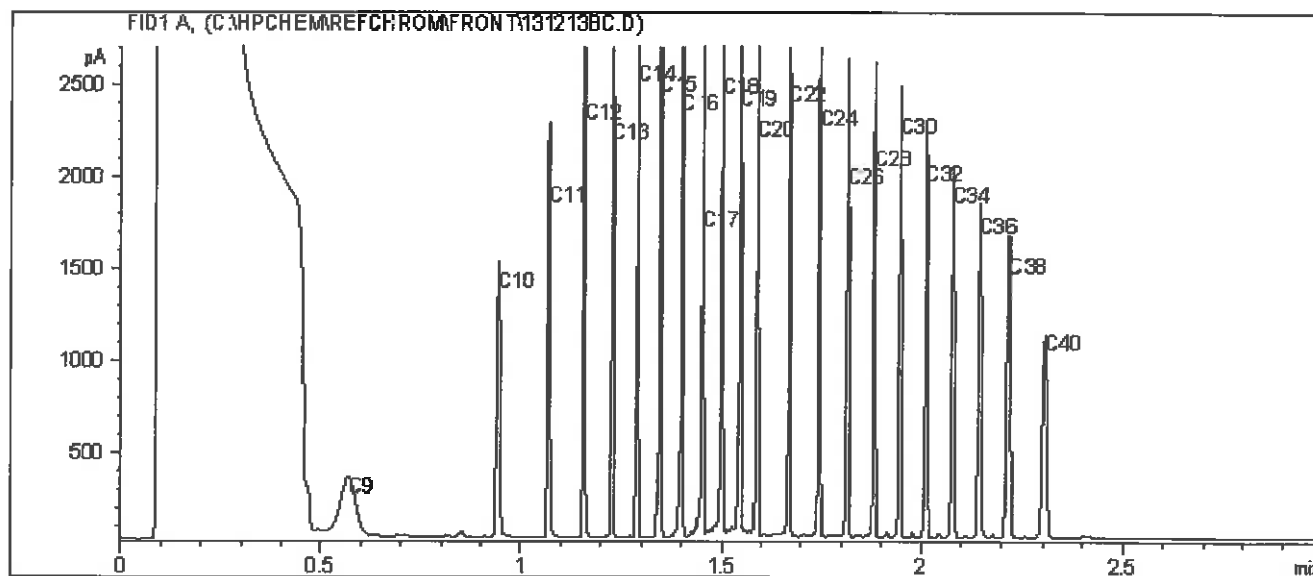
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5450

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-5-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



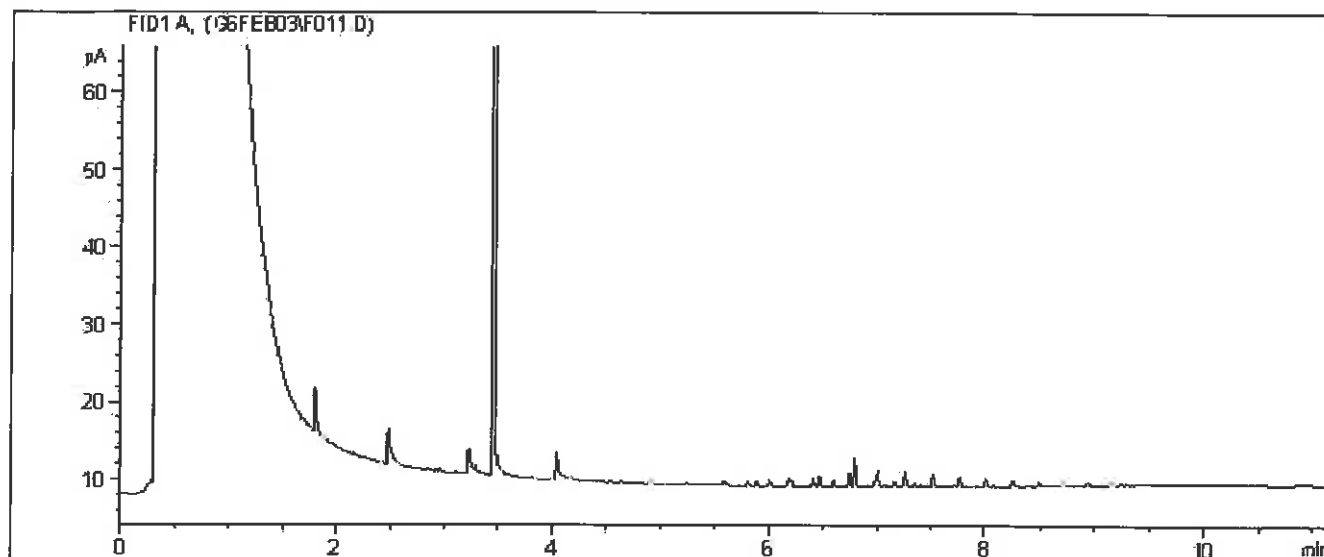
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

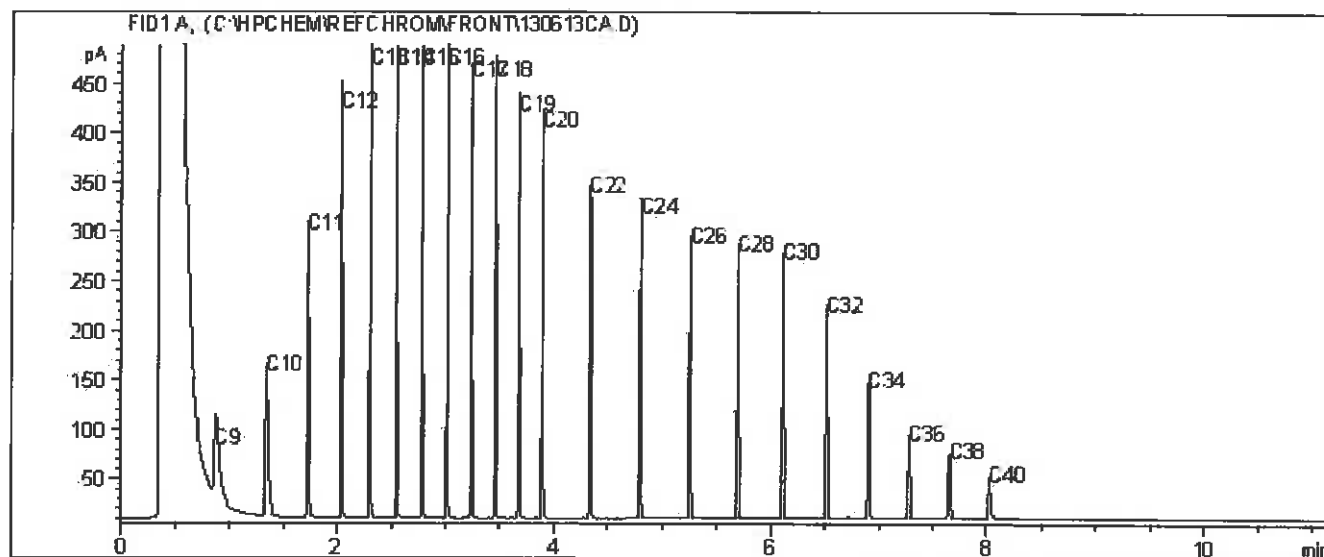
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5450

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-5-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

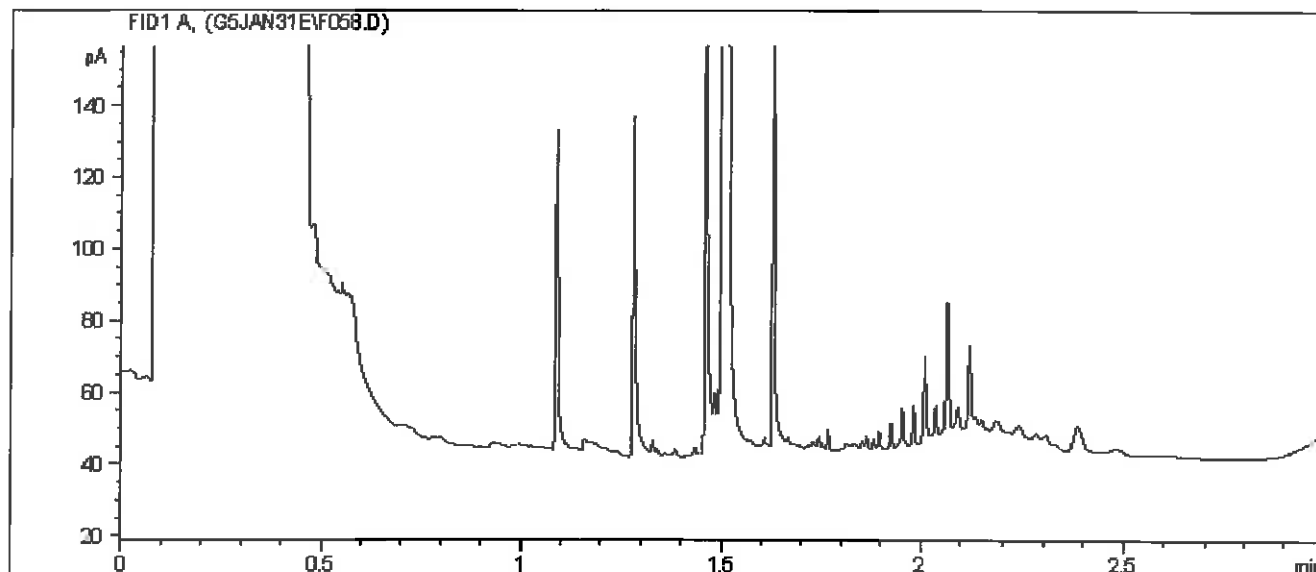
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

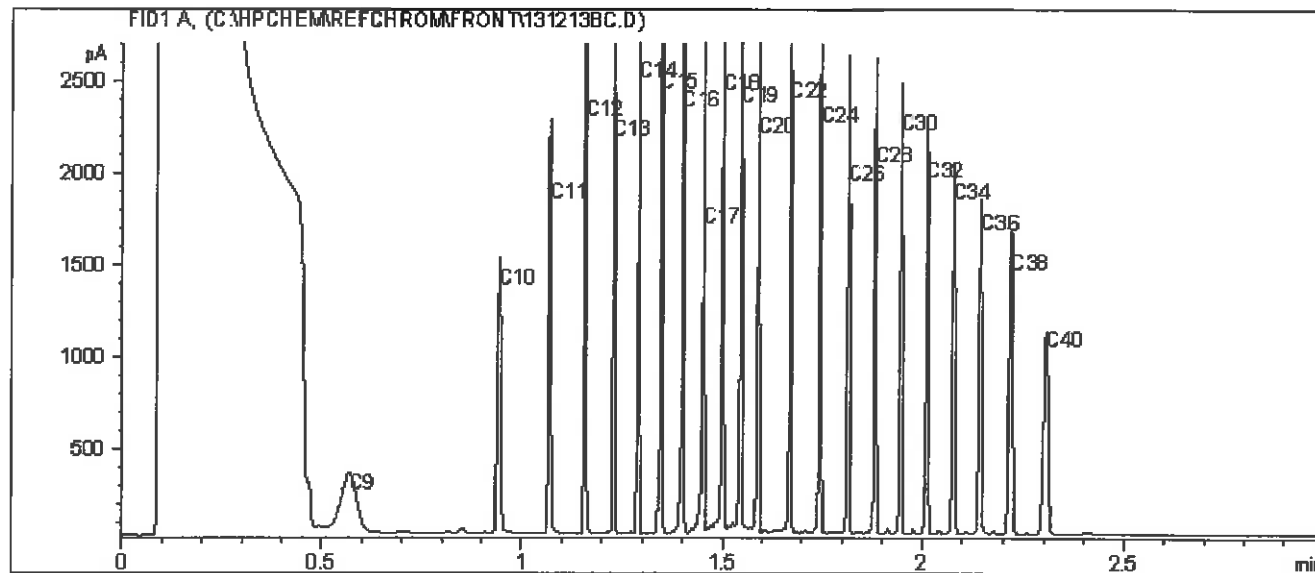
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5450 Lab-Dup

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-5-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



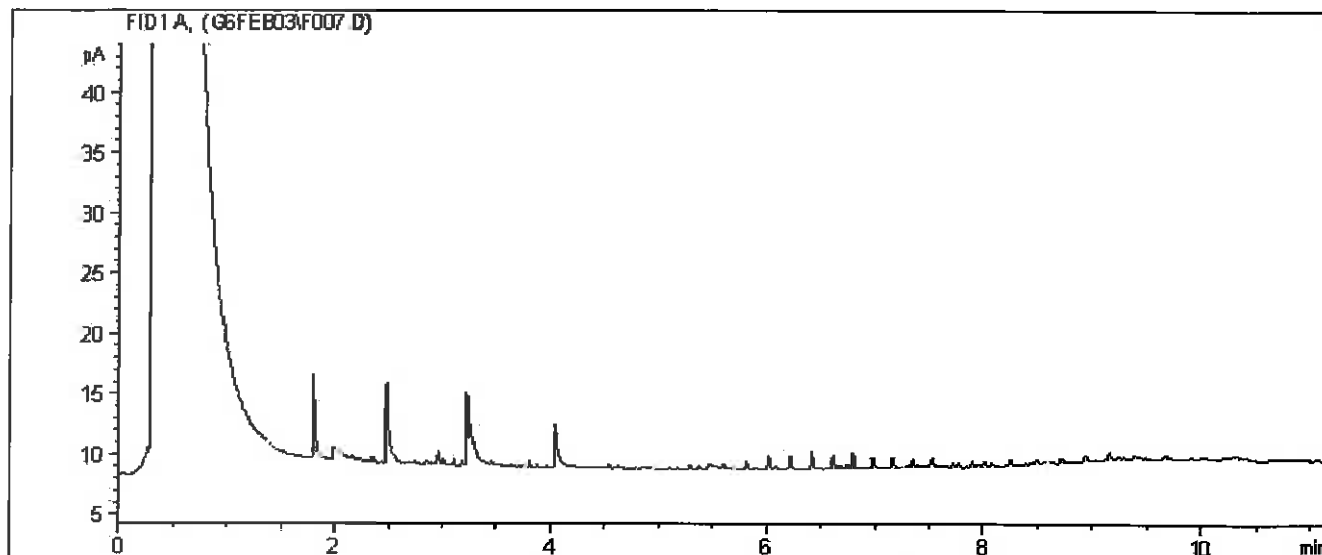
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

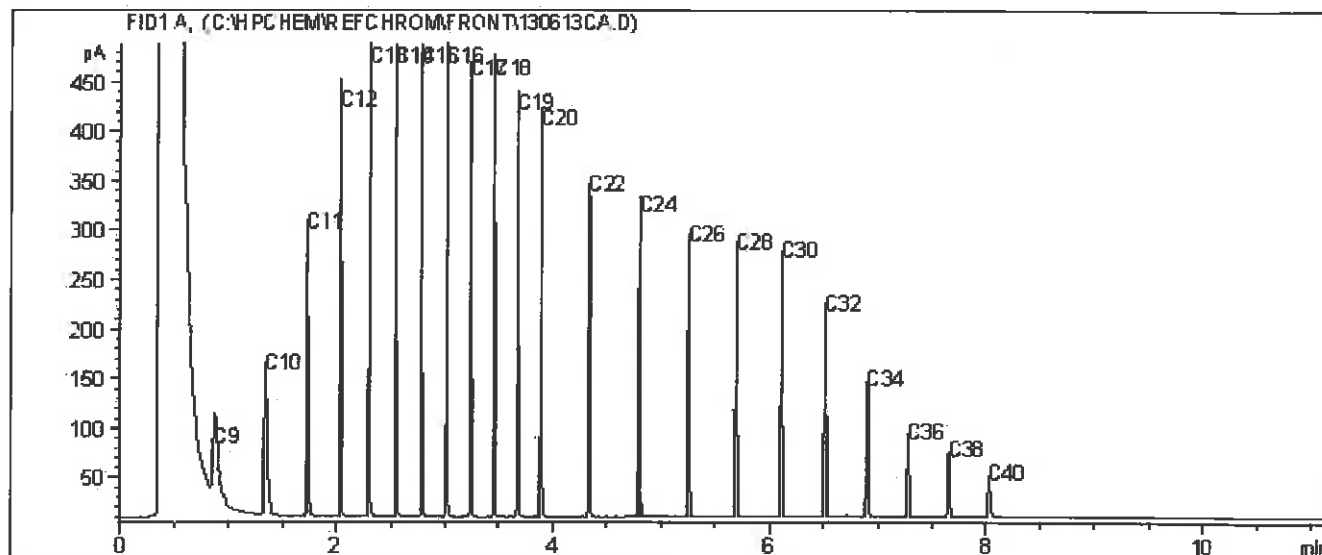
Report Date: 2014/02/03
 Maxxam Job #: B406383
 Maxxam Sample: IN5450 Lab-Dup

FRANZ/CORE 6
 Client Project #: LOWER POST
 Site Reference: LOWER POST
 Client ID: BH13-5-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
 Varsol: C8 - C12

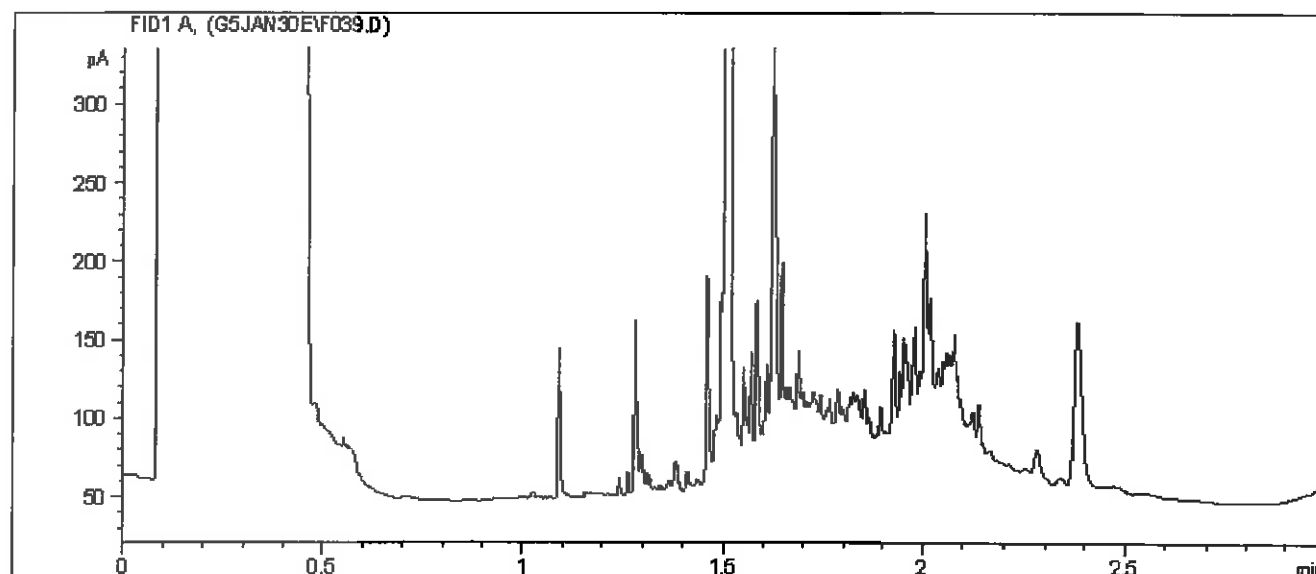
Diesel: C8 - C22
 Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

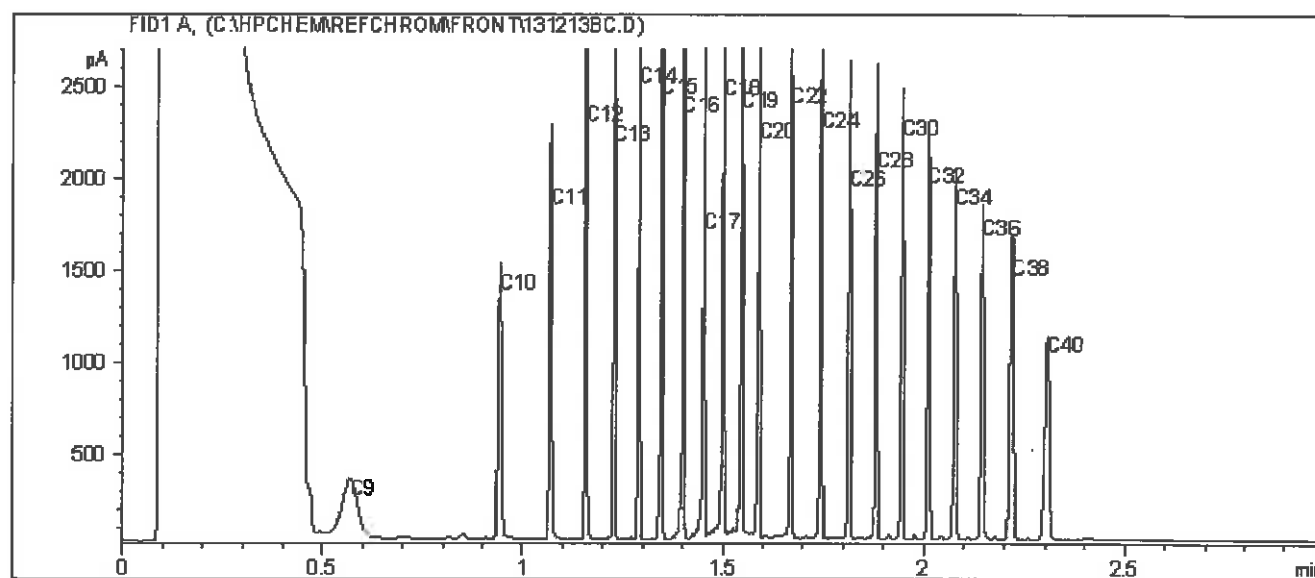
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5451

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-5-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



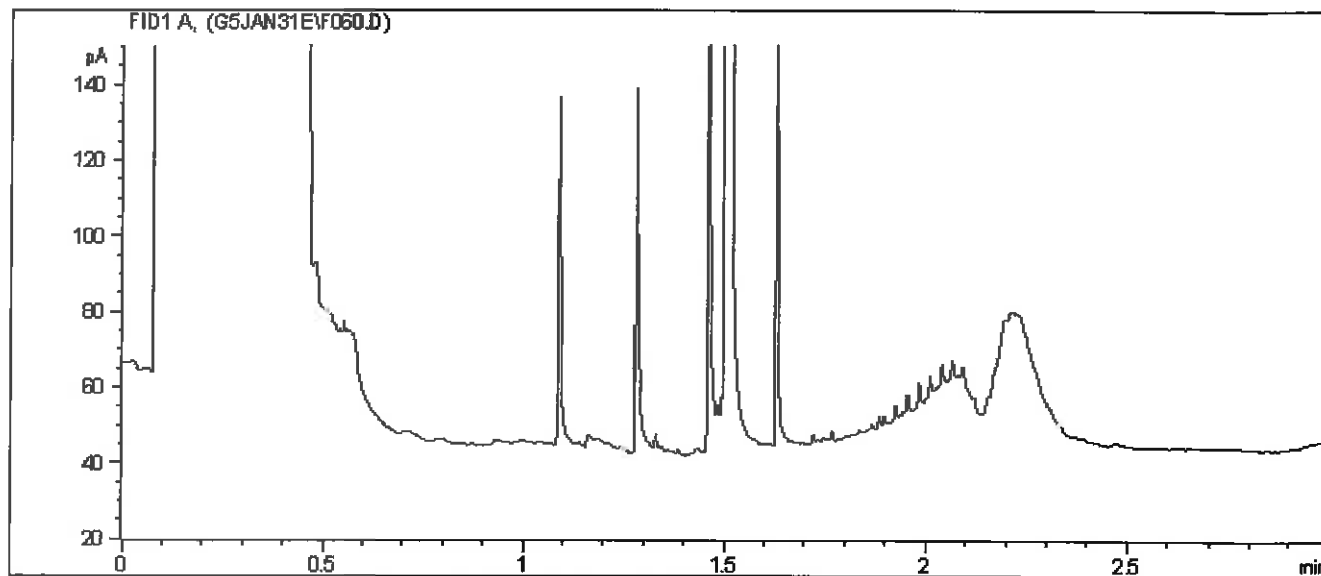
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

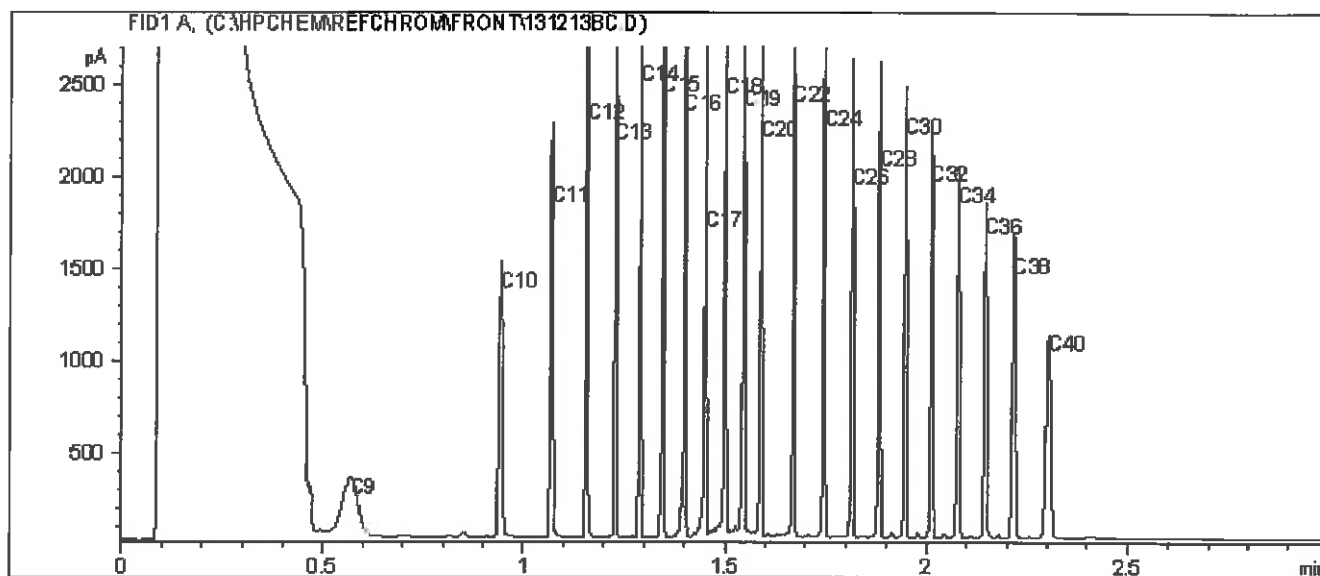
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5456

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-9-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



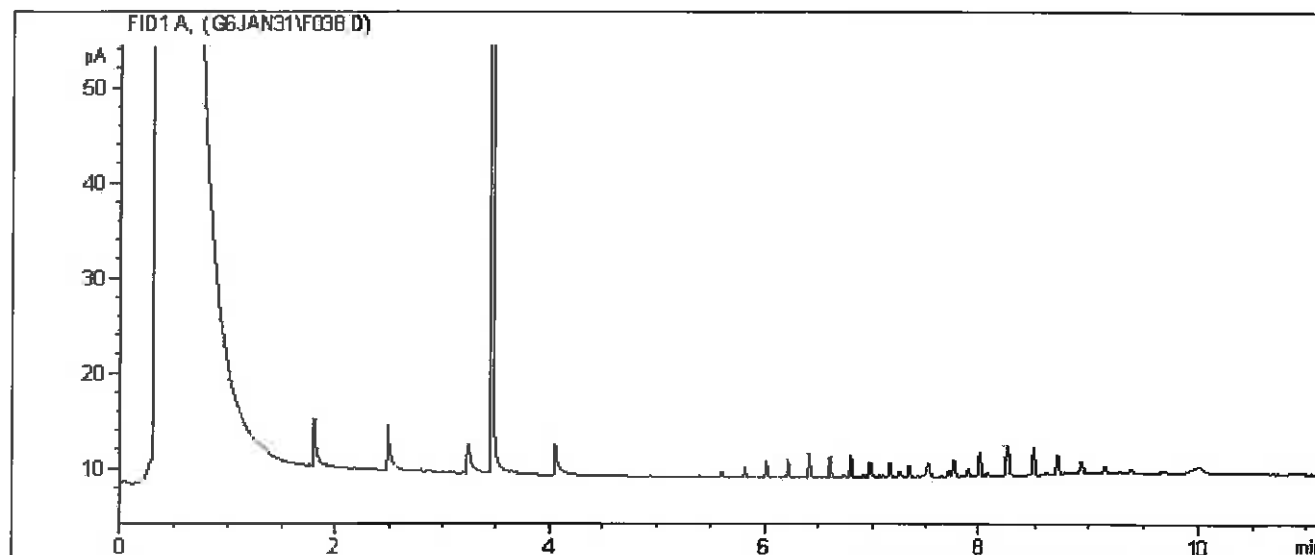
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

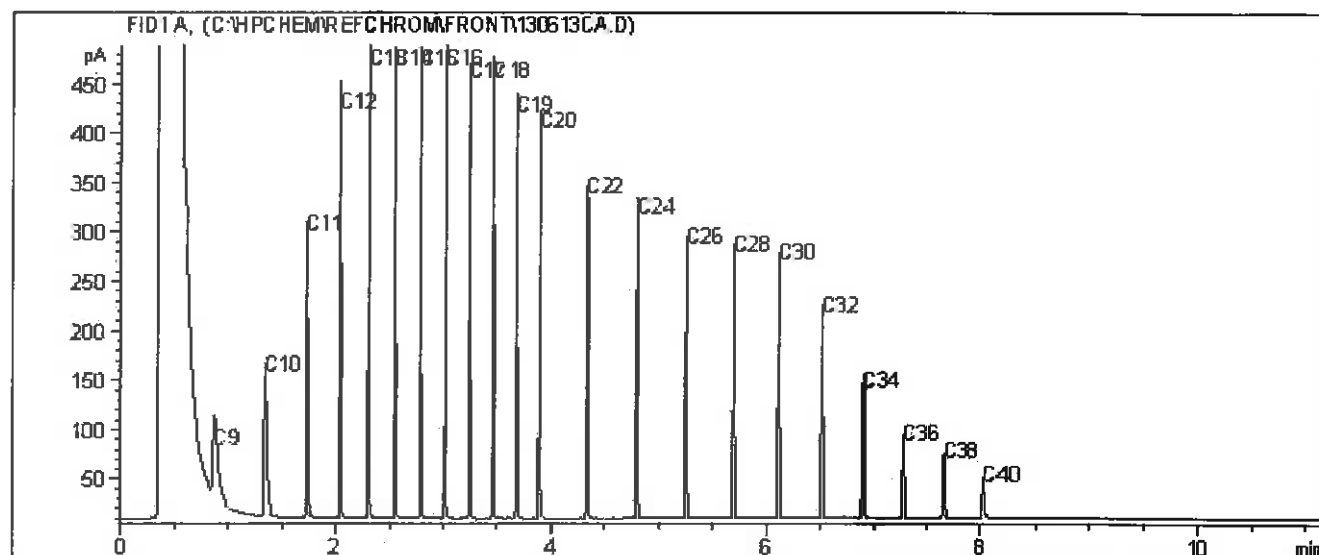
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5456

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-9-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

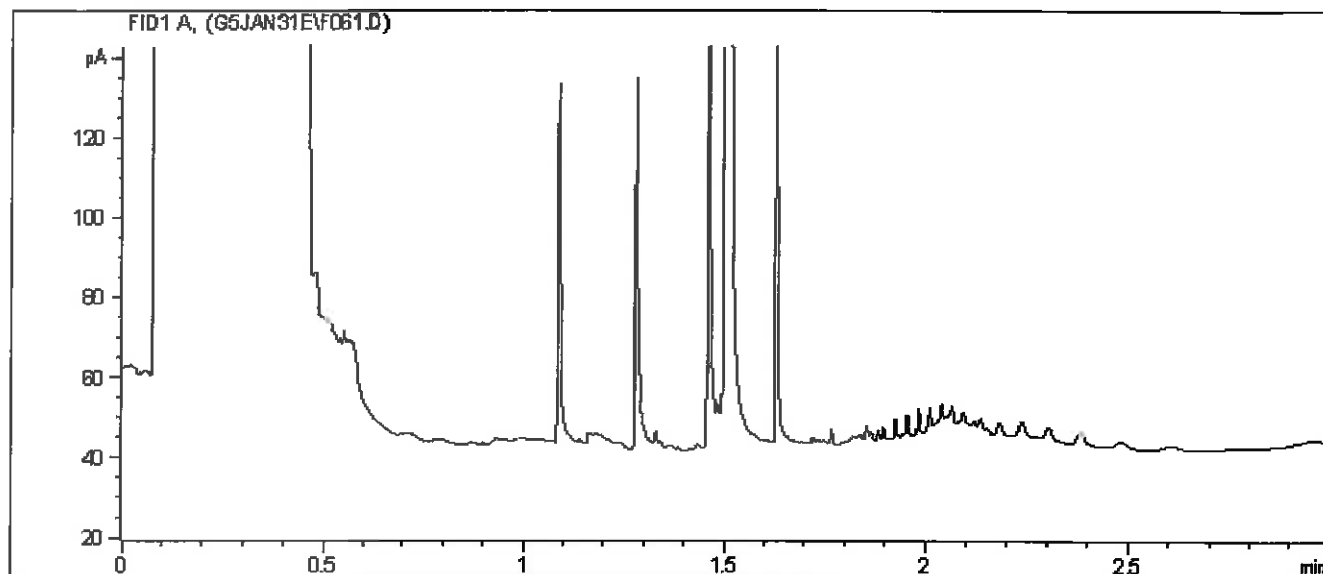
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

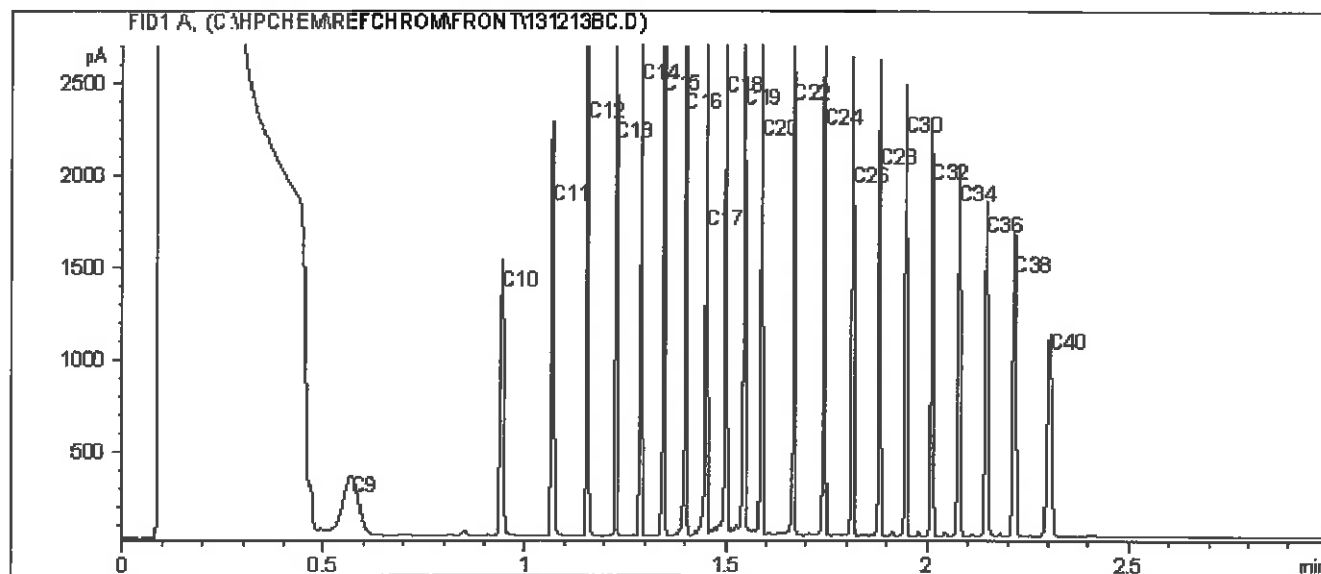
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5457

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-9-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



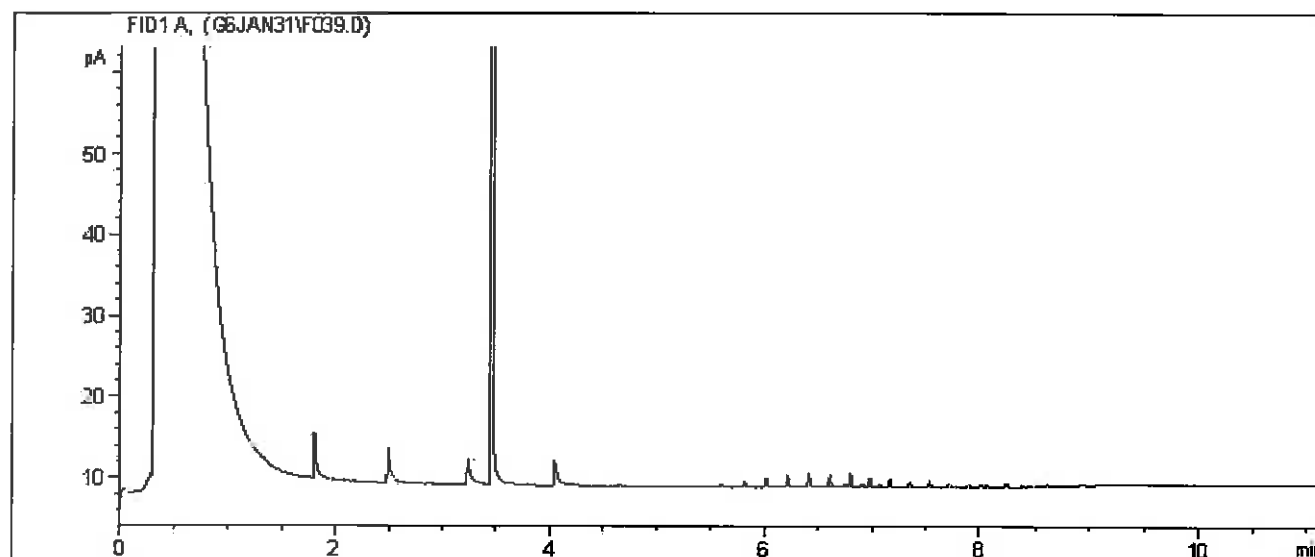
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

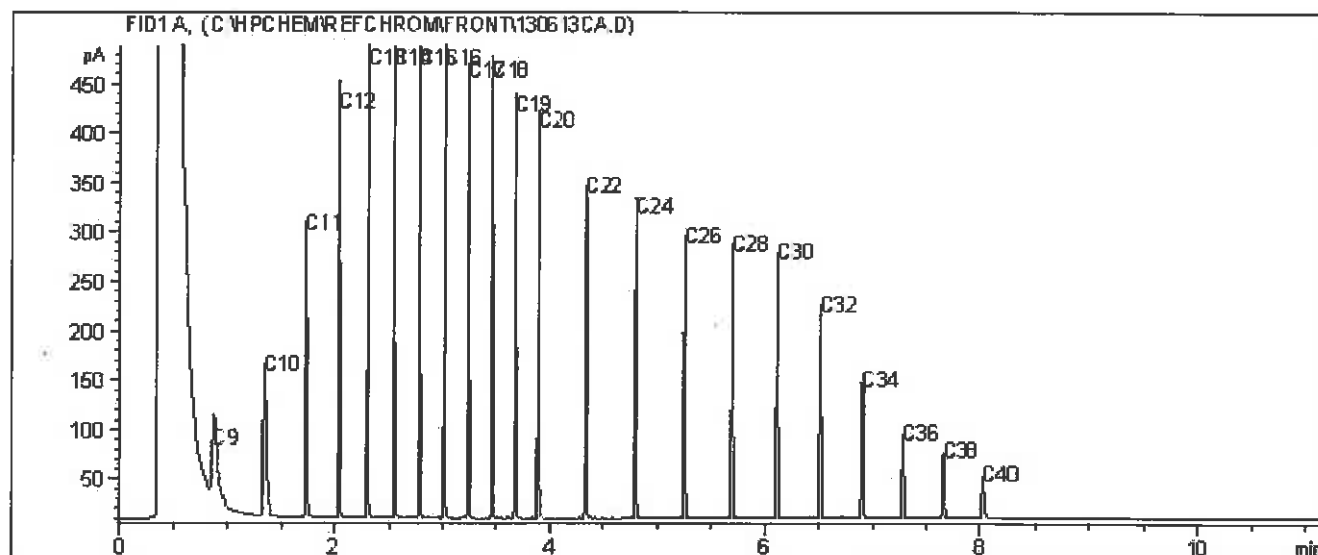
Report Date: 2014/02/03
Maxxam Job #: B406383
Maxxam Sample: IN5457

FRANZ/CORE 6
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-9-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
 Your Project #: LOWER POST
 Site Location: LOWER POST
 Your C.O.C. #: G032687

Attention: John Taylor
 FRANZ ENVIRONMENTAL INC.
 FRANZEN-VAN
 1080 MAINLAND STREET
 SUITE 308
 VANCOUVER, BC
 CANADA V6B 2T4

Report Date: 2014/02/13
Report #: R1515981
Version: 2R

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B408764
Received: 2014/02/04, 08:55

Sample Matrix: Soil
 # Samples Received: 5

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
BTEX/MTBE Soil LH, VH, F1 SIM/MS	5	2014/02/04	2014/02/05	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	5	N/A	2014/02/06	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	5	2014/02/04	2014/02/07	BBY8SOP-00030	CCME Soil Tier 1
Moisture	5	N/A	2014/02/05	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	1	2014/02/04	2014/02/07	BBY8SOP-00022	EPA 8270D
PAH in Soil by GC/MS (SIM) - CCME	4	2014/02/04	2014/02/12	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	1	N/A	2014/02/08	BBY WI-00033	CCME Guidelines
Benzo[a]pyrene Equivalency	4	N/A	2014/02/12	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	1	N/A	2014/02/08	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	4	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	5	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	5	2014/02/04	2014/02/12	BBY8SOP-00029	BC Env Lab Manual

* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Crystal Ireland

13 Feb 2014 10:52:11 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
 Email: Cireland@maxxam.ca
 Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B408764
Report Date: 2014/02/13

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	<10	25	<10	<10	<10	10 7375938
F3 (C16-C34 Hydrocarbons)	42	44	<10	<10	61	10 7375938
F4 (C34-C50 Hydrocarbons)	16	28	<10	<10	22	10 7375938
Reached Baseline at C50	YES	YES	YES	YES	YES	N/A 7375938
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	103	101	99	101	101	7375938

PHYSICAL TESTING (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	QC Batch
Physical Properties						
Moisture	7.0	12	10	8.8	6.7	0.30 7371388

TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	QC Batch
Calculated Parameters						
LEPH (C10-C19 less PAH)	<100	<100	<100	<100	<100	100 7371084
HEPH (C19-C32 less PAH)	<100	<100	<100	<100	<100	100 7371084
Hydrocarbons						
EPH (C10-C19)	<100	<100	<100	<100	<100	100 7379723
EPH (C19-C32)	<100	<100	<100	<100	<100	100 7379723
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	113	109	115	118	114	7379723

N/A = Not Applicable
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID		IP4809	IP4810	IP4811	IP4812	IP4813		
Sampling Date		2014/01/31	2014/01/31	2014/01/31	2014/01/29	2014/01/31		
UNITS		BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	RDL	QC Batch
Calculated Parameters								
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	<10	10	7371179
Volatiles								
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	7372499
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7372499
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7372499
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7372499
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7372499
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7372499
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	7372499
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7372499
(C6-C10)	mg/kg	<10	<10	<10	<10	<10	10	7372499
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	106	104	105	104	106		7372499
4-BROMOFLUOROBENZENE (sur.)	%	97	97	96	96	93		7372499
D10-ETHYLBENZENE (sur.)	%	86	87	88	85	87		7372499
D4-1,2-DICHLOROETHANE (sur.)	%	103	98	98	100	101		7372499

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813				
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31				
Calculated Parameters									
	UNITS	BH13-14-3	QC Batch	BH13-14-4	QC Batch	BH13-19-3	DUP 8	RDL	QC Batch
Index of Additive Cancer Risk(IARC)	N/A	0.31	7371134	0.31	7371134	0.31	0.31	0.10	7371134
Benzo(a)pyrene equivalency	N/A	<0.10	7371134	<0.10	7371134	<0.10	<0.10	0.10	7371134
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.010	7379739	<0.010	7376049	<0.010	<0.010	0.010	7379739
2-Methylnaphthalene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Acenaphthylene	mg/kg	<0.0050	7379739	<0.0050	7376049	<0.0050	<0.0050	0.0050	7379739
Acenaphthene	mg/kg	<0.0050	7379739	<0.0050	7376049	<0.0050	<0.0050	0.0050	7379739
Fluorene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Phenanthrene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Anthracene	mg/kg	<0.0040	7379739	<0.0040	7376049	<0.0040	<0.0040	0.0040	7379739
Fluoranthene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Pyrene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Benzo(a)anthracene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Chrysene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Benzo(b&l)fluoranthene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Benzo(k)fluoranthene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Benzo(a)pyrene	mg/kg	<0.020	7379739	<0.020	7376049	<0.020	<0.020	0.020	7379739
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	7379739	<0.050	7376049	<0.050	<0.050	0.050	7379739
Dibenz(a,h)anthracene	mg/kg	<0.050	7379739	<0.050	7376049	<0.050	<0.050	0.050	7379739
Benzo(g,h,i)perylene	mg/kg	<0.050	7379739	<0.050	7376049	<0.050	<0.050	0.050	7379739
Low Molecular Weight PAH's	mg/kg	<0.050	7371083	<0.050	7371083	<0.050	<0.050	0.050	7371083
High Molecular Weight PAH's	mg/kg	<0.050	7371083	<0.050	7371083	<0.050	<0.050	0.050	7371083
Total PAH	mg/kg	<0.050	7371083	<0.050	7371083	<0.050	<0.050	0.050	7371083
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	114	7379739	100	7376049	108	109	113	7379739
D8-ACENAPHTHYLENE (sur.)	%	113	7379739	99	7376049	110	109	111	7379739
D8-NAPHTHALENE (sur.)	%	116	7379739	103	7376049	113	113	113	7379739
TERPHENYL-D14 (sur.)	%	124	7379739	106	7376049	116	115	122	7379739

N/A = Not Applicable

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

Package 1	1.0°C
-----------	-------

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7371386	Moisture	2014/02/05					<0.30	%	3.9	20
7372499	1,4-Difluorobenzene (sur.)	2014/02/05	101	70 - 130	104	70 - 130	104	%		
7372499	4-BROMOFLUOROBENZENE (sur.)	2014/02/05	100	70 - 130	98	70 - 130	98	%		
7372499	D10-ETHYLBENZENE (sur.)	2014/02/05	90	50 - 130	82	50 - 130	89	%		
7372499	D4-1,2-DICHLOROETHANE (sur.)	2014/02/05	95	70 - 130	97	70 - 130	104	%		
7372499	Benzene	2014/02/05	98	60 - 140	98	60 - 140	<0.0050	mg/kg	NC	40
7372499	Toluene	2014/02/05	91	60 - 140	90	60 - 140	<0.020	mg/kg	NC	40
7372499	Ethylbenzene	2014/02/05	93	60 - 140	93	60 - 140	<0.010	mg/kg	NC	40
7372499	m & p-Xylene	2014/02/05	89	60 - 140	88	60 - 140	<0.040	mg/kg	NC	40
7372499	o-Xylene	2014/02/05	87	60 - 140	86	60 - 140	<0.040	mg/kg	NC	40
7372499	(C6-C10)	2014/02/05			117	60 - 140	<10	mg/kg		
7372499	Methyl-tert-butylether(MTBE)	2014/02/05					<0.10	mg/kg		
7372499	Styrene	2014/02/05					<0.030	mg/kg		
7372499	Xylenes (Total)	2014/02/05					<0.040	mg/kg	NC	40
7375938	O-TERPHENYL (sur.)	2014/02/07	87	50 - 130	96	50 - 130	94	%		
7375938	F2 (C10-C16 Hydrocarbons)	2014/02/07	95	50 - 130	92	80 - 120	<10	mg/kg	NC	40
7375938	F3 (C16-C34 Hydrocarbons)	2014/02/07	98	50 - 130	95	80 - 120	<10	mg/kg	NC	40
7375938	F4 (C34-C50 Hydrocarbons)	2014/02/07	90	50 - 130	92	80 - 120	<10	mg/kg	NC	40
7375938	Reached Baseline at C50	2014/02/07					YES, RDL=N/A	mg/kg	NC	50
7376049	D10-ANTHRACENE (sur.)	2014/02/07	84	60 - 130	96	60 - 130	111	%		
7376049	D8-ACENAPHTHYLENE (sur.)	2014/02/07	97	50 - 130	98	50 - 130	104	%		
7376049	D8-NAPHTHALENE (sur.)	2014/02/07	101	50 - 130	99	50 - 130	104	%		
7376049	TERPHENYL-D14 (sur.)	2014/02/07	91	60 - 130	99	60 - 130	113	%		
7376049	Naphthalene	2014/02/07	84	50 - 130	76	50 - 130	<0.010	mg/kg	NC	50
7376049	2-Methylnaphthalene	2014/02/07	87	50 - 130	82	50 - 130	<0.020	mg/kg	NC	50
7376049	Acenaphthylene	2014/02/07	90	50 - 130	84	50 - 130	<0.0050	mg/kg	NC	50
7376049	Acenaphthene	2014/02/07	84	50 - 130	78	50 - 130	<0.0050	mg/kg	NC	50
7376049	Fluorene	2014/02/07	88	50 - 130	82	50 - 130	<0.020	mg/kg	NC	50
7376049	Phenanthrene	2014/02/07	84	60 - 130	81	60 - 130	<0.020	mg/kg	NC	50
7376049	Anthracene	2014/02/07	77	60 - 130	78	60 - 130	<0.0040	mg/kg	NC	50
7376049	Fluoranthene	2014/02/07	82	60 - 130	81	60 - 130	<0.020	mg/kg	NC	50
7376049	Pyrene	2014/02/07	93	60 - 130	90	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(a)anthracene	2014/02/07	79	60 - 130	76	60 - 130	<0.020	mg/kg	NC	50
7376049	Chrysene	2014/02/07	80	60 - 130	78	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(b&f)fluoranthene	2014/02/07	87	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(k)fluoranthene	2014/02/07	76	60 - 130	76	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(a)pyrene	2014/02/07	82	60 - 130	80	60 - 130	<0.020	mg/kg	NC	50
7376049	Indeno(1,2,3-cd)pyrene	2014/02/07	84	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50
7376049	Dibenzo(a,h)anthracene	2014/02/07	85	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Location: LOWER POST
Your P.O. #: 700266127
Sampler Initials: VR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7376049	Benzo(g,h,i)perylene	2014/02/07	83	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50
7376049	Benzo(b)fluoranthene	2014/02/07					<0.020	mg/kg	NC	N/A
7379723	O-TERPHENYL (sur.)	2014/02/12	91	50 - 130	95	50 - 130	110	%		
7379723	EPH (C10-C19)	2014/02/12	103	50 - 130	93	50 - 130	<100	mg/kg	NC	40
7379723	EPH (C19-C32)	2014/02/12	101	50 - 130	92	50 - 130	<100	mg/kg	NC	40
7379739	D10-ANTHRACENE (sur.)	2014/02/12	99	60 - 130	102	60 - 130	113	%		
7379739	D8-ACENAPHTHYLENE (sur.)	2014/02/12	101	50 - 130	99	50 - 130	109	%		
7379739	D8-NAPHTHALENE (sur.)	2014/02/12	103	50 - 130	101	50 - 130	112	%		
7379739	TERPHENYL-D14 (sur.)	2014/02/12	107	60 - 130	108	60 - 130	119	%		
7379739	Naphthalene	2014/02/12	87	50 - 130	86	50 - 130	<0.010	mg/kg	NC	50
7379739	2-Methylnaphthalene	2014/02/12	91	50 - 130	89	50 - 130	<0.020	mg/kg	NC	50
7379739	Acenaphthylene	2014/02/12	92	50 - 130	90	50 - 130	<0.0050	mg/kg	NC	50
7379739	Acenaphthene	2014/02/12	91	50 - 130	89	50 - 130	<0.0050	mg/kg	NC	50
7379739	Fluorene	2014/02/12	94	50 - 130	93	50 - 130	<0.020	mg/kg	NC	50
7379739	Phenanthrene	2014/02/12	85	60 - 130	87	60 - 130	<0.020	mg/kg	NC	50
7379739	Anthracene	2014/02/12	95	60 - 130	95	60 - 130	<0.0040	mg/kg	NC	50
7379739	Fluoranthene	2014/02/12	98	60 - 130	99	60 - 130	<0.020	mg/kg	NC	50
7379739	Pyrene	2014/02/12	99	60 - 130	99	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(a)anthracene	2014/02/12	92	60 - 130	90	60 - 130	<0.020	mg/kg	NC	50
7379739	Chrysene	2014/02/12	93	60 - 130	92	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(b,k)fluoranthene	2014/02/12	93	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(k)fluoranthene	2014/02/12	87	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(a)pyrene	2014/02/12	89	60 - 130	92	60 - 130	<0.020	mg/kg	NC	50
7379739	Indeno(1,2,3-cd)pyrene	2014/02/12	103	60 - 130	109	60 - 130	<0.050	mg/kg	NC	50
7379739	Dibenz(a,h)anthracene	2014/02/12	105	60 - 130	109	60 - 130	<0.050	mg/kg	NC	50
7379739	Benzo(g,h,i)perylene	2014/02/12	99	60 - 130	105	60 - 130	<0.050	mg/kg	NC	50
7379739	Benzo(b)fluoranthene	2014/02/12					<0.020	mg/kg		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

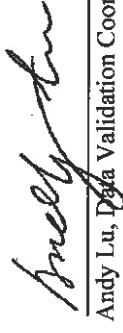
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B408764

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).


Andy Lu, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam

4024 Canada Way, Burnaby, BC Canada V5G 1A8 PH: 604.754.7278 Toll Free: 1 800 695 8888 Fax: 604.751 8563

CHAIN OF CUSTODY RECORD

Page 1 of 1

G 032587

Maxxam Job#: B408764

Invoice To: Repeat Report Yes ☐ No ☒ 5241022

Company Name: ATLANTIC POLICE WORKS & CONSULTING Company Name:

Contact Name: BLAN MAVER Contact Name:

Address: 641 - 800 BURNBURY STREET Address:

Phone / Fax: VANCOUVER, BC V6L 2V8 Phone / Fax:

E-mail: brodley.klava@pages.com E-mail:

Report To: Cone 6 Env.

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To: 1410 - 374 HORNBY STREET

Report To: VANCOUVER, BC V6L 1S4

Report To: John Taylor / Maxxam

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

Report To:

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

NO. 2

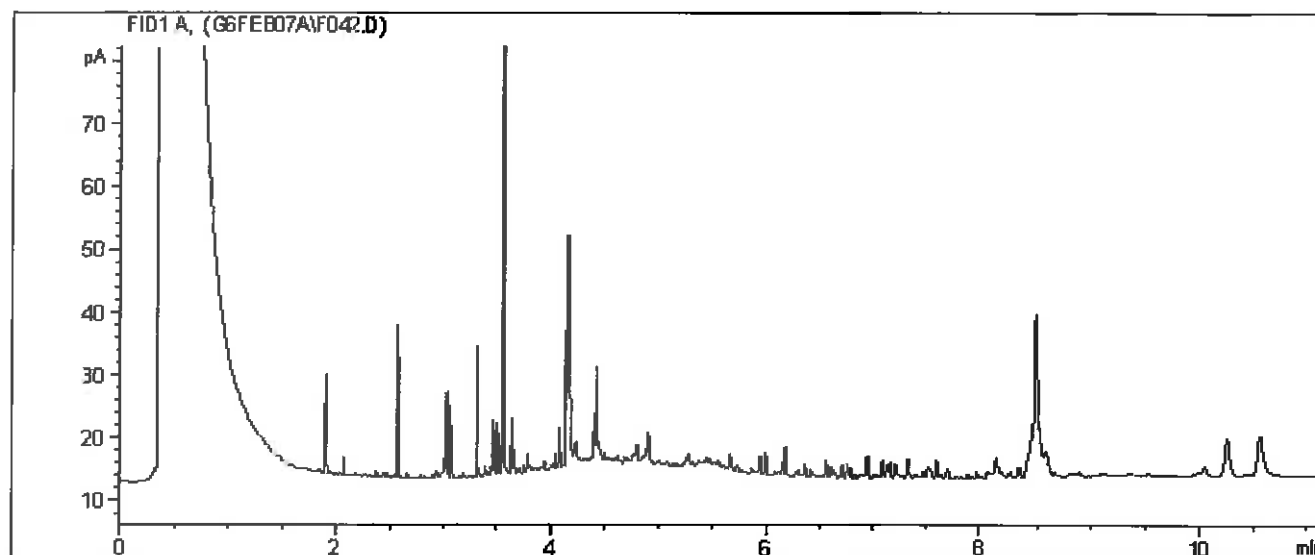
NO. 2

NO. 2

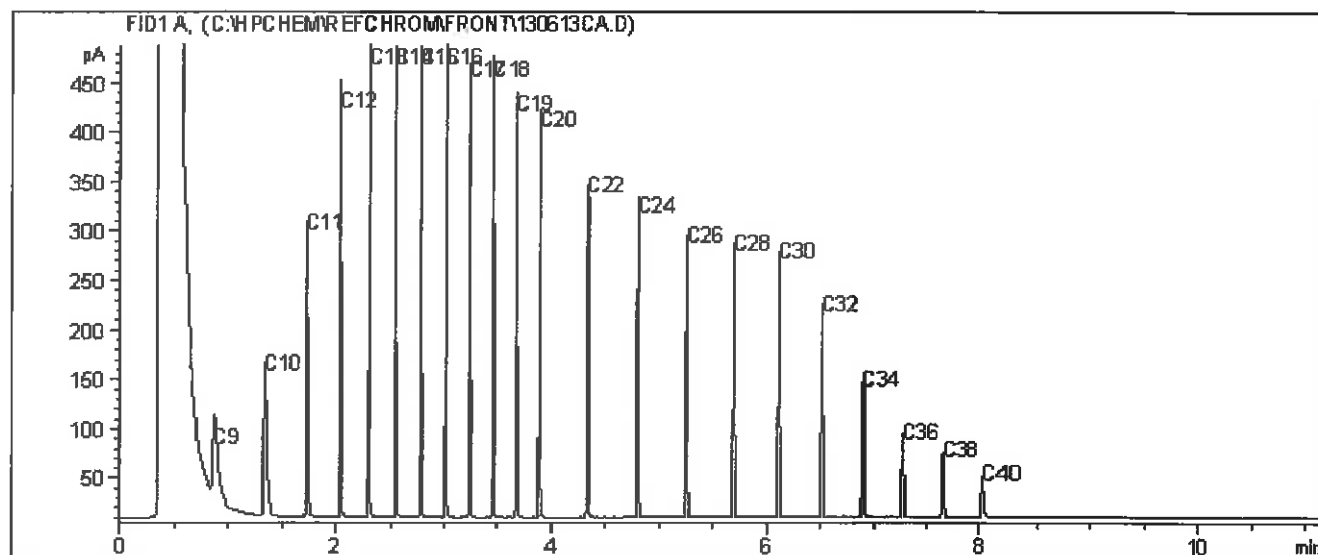
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4809

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-14-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

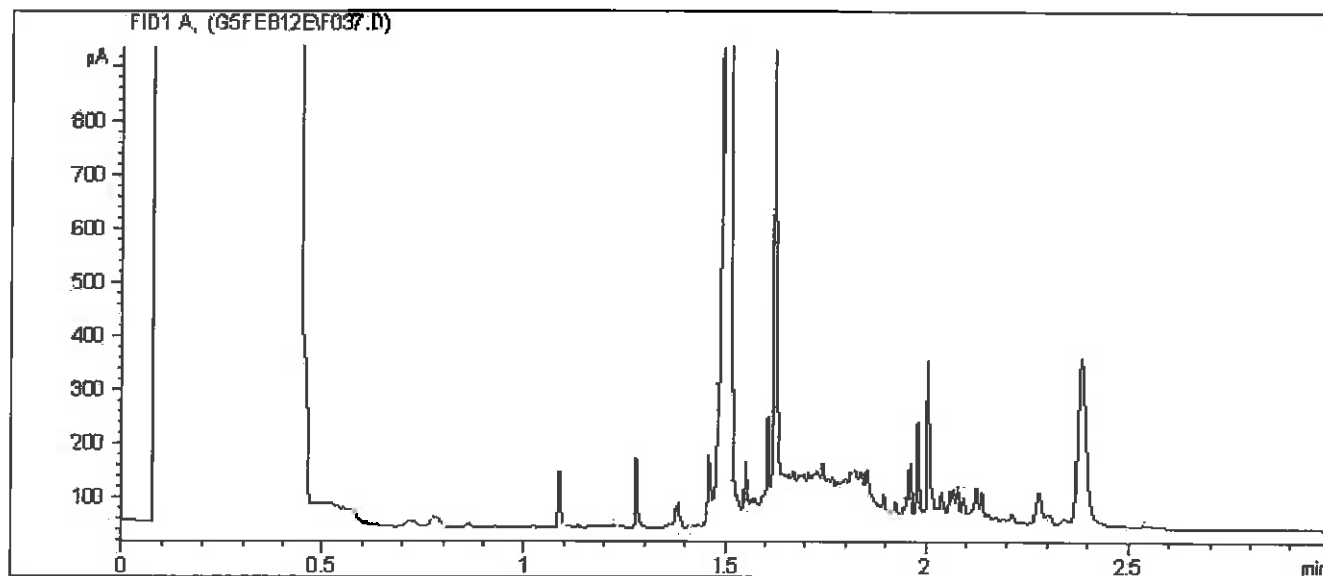
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

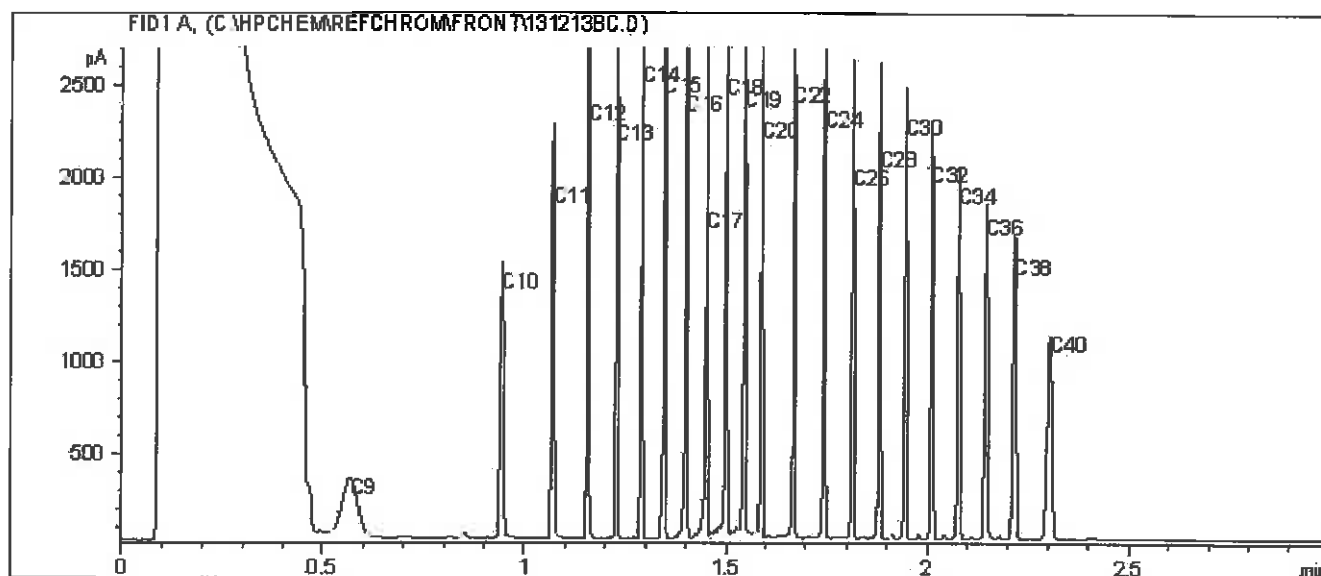
Report Date: 2014/02/13
 Maxxam Job #: B408764
 Maxxam Sample: IP4809

FRANZ ENVIRONMENTAL INC.
 Client Project #: LOWER POST
 Site Reference: LOWER POST
 Client ID: BH13-14-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



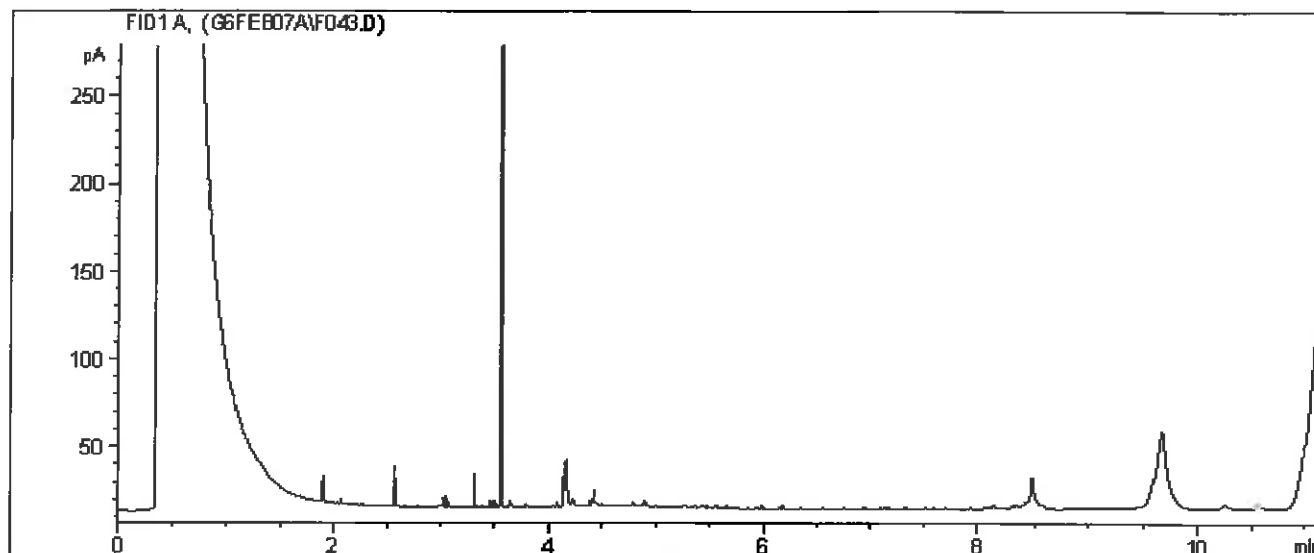
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

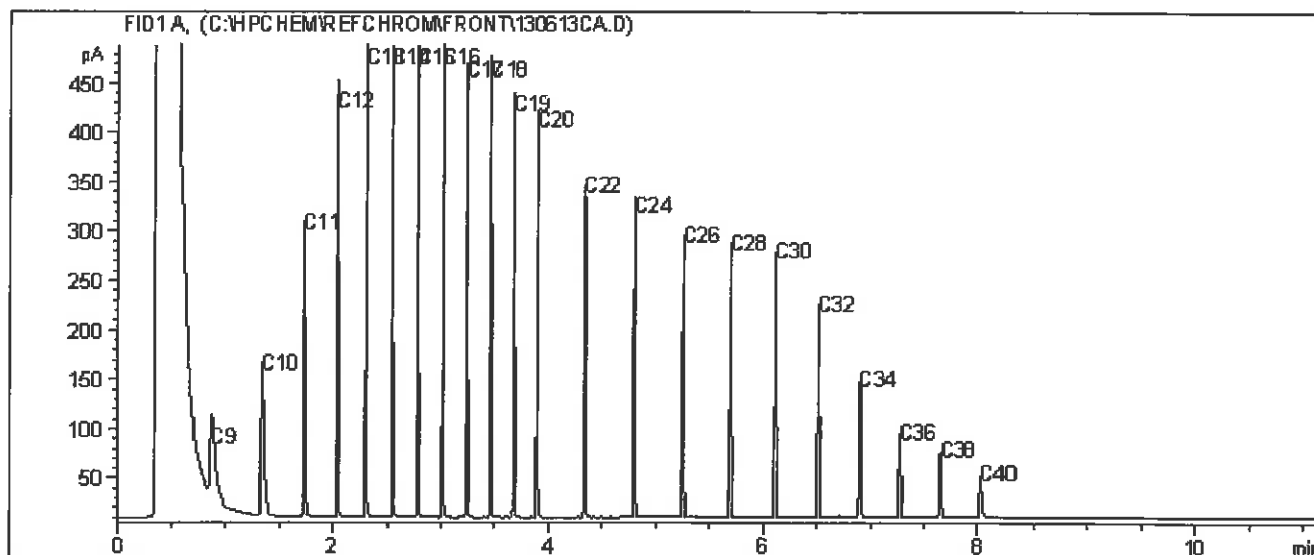
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4810

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-14-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

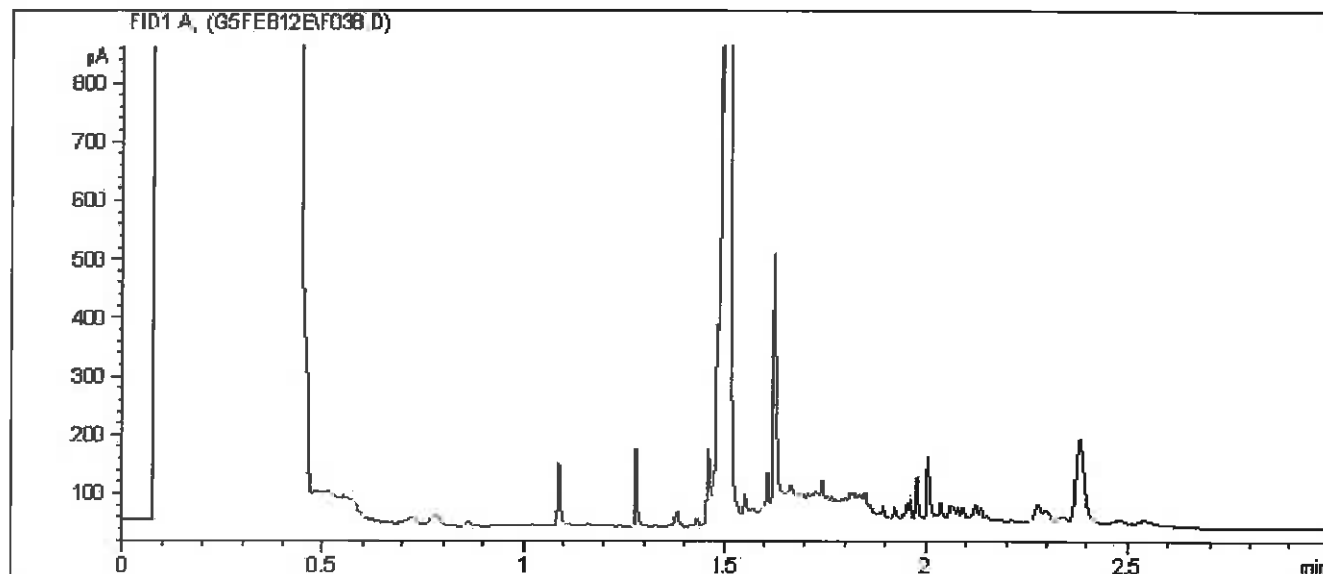
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

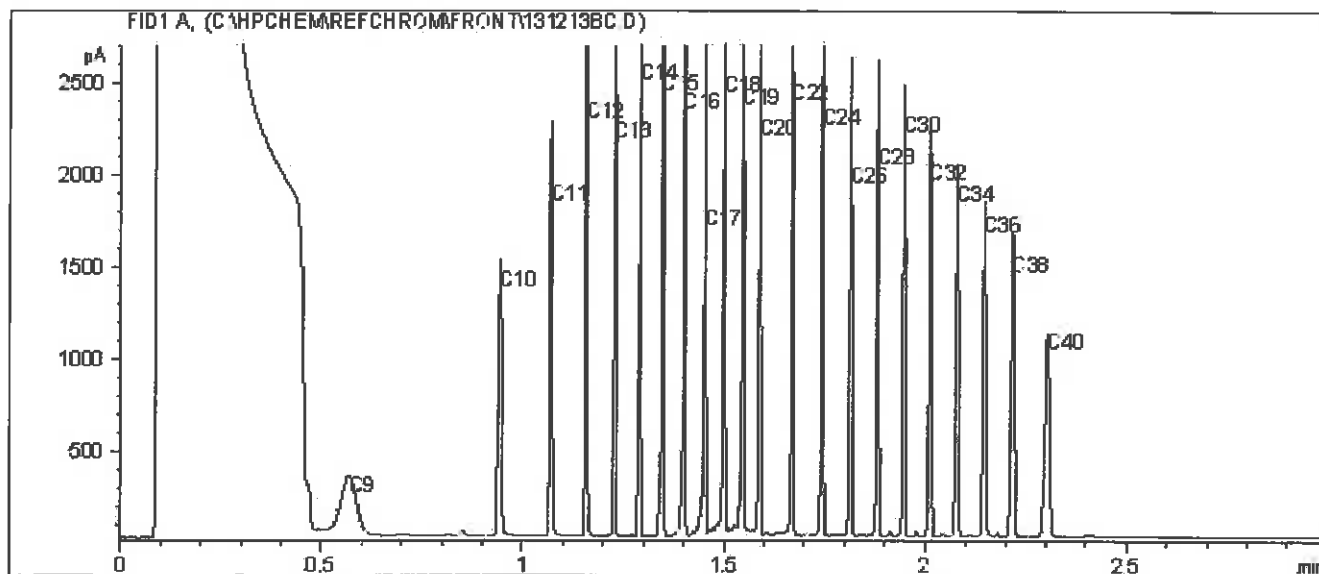
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4810

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-14-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



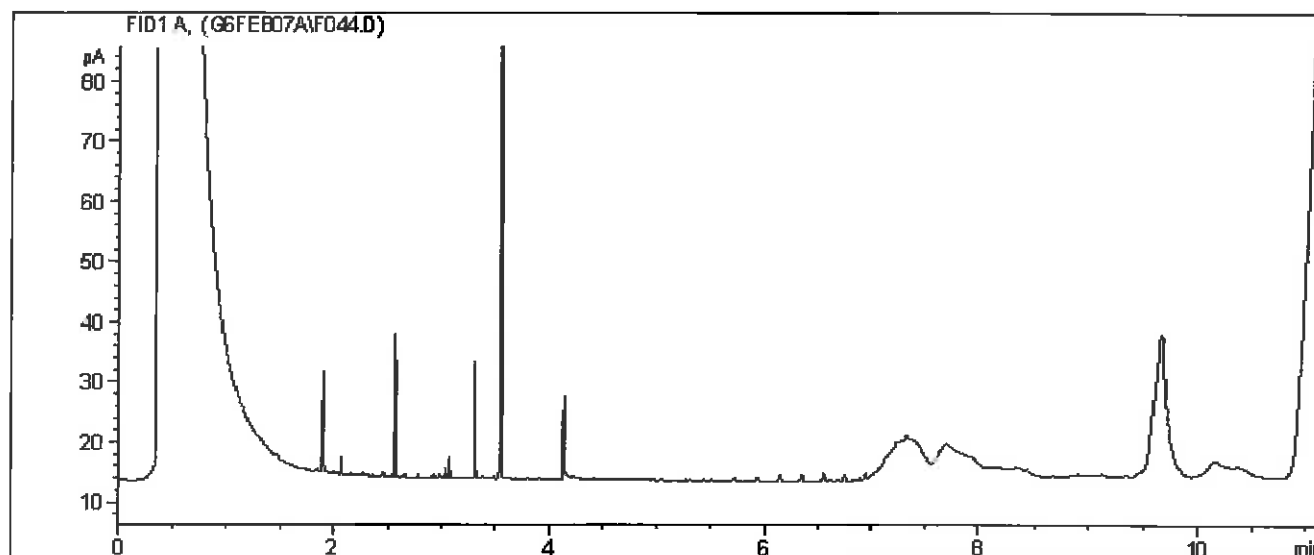
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

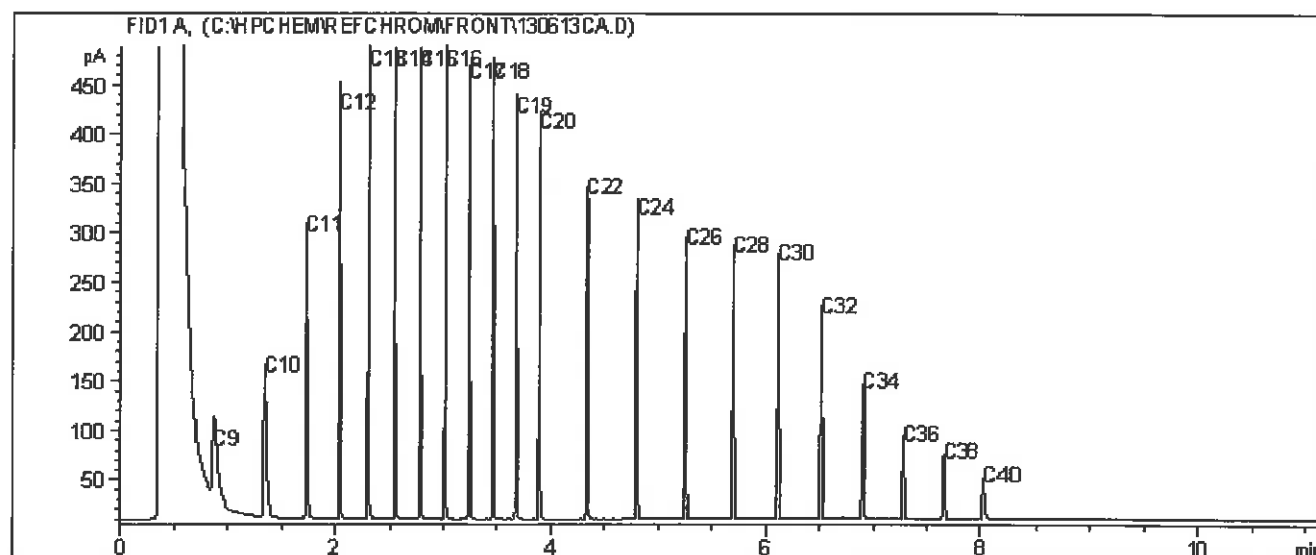
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4811

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-19-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

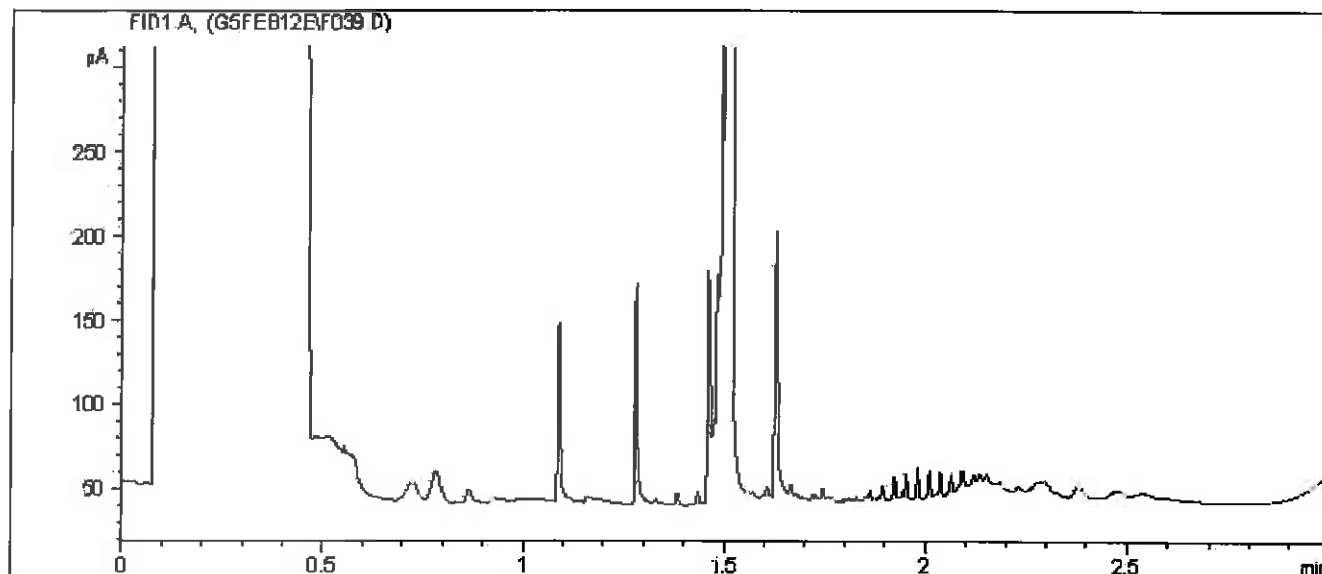
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

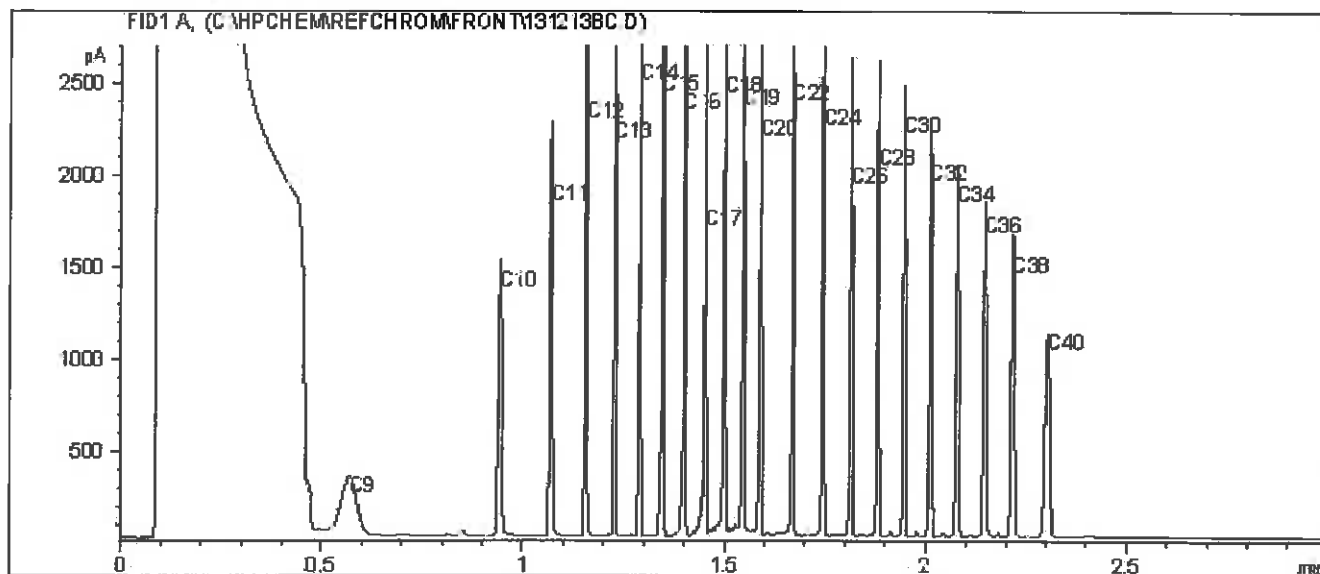
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4811

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-19-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



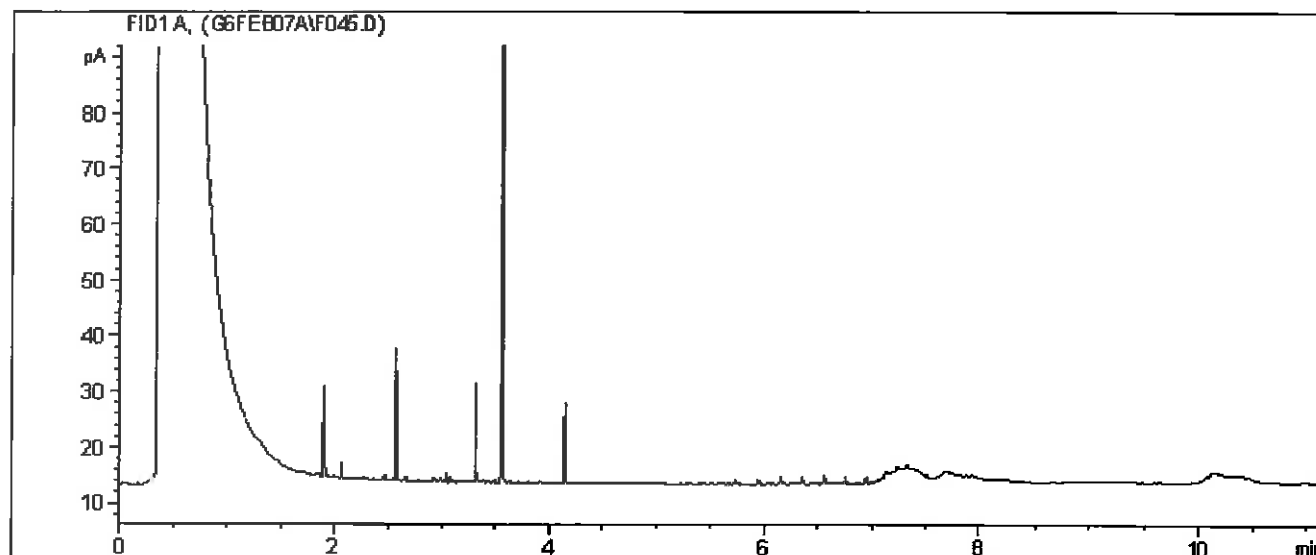
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

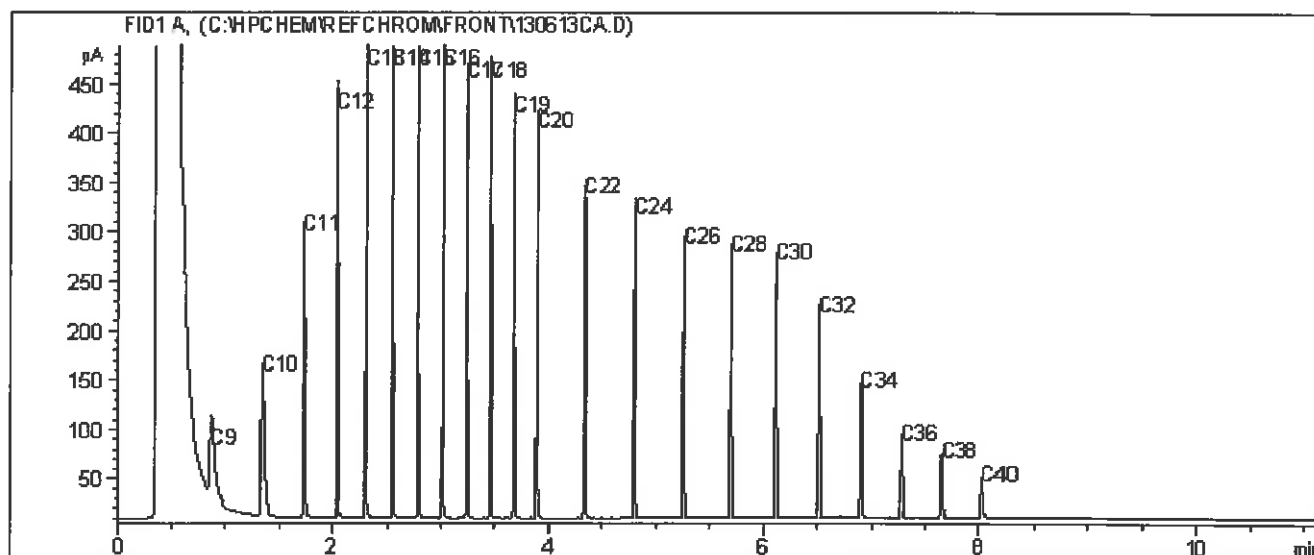
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4812

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-19-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

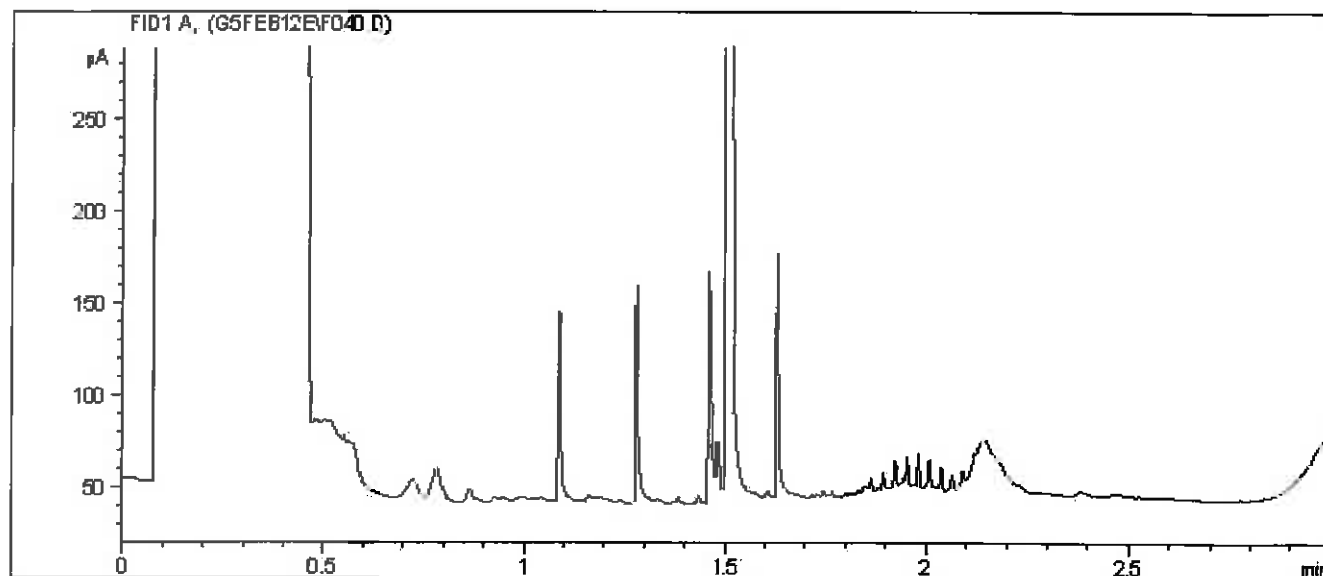
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

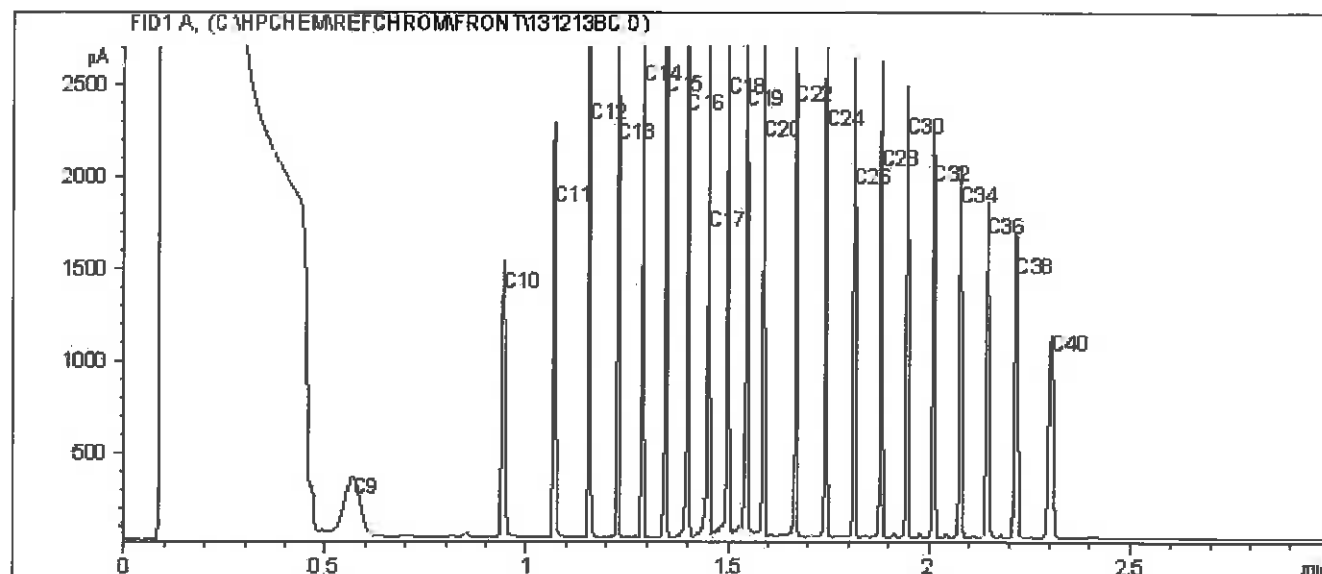
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4812

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: BH13-19-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



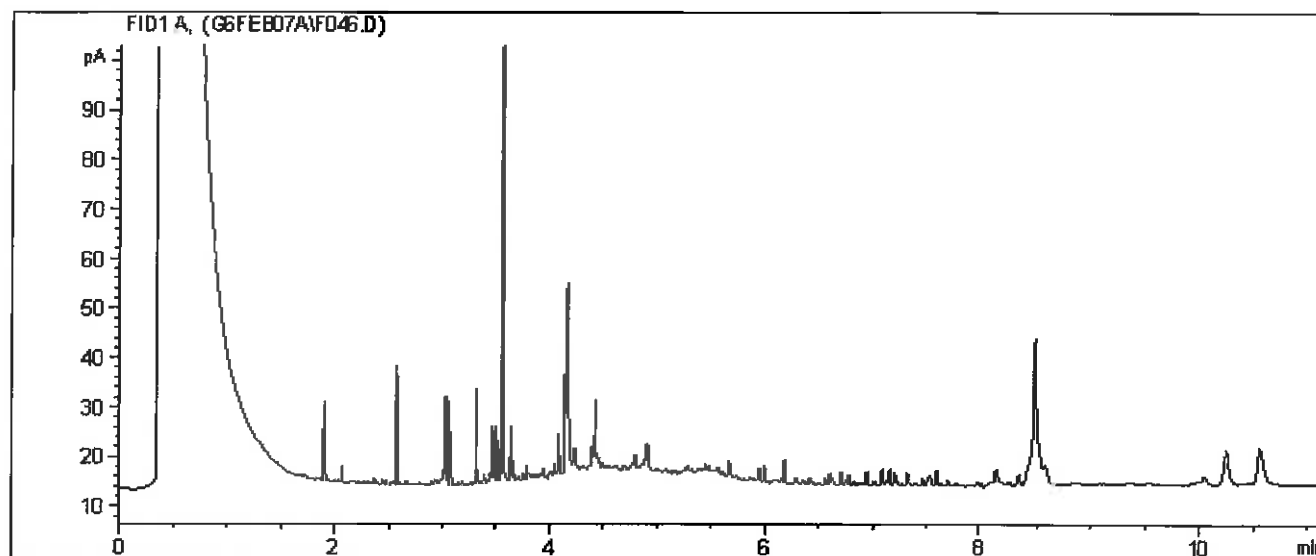
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

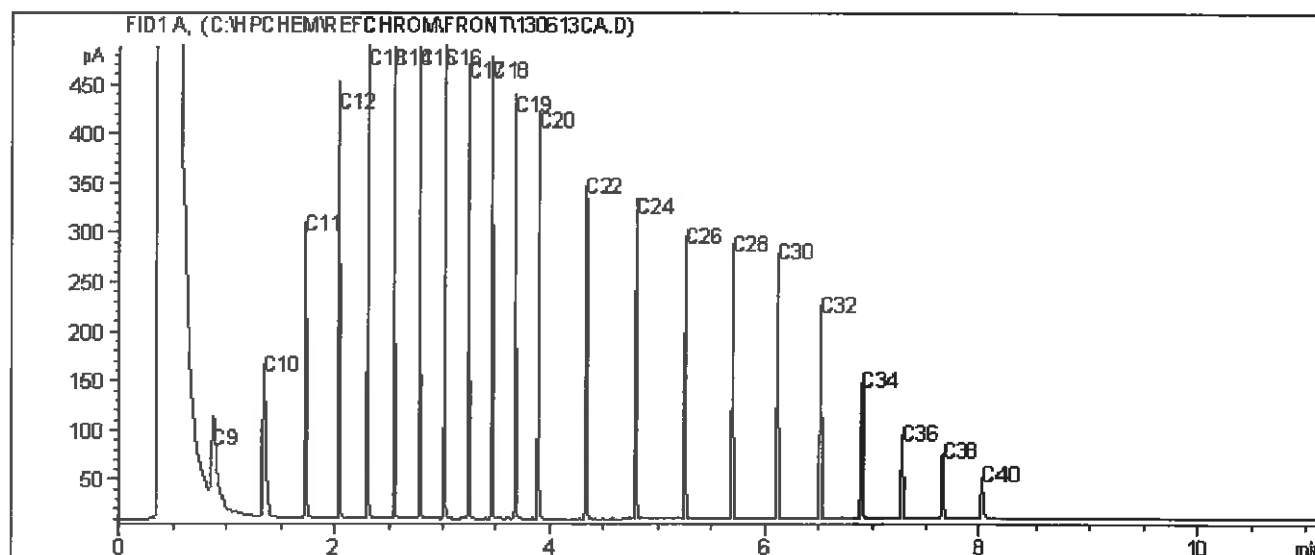
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4813

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: DUP 8

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

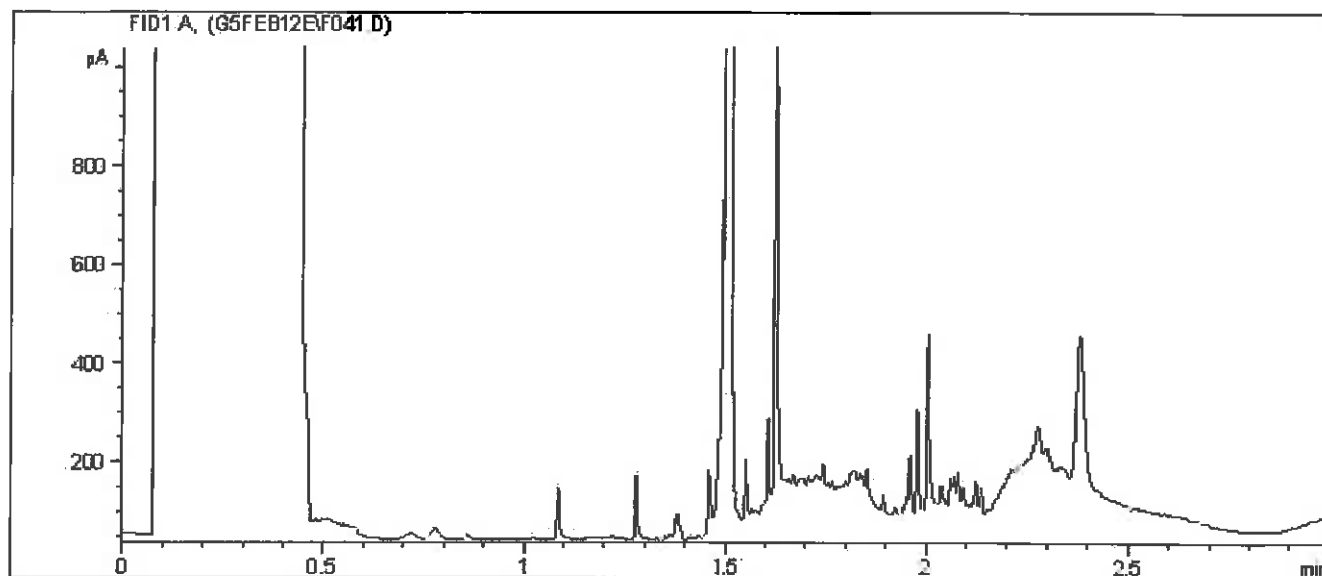
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

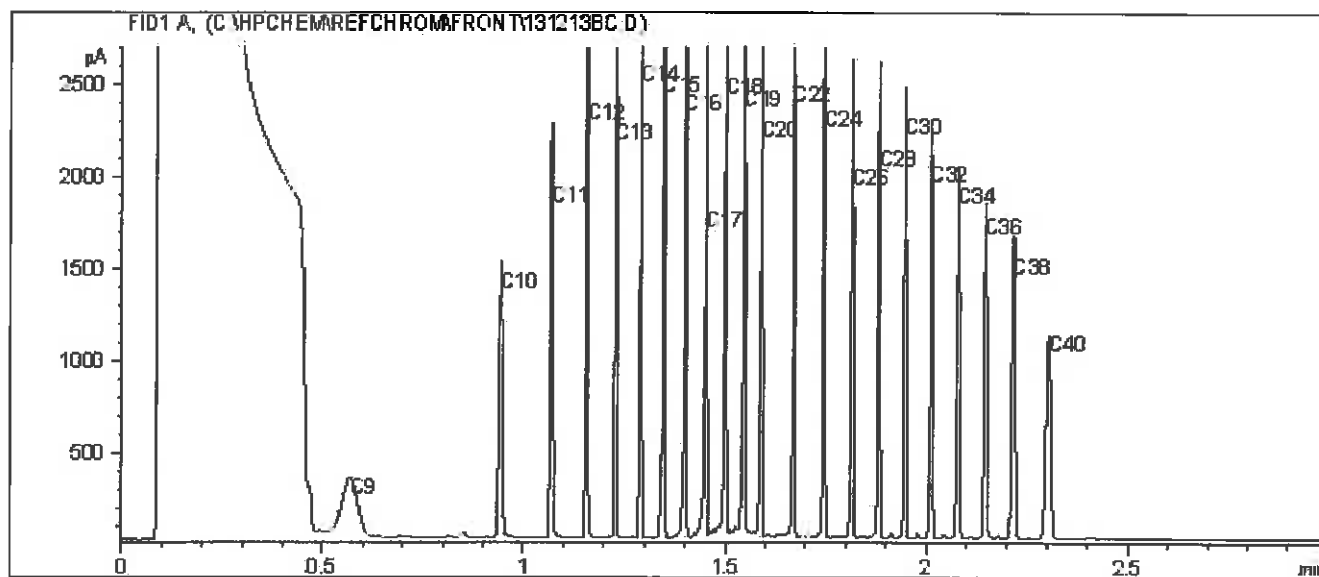
Report Date: 2014/02/13
Maxxam Job #: B408764
Maxxam Sample: IP4813

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Site Reference: LOWER POST
Client ID: DUP 8

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
Your C.O.C. #: G032692

Attention: John Taylor
FRANZ ENVIRONMENTAL INC.
FRANZENV-VAN
1080 MAINLAND STREET
SUITE 308
VANCOUVER, BC
CANADA V6B 2T4

Report Date: 2013/10/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B398668

Received: 2013/10/25, 09:00

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	5	2013/10/25	2013/10/25	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	5	N/A	2013/10/25	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	5	2013/10/25	2013/10/25	BBY8SOP-00030	CCME Soil Tier 1
Elements by ICPMS (total)	1	2013/10/26	2013/10/28	BBY7SOP-00004	BCMOE-SALM
Moisture	6	N/A	2013/10/25	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	6	2013/10/25	2013/10/25	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	6	N/A	2013/10/26	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	6	N/A	2013/10/26	BBY WI-00033	BC MOE Lab Method
pH (2:1 DI Water Extract)	1	2013/10/26	2013/10/26	BBY6SOP-00028	Carter, SSMA 16.2
EPH less PAH in Soil By GC/FID	6	N/A	2013/10/26	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	6	2013/10/25	2013/10/25	BBY8SOP-00029	BC Env Lab Manual

* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

28 Oct 2013 17:34:51 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
Email: Cireland@maxxam.ca
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	HX5893	HX5894	HX5895	HX5896	HX5897	
Sampling Date	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23	
	301-7	302-7	303-7	304-7	305-1	RDL
Ext. Pet. Hydrocarbon						QC Batch
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	1600	22	10
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	120	<10	10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10
Reached Baseline at C50	mg/kg	YES	YES	YES	YES	N/A
Surrogate Recovery (%)						7247965
O-TERPHENYL (sur.)	%	90	96	88	102	7247965

PHYSICAL TESTING (SOIL)

Maxxam ID	HX5892	HX5893	HX5894	HX5895	HX5896	HX5897
Sampling Date	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23
	201-1	301-7	302-7	303-7	304-7	305-1
Physical Properties						RDL
Moisture	%	5.2	5.8	5.1	6.9	5.6
						0.30
						7247983

TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	HX5892	HX5893	HX5894	HX5895	HX5896	HX5897
Sampling Date	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23
	201-1	301-7	302-7	303-7	304-7	305-1
Calculated Parameters						RDL
LEPH (C10-C19 less PAH)	mg/kg	1890	<100	<100	1900	<100
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	<100
Hydrocarbons						
EPH (C10-C19)	mg/kg	1890	<100	<100	1900	<100
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	<100
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	104	104	103	104	104
						7247961

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	HX5893	HX5894	HX5895	HX5896	HX5897	
Sampling Date	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23	
UNITS	301-7	302-7	303-7	304-7	305-1	QC Batch
Calculated Parameters						
F1 (C6-C10) - BTEX	<10	<10	<10	270	<10	10
Volatiles						
Methyl-tert-butylether (MTBE)	<0.10	<0.10	<0.10	<0.10	<0.10	0.10
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Toluene	<0.020	<0.020	<0.020	0.12	0.022	0.020
Ethylbenzene	0.011	<0.010	<0.010	0.45	0.020	0.010
m & p-Xylene	<0.040	<0.040	<0.040	0.62	<0.040	0.040
o-Xylene	<0.040	<0.040	<0.040	2.1	<0.040	0.040
Styrene	<0.030	<0.030	<0.030	<0.030	<0.030	0.030
Xylenes (Total)	<0.040	<0.040	<0.040	2.7	<0.040	0.040
(C6-C10)	<10	<10	<10	270	<10	10
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	99	100	99	93	97	7248120
4-BROMOFLUOROBENZENE (sur.)	105	104	106	122	107	7248120
D10-ETHYLBENZENE (sur.)	97	98	102	104	102	7248120
D4-1,2-DICHLOROETHANE (sur.)	103	102	104	100	103	7248120

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID	HX5892		
Sampling Date	2013/10/23		
	201-1		
Physical Properties		UNITS	RDL
Soluble (2:1) pH		pH Units	0.010
Total Metals by ICPMS			
Total Aluminum (Al)	6170	mg/kg	100
Total Antimony (Sb)	0.54	mg/kg	0.10
Total Arsenic (As)	7.25	mg/kg	0.50
Total Barium (Ba)	206	mg/kg	0.10
Total Beryllium (Be)	<0.40	mg/kg	0.40
Total Bismuth (Bi)	<0.10	mg/kg	0.10
Total Cadmium (Cd)	0.471	mg/kg	0.050
Total Calcium (Ca)	58000	mg/kg	100
Total Chromium (Cr)	17.5	mg/kg	1.0
Total Cobalt (Co)	6.47	mg/kg	0.30
Total Copper (Cu)	14.2	mg/kg	0.50
Total Iron (Fe)	16600	mg/kg	100
Total Lead (Pb)	6.32	mg/kg	0.10
Total Lithium (Li)	6.0	mg/kg	5.0
Total Magnesium (Mg)	15100	mg/kg	100
Total Manganese (Mn)	256	mg/kg	0.20
Total Mercury (Hg)	0.051	mg/kg	0.050
Total Molybdenum (Mo)	0.88	mg/kg	0.10
Total Nickel (Ni)	30.1	mg/kg	0.80
Total Phosphorus (P)	511	mg/kg	10
Total Potassium (K)	658	mg/kg	100
Total Selenium (Se)	<0.50	mg/kg	0.50
Total Silver (Ag)	0.156	mg/kg	0.050
Total Sodium (Na)	<100	mg/kg	100
Total Strontium (Sr)	179	mg/kg	0.10
Total Thallium (Tl)	0.077	mg/kg	0.050
Total Tin (Sn)	0.18	mg/kg	0.10
Total Titanium (Ti)	279	mg/kg	1.0
Total Uranium (U)	0.754	mg/kg	0.050
Total Vanadium (V)	35.5	mg/kg	2.0
Total Zinc (Zn)	75.5	mg/kg	1.0
Total Zirconium (Zr)	2.70	mg/kg	0.50

RDL = Reportable Detection Limit

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	Sampling Date	HX5892	HX5893	HX5894	HX5895	HX5896	HX5897		
		2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23	2013/10/23		
UNITS	201-1	301-7	302-7	303-7	304-7	305-1	RDL	RDL	QC Batch
Calculated Parameters									
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.10	0.31	0.31	0.10	0.31	0.10	7247838
Benzo(a)pyrene equivalency	N/A	<0.10	0.10	<0.10	<0.10	0.10	<0.10	0.10	7247838
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.030(1)	0.030	<0.010	<0.010	0.010	<0.010	0.010	7247809
2-Methylnaphthalene	mg/kg	0.57	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	0.0050	<0.0050	0.0050	7247809
Acenaphthene	mg/kg	<0.023(1)	0.023	<0.0050	<0.0050	0.0050	<0.028(1)	0.028	7247809
Fluorene	mg/kg	0.15	0.020	<0.020	<0.020	0.020	0.11	0.020	7247809
Phenanthrene	mg/kg	0.047	0.020	<0.020	<0.020	0.020	0.057	0.020	7247809
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	<0.0040	0.0040	<0.0040	0.0040	7247809
Fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Pyrene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Benzo(a)anthracene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Chrysene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Benzo(b&j)fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Benzo(a)pyrene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	7247809
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	<0.050	<0.050	0.050	<0.050	0.050	7247809
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	<0.050	<0.050	0.050	<0.050	0.050	7247809
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	<0.050	<0.050	0.050	<0.050	0.050	7247809
Low Molecular Weight PAH's	mg/kg	0.76	0.050	<0.050	<0.050	0.050	1.9	0.050	7247364
High Molecular Weight PAH's	mg/kg	<0.050	0.050	<0.050	<0.050	0.050	<0.050	0.050	7247364
Total PAH	mg/kg	0.76	0.050	<0.050	<0.050	0.050	1.9	0.050	7247364
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	101	95	93	99	97	100		7247809
D8-ACENAPHTHYLENE (sur.)	%	101	92	90	94	97	95		7247809
D8-NAPHTHALENE (sur.)	%	104	100	94	96	95	96		7247809
TERPHENYL-D14 (sur.)	%	107	106	100	102	104	108		7247809

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) - RDL raised due to sample matrix interference.

FRANZ ENVIRONMENTAL INC.

Your P.O. #: 700286127
Sampler Initials: CM

Package 1	3.7°C
-----------	-------

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7247809	D10-ANTHRACENE (sur.)	2013/10/25	95	60 - 130	88	50 - 130	107	%				
7247809	D8-ACENAPHTHYLENE (sur.)	2013/10/25	96	50 - 130	87	50 - 130	106	%				
7247809	D8-NAPHTHALENE (sur.)	2013/10/25	96	50 - 130	85	50 - 130	104	%				
7247809	TERPHENYL-D14 (sur.)	2013/10/25	106	60 - 130	95	60 - 130	115	%				
7247809	Naphthalene	2013/10/25	94	50 - 130	82	50 - 130	<0.010	mg/kg	NC	50		
7247809	2-Methylnaphthalene	2013/10/25	99	50 - 130	88	50 - 130	<0.020	mg/kg	NC	50		
7247809	Acenaphthylene	2013/10/25	97	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
7247809	Acenaphthene	2013/10/25	99	50 - 130	87	50 - 130	<0.050	mg/kg	NC	50		
7247809	Fluorene	2013/10/25	100	50 - 130	88	50 - 130	<0.020	mg/kg	NC	50		
7247809	Phenanthrene	2013/10/25	95	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50		
7247809	Anthracene	2013/10/25	98	60 - 130	89	60 - 130	<0.040	mg/kg	NC	50		
7247809	Fluoranthene	2013/10/25	105	60 - 130	93	60 - 130	<0.020	mg/kg	NC	50		
7247809	Pyrene	2013/10/25	105	60 - 130	94	60 - 130	<0.020	mg/kg	NC	50		
7247809	Benzo(a)anthracene	2013/10/25	95	60 - 130	84	60 - 130	<0.020	mg/kg	NC	50		
7247809	Chrysene	2013/10/25	96	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50		
7247809	Benzo(b)fluoranthene	2013/10/25	97	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50		
7247809	Benzo(k)fluoranthene	2013/10/25	90	60 - 130	81	60 - 130	<0.020	mg/kg	NC	50		
7247809	Benzo(a)pyrene	2013/10/25	96	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50		
7247809	Indeno(1,2,3-cd)pyrene	2013/10/25	97	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50		
7247809	Dibenz(a,h)anthracene	2013/10/25	95	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
7247809	Benzo(g,h,i)perylene	2013/10/25	92	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
7247961	O-TERPHENYL (sur.)	2013/10/25	98	50 - 130	97	50 - 130	106	%				
7247961	EPH (C10-C19)	2013/10/25	101	50 - 130	102	50 - 130	<100	mg/kg	NC	40		
7247961	EPH (C19-C32)	2013/10/25	NC	50 - 130	105	50 - 130	<100	mg/kg	NC	40		
7247965	O-TERPHENYL (sur.)	2013/10/24	83	50 - 130	89	50 - 130	90	%				
7247965	F2 (C10-C16 Hydrocarbons)	2013/10/24	94	50 - 130	97	80 - 120	<10	mg/kg	NC	40		
7247965	F3 (C16-C34 Hydrocarbons)	2013/10/24	97	50 - 130	93	80 - 120	<10	mg/kg	4.2	40		
7247965	F4 (C34-C50 Hydrocarbons)	2013/10/24	95	50 - 130	89	80 - 120	<10	mg/kg	3.4	40		
7247965	Reached Baseline at C50	2013/10/24			YES	N/A	YES, RDL=N/A	mg/kg	NC	50		
7247965	Moisture	2013/10/25					<0.30	%	2.0	20		
7248120	1,4-Difluorobenzene (sur.)	2013/10/25	97	70 - 130	102	70 - 130	102	%				
7248120	4-BROMOFLUOROBENZENE (sur.)	2013/10/25	108	70 - 130	108	70 - 130	107	%				
7248120	D10-ETHYLBENZENE (sur.)	2013/10/25	99	50 - 130	90	50 - 130	88	%				
7248120	D4-1,2-DICHLOROETHANE (sur.)	2013/10/25	102	70 - 130	103	70 - 130	103	%				
7248120	Benzene	2013/10/25	91	60 - 140	98	60 - 140	<0.0050	mg/kg	NC	40		
7248120	Toluene	2013/10/25	90	60 - 140	98	60 - 140	<0.020	mg/kg	NC	40		
7248120	Ethylbenzene	2013/10/25	91	60 - 140	100	60 - 140	<0.010	mg/kg	NC	40		
7248120	m & p-Xylene	2013/10/25	90	60 - 140	98	60 - 140	<0.040	mg/kg	NC	40		
7248120	o-Xylene	2013/10/25	90	60 - 140	97	60 - 140	<0.040	mg/kg	NC	40		

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7248120	(C6-C10)	2013/10/25			104	80 - 140	<10	mg/kg	NC	40		
7248120	Methyl-tert-butylether(MTBE)	2013/10/25					<0.10	mg/kg	NC	40		
7248120	Styrene	2013/10/25					<0.030	mg/kg	NC	40		
7248120	Xylenes (Total)	2013/10/25					<0.040	mg/kg	NC	40		
7249109	Total Antimony (Sb)	2013/10/28	94	75 - 125	94	75 - 125	<0.10	mg/kg	NC	30	105	70 - 130
7249109	Total Arsenic (As)	2013/10/28	96	75 - 125	93	75 - 125	<0.50	mg/kg	NC	30	100	70 - 130
7249109	Total Barium (Ba)	2013/10/28	NC	75 - 125	95	75 - 125	<0.10	mg/kg	2.6	35	98	70 - 130
7249109	Total Beryllium (Be)	2013/10/28	90	75 - 125	91	75 - 125	<0.40	mg/kg	NC	30		
7249109	Total Cadmium (Cd)	2013/10/28	98	75 - 125	95	75 - 125	<0.050	mg/kg	NC	30	100	70 - 130
7249109	Total Chromium (Cr)	2013/10/28	NC	75 - 125	96	75 - 125	<1.0	mg/kg	18.4	30	107	70 - 130
7249109	Total Cobalt (Co)	2013/10/28	94	75 - 125	98	75 - 125	<0.30	mg/kg	5.8	30	93	70 - 130
7249109	Total Copper (Cu)	2013/10/28	95	75 - 125	99	75 - 125	<0.50	mg/kg	2.8	30	91	70 - 130
7249109	Total Lead (Pb)	2013/10/28	103	75 - 125	101	75 - 125	<0.10	mg/kg	1.4	35	98	70 - 130
7249109	Total Lithium (Li)	2013/10/28	89	75 - 125	92	75 - 125	<5.0	mg/kg				
7249109	Total Manganese (Mn)	2013/10/28	NC	75 - 125	98	75 - 125	<0.20	mg/kg	0.6	30	99	70 - 130
7249109	Total Mercury (Hg)	2013/10/28	103	75 - 125	98	75 - 125	<0.050	mg/kg	NC	35	119	70 - 130
7249109	Total Molybdenum (Mo)	2013/10/28	101	75 - 125	97	75 - 125	<0.10	mg/kg	NC	35	115	70 - 130
7249109	Total Nickel (Ni)	2013/10/28	NC	75 - 125	98	75 - 125	<0.80	mg/kg	9.3	30	96	70 - 130
7249109	Total Selenium (Se)	2013/10/28	104	75 - 125	97	75 - 125	<0.50	mg/kg	NC	30		
7249109	Total Silver (Ag)	2013/10/28	89	75 - 125	87	75 - 125	<0.050	mg/kg	NC	35		
7249109	Total Strontium (Sr)	2013/10/28	98	75 - 125	92	75 - 125	<0.10	mg/kg	6.2	35	102	70 - 130
7249109	Total Thallium (Tl)	2013/10/28	98	75 - 125	99	75 - 125	<0.050	mg/kg	NC	30	101	70 - 130
7249109	Total Tin (Sn)	2013/10/28	90	75 - 125	91	75 - 125	<0.10	mg/kg	NC	35		
7249109	Total Titanium (Ti)	2013/10/28	NC	75 - 125	94	75 - 125	<1.0	mg/kg	3.6	35	111	70 - 130
7249109	Total Uranium (U)	2013/10/28	97	75 - 125	98	75 - 125	<0.050	mg/kg			99	70 - 130
7249109	Total Vanadium (V)	2013/10/28	88	75 - 125	93	75 - 125	<2.0	mg/kg	3.2	30	104	70 - 130
7249109	Total Zinc (Zn)	2013/10/28	98	75 - 125	101	75 - 125	<1.0	mg/kg	2.0	30	93	70 - 130
7249109	Total Aluminum (Al)	2013/10/28					<100	mg/kg	0.06	35	125	70 - 130
7249109	Total Calcium (Ca)	2013/10/28					<100	mg/kg	10.8	30	100	70 - 130
7249109	Total Iron (Fe)	2013/10/28					<100	mg/kg	2.3	30	102	70 - 130
7249109	Total Magnesium (Mg)	2013/10/28					<100	mg/kg	9.6	30	102	70 - 130
7249109	Total Phosphorus (P)	2013/10/28					<10	mg/kg	7.1	30	92	70 - 130
7249109	Total Bismuth (Bi)	2013/10/28					<0.10	mg/kg	NC	30		
7249109	Total Potassium (K)	2013/10/28					<100	mg/kg	3.1	35		
7249109	Total Sodium (Na)	2013/10/28					<100	mg/kg	NC	35		

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7249109	Total Zirconium (Zr)	2013/10/28					<0.50	mg/kg	NC	30		
7249112	Soluble (2:1) pH	2013/10/28			99	97 - 103			0.5	20		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.


NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B398668

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Data Validation Coordinator



Rob Reinert, Data Validation Coordinator

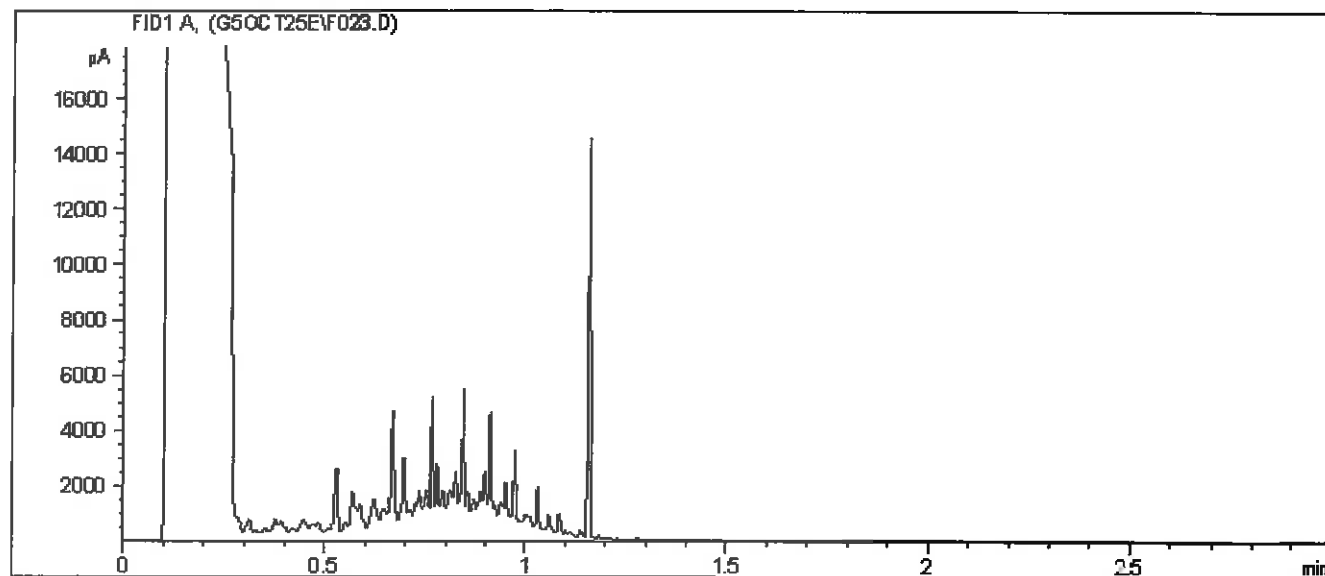
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5892

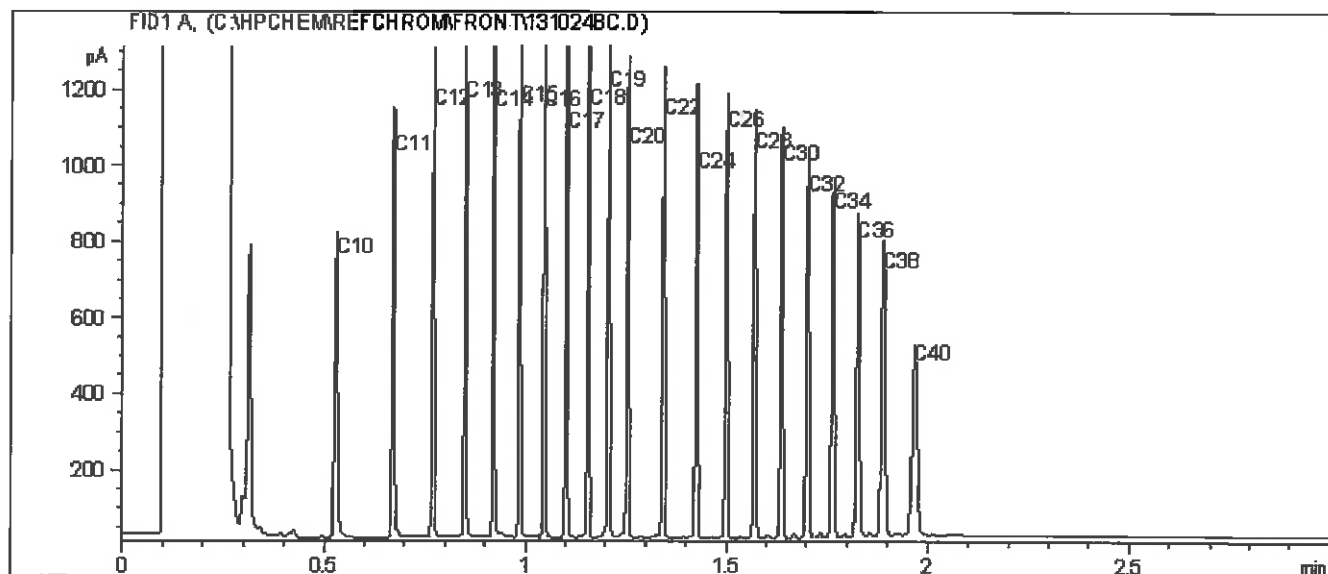
FRANZ ENVIRONMENTAL INC.

Client ID: 201-1

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

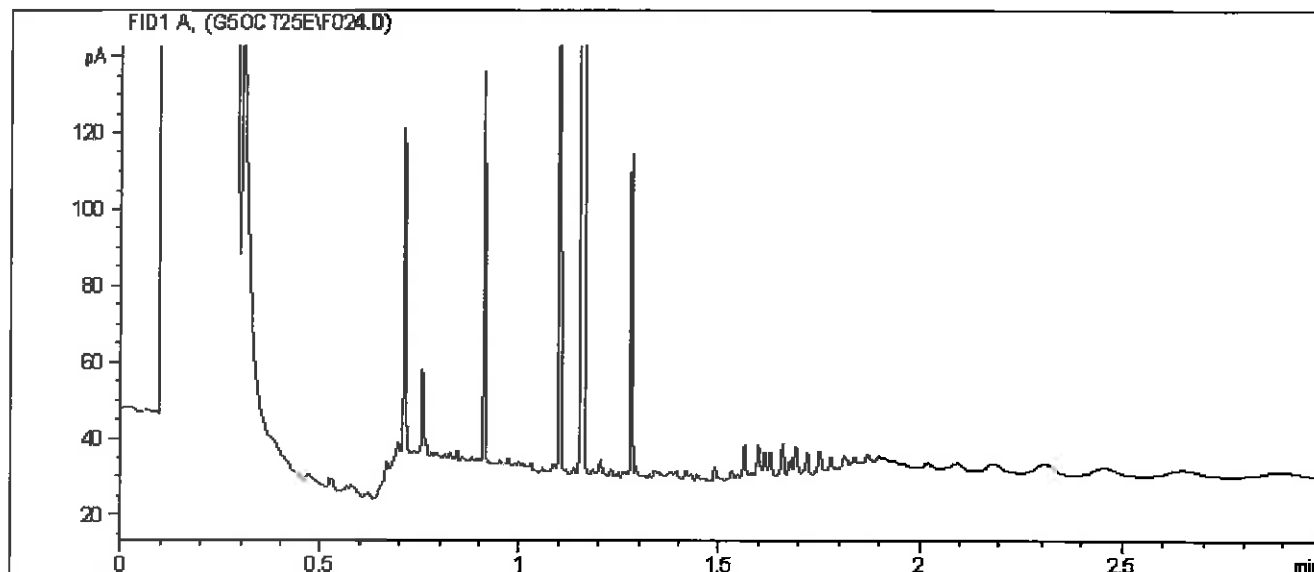
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5893

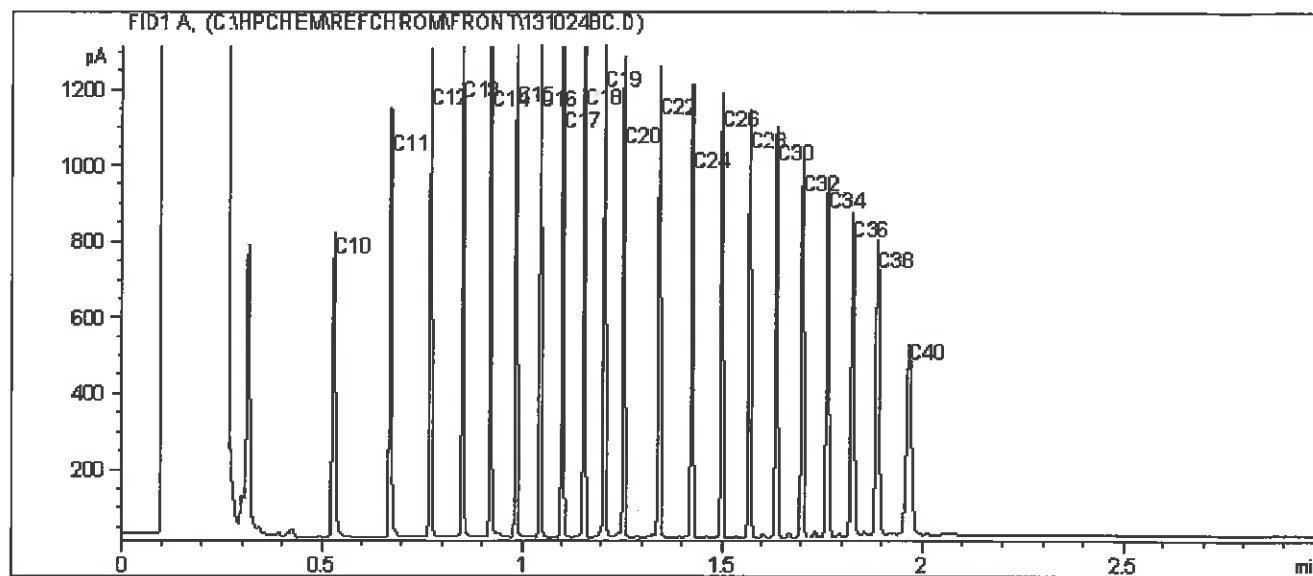
FRANZ ENVIRONMENTAL INC.

Client ID: 301-7

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

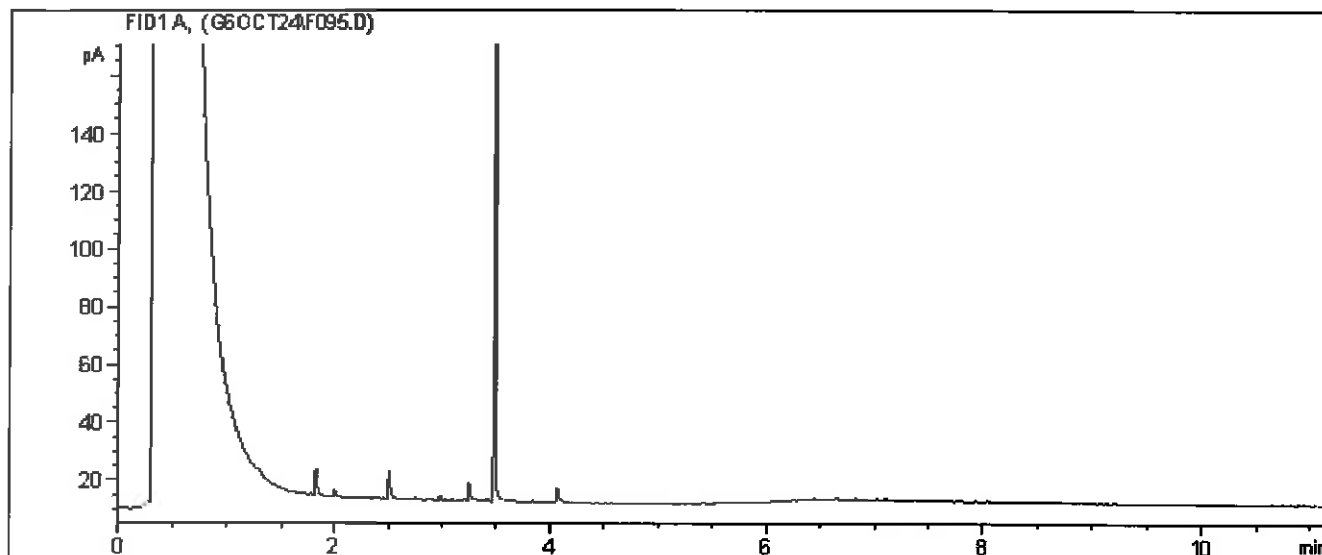
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5893

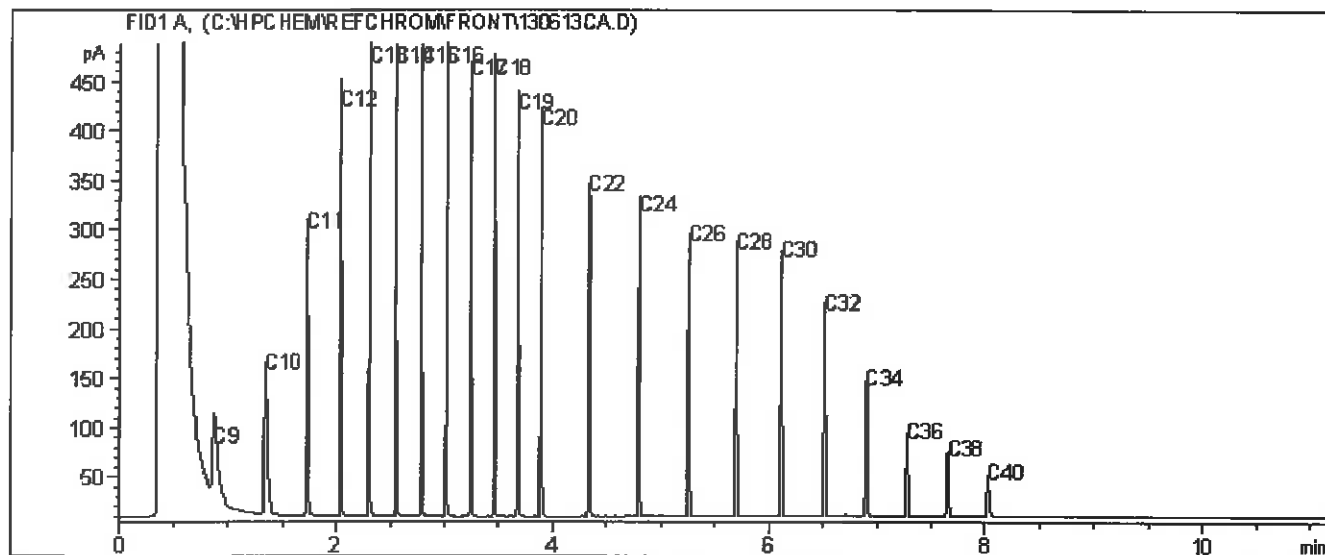
FRANZ ENVIRONMENTAL INC.

Client ID: 301-7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

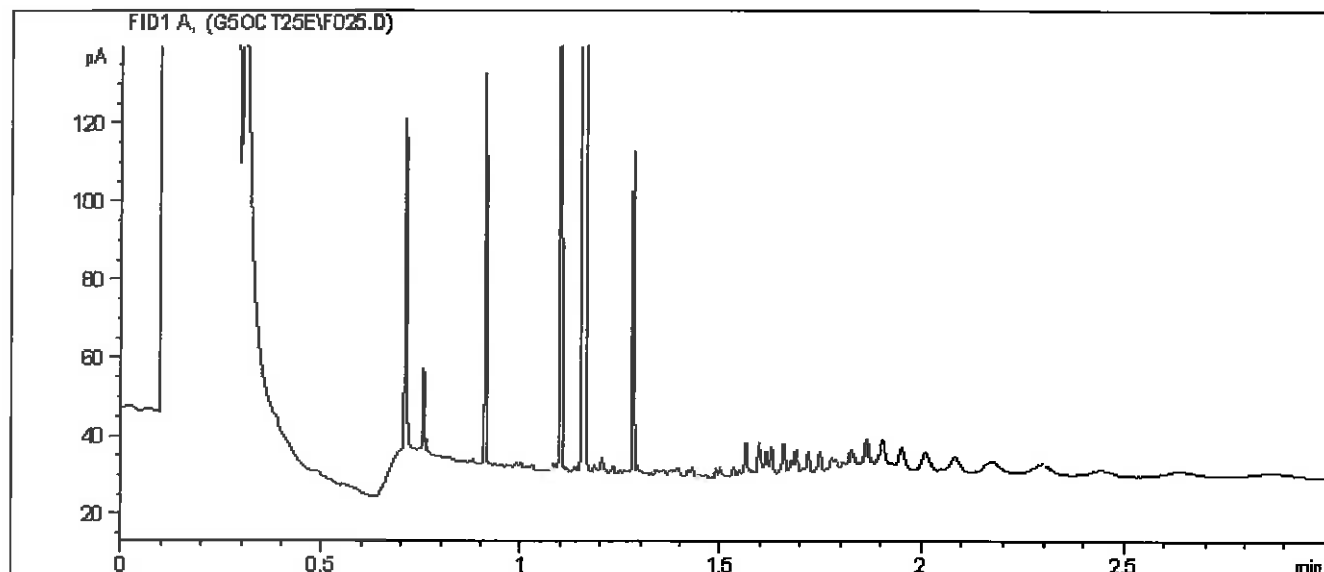
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5894

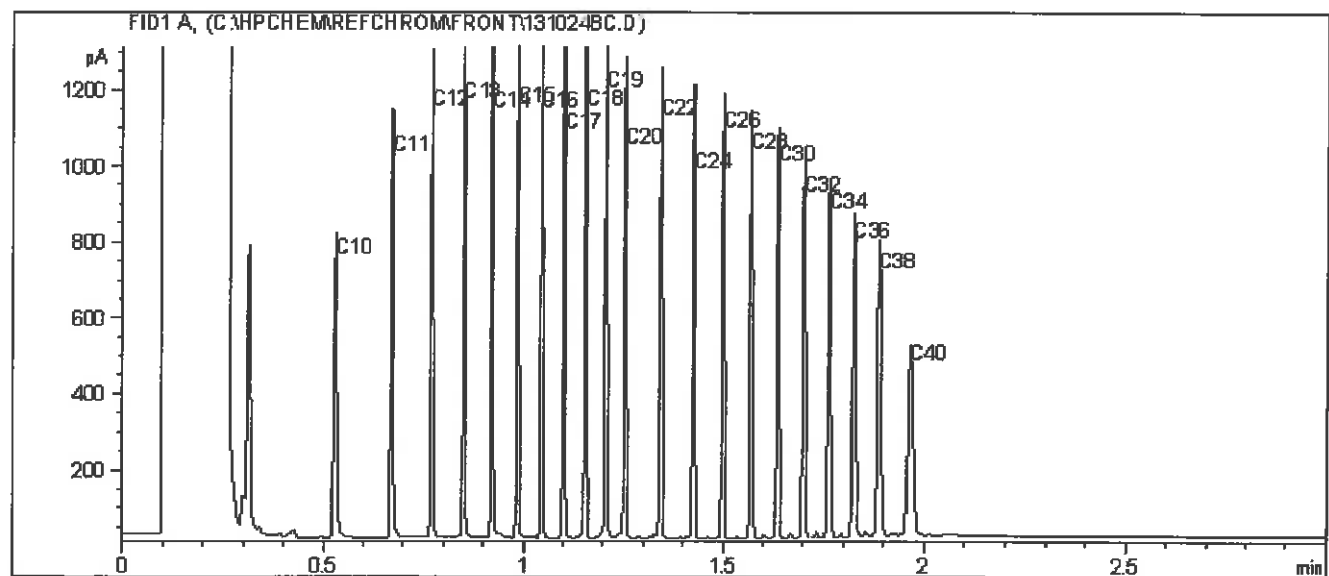
FRANZ ENVIRONMENTAL INC.

Client ID: 302-7

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

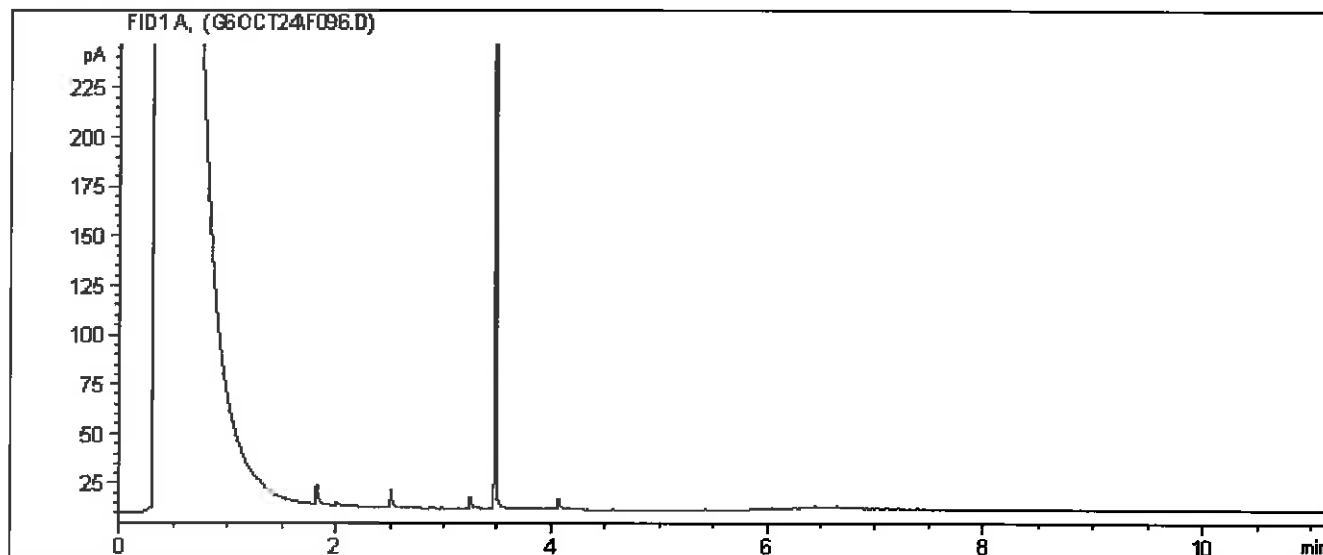
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5894

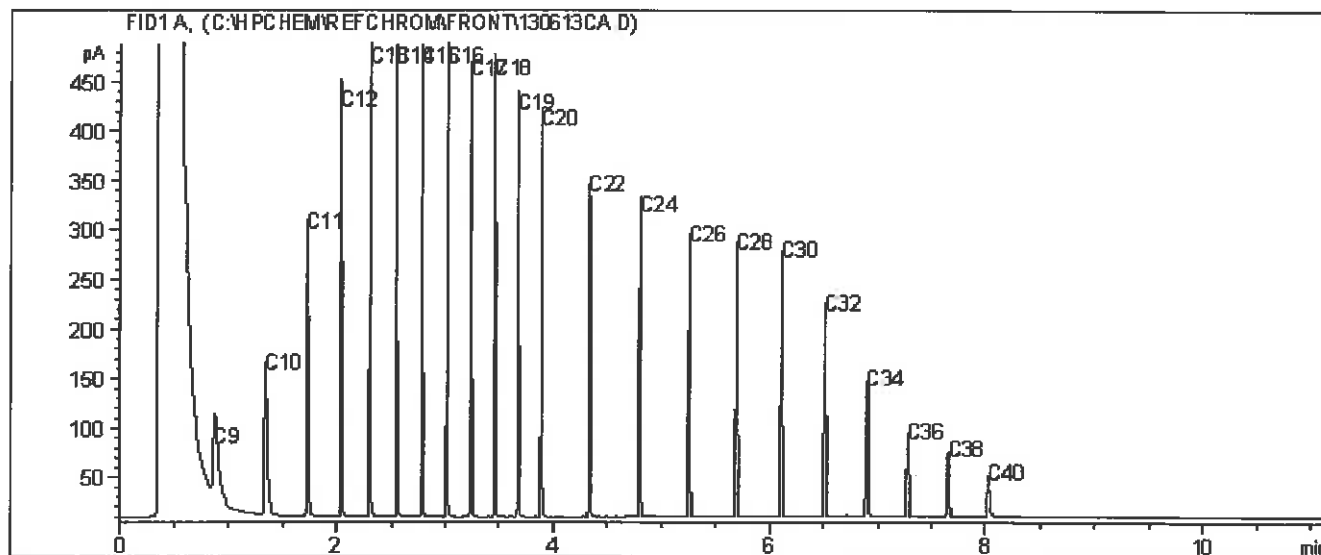
FRANZ ENVIRONMENTAL INC.

Client ID: 302-7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

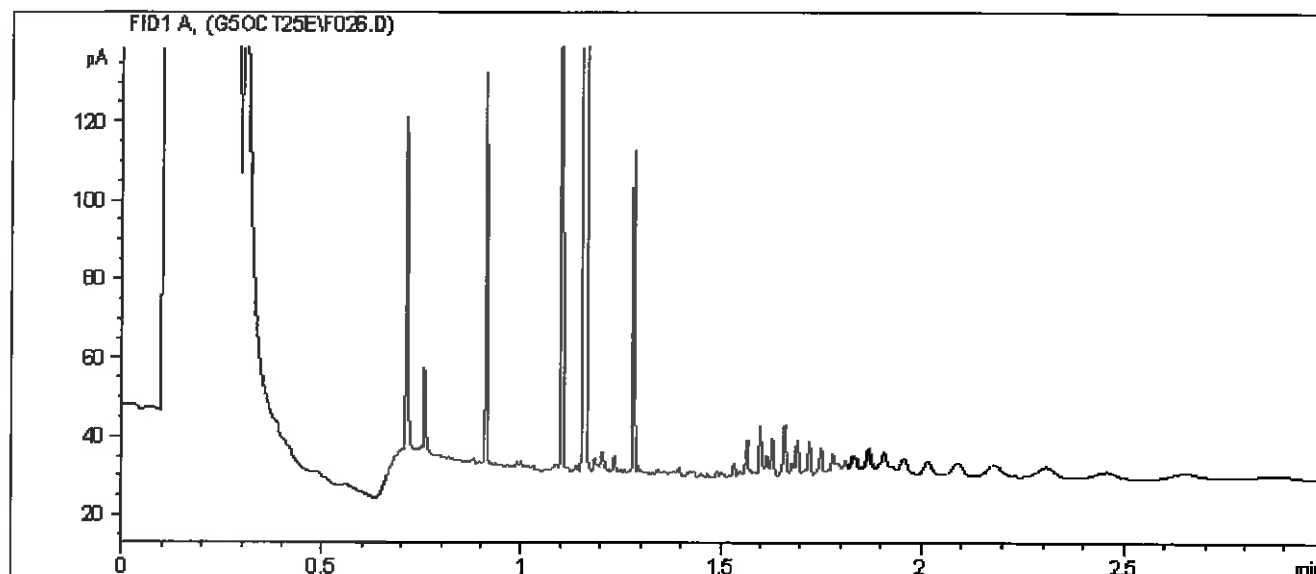
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5895

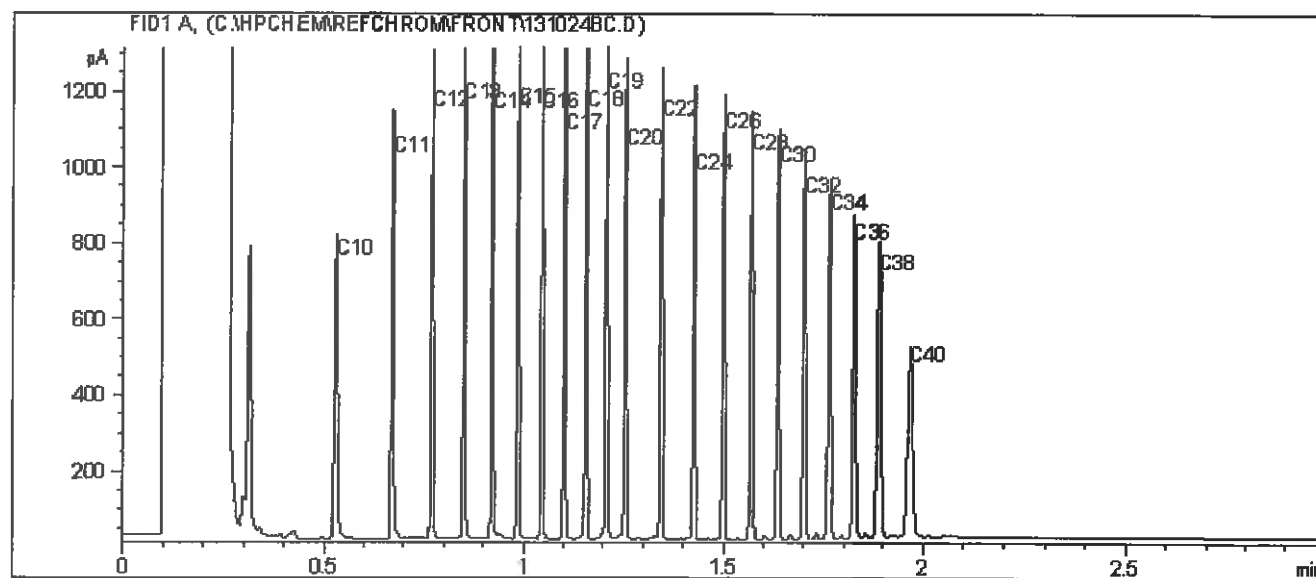
FRANZ ENVIRONMENTAL INC.

Client ID: 303-7

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

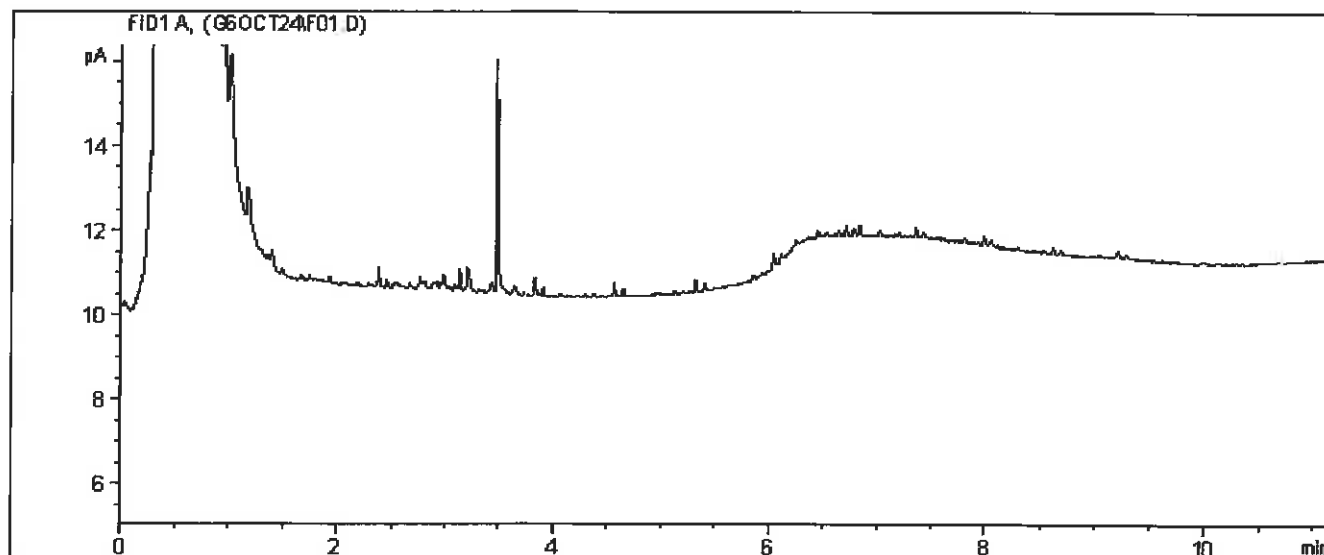
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5895

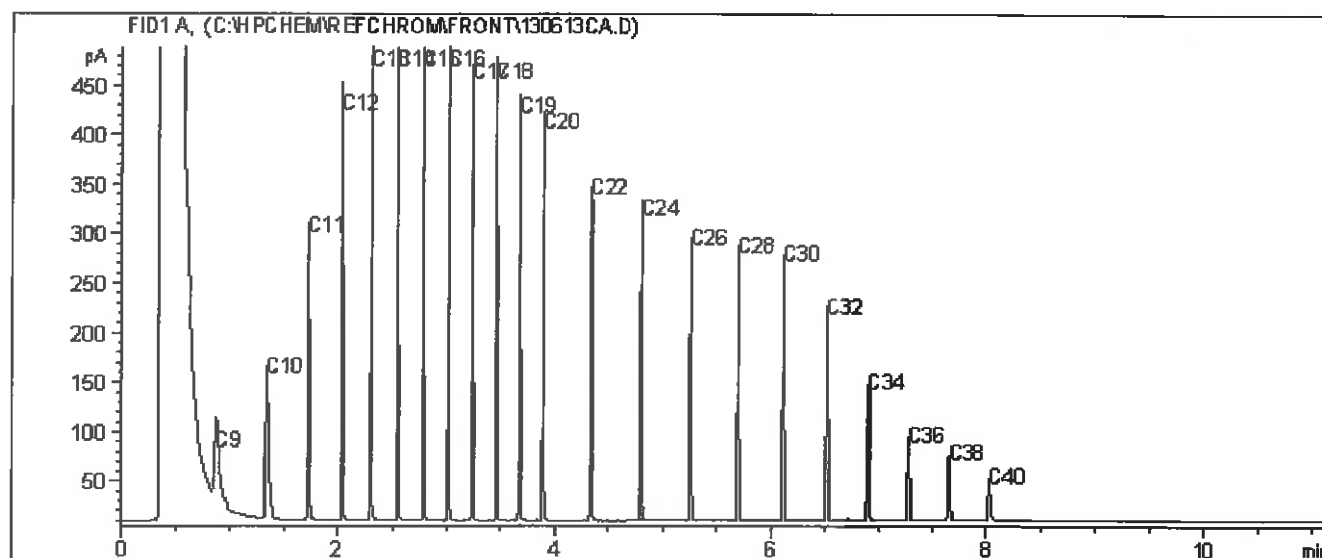
FRANZ ENVIRONMENTAL INC.

Client ID: 303-7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

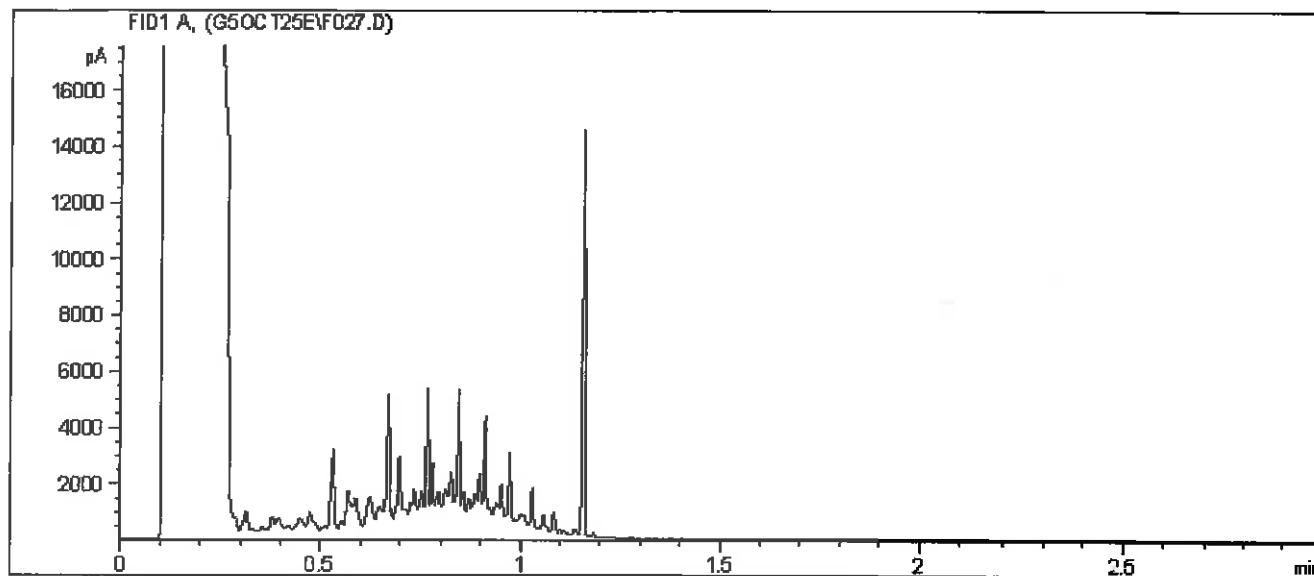
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5896

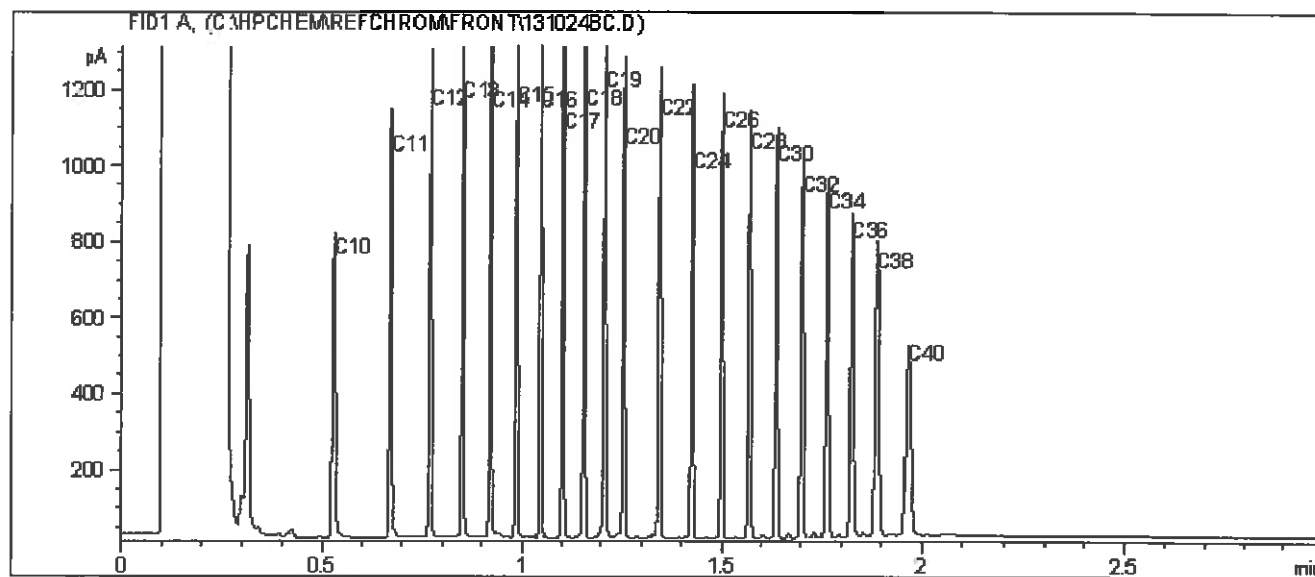
FRANZ ENVIRONMENTAL INC.

Client ID: 304-7

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

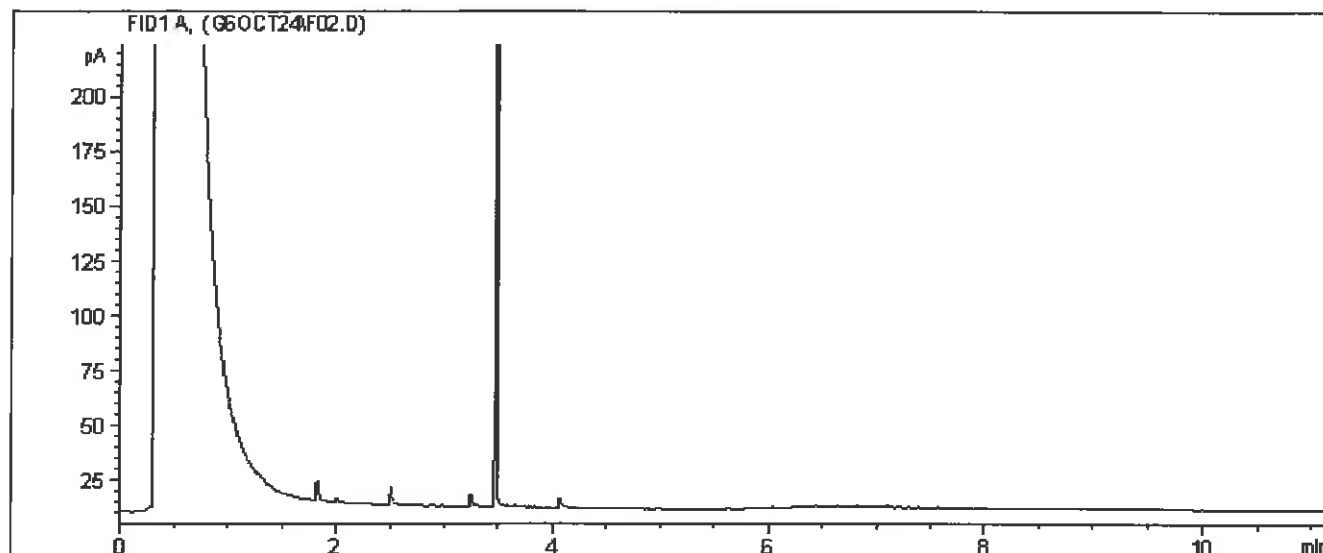
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5896

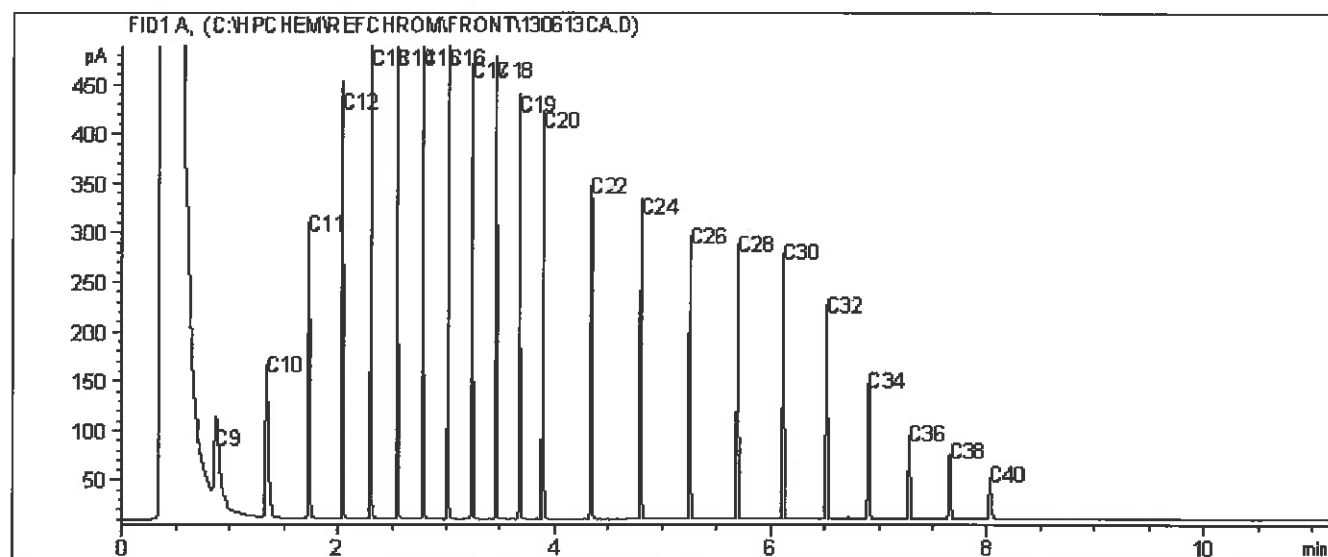
FRANZ ENVIRONMENTAL INC.

Client ID: 304-7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

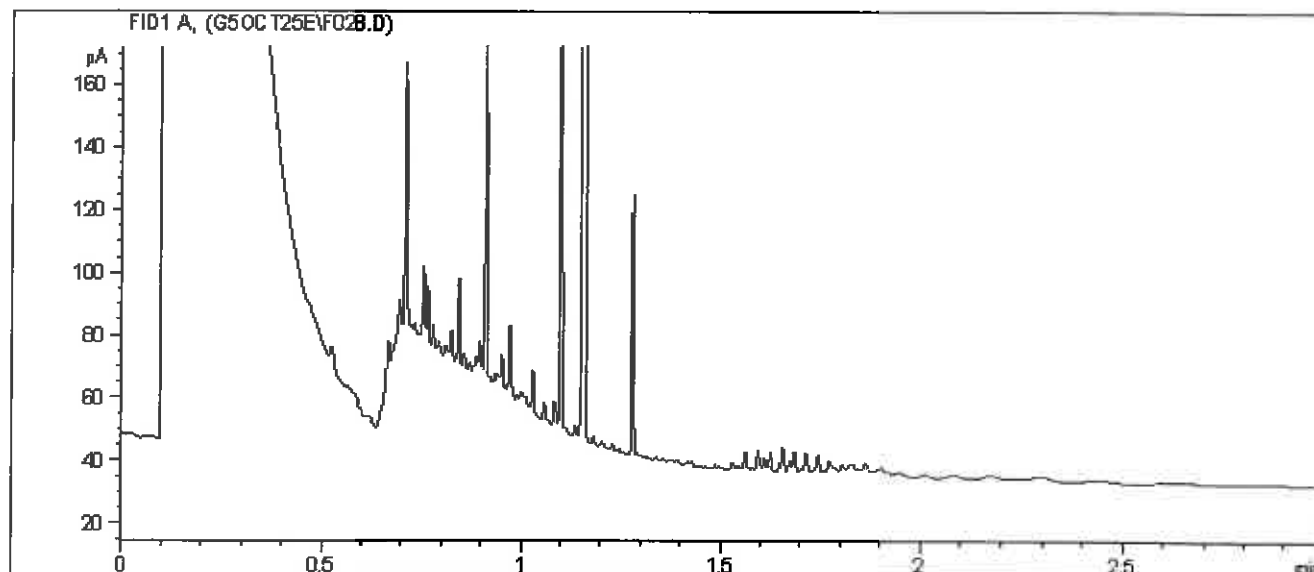
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5897

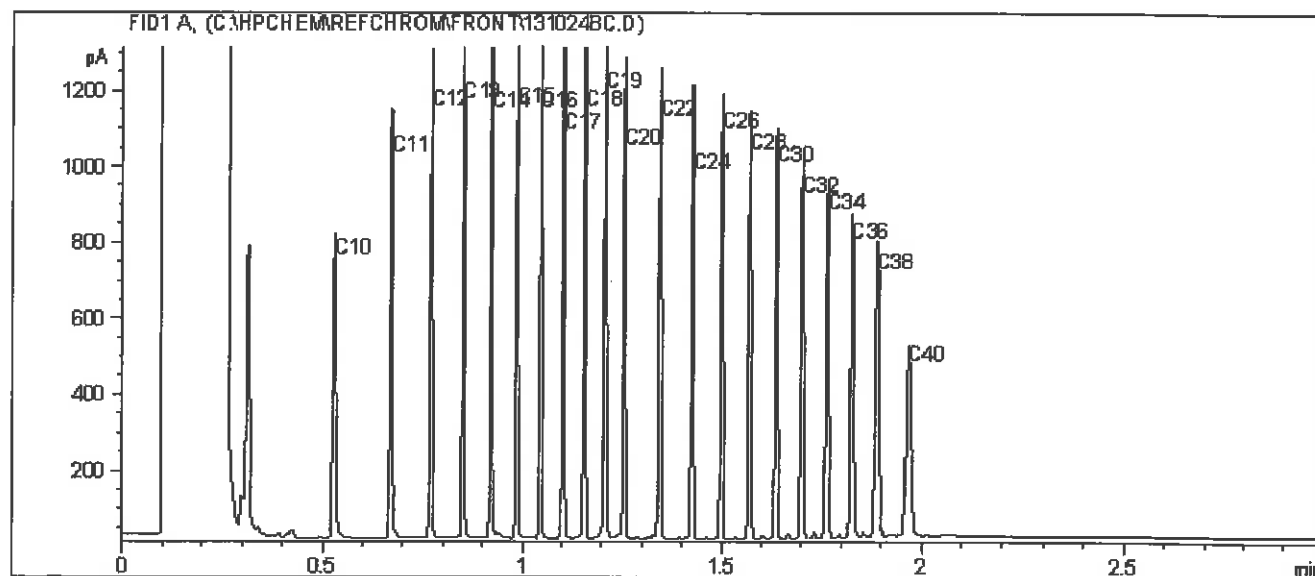
FRANZ ENVIRONMENTAL INC.

Client ID: 305-1

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

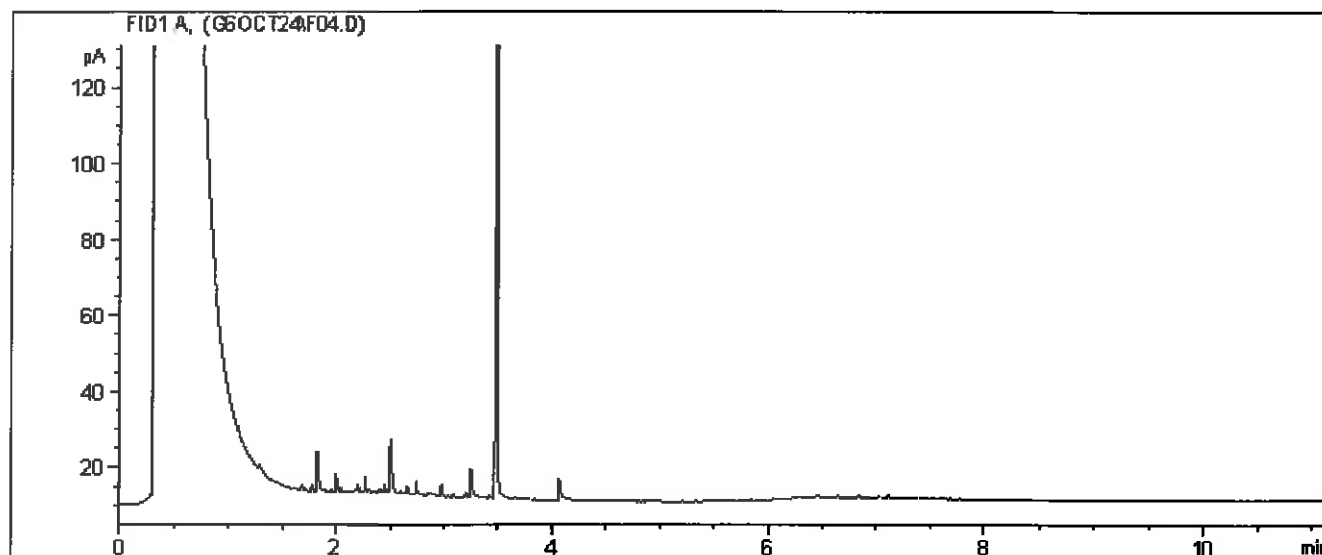
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/10/28
Maxxam Job #: B398668
Maxxam Sample: HX5897

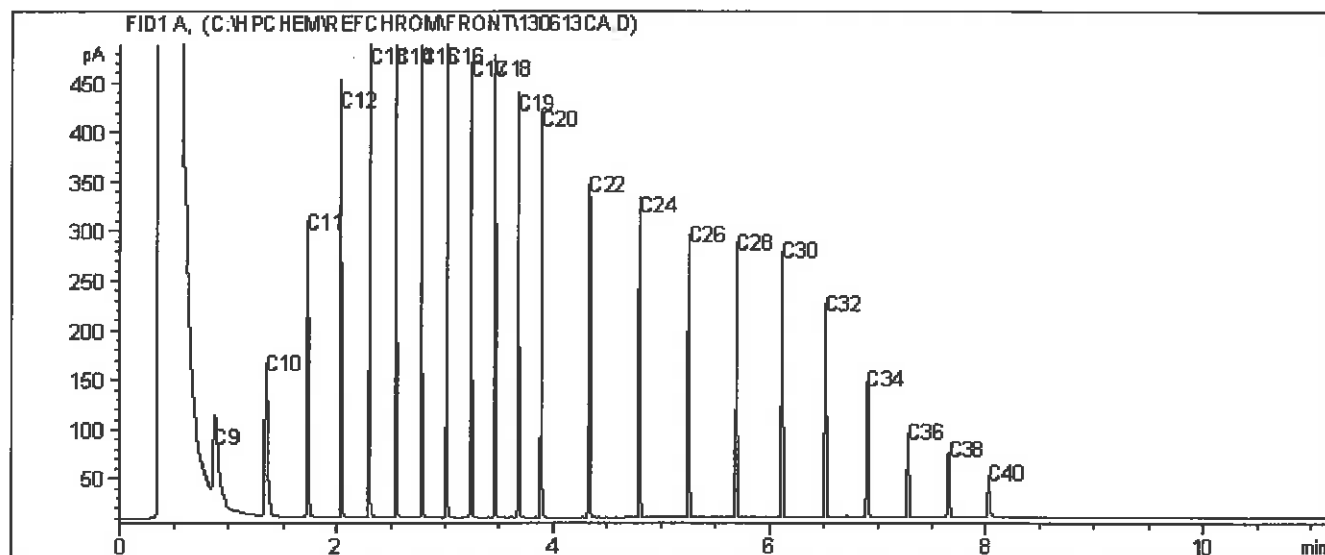
FRANZ ENVIRONMENTAL INC.

Client ID: 305-1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
Your Project #: LOWER POST
Your C.O.C. #: 42343702

Attention: Richard Wells
FRANZ ENVIRONMENTAL INC.
FRANZENV-VAN
1080 MAINLAND STREET
SUITE 308
VANCOUVER, BC
CANADA V6B 2T4

Report Date: 2013/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3B3637
Received: 2013/12/09, 09:30

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	4	2013/12/09	2013/12/10	BBY8-SOP-00010	EPA 8260C
CCME Hydrocarbons (F2-F4 in water)	4	2013/12/11	2013/12/12	BBY8SOP-00030	CCME Soil Tier1
Hardness (calculated as CaCO3)	4	N/A	2013/12/11	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAf	4	N/A	2013/12/12	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	4	N/A	2013/12/11	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	4	N/A	2013/12/10	BBY7SOP-00002	EPA 6020A
Nitrate + Nitrite (N)	4	N/A	2013/12/10	BBY6SOP-00010	SM 4500NO3-I
Nitrite (N) by CFA	4	N/A	2013/12/10	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	4	N/A	2013/12/11	BBY6SOP-00010	SM 4500NO3-I
PAH in Water by GC/MS (SIM)	4	2013/12/11	2013/12/12	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	4	N/A	2013/12/12	BBY WI-00033	BC MOE Lab Method
Filter and HNO3 Preserve for Metals	4	N/A	2013/12/09	BBY6WI-00001	EPA 200.2
EPH less PAH in Water by GC/FID	4	N/A	2013/12/16	BBY WI-00033	BC MOE Lab Method
Extrac. Petroleum HC in Water by GC/FID	4	2013/12/12	2013/12/13	BBY8SOP-00029	BC Env Lab Manual
Volatile F1-BTEX	3	N/A	2013/12/10	BBY WI-00033	BC MOE Lab Method
Volatile F1-BTEX	1	N/A	2013/12/11	BBY WI-00033	BC MOE Lab Method

* Results relate only to the items tested.

Encryption Key



Shanaz Akbar

16 Dec 2013 17:13:49 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
Email: Cireland@maxxam.ca
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID	IG7270	IG7271	IG7272	IG7273
Sampling Date	2013/12/03	2013/12/03	2013/12/04	2013/12/04
UNITS	MW11-3	MW11-4	MW11-6	MW11-7
Calculated Parameters				
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD
				ONSITE

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IG7270	IG7271	IG7272	IG7273
Sampling Date	2013/12/03	2013/12/03	2013/12/04	2013/12/04
UNITS	MW11-3	MW11-4	QC Batch	MW11-7
Extractable Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	<0.20	<0.20	7317335	<0.20
F3 (C16-C34 Hydrocarbons)	<0.20	<0.20	7317335	<0.20
F4 (C34-C50 Hydrocarbons)	<3.0	<3.0	7317335	<3.0
Reached Baseline at C50	YES	YES	7317335	YES
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	93	95	7317335	90
				7318402

TOTAL PETROLEUM HYDROCARBONS (WATER)

Maxxam ID	IG7270	IG7271	IG7272	IG7273
Sampling Date	2013/12/03	2013/12/03	2013/12/04	2013/12/04
UNITS	MW11-3	MW11-4	MW11-6	MW11-7
Calculated Parameters				
LEPH (C10-C19 less PAH)	<0.20	<0.20	<0.20	<0.20
HEPH (C19-C32 less PAH)	<0.20	<0.20	<0.20	<0.20
Ext. Pet. Hydrocarbon				
EPH (C10-C19)	<0.20	<0.20	<0.20	<0.20
EPH (C19-C32)	<0.20	<0.20	<0.20	<0.20
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	111	110	111	110
				7318364

N/A = Not Applicable

RDL = Reportable Detection Limit

CCME&CSR BTEX/F1/VPH IN WATER (WATER)

Maxxam ID	IG7270	IG7271	IG7272	IG7273	
Sampling Date	2013/12/03	2013/12/03	2013/12/04	2013/12/04	
UNITS	MW11-3	MW11-4	MW11-5	MW11-7	QC Batch
Calculated Parameters					
F1 (C6-C10) - BTEX	<300	<300	<300	<300	7313378
Volatiles					
VPH (VH6 to 10 - BTEX)	<300	<300	<300	<300	7313378
Methyl-tert-butylether (MTBE)	<4.0	<4.0	<4.0	<4.0	7313899
Benzene	<0.40	<0.40	<0.40	<0.40	7313899
Toluene	<0.40	<0.40	<0.40	<0.40	7313899
Ethylbenzene	<0.40	<0.40	<0.40	<0.40	7313899
m & p-Xylene	<0.40	<0.40	<0.40	<0.40	7313899
o-Xylene	<0.40	<0.40	<0.40	<0.40	7313899
Styrene	<0.40	<0.40	<0.40	<0.40	7313899
Xylenes (Total)	<0.40	<0.40	<0.40	<0.40	7313899
VH C6-C10	<300	<300	<300	<300	7313899
(C6-C10)	<300	<300	<300	<300	7313899
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	102	102	105	102	7313899
4-BROMOFLUOROBENZENE (sur.)	101	101	90	101	7313899
D4-1,2-DICHLOROETHANE (sur.)	93	91	100	92	7313899

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID		IG7270	IG7271	IG7272	IG7273	
Sampling Date		2013/12/03	2013/12/03	2013/12/04	2013/12/04	
		MW11-3	MW11-4	MW11-6	MW11-7	
Misc. Inorganics						
	UNITS					RDL
Dissolved Hardness (CaCO3)	mg/L	454	506	475	430	0.50
Elements						7313183
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010
						7318101

Maxxam Job #: B3B3637
Report Date: 2013/12/16

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	IG7270	IG7271	IG7272	IG7273	
Sampling Date	2013/12/03	2013/12/03	2013/12/04	2013/12/04	
	MW11-3	MW11-4	MW11-6	MW11-7	QC Batch
Dissolved Metals by ICPMS					
	UNITS				RDL
Dissolved Aluminum (Al)	ug/L	3.2	<3.0	<3.0	3.0
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.50
Dissolved Arsenic (As)	ug/L	<0.10	0.14	0.55	0.10
Dissolved Barium (Ba)	ug/L	62.6	51.6	54.3	1.0
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0
Dissolved Boron (B)	ug/L	<50	<50	<50	50
Dissolved Cadmium (Cd)	ug/L	0.061	0.025	<0.010	0.010
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	1.00	0.50
Dissolved Copper (Cu)	ug/L	1.30	<0.20	<0.20	0.20
Dissolved Iron (Fe)	ug/L	5.5	79.0	586	5.0
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20
Dissolved Lithium (Li)	ug/L	8.6	7.8	7.9	5.0
Dissolved Manganese (Mn)	ug/L	21.3	47.5	97.1	1.0
Dissolved Molybdenum (Mo)	ug/L	3.9	5.8	6.8	1.0
Dissolved Nickel (Ni)	ug/L	4.7	2.9	2.7	1.0
Dissolved Selenium (Se)	ug/L	13.0	0.66	0.19	0.10
Dissolved Silicon (Si)	ug/L	3590	4010	4530	100
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020
Dissolved Strontium (Sr)	ug/L	535	726	650	1.0
Dissolved Thallium (Tl)	ug/L	0.056	0.067	<0.050	0.050
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0
Dissolved Uranium (U)	ug/L	5.92	5.31	4.98	0.10
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	0.50
Dissolved Calcium (Ca)	mg/L	103	95.1	79.6	0.050
Dissolved Magnesium (Mg)	mg/L	47.7	57.6	56.1	0.050
Dissolved Potassium (K)	mg/L	5.55	7.14	2.90	0.050
Dissolved Sodium (Na)	mg/L	8.99	16.5	8.95	0.050
Dissolved Sulphur (S)	mg/L	24.0	23.4	23.9	3.0

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

NITRITE & NITRATE (WATER)

Maxxam ID		IG7270		IG7271		IG7272		IG7273		
Sampling Date		2013/12/03		2013/12/03		2013/12/04		2013/12/04		
	UNITS	MW11-3	RDL	MW11-4	RDL	MW11-6	MW11-7	RDL	QC Batch	
ANIONS										
Nitrite (N)	mg/L	0.0069(1)	0.0050	<0.0050(1)	0.0050	<0.0050(1)	<0.0050(1)	0.0050	7316141	
Calculated Parameters										
Nitrate (N)	mg/L	1.17	0.020	10.4	0.20	0.110	<0.020	0.020	7312598	
Nutrients										
Nitrate plus Nitrite (N)	mg/L	1.18(1)	0.020	10.4(1)	0.20	0.110(1)	<0.020(1)	0.020	7316130	

RDL = Reportable Detection Limit
(1) - Sample received past method-specified hold time.

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Maxxam Job #: B3B3637
Report Date: 2013/12/16

Your P.O. #: 700266127
Sampler Initials: GB

CCME PAH IN WATER BY GC-MS (WATER)

Maxxam ID	IG7270	IG7271	IG7272	IG7273	
Sampling Date	2013/12/03	2013/12/03	2013/12/04	2013/12/04	
	MW11-3	MW11-4	MW11-6	MW11-7	QC Batch
UNITS					
Polycyclic Aromatics					
Low Molecular Weight PAH's	ug/L	<0.50	<0.50	<0.50	0.50
High Molecular Weight PAH's	ug/L	<0.050	<0.050	<0.050	0.050
Total PAH	ug/L	<0.50	<0.50	<0.50	0.50
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10
Quinoline	ug/L	<0.50	<0.50	<0.50	0.50
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	0.050
Acenaphthene	ug/L	<0.050	<0.050	<0.050	0.050
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010
Acridine	ug/L	<0.050	<0.050	<0.050	0.050
Fluoranthene	ug/L	<0.020	<0.020	<0.020	0.020
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.010
Chrysene	ug/L	<0.050	<0.050	<0.050	0.050
Benzo(b&j)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	0.0090
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	0.050
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	0.050
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	0.050
Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	125	119	116	7317060
D8-ACENAPHTHYLENE (sur.)	%	118	114	115	7317060
D8-NAPHTHALENE (sur.)	%	111	128	106	7317060
D9-Acridine	%	94	89	88	7317060
TERPHENYL-D14 (sur.)	%	103	102	99	7317060

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

Package 1 | 1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7313899	1,4-Difluorobenzene (sur.)	2013/12/09	100	70 - 130	101	70 - 130	103	%		
7313899	4-BROMOFLUOROBENZENE (sur.)	2013/12/09	109	70 - 130	101	70 - 130	93	%		
7313899	D4-1,2-DICHLOROETHANE (sur.)	2013/12/09	88	70 - 130	90	70 - 130	93	%		
7313899	Methyl-tert-butylether(MTBE)	2013/12/09	84	70 - 130	83	70 - 130	<4.0	ug/L		
7313899	Benzene	2013/12/09	83	70 - 130	83	70 - 130	<0.40	ug/L	NC	30
7313899	Toluene	2013/12/09	89	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7313899	Ethylbenzene	2013/12/09	97	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7313899	m & p-Xylene	2013/12/09	97	70 - 130	90	70 - 130	<0.40	ug/L	NC	30
7313899	o-Xylene	2013/12/09	102	70 - 130	95	70 - 130	<0.40	ug/L	NC	30
7313899	Styrene	2013/12/09	100	70 - 130	94	70 - 130	<0.40	ug/L		
7313899	VH C6-C10	2013/12/09			95	70 - 130	<300	ug/L		
7313899	(C6-C10)	2013/12/09			99	70 - 130	<300	ug/L	NC	30
7313899	Xylenes (Total)	2013/12/09					<300	ug/L	NC	30
7315148	Dissolved Aluminum (Al)	2013/12/10	102	80 - 120	105	80 - 120	<3.0	ug/L	NC	20
7315148	Dissolved Antimony (Sb)	2013/12/10	103	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7315148	Dissolved Arsenic (As)	2013/12/10	106	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
7315148	Dissolved Barium (Ba)	2013/12/10	NC	80 - 120	102	80 - 120	<1.0	ug/L	0.2	20
7315148	Dissolved Beryllium (Be)	2013/12/10	98	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
7315148	Dissolved Bismuth (Bi)	2013/12/10	97	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7315148	Dissolved Cadmium (Cd)	2013/12/10	100	80 - 120	100	80 - 120	<0.010	ug/L	2.0	20
7315148	Dissolved Chromium (Cr)	2013/12/10	NC	80 - 120	102	80 - 120	<1.0	ug/L	2.9	20
7315148	Dissolved Cobalt (Co)	2013/12/10	93	80 - 120	102	80 - 120	<0.50	ug/L	1.8	20
7315148	Dissolved Copper (Cu)	2013/12/10	105	80 - 120	102	80 - 120	<0.20	ug/L	16.1	20
7315148	Dissolved Iron (Fe)	2013/12/10	98	80 - 120	101	80 - 120	<0.20	ug/L	NC	20
7315148	Dissolved Lead (Pb)	2013/12/10	93	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7315148	Dissolved Lithium (Li)	2013/12/10	NC	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7315148	Dissolved Manganese (Mn)	2013/12/10	94	80 - 120	104	80 - 120	<1.0	ug/L	0.05	20
7315148	Dissolved Molybdenum (Mo)	2013/12/10	NC	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
7315148	Dissolved Nickel (Ni)	2013/12/10	104	80 - 120	101	80 - 120	<0.10	ug/L	1.0	20
7315148	Dissolved Selenium (Se)	2013/12/10	104	80 - 120	91	80 - 120	<0.020	ug/L	NC	20
7315148	Dissolved Silver (Ag)	2013/12/10	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.08	20
7315148	Dissolved Strontium (Sr)	2013/12/10	99	80 - 120	99	80 - 120	<0.050	ug/L	NC	20
7315148	Dissolved Thallium (Tl)	2013/12/10	NC	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7315148	Dissolved Tin (Sn)	2013/12/10	80	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
7315148	Dissolved Titanium (Ti)	2013/12/10	98	80 - 120	95	80 - 120	<0.10	ug/L	NC	20
7315148	Dissolved Uranium (U)	2013/12/10	97	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
7315148	Dissolved Vanadium (V)	2013/12/10	106	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
7315148	Dissolved Zinc (Zn)	2013/12/10					<50	ug/L	NC	20
7315148	Dissolved Boron (B)	2013/12/10								

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7315148	Dissolved Silicon (Si)	2013/12/10					<100	ug/L	3.7	20
7315148	Dissolved Zirconium (Zr)	2013/12/10					<0.50	ug/L	NC	20
7316130	Nitrate plus Nitrite (N)	2013/12/10	108	80 - 120	105	80 - 120	<0.020	mg/L	NC	25
7316141	Nitrite (N)	2013/12/10	108	80 - 120	102	80 - 120	<0.0050	mg/L		
7317060	D10-ANTHRACENE (sur.)	2013/12/11	84	60 - 130	115	60 - 130	122	%		
7317060	D8-ACENAPHTHYLENE (sur.)	2013/12/11	78	50 - 130	108	50 - 130	110	%		
7317060	D8-NAPHTHALENE (sur.)	2013/12/11	67	50 - 130	90	50 - 130	109	%		
7317060	D9-Acridine	2013/12/11	78	50 - 130	94	50 - 130	91	%		
7317060	TERPHENYL-D14 (sur.)	2013/12/11	54(1)	60 - 130	109	60 - 130	106	%		
7317060	Naphthalene	2013/12/12	87	50 - 130	90	50 - 130	<0.10	ug/L	31.6(2)	40
7317060	2-Methylnaphthalene	2013/12/12	86	50 - 130	100	50 - 130	<0.10	ug/L	21.9	40
7317060	Quinoline	2013/12/12	54	50 - 130	107	50 - 130	<0.50	ug/L	NC	40
7317060	Acenaphthylene	2013/12/12	104	50 - 130	98	50 - 130	<0.050	ug/L	NC	40
7317060	Acenaphthene	2013/12/12	104	50 - 130	94	50 - 130	<0.050	ug/L	NC	40
7317060	Fluorene	2013/12/12	80	50 - 130	89	50 - 130	<0.050	ug/L	1.3	40
7317060	Phenanthrene	2013/12/12	100	60 - 130	92	60 - 130	<0.050	ug/L	7.4	40
7317060	Anthracene	2013/12/12	107	60 - 130	99	60 - 130	<0.010	ug/L	NC	40
7317060	Acridine	2013/12/12	93	50 - 130	86	50 - 130	<0.050	ug/L	NC	40
7317060	Fluoranthene	2013/12/12	101	60 - 130	95	60 - 130	<0.020	ug/L	NC	40
7317060	Pyrene	2013/12/12	103	60 - 130	96	60 - 130	<0.020	ug/L	NC	40
7317060	Benzo(a)anthracene	2013/12/12	93	60 - 130	83	60 - 130	<0.010	ug/L	NC	40
7317060	Chrysene	2013/12/12	96	60 - 130	86	60 - 130	<0.050	ug/L	NC	40
7317060	Benzo(b)fluoranthene	2013/12/12	94	60 - 130	83	60 - 130	<0.050	ug/L	NC	40
7317060	Benzo(k)fluoranthene	2013/12/12	95	60 - 130	88	60 - 130	<0.050	ug/L	NC	40
7317060	Benzo(a)pyrene	2013/12/12	93	60 - 130	87	60 - 130	<0.0090	ug/L	NC	40
7317060	Indeno(1,2,3-cd)pyrene	2013/12/12	95	60 - 130	87	60 - 130	<0.050	ug/L	NC	40
7317060	Dibenz(a,h)anthracene	2013/12/12	91	60 - 130	80	60 - 130	<0.050	ug/L	NC	40
7317060	Benzo(a,h)perylene	2013/12/12	92	60 - 130	84	60 - 130	<0.050	ug/L	NC	40
7317335	F2(C10-C16 Hydrocarbons)	2013/12/12	118	80 - 120	101	80 - 120	<0.20	mg/L	NC	40
7317335	O-TERPHENYL (sur.)	2013/12/12	94	50 - 130	93	50 - 130	89	%		
7317335	F3(C16-C34 Hydrocarbons)	2013/12/12					<0.20	mg/L		
7317335	F4(C34-C50 Hydrocarbons)	2013/12/12					<3.0	mg/L		
7317335	Reached Baseline at C50	2013/12/12					YES, RDL=N/A	mg/L		
7318101	Dissolved Mercury (Hg)	2013/12/12	102	80 - 120	106	80 - 120	<0.010	ug/L	NC	20
7318364	O-TERPHENYL (sur.)	2013/12/13	108	50 - 130	103	50 - 130	108	%		
7318364	EPH(C10-C19)	2013/12/13	128	50 - 130	113	50 - 130	<0.20	mg/L	NC	30
7318364	EPH(C19-C32)	2013/12/13	111	50 - 130	100	50 - 130	<0.20	mg/L	NC	30
7318402	F2(C10-C16 Hydrocarbons)	2013/12/12	93	80 - 120	105	80 - 120	<0.20	mg/L	NC	40
7318402	O-TERPHENYL (sur.)	2013/12/12	109	50 - 130	90	50 - 130	92	%		

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7318402	F3 (C16-C34 Hydrocarbons)	2013/12/12					<0.20	mg/L	NC	40
7318402	F4 (C34-C50 Hydrocarbons)	2013/12/12					<3.0	mg/L	NC	40
7318402	Reached Baseline at C50	2013/12/12					YES, RDL=N/A	mg/L	NC	40

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.


(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) - RDL raised due to sample dilution.

Validation Signature Page

Maxxam Job #: B3B3637

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Form 100-1 (Rev. 1-1-71) **United States Department of Justice** **Office of the Inspector General**

Case No. 100-1 **File No.** 100-1

Subject: [REDACTED]

Classification: [REDACTED]

Administrative: [REDACTED]

Case No.	File No.	Subject	Classification	Administrative	Investigative	Legal	Financial	Physical	Technical	Medical	Psychological	Other
100-1210	MW11-3	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71
100-1211	MW11-4	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71
100-1212	MW11-5	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71
100-1213	MW11-7	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71	10/1/71

Inspector: [REDACTED] **Supervisor:** [REDACTED] **Reviewer:** [REDACTED]

Date: 10/1/71 **Page:** 14 of 22



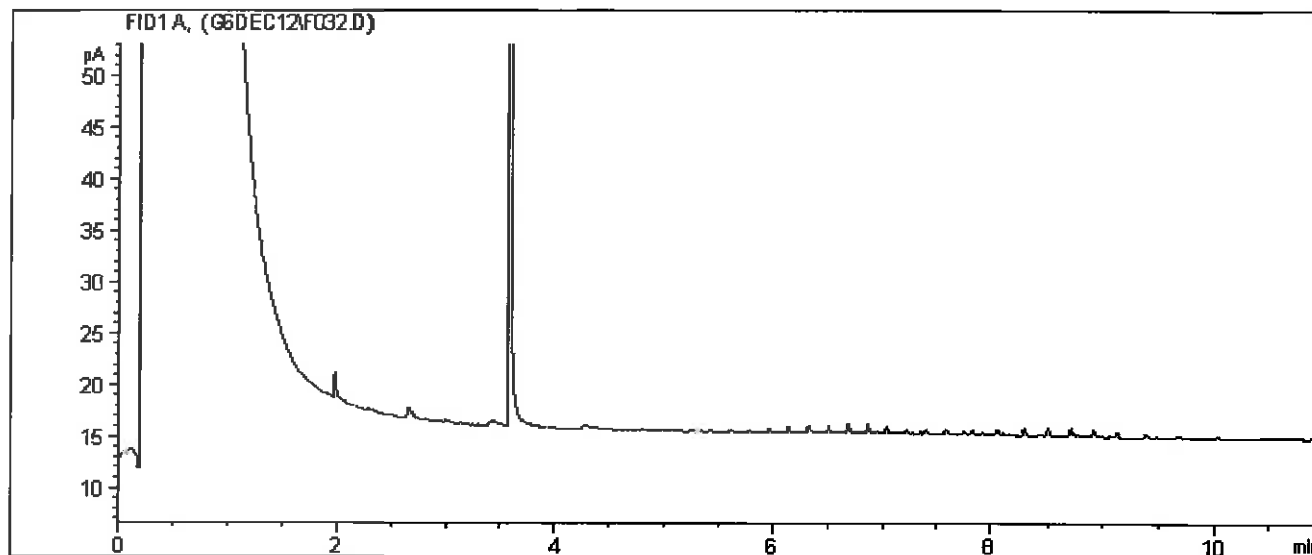
BIB3637

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7270

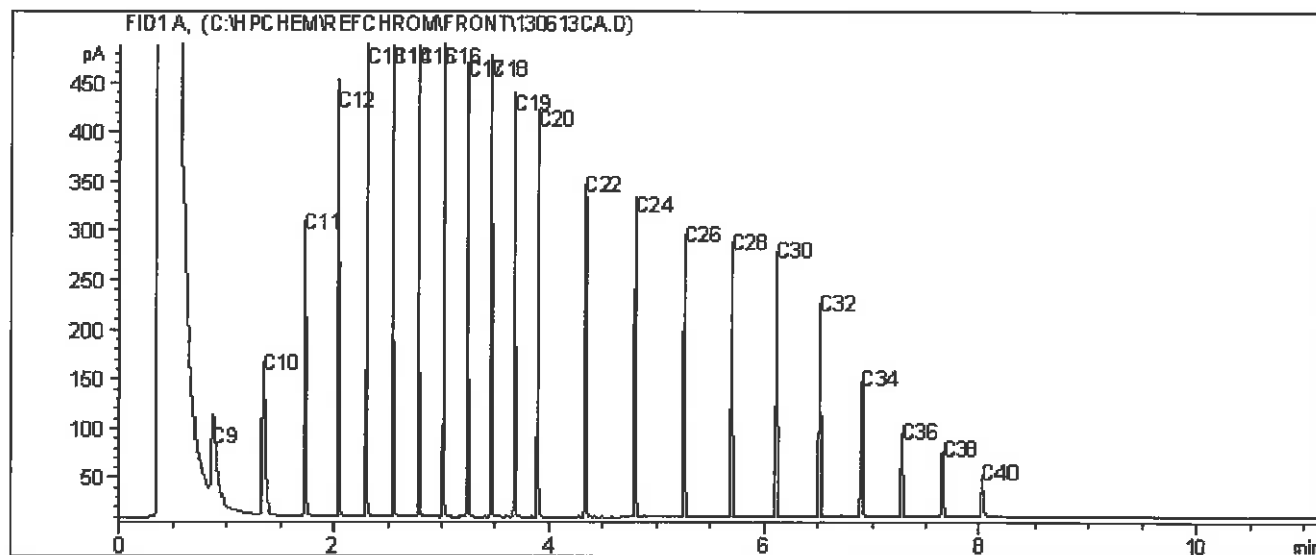
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-3

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

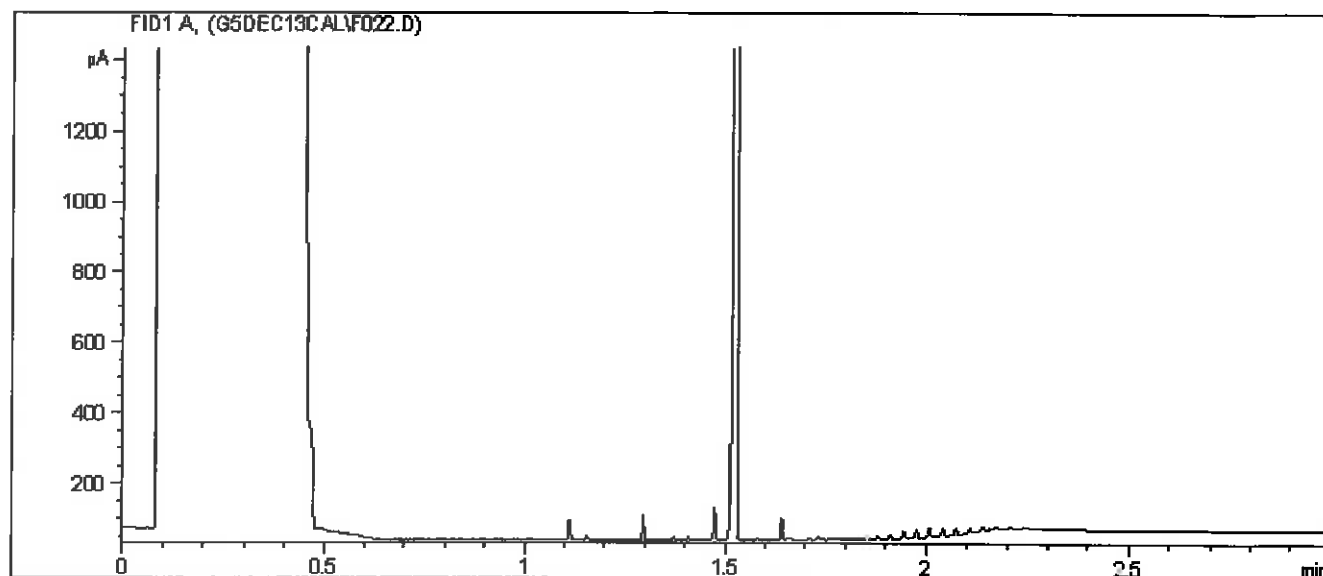
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7270

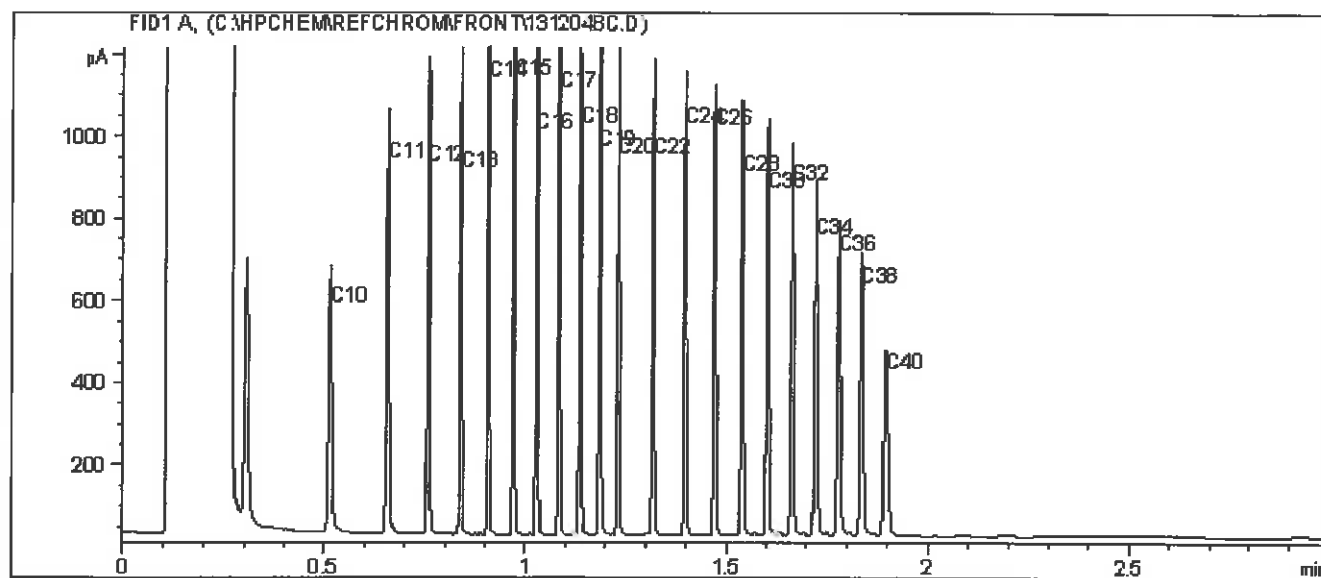
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-3

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

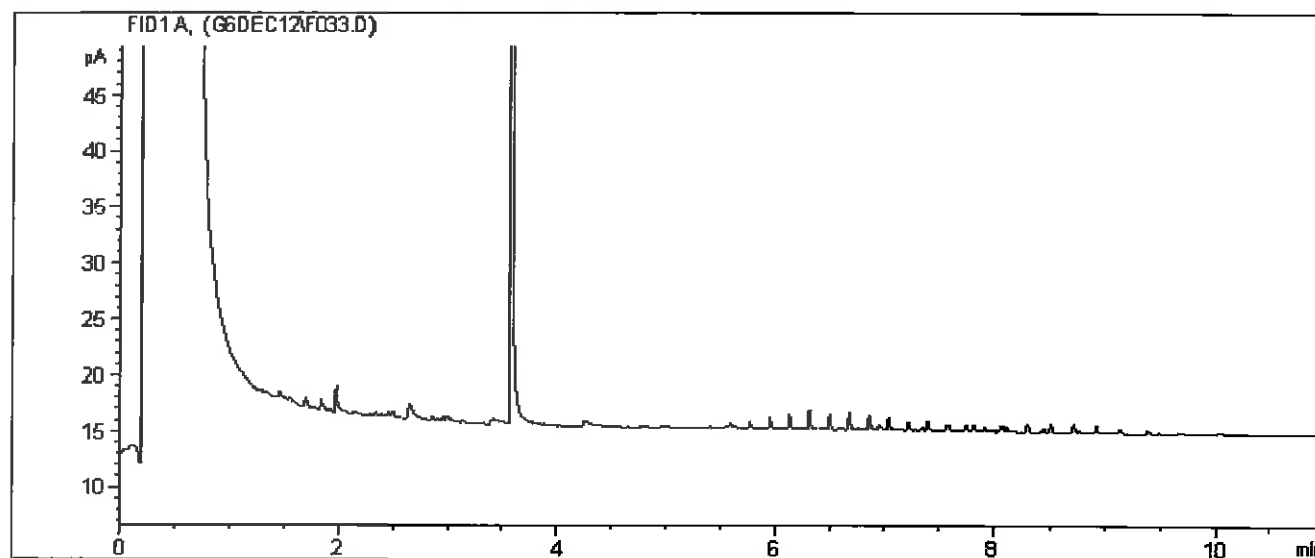
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7271

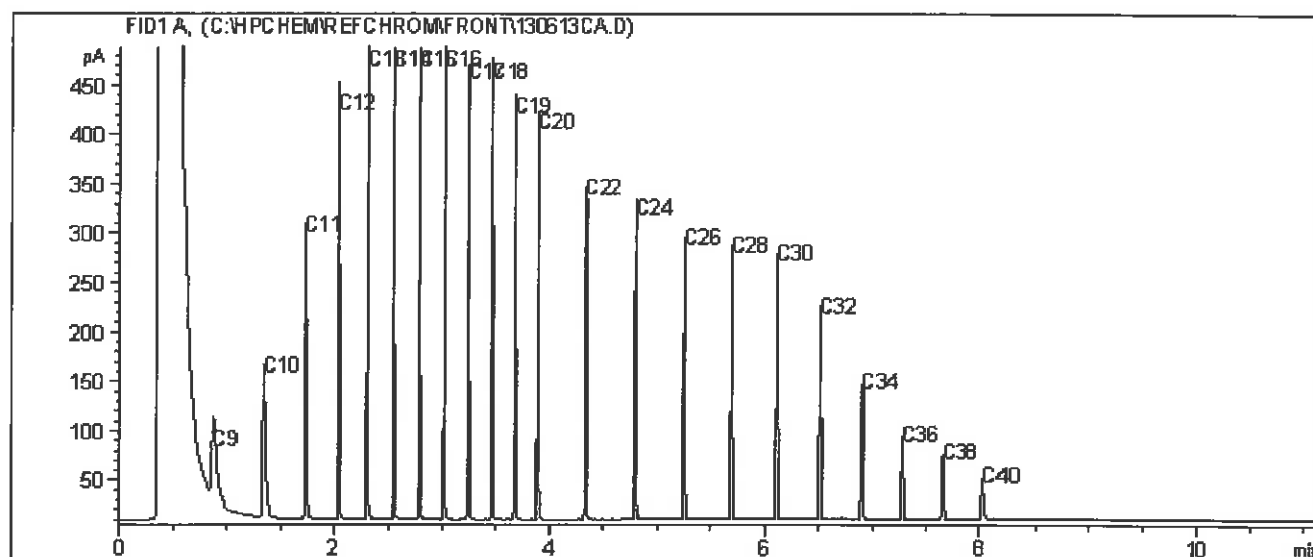
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-4

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

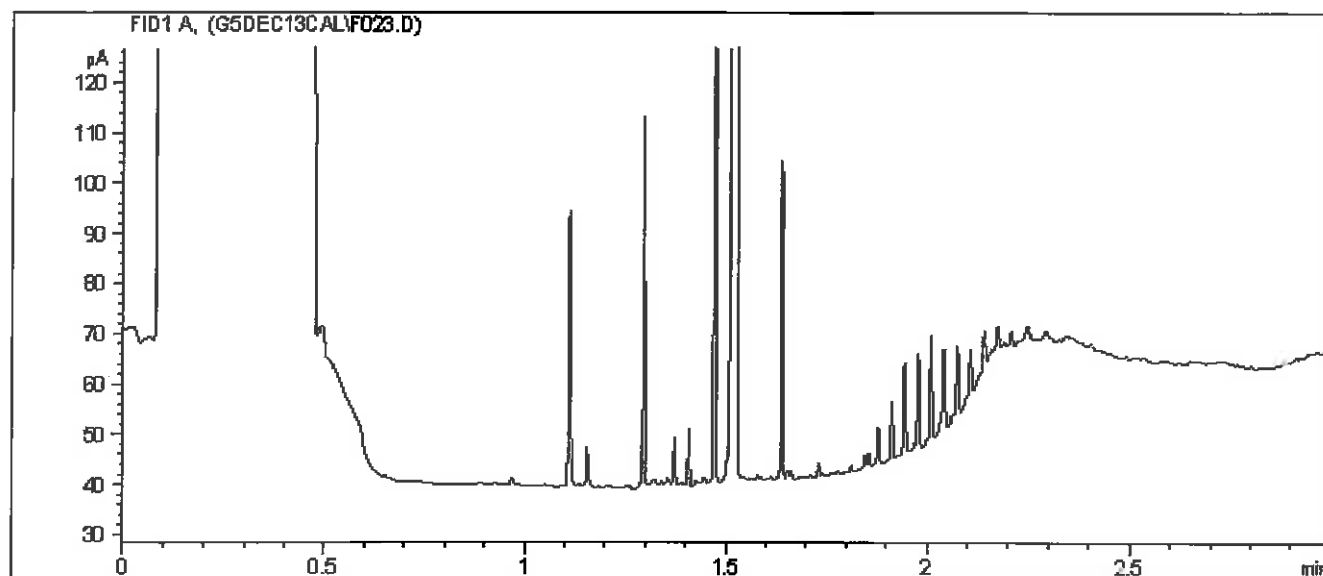
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7271

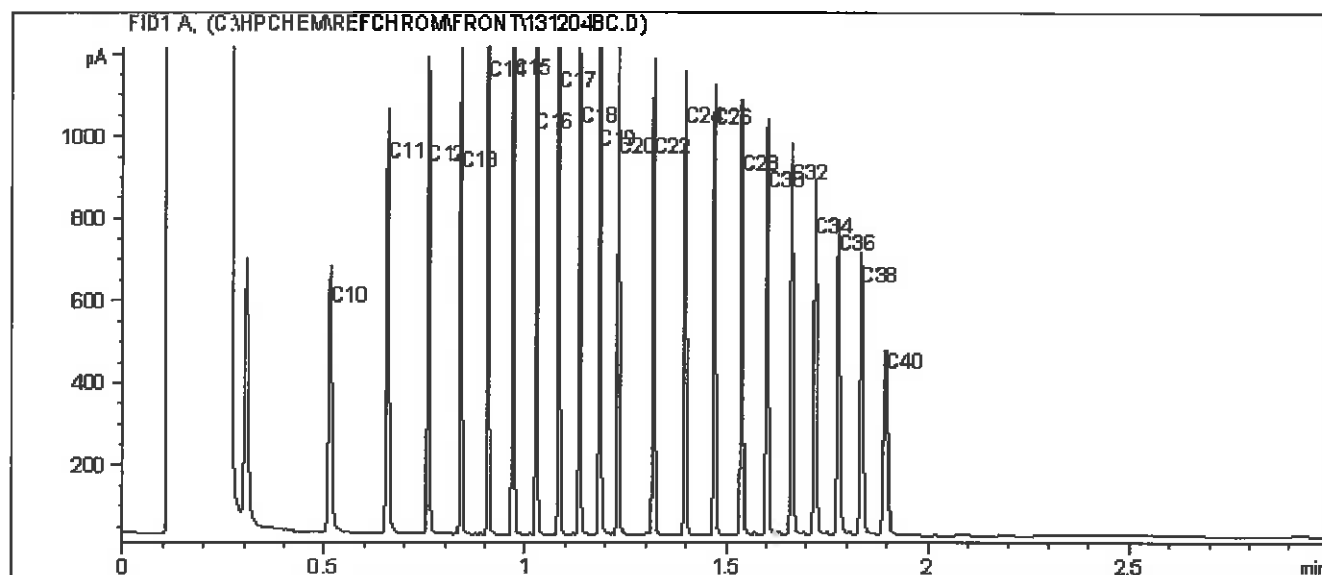
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-4

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

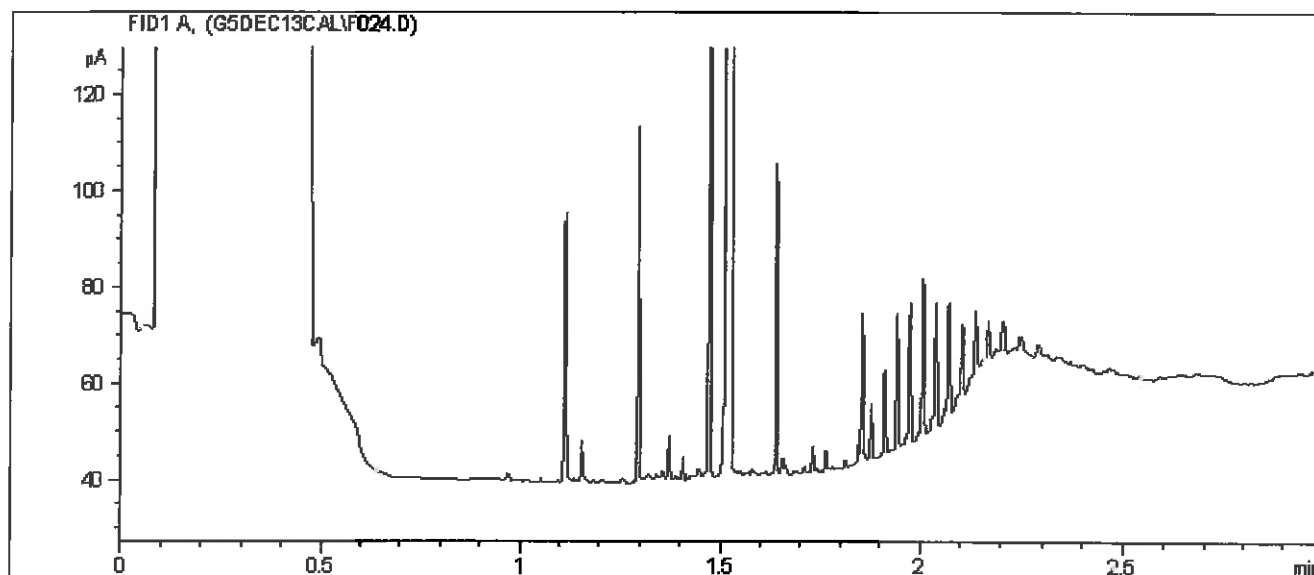
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7272

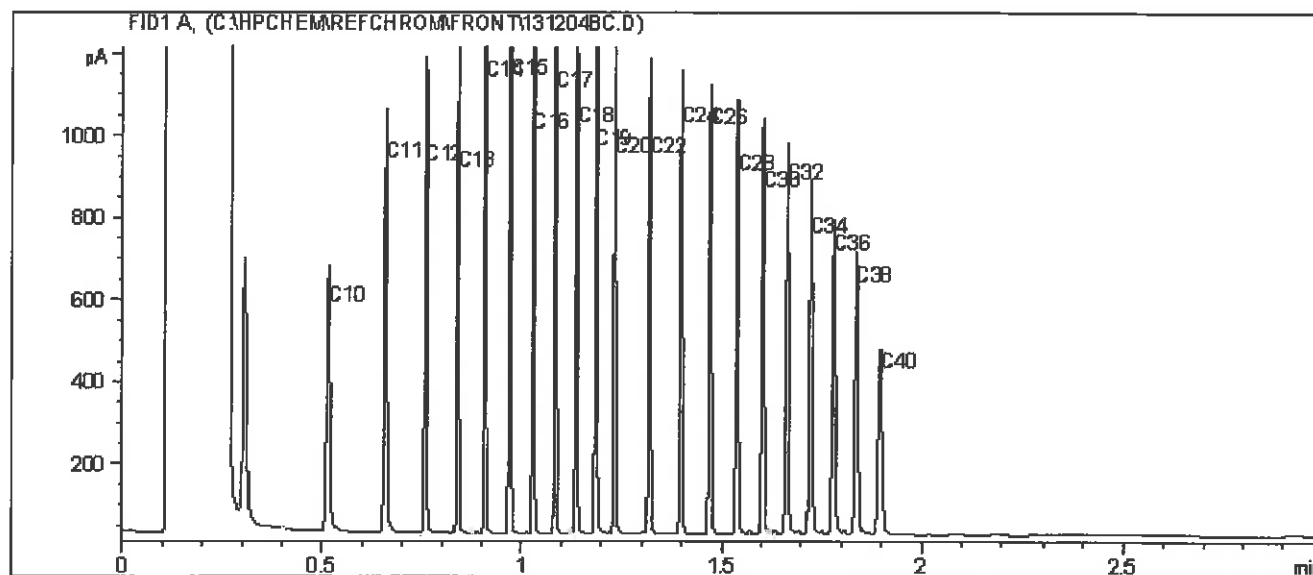
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-6

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

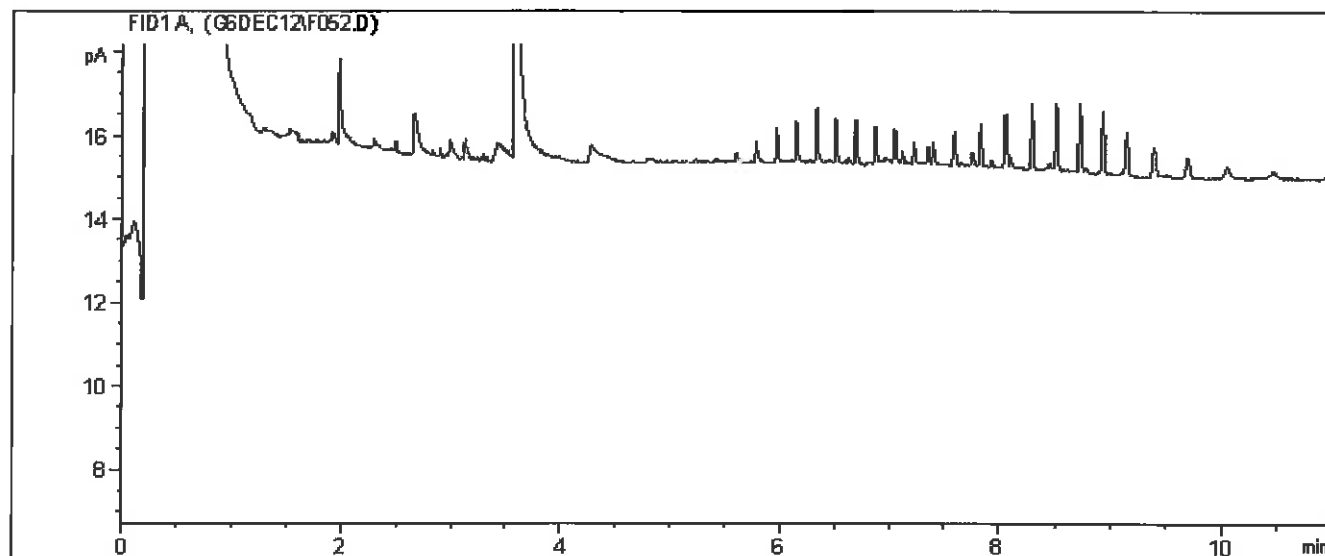
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7272

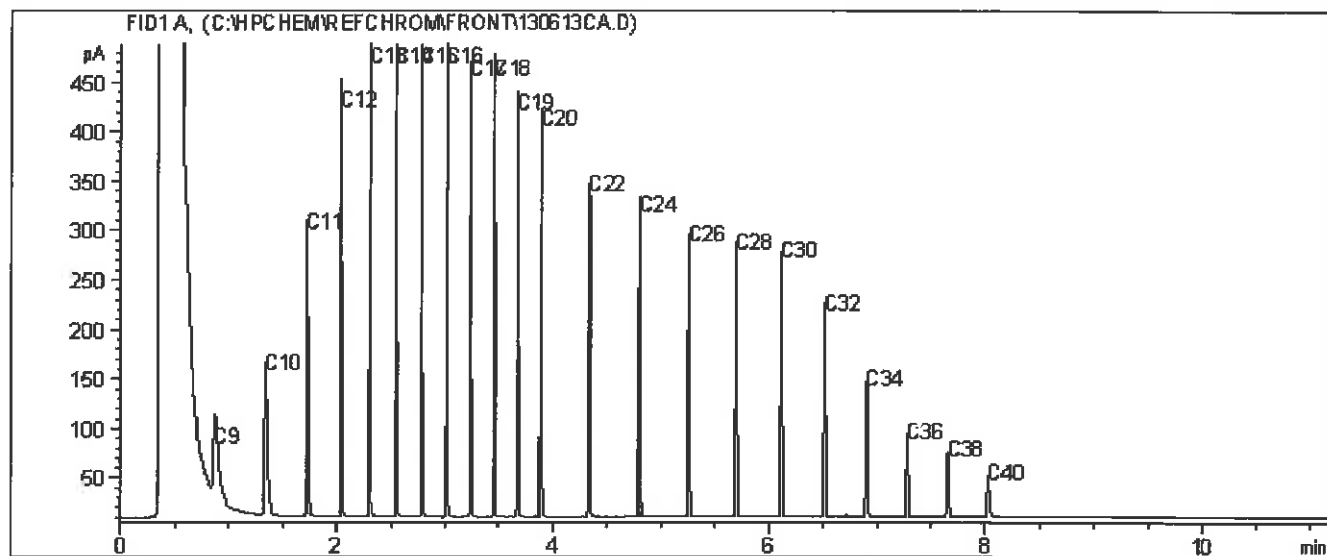
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-6

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

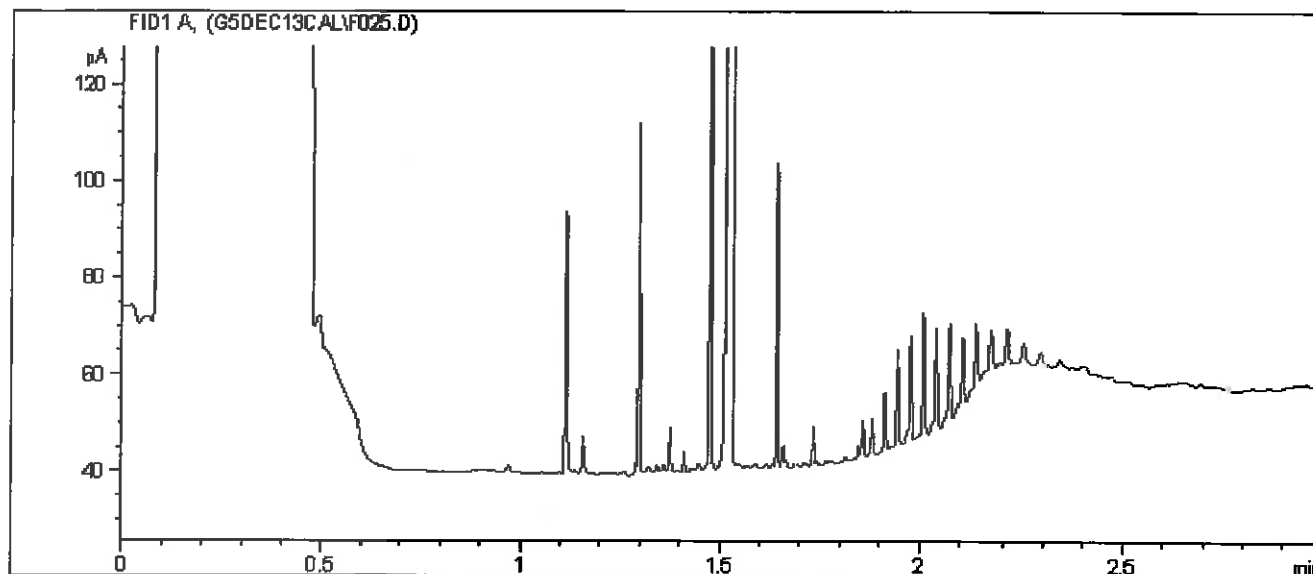
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7273

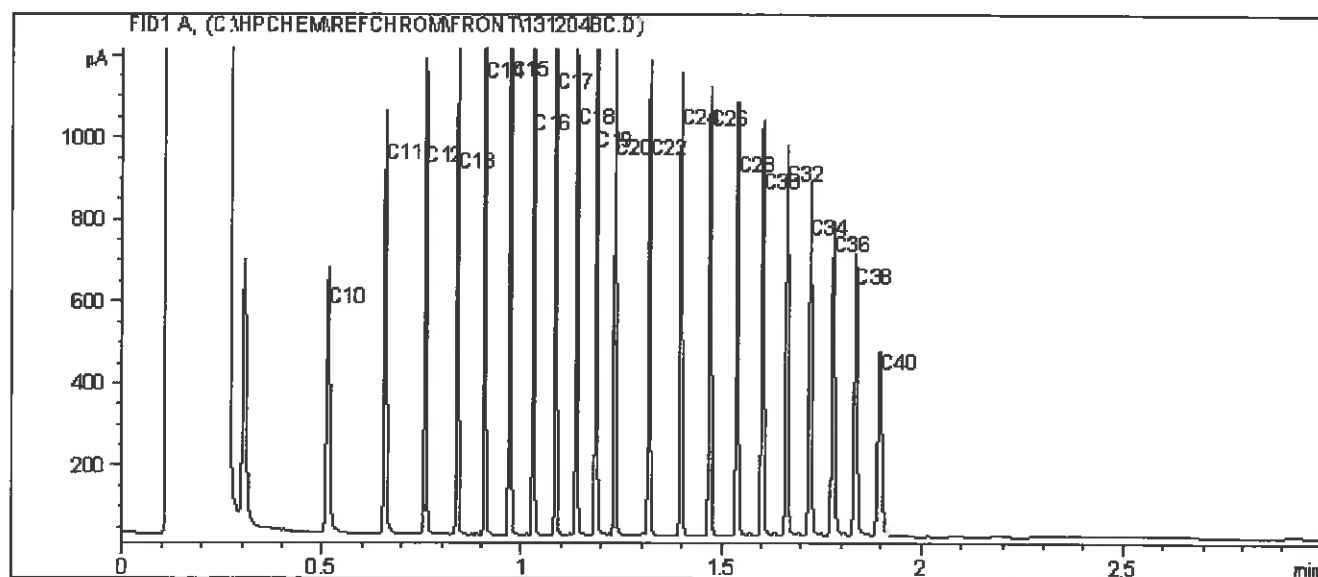
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-7

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

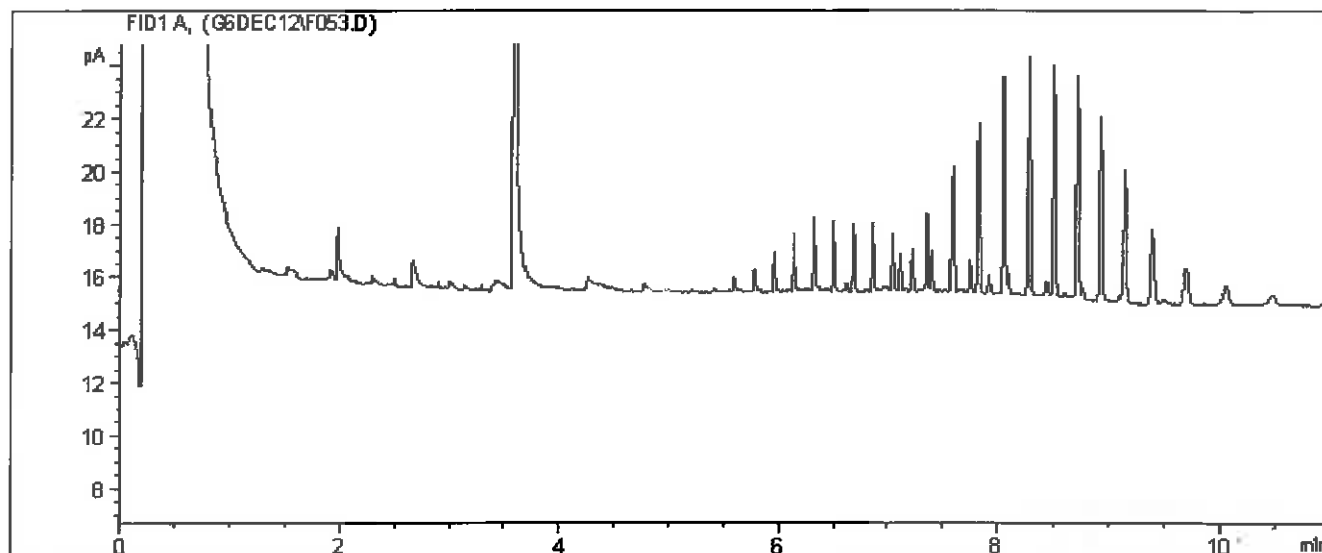
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3637
Maxxam Sample: IG7273

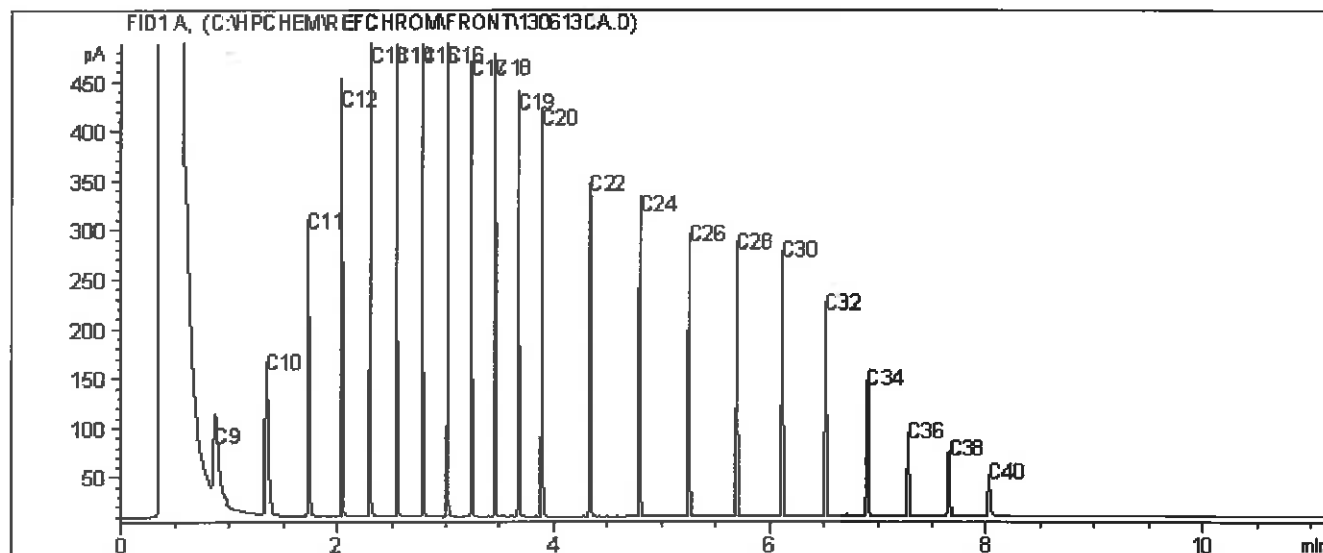
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: MW11-7

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
 Your Project #: 00069
 Site Location: LOWER POST, BC
 Your C.O.C. #: G026585, G026586

Attention: John Taylor
 FRANZ ENVIRONMENTAL INC.
 FRANZENV-VAN
 1080 MAINLAND STREET
 SUITE 308
 VANCOUVER, BC
 CANADA V6B 2T4

Report Date: 2014/02/06
Report #: R1512067
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B407541
Received: 2014/01/30, 09:30

Sample Matrix: Soil
 # Samples Received: 14

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	12	2014/01/30	2014/01/31	BBY8-SOP-00010	EPA SW846 8260C
BTEX/MTBE Soil LH, VH, F1 SIM/MS	2	2014/01/30	2014/02/03	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	10	N/A	2014/01/31	BBY WI-00033	BC MOE Lab Method
Volatile F1-BTEX	2	N/A	2014/02/03	BBY WI-00033	BC MOE Lab Method
Volatile F1-BTEX	2	N/A	2014/02/04	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	14	2014/01/30	2014/02/05	BBY8SOP-00030	CCME Soil Tier 1
Moisture	14	N/A	2014/01/31	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	13	2014/01/30	2014/02/05	BBY8SOP-00022	EPA 8270D
PAH in Soil by GC/MS (SIM) - CCME	1	2014/01/31	2014/02/05	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	14	N/A	2014/02/05	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	14	N/A	2014/02/05	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	14	N/A	2014/02/05	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	14	2014/01/30	2014/02/04	BBY8SOP-00029	BC Env Lab Manual

* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Crystal Ireland

06 Feb 2014 16:21:39 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
 Email: C Ireland@maxxam.ca
 Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IO4072	IO4073	IO4074	IO4075	IO4076	IO4077	IO4078	IO4079	
Sampling Date	2014/01/27	2014/01/27	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28	
UNITS	MW13-11-4	DUP 6	BH13-15-3	BH13-15-4	BH13-13-3	BH13-13-4	DUP 7	BH13-12-6	RDL QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	19	<10	10	<10	<10	<10	17	730	10 7372323
F3 (C16-C34 Hydrocarbons)	15	12	<10	<10	<10	<10	11	160	10 7372323
F4 (C34-C50 Hydrocarbons)	13	<10	<10	<10	<10	<10	<10	<10	10 7372323
Reached Baseline at C50	YES	YES	YES	YES	YES	YES	YES	YES	N/A 7372323
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	117	110	122	104	103	110	122	109	7372323

Maxxam ID	IO4080	IO4081	IO4082	IO4083	IO4088	IO4089		
Sampling Date	2014/01/28	2014/01/27	2014/01/27	2014/01/27	2014/01/27	2014/01/27		
UNITS	BH13-12-4	MW13-11-3	MW13-10-3	MW13-10-4	MW13-9-3	MW13-9-4	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	<10	<10	11	<10	<10	<10	10	7372323
F3 (C16-C34 Hydrocarbons)	<10	<10	<10	<10	<10	<10	10	7372323
F4 (C34-C50 Hydrocarbons)	<10	<10	<10	<10	<10	<10	10	7372323
Reached Baseline at C50	YES	YES	YES	YES	YES	YES	N/A	7372323
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	93	116	120	111	102	108		7372323

PHYSICAL TESTING (SOIL)

Maxxam ID	IO4072	IO4073	IO4074	IO4075	IO4076	IO4077	IO4078	IO4079	IO4080
Sampling Date	2014/01/27	2014/01/27	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28
UNITS	MW13-11-4	DUP 6	BH13-15-3	BH13-15-4	BH13-13-3	BH13-13-4	DUP 7	BH13-12-6	BH13-12-4 RDL QC Batch
Physical Properties									
Moisture	16	8.8	4.7	5.1	19	15	18	9.4	16 0.30 7366065

N/A = Not Applicable
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

PHYSICAL TESTING (SOIL)

Maxxam ID	IO4081	IO4082	IO4083	IO4088	IO4089
Sampling Date	2014/01/27	2014/01/27	2014/01/27	2014/01/27	2014/01/27
UNITS	MW13-11-3	QC Batch	MW13-10-4	QC Batch	MW13-9-4
Physical Properties					
Moisture	%	11	7365860	15	7366065
			5.3	7366885	10
				8.6	0.30
					7366065

TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IO4072	IO4073	IO4074	IO4075	IO4076	IO4077	IO4078	IO4079
Sampling Date	2014/01/27	2014/01/27	2014/01/27	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28
UNITS	MW13-11-4	DUP 6	BH13-15-3	BH13-15-4	BH13-13-3	BH13-13-4	DUP 7	BH13-12-6
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	<100	<100	704
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	<100	<100	<100
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	<100	<100	704
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	<100	<100	<100
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	97	110	107	108	104	105	99
								7371274

Maxxam ID	IO4080	IO4081	IO4082	IO4083	IO4088	IO4089
Sampling Date	2014/01/28	2014/01/27	2014/01/27	2014/01/27	2014/01/27	2014/01/27
UNITS	BH13-12-4	MW13-11-3	MW13-10-3	MW13-10-4	MW13-9-3	MW13-9-4
Calculated Parameters						
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	<100
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	<100
Hydrocarbons						
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	<100
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	<100
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	99	105	105	108	105
						108
						7371274

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	IO4072	IO4073	IO4074	IO4075	IO4076	
Sampling Date	2014/01/27	2014/01/27	2014/01/28	2014/01/28	2014/01/28	
	MW13-11-4	DUP 6	BH13-15-3	BH13-15-4	BH13-13-3	QC Batch
Calculated Parameters						
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	10
Volatiles						
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	0.030
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040
(C6-C10)	mg/kg	<10	<10	<10	<10	10
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	95	94	95	95	96
4-BROMOFLUOROBENZENE (sur.)	%	107	105	108	110	109
D10-ETHYLBENZENE (sur.)	%	98	96	98	97	98
D4-1,2-DICHLOROETHANE (sur.)	%	112	111	115	111	111
						7366595

RDL = Reportable Detection Limit

Maxxam Job #: B407541
Report Date: 2014/02/06

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	IO4077	IO4078	IO4079	IO4080	IO4081	
Sampling Date	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/27	
UNITS	BH13-13-4	QC Batch	DUP 7	BH13-12-6	MW13-11-3	QC Batch
Calculated Parameters						
F1 (C6-C10) - BTEX	<10	7366058	<10	<10	<10	10
Volatiles						
Methyl-tert-butylether (MTBE)	<0.10	7366595	<0.10	<0.10	<0.10	0.10
Benzene	<0.0050	7366595	<0.0050	<0.0050	<0.0050	0.0050
Toluene	<0.020	7366595	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.010	7366595	<0.010	<0.010	<0.010	0.010
m & p-Xylene	<0.040	7366595	<0.040	<0.040	<0.040	0.040
o-Xylene	<0.040	7366595	<0.040	<0.040	<0.040	0.040
Styrene	<0.030	7366595	<0.030	<0.030	<0.030	0.030
Xylenes (Total)	<0.040	7366595	<0.040	<0.040	<0.040	0.040
(C6-C10)	<10	7366595	<10	<10	<10	10
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	96	7366595	100	97	94	7366595
4-BROMOFLUOROBENZENE (sur.)	110	7366595	104	112	107	7366595
D10-ETHYLBENZENE (sur.)	98	7366595	97	101	97	7366595
D4-1,2-DICHLOROETHANE (sur.)	112	7366595	103	112	111	7366595

RDL = Reportable Detection Limit

CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	IO4082	IO4083	IO4088	IO4089	
Sampling Date	2014/01/27	2014/01/27	2014/01/27	2014/01/27	
UNITS	MW13-10-3	MW13-10-4	QC Batch	QC Batch	QC Batch
Calculated Parameters					
F1 (C6-C10) - BTEX	<10	<10	7366058	<10	10
Volatiles					
Methyl-tert-butylether (MTBE)	<0.10	<0.10	7367620	<0.10	0.10
Benzene	<0.0050	<0.0050	7367620	<0.0050	0.0050
Toluene	<0.020	<0.020	7367620	<0.020	0.020
Ethylbenzene	<0.010	<0.010	7367620	<0.010	0.010
m & p-Xylene	<0.040	<0.040	7367620	<0.040	0.040
o-Xylene	<0.040	<0.040	7367620	<0.040	0.040
Styrene	<0.030	<0.030	7367620	<0.030	0.030
Xylenes (Total)	<0.040	<0.040	7367620	<0.040	0.040
(C6-C10)	<10	<10	7367620	<10	10
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	101	101	7367620	95	100
4-BROMOFLUOROBENZENE (sur.)	103	105	7367620	108	102
D10-ETHYLBENZENE (sur.)	94	95	7367620	98	98
D4-1,2-DICHLOROETHANE (sur.)	103	101	7367620	111	101

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IO4072	IO4073	IO4074	IO4075	IO4076	IO4077	IO4078	IO4079	
Sampling Date	2014/01/27	2014/01/27	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28	2014/01/28	
UNITS	MW13-11-4	DUP 6	BH13-15-3	BH13-15-4	BH13-13-3	BH13-13-4	DUP 7	RDL	QC Batch
Calculated Parameters									
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.31	0.31	0.31	0.31	0.31	0.10	0.10
Benzo(a)pyrene equivalency	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	0.097
2-Methylnaphthalene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	0.31
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	<0.0090(1)
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	<0.027(1)
Fluorene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	0.051
Phenanthrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	0.032
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	<0.0040
Fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Benzo(a)anthracene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Chrysene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Benzo(b&j)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Benzo(b)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Benzo(a)pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	<0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	<0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	<0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	<0.050
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	0.49
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	<0.050
Total PAH	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	0.49
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	91	110	101	111	104	92	99	7371284
D8-ACENAPHTHYLENE (sur.)	%	84	95	92	92	91	92	91	7371284
D8-NAPHTHALENE (sur.)	%	96	107	104	105	103	105	99	7371284
TERPHENYL-D14 (sur.)	%	83	106	101	109	100	91	94	7371284

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) - RDL raised due to sample matrix interference.

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IO4080	IO4081	IO4082	IO4083	IO4088	IO4089	
Sampling Date	2014/01/28	2014/01/27	2014/01/27	2014/01/27	2014/01/27	2014/01/27	
UNITS	BH13-12-4	MW13-11-3	MW13-10-3	MW13-10-4	MW13-9-3	MW13-9-4	QC Batch
Calculated Parameters							
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.31	0.31	0.31	0.31	
Benzolaprene equivalency	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	
Polycyclic Aromatics							
Naphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	7371284
2-Methylnaphthalene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	7371284
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	7371284
Fluorene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Phenanthrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	0.0099	<0.0040	7371284
Fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Benzo(a)anthracene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Chrysene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Benzo(b&f)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Benzo(a)pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	7371284
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7371284
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7371284
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7371284
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7365792
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7365792
Total PAH	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	7365792
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	100	100	81	95	90	93
D8-ACENAPHTHYLENE (sur.)	%	85	92	89	97	92	94
D8-NAPHTHALENE (sur.)	%	96	104	98	106	101	103
TERPHENYL-D14 (sur.)	%	95	99	87	101	96	101

N/A = Not Applicable
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

Package 1 1.3°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7365860	Moisture	2014/01/31					<0.30	%	0	20
7366085	Moisture	2014/01/31					<0.30	%	13.8	20
7366595	1,4-Difluorobenzene (sur.)	2014/01/30	95	70 - 130	95	70 - 130	96	%		
7366595	4-BROMOFLUOROBENZENE (sur.)	2014/01/30	111	70 - 130	112	70 - 130	106	%		
7366595	D10-ETHYLBENZENE (sur.)	2014/01/30	97	50 - 130	90	50 - 130	97	%		
7366595	D4-1,2-DICHLOROETHANE (sur.)	2014/01/30	111	70 - 130	107	70 - 130	110	%		
7366595	Benzene	2014/01/31	104	60 - 140	102	60 - 140	<0.0050	mg/kg	NC	40
7366595	Toluene	2014/01/31	95	60 - 140	93	60 - 140	<0.020	mg/kg	NC	40
7366595	Ethylbenzene	2014/01/31	96	60 - 140	95	60 - 140	<0.010	mg/kg	NC	40
7366595	m & p-Xylene	2014/01/31	94	60 - 140	93	60 - 140	<0.040	mg/kg	NC	40
7366595	o-Xylene	2014/01/31	92	60 - 140	91	60 - 140	<0.040	mg/kg	NC	40
7366595	(C6-C10)	2014/01/31			91	60 - 140	<10	mg/kg	NC	40
7366595	Methyl-tert-butylether(MTBE)	2014/01/31					<0.10	mg/kg	NC	40
7366595	Styrene	2014/01/31					<0.030	mg/kg	NC	40
7366595	Xylenes (Total)	2014/01/31					<0.040	mg/kg	NC	40
7366685	Moisture	2014/02/01					<0.30	%	4.2	20
7367620	1,4-Difluorobenzene (sur.)	2014/01/31	95	70 - 130	97	70 - 130	102	%		
7367620	4-BROMOFLUOROBENZENE (sur.)	2014/01/31	99	70 - 130	99	70 - 130	102	%		
7367620	D10-ETHYLBENZENE (sur.)	2014/01/31	92	50 - 130	86	50 - 130	94	%		
7367620	D4-1,2-DICHLOROETHANE (sur.)	2014/01/31	91	70 - 130	97	70 - 130	102	%		
7367620	Benzene	2014/01/31	97	60 - 140	86	60 - 140	<0.0050	mg/kg	NC	40
7367620	Toluene	2014/01/31	103	60 - 140	87	60 - 140	<0.020	mg/kg	NC	40
7367620	Ethylbenzene	2014/01/31	106	60 - 140	90	60 - 140	<0.010	mg/kg	NC	40
7367620	m & p-Xylene	2014/01/31	100	60 - 140	85	60 - 140	<0.040	mg/kg	NC	40
7367620	o-Xylene	2014/01/31	100	60 - 140	85	60 - 140	<0.040	mg/kg	NC	40
7367620	(C6-C10)	2014/01/31			96	60 - 140	<10	mg/kg		
7367620	Methyl-tert-butylether(MTBE)	2014/01/31					<0.10	mg/kg		
7367620	Styrene	2014/01/31					<0.030	mg/kg		
7367620	Xylenes (Total)	2014/01/31					<0.040	mg/kg	NC	40
7371274	O-TERPHENYL (sur.)	2014/02/04	95	50 - 130	93	50 - 130	107	%		
7371274	EPH (C10-C19)	2014/02/04	91	50 - 130	93	50 - 130	<100	mg/kg	NC	40
7371274	EPH (C19-C32)	2014/02/04	92	50 - 130	93	50 - 130	<100	mg/kg	NC	40
7371284	D10-ANTHRACENE (sur.)	2014/02/05	90	60 - 130	119	60 - 130	124	%		
7371284	D8-ACENAPHTHYLENE (sur.)	2014/02/05	86	50 - 130	93	50 - 130	104	%		
7371284	D8-NAPHTHALENE (sur.)	2014/02/05	95	50 - 130	101	50 - 130	116	%		
7371284	TERPHENYL-D14 (sur.)	2014/02/05	90	60 - 130	111	60 - 130	128	%		
7371284	Naphthalene	2014/02/05	89	50 - 130	91	50 - 130	<0.010	mg/kg	NC	50
7371284	2-Methylnaphthalene	2014/02/05	91	50 - 130	93	50 - 130	<0.020	mg/kg	NC	50
7371284	Acenaphthylene	2014/02/05	88	50 - 130	89	50 - 130	<0.0050	mg/kg	NC	50

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Location: LOWER POST, BC
Your P.O. #: 700266127
Sampler Initials: VR

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7371284	Acenaphthene	2014/02/05	89	50 - 130	91	50 - 130	<0.0050	mg/kg	NC	50
7371284	Fluorene	2014/02/05	90	50 - 130	89	50 - 130	<0.020	mg/kg	NC	50
7371284	Phenanthrene	2014/02/05	77	60 - 130	90	60 - 130	<0.020	mg/kg	NC	50
7371284	Anthracene	2014/02/05	97	60 - 130	106	60 - 130	<0.0040	mg/kg	NC	50
7371284	Fluoranthene	2014/02/05	97	60 - 130	114	60 - 130	<0.020	mg/kg	NC	50
7371284	Pyrene	2014/02/05	92	60 - 130	108	60 - 130	<0.020	mg/kg	NC	50
7371284	Benzo(a)anthracene	2014/02/05	81	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7371284	Chrysene	2014/02/05	87	60 - 130	92	60 - 130	<0.020	mg/kg	NC	50
7371284	Benzo(b)fluoranthene	2014/02/05	96	60 - 130	77	60 - 130	<0.020	mg/kg	NC	50
7371284	Benzo(k)fluoranthene	2014/02/05	94	60 - 130	97	60 - 130	<0.020	mg/kg	NC	50
7371284	Benzo(a)pyrene	2014/02/05	88	60 - 130	91	60 - 130	<0.020	mg/kg	NC	50
7371284	Indeno(1,2,3-cd)pyrene	2014/02/05	84	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50
7371284	Dibenz(a,h)anthracene	2014/02/05	83	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50
7371284	Benzo(g,h,i)perylene	2014/02/05	79	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7371284	Benzo(b)fluoranthene	2014/02/05					<0.020	mg/kg	NC	N/A
7372323	O-TERPHENYL (sur.)	2014/02/05	106	50 - 130	88	50 - 130	109	%		
7372323	F2 (C10-C16 Hydrocarbons)	2014/02/05	112	50 - 130	105	80 - 120	<10	mg/kg	NC	40
7372323	F3 (C16-C34 Hydrocarbons)	2014/02/05	108	50 - 130	105	80 - 120	<10	mg/kg	NC	40
7372323	F4 (C34-C50 Hydrocarbons)	2014/02/05	109	50 - 130	107	80 - 120	<10	mg/kg	NC	40
7372323	Reached Baseline at C50	2014/02/05					YES, RDL=N/A	mg/kg	NC	50

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.


Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B407541

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



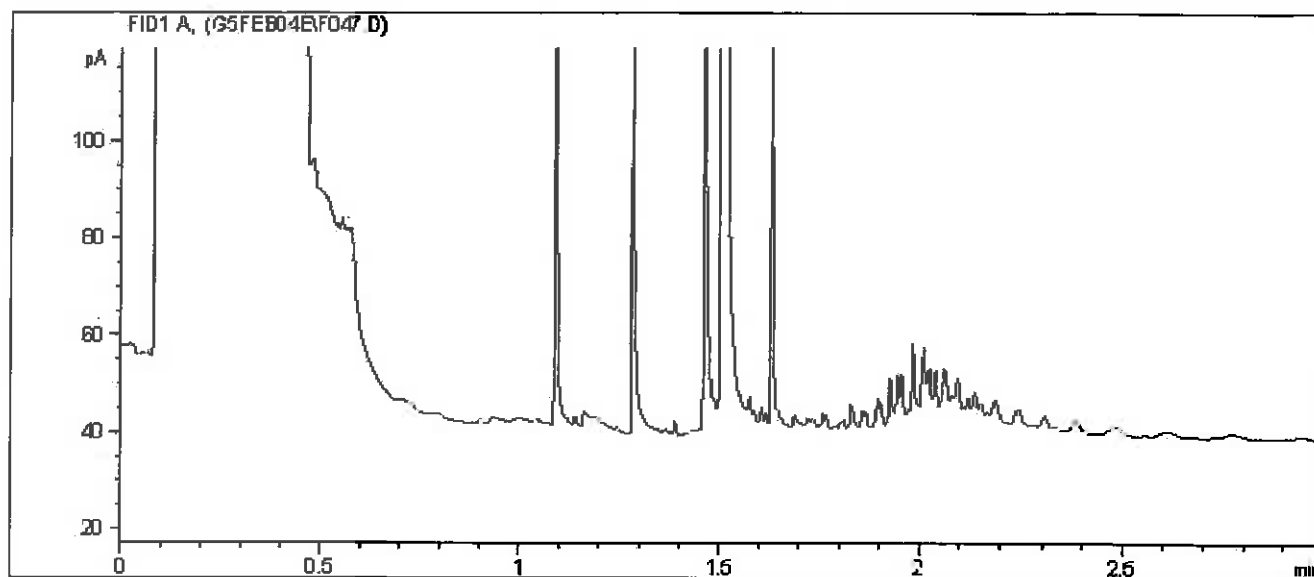
Andy Lu, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

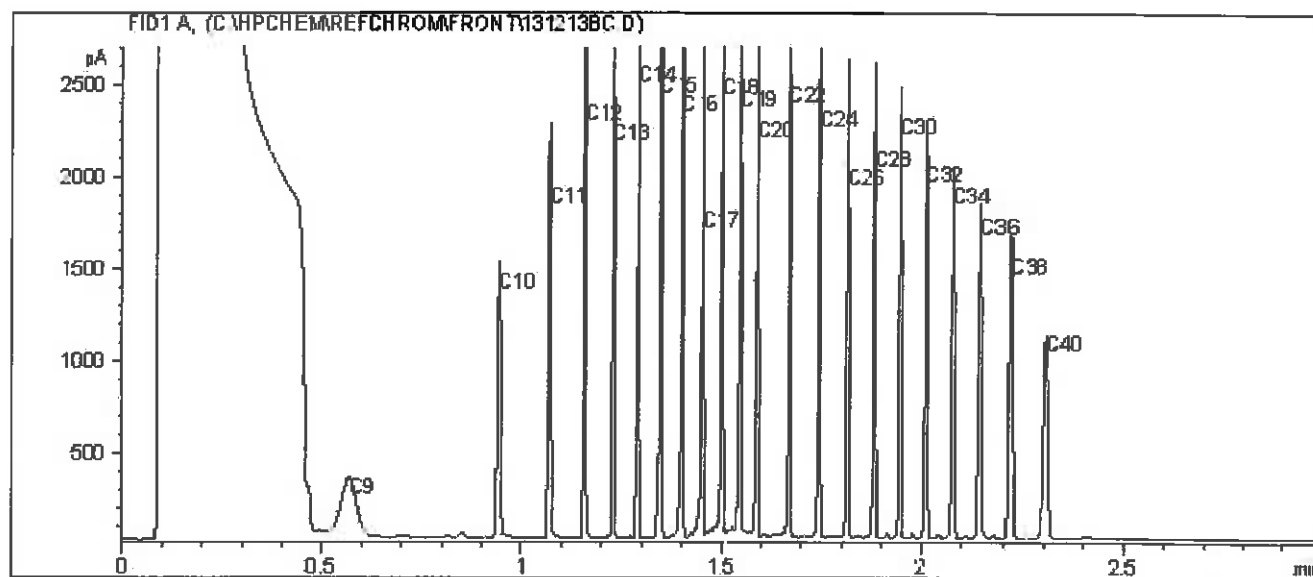
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4072

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-11-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



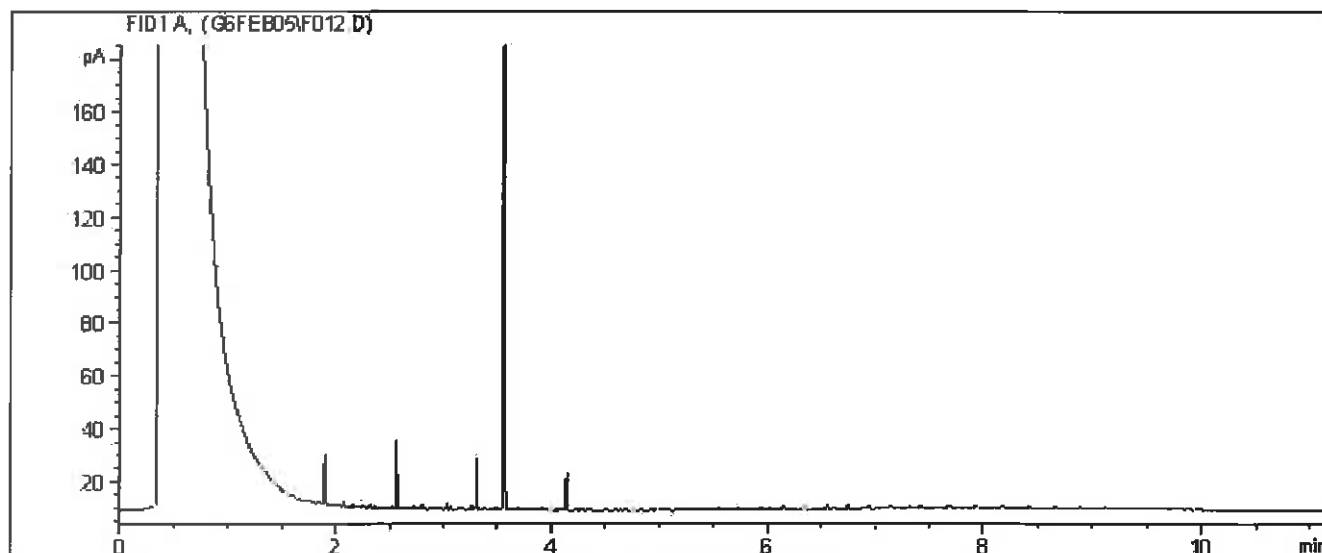
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

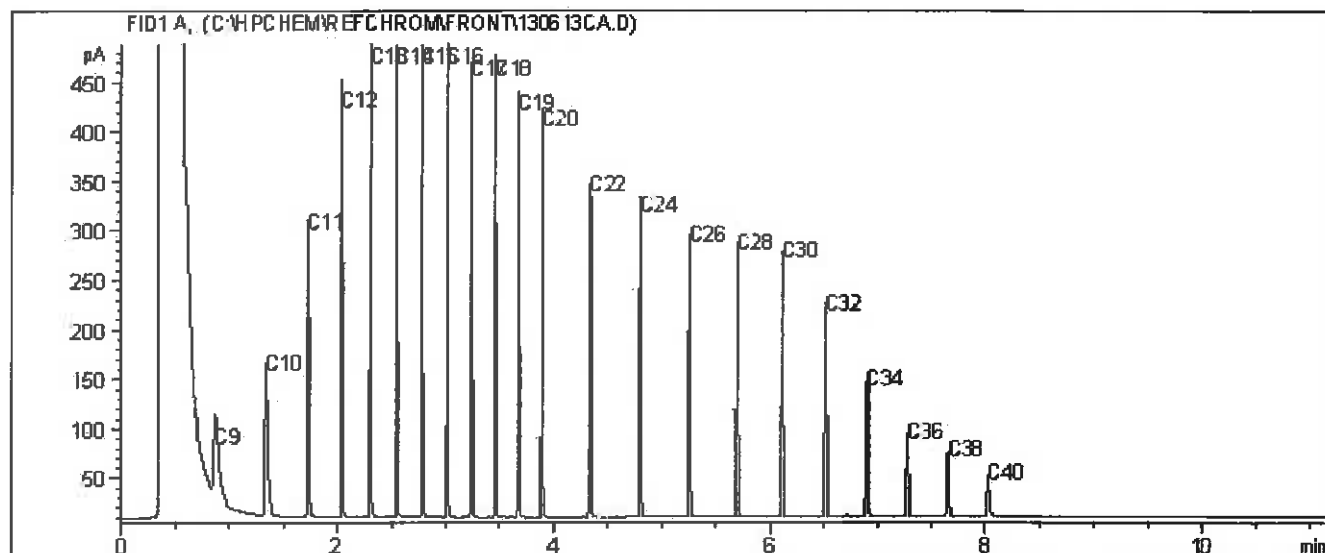
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4072

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-11-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

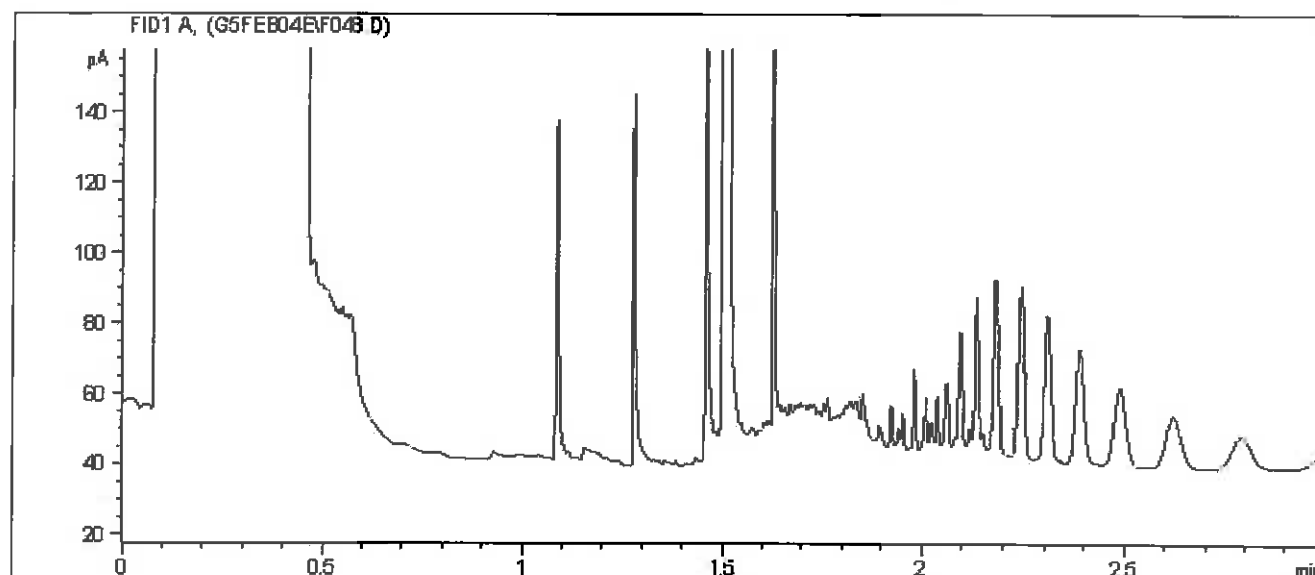
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

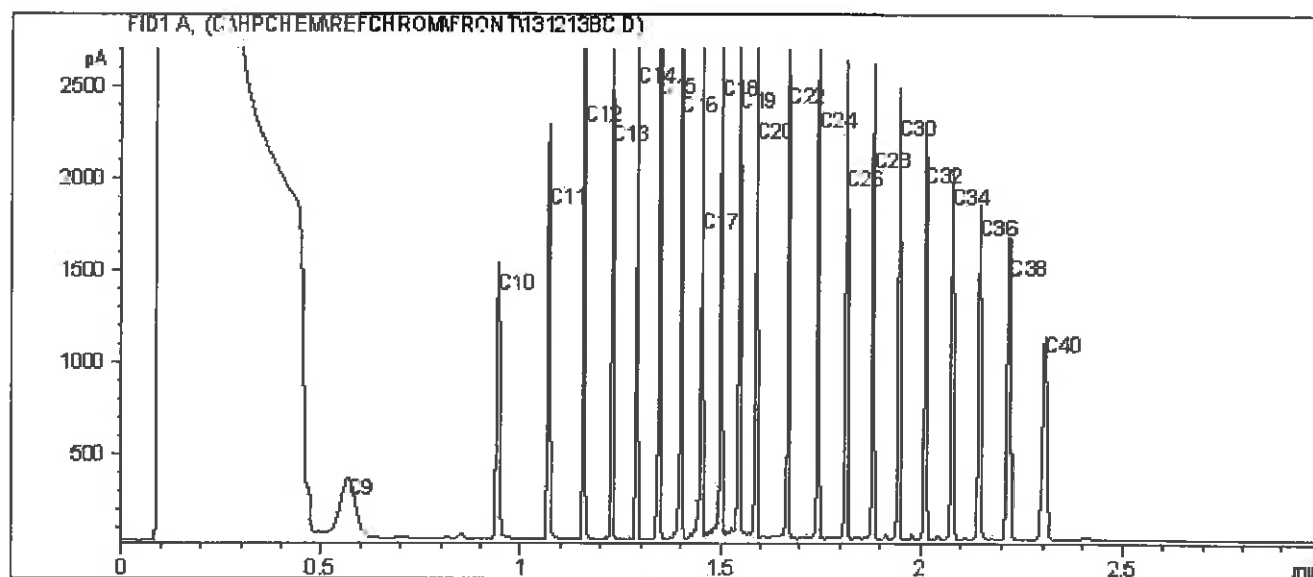
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4073

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: DUP 6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



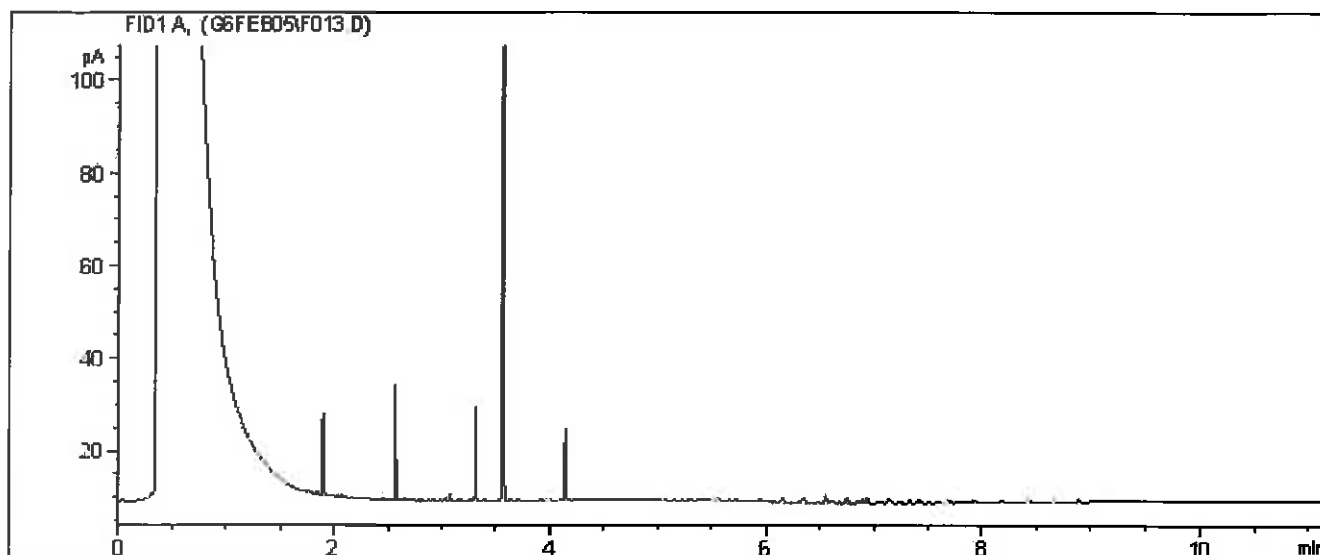
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

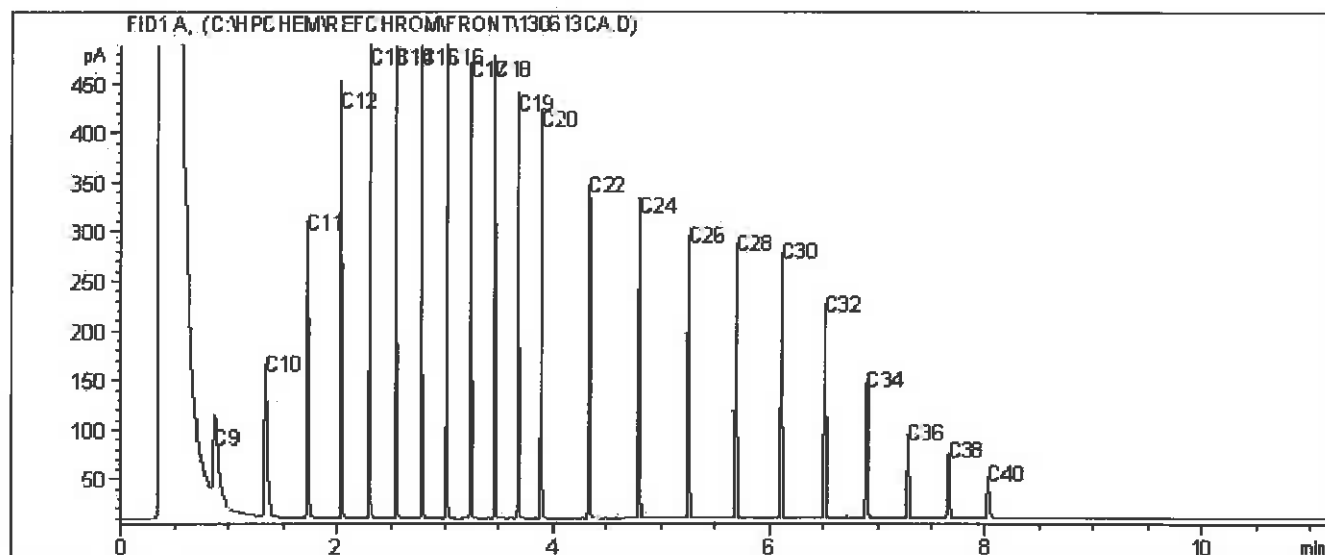
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4073

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: DUP 6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution -- Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

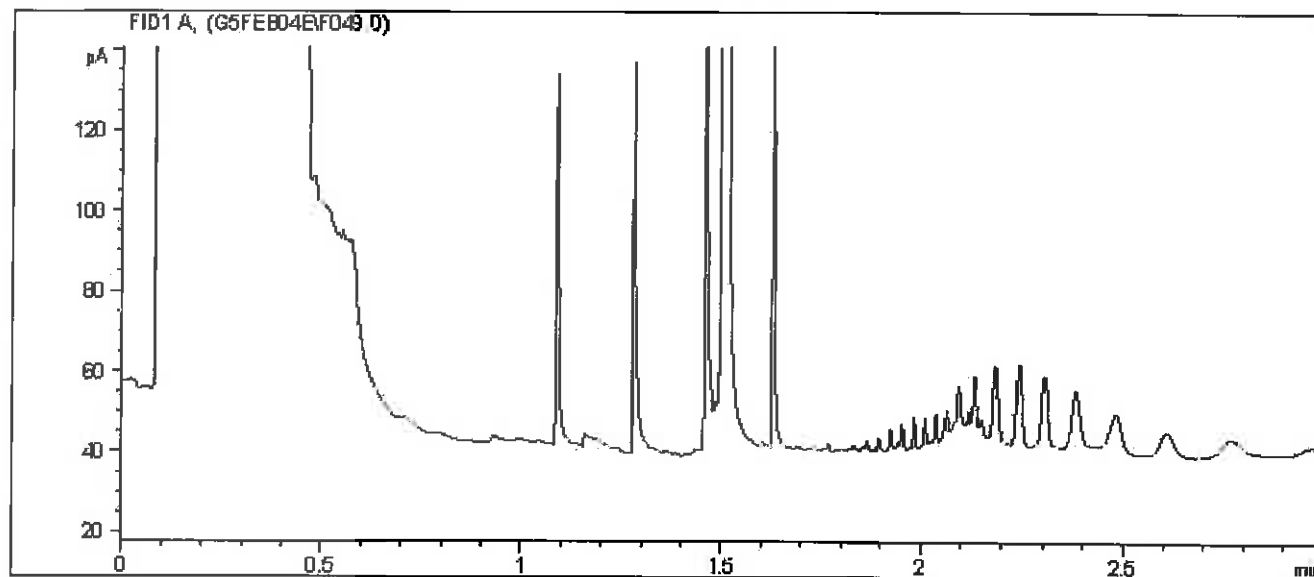
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

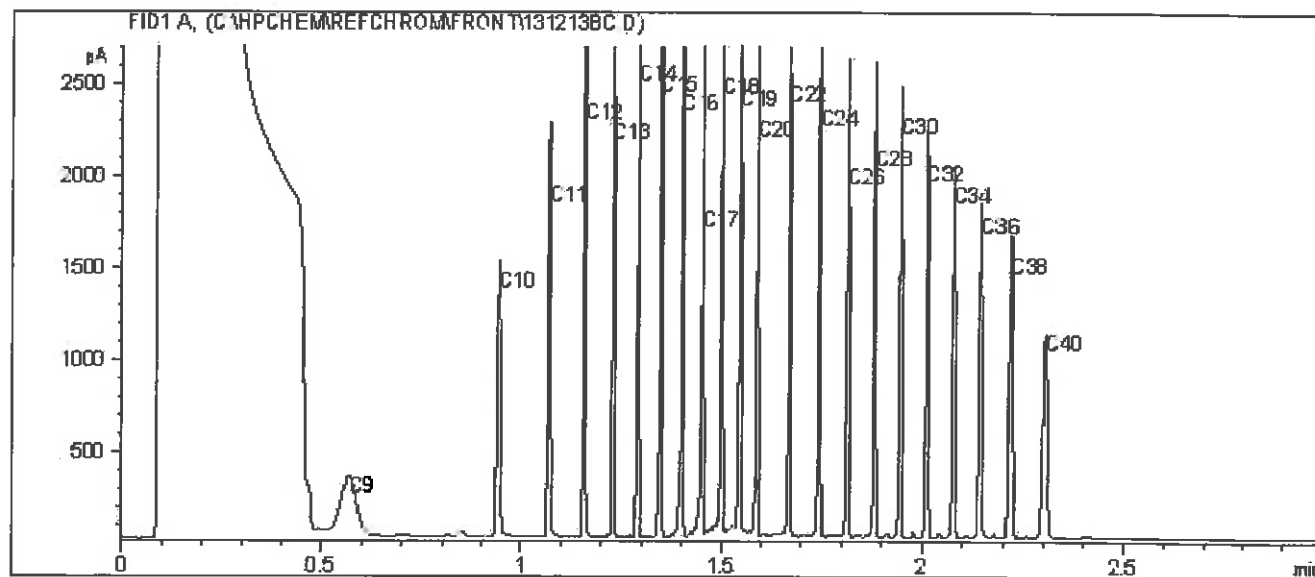
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4074

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-15-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



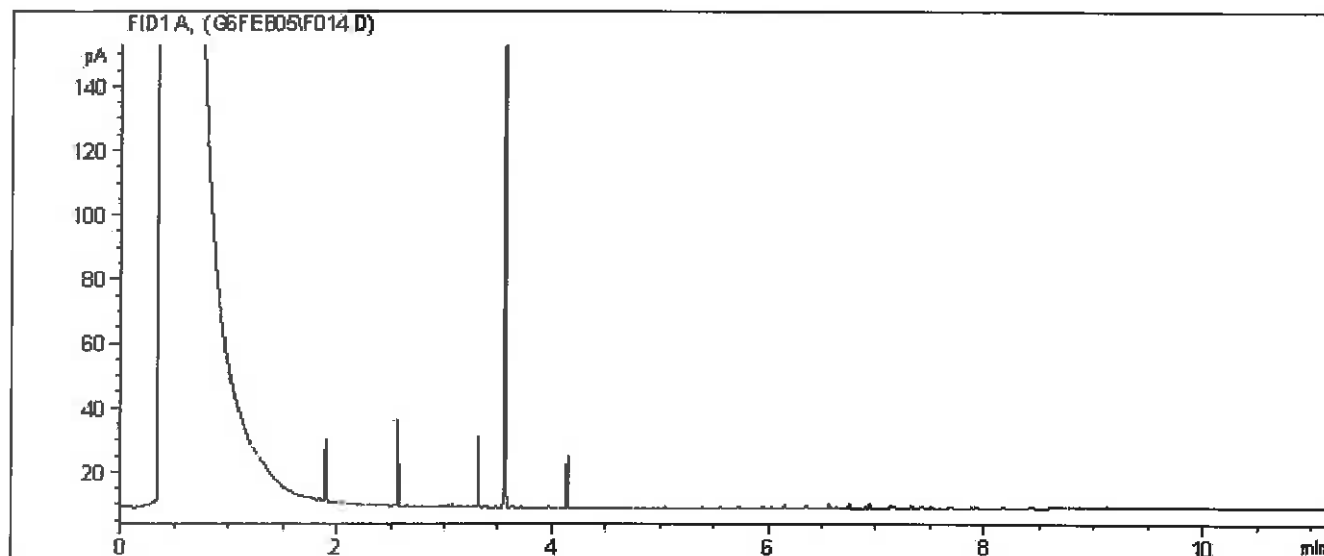
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

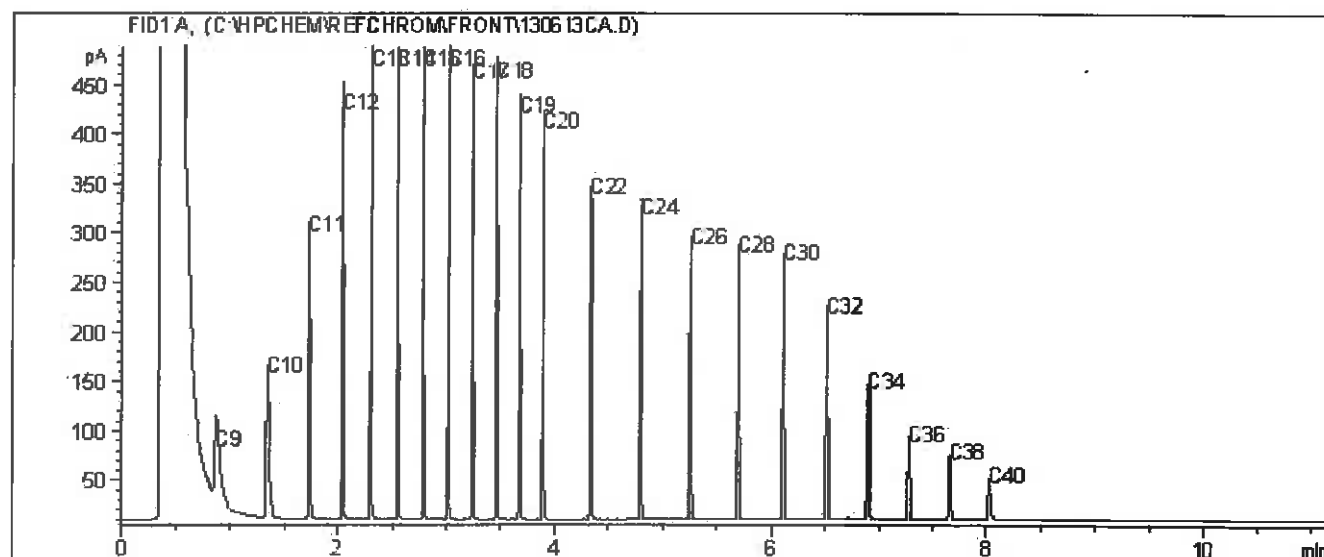
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4074

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-15-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

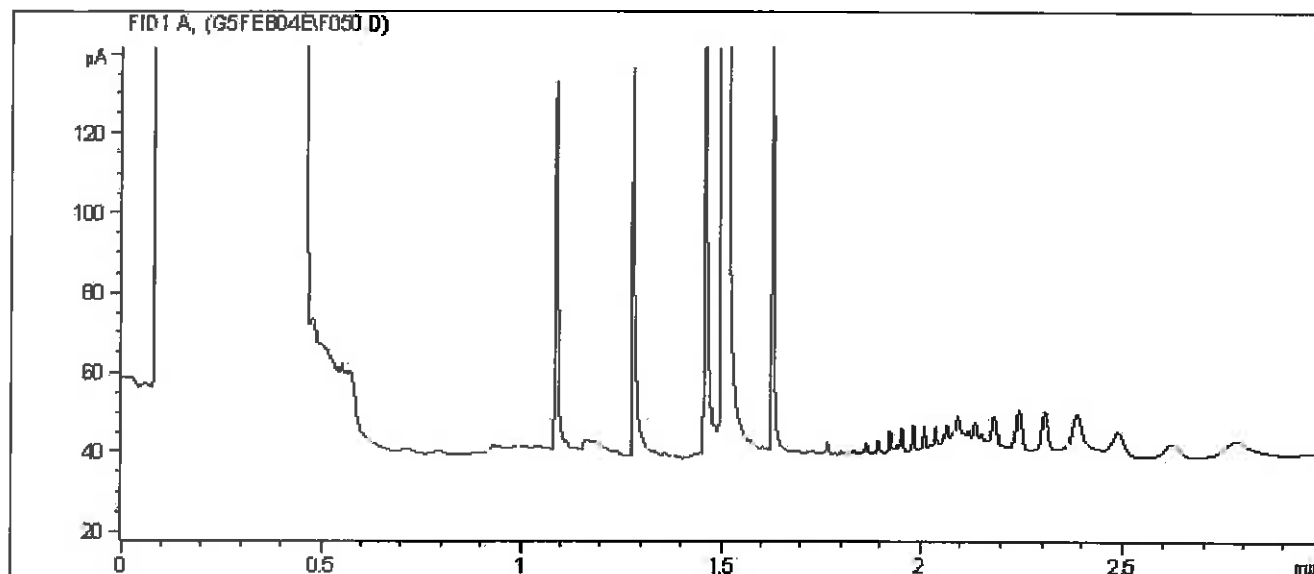
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

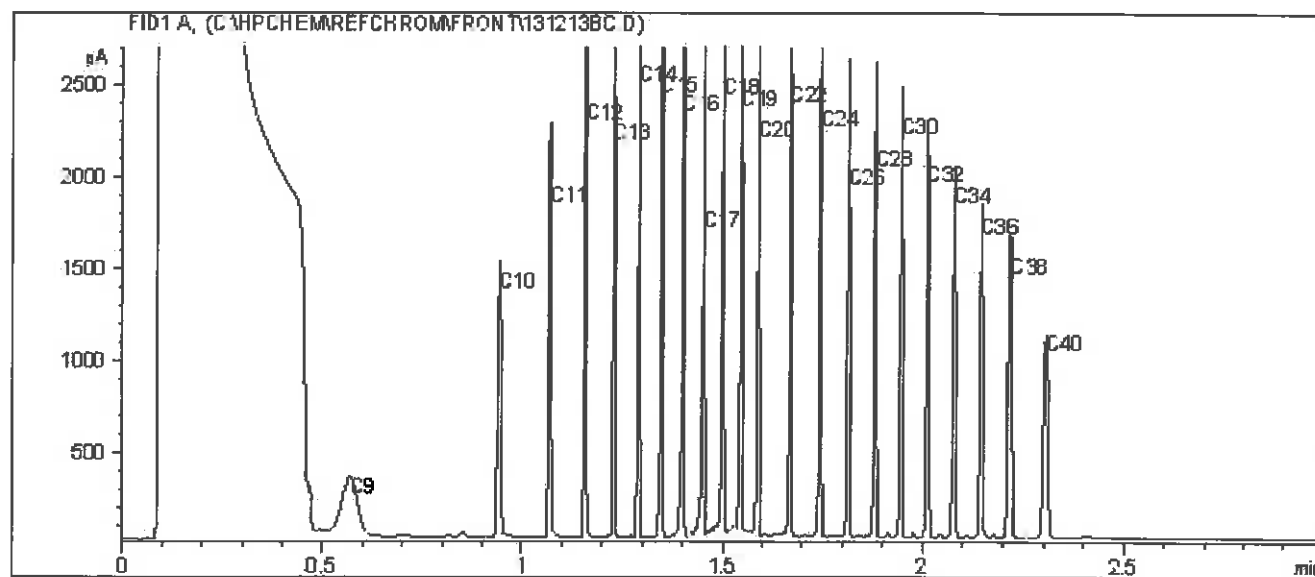
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4075

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-15-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



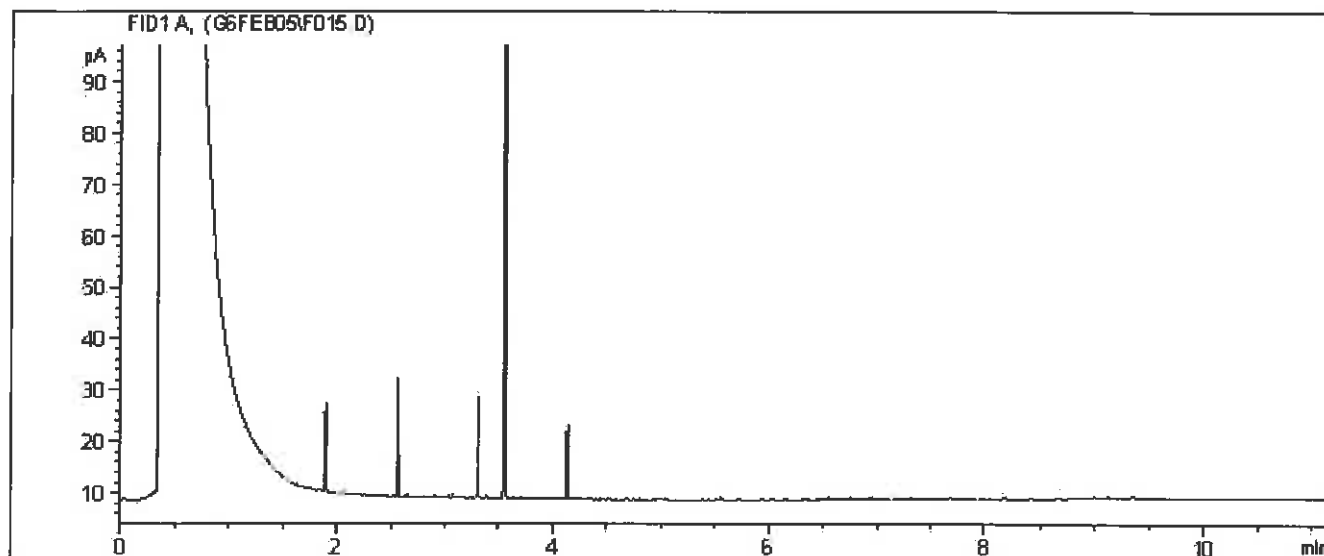
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

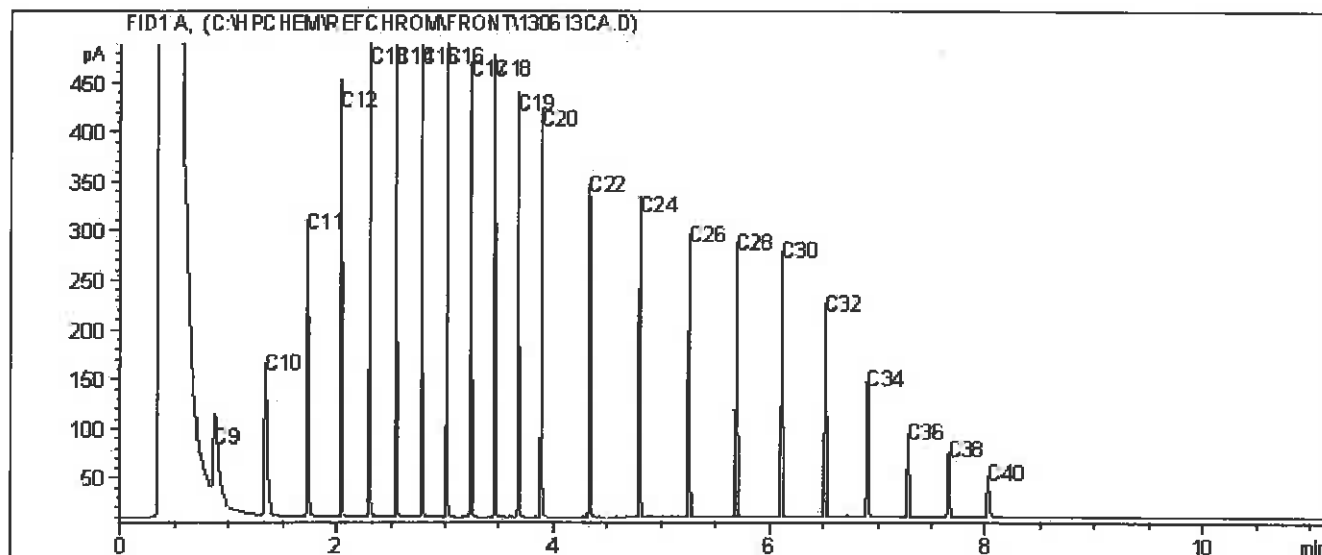
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4075

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-15-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

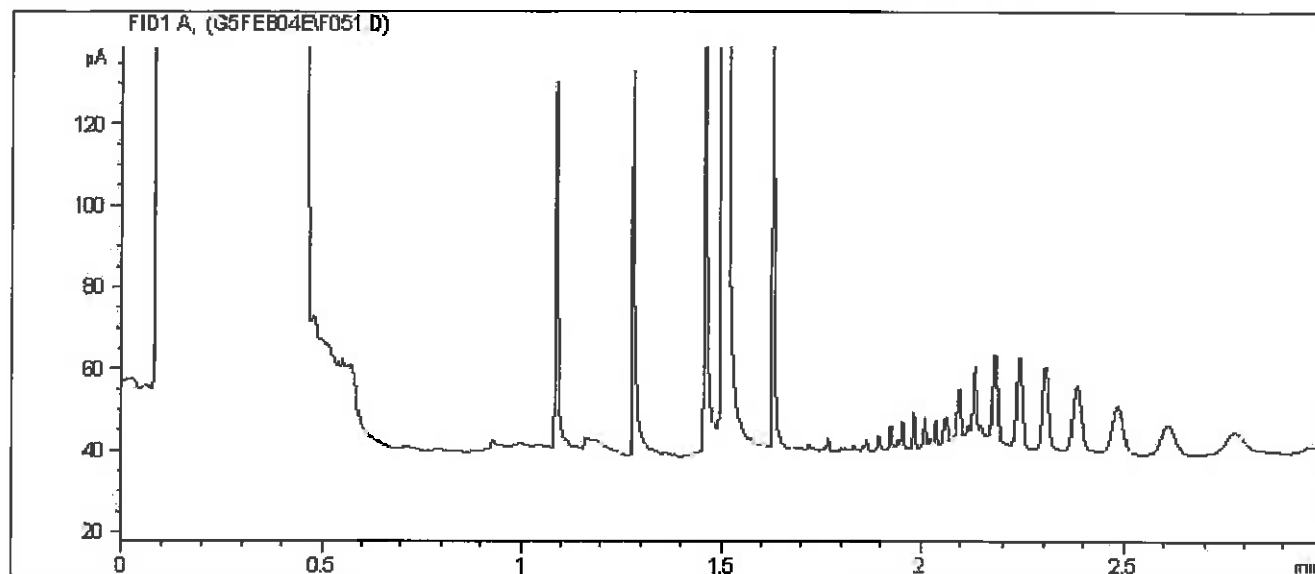
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

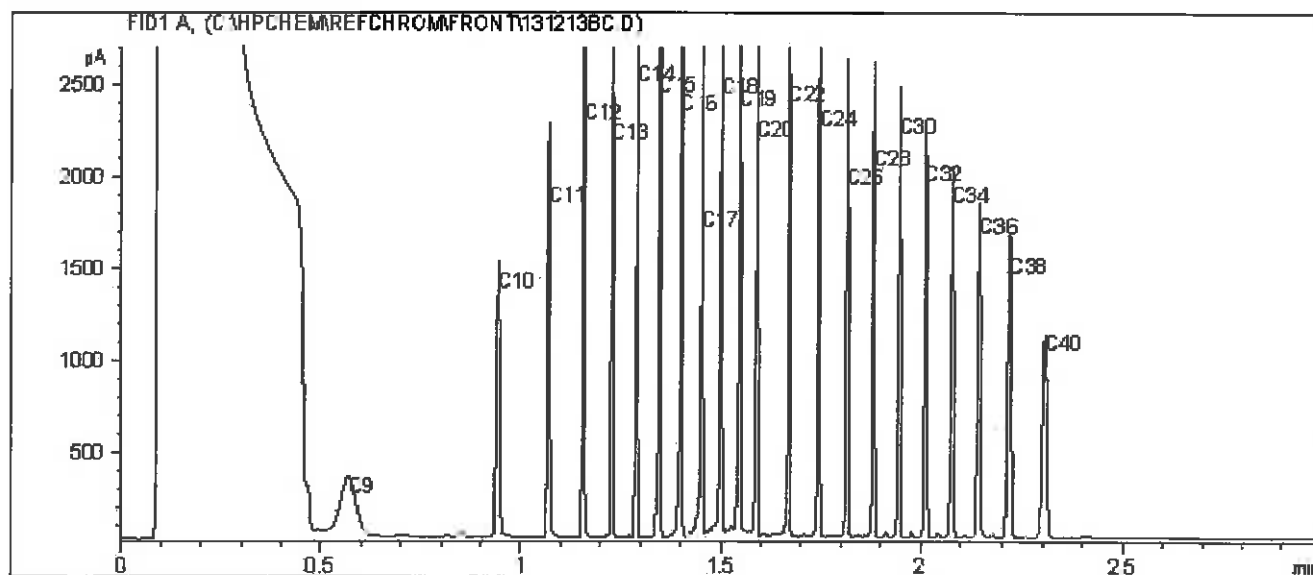
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4076

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-13-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



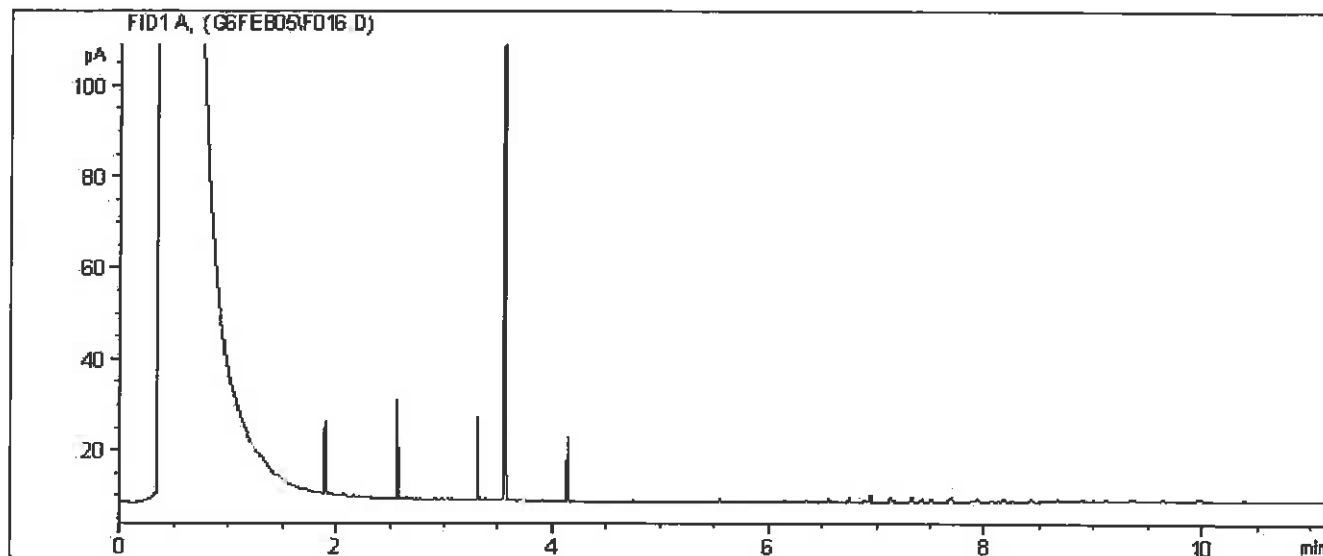
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

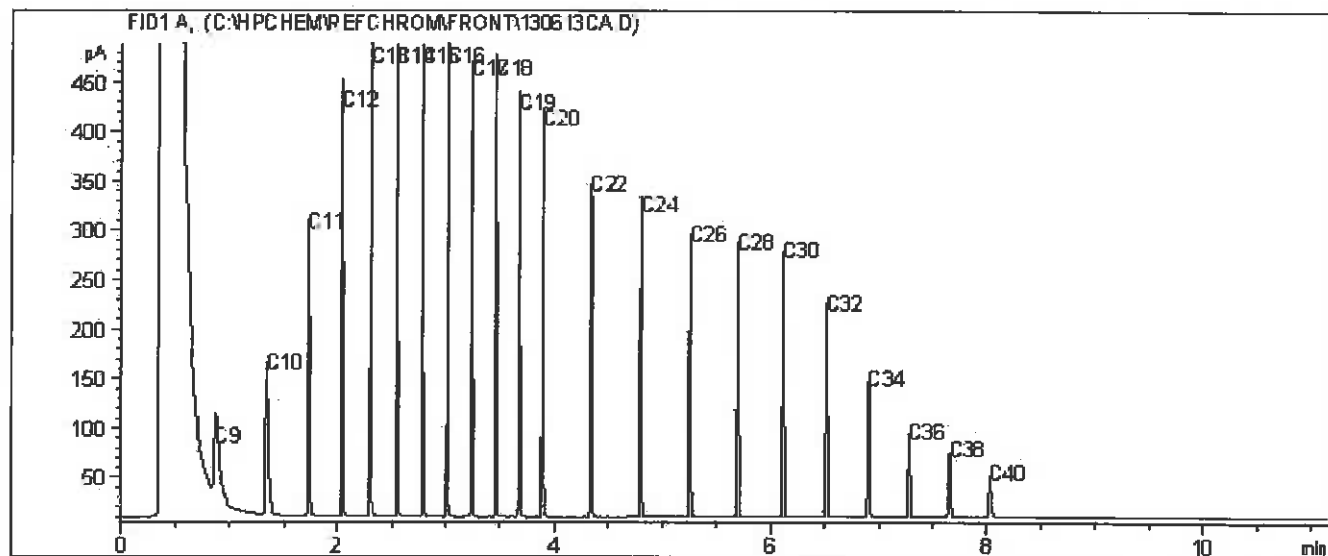
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4076

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-13-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

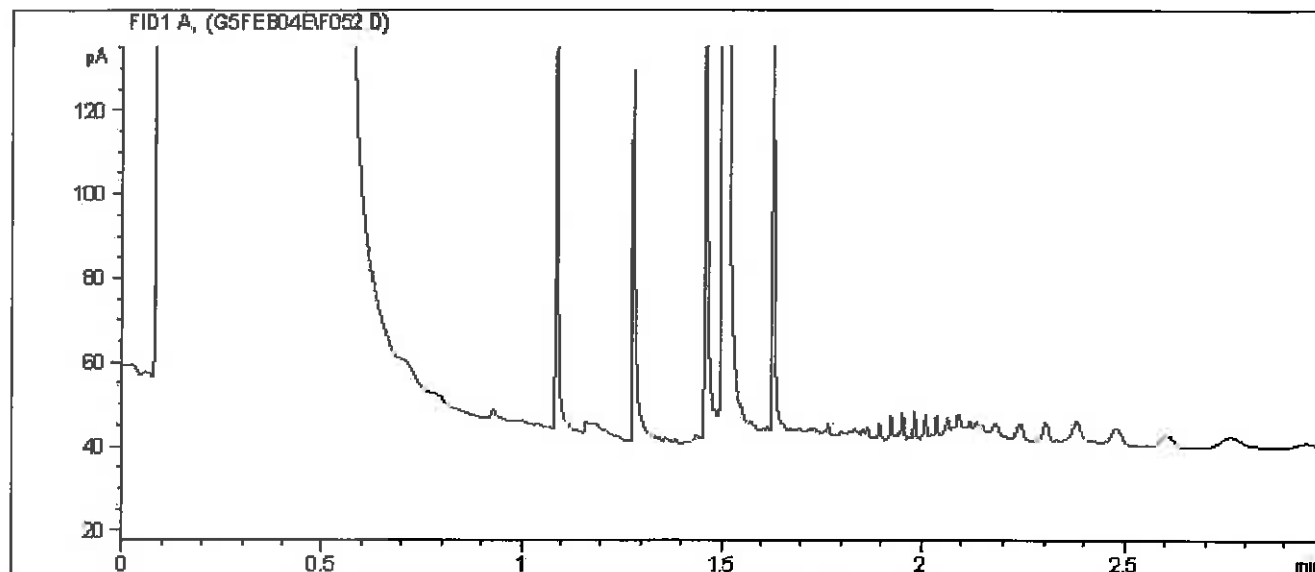
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

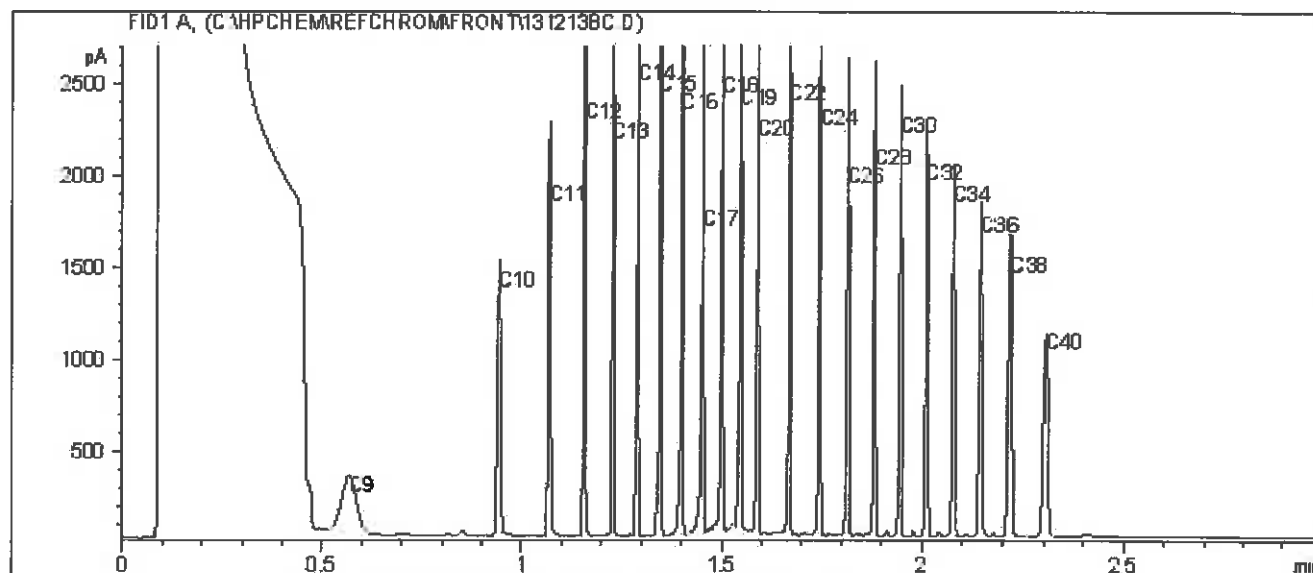
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4077

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-13-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



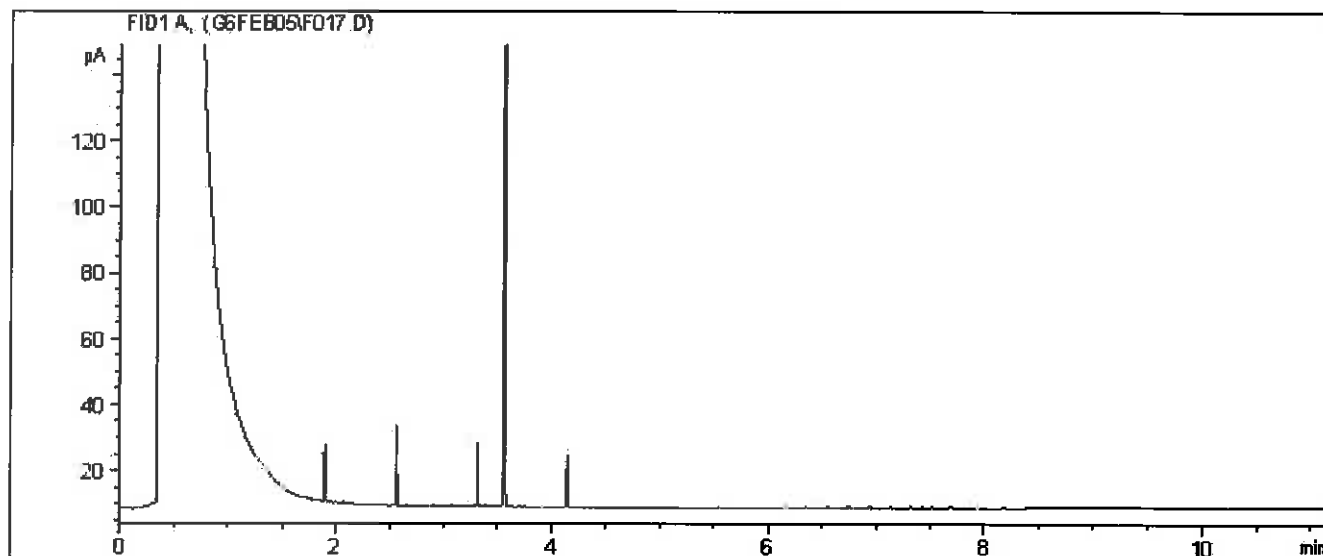
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

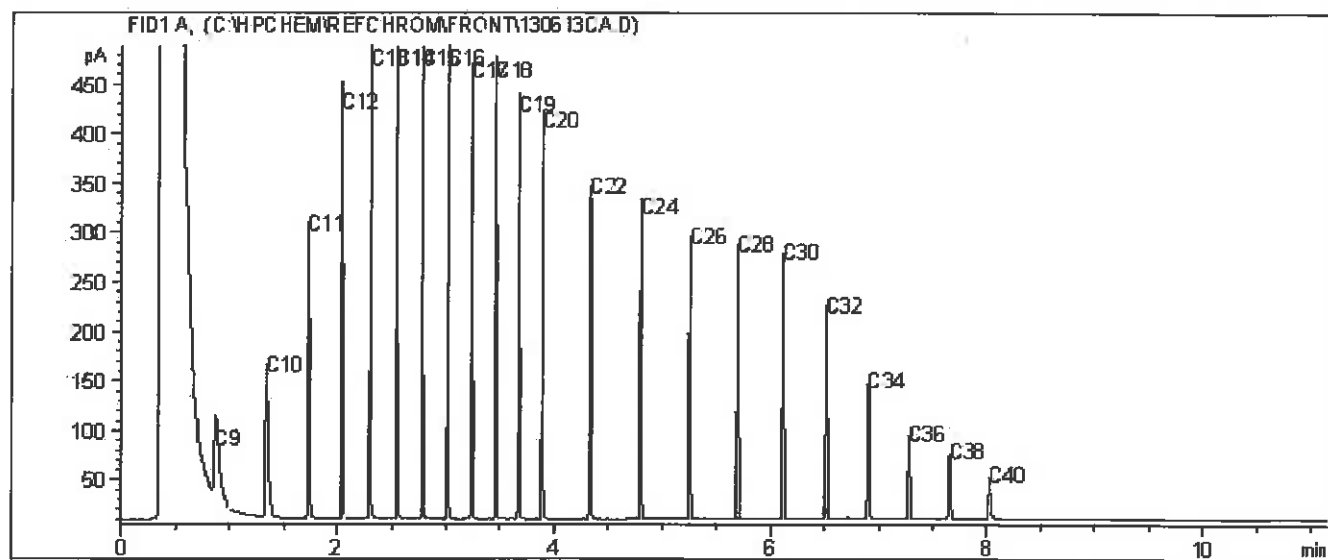
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4077

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-13-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

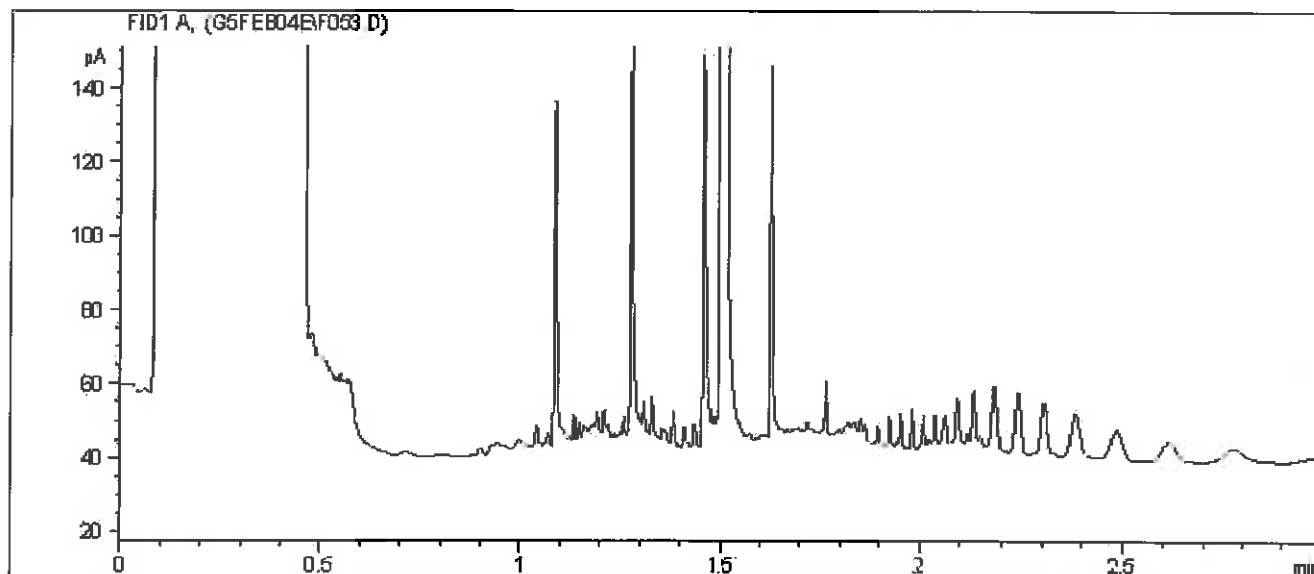
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

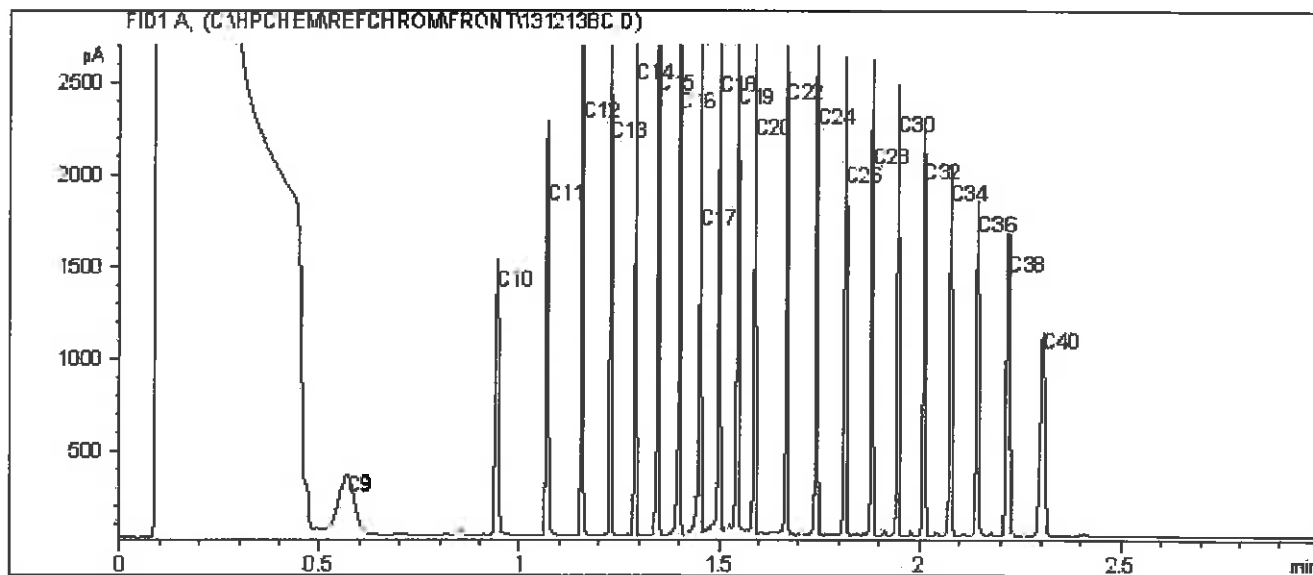
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4078

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: DUP 7

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



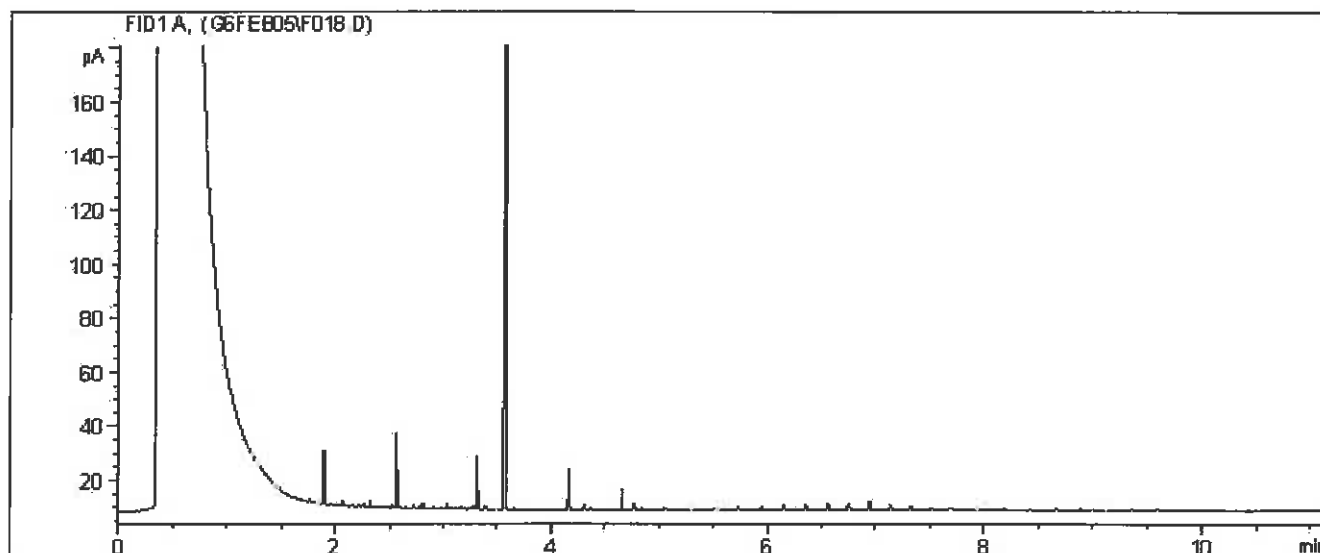
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

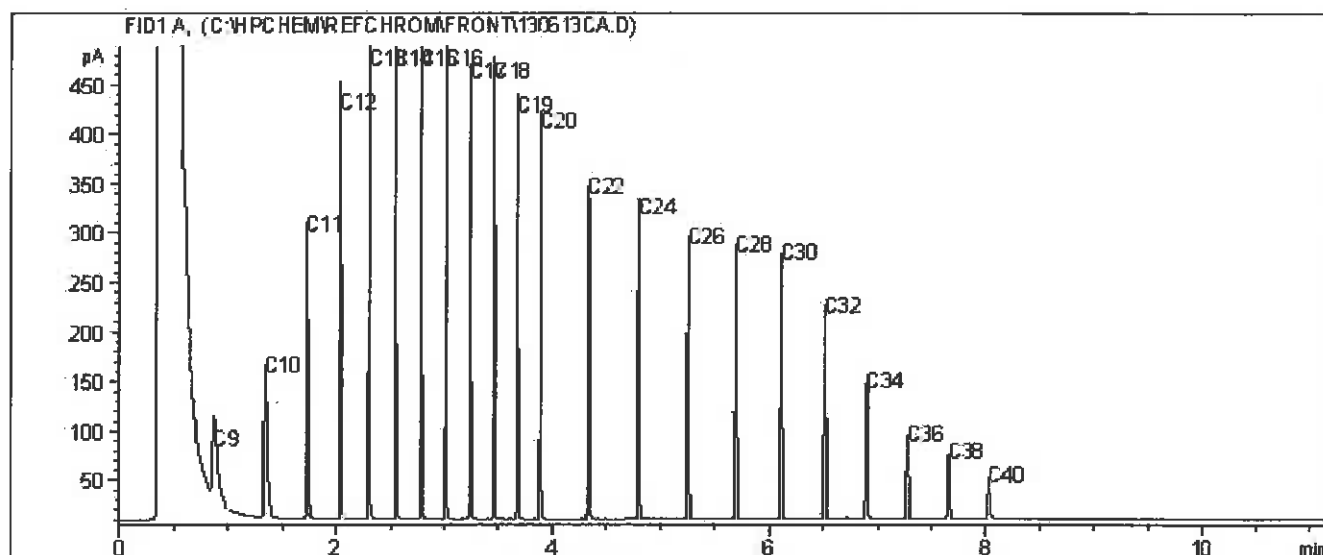
Report Date: 2014/02/06
 Maxxam Job #: B407541
 Maxxam Sample: IO4078

FRANZ ENVIRONMENTAL INC.
 Client Project #: 00069
 Site Reference: LOWER POST, BC
 Client ID: DUP 7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
 Varsol: C8 - C12

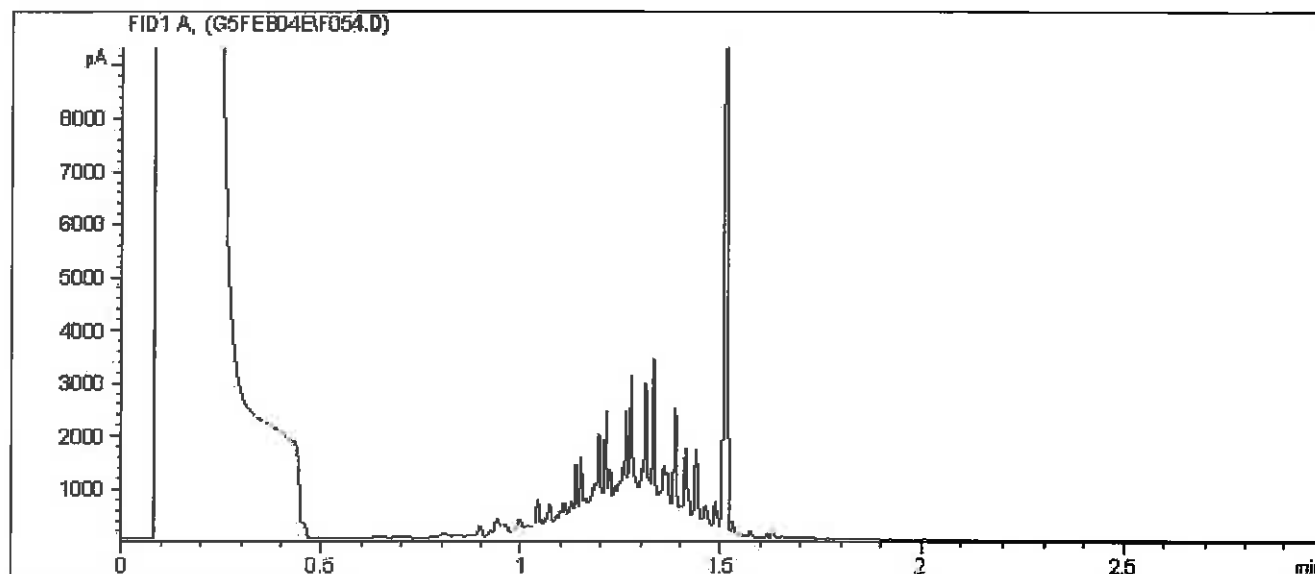
Diesel: C8 - C22
 Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

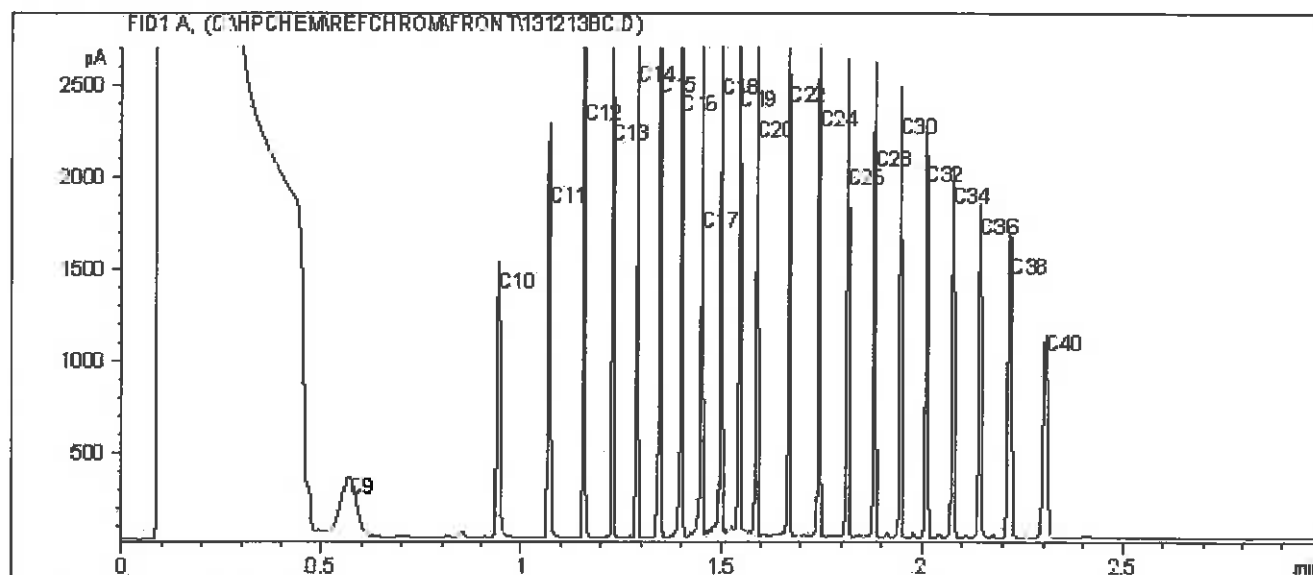
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4079

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-12-6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



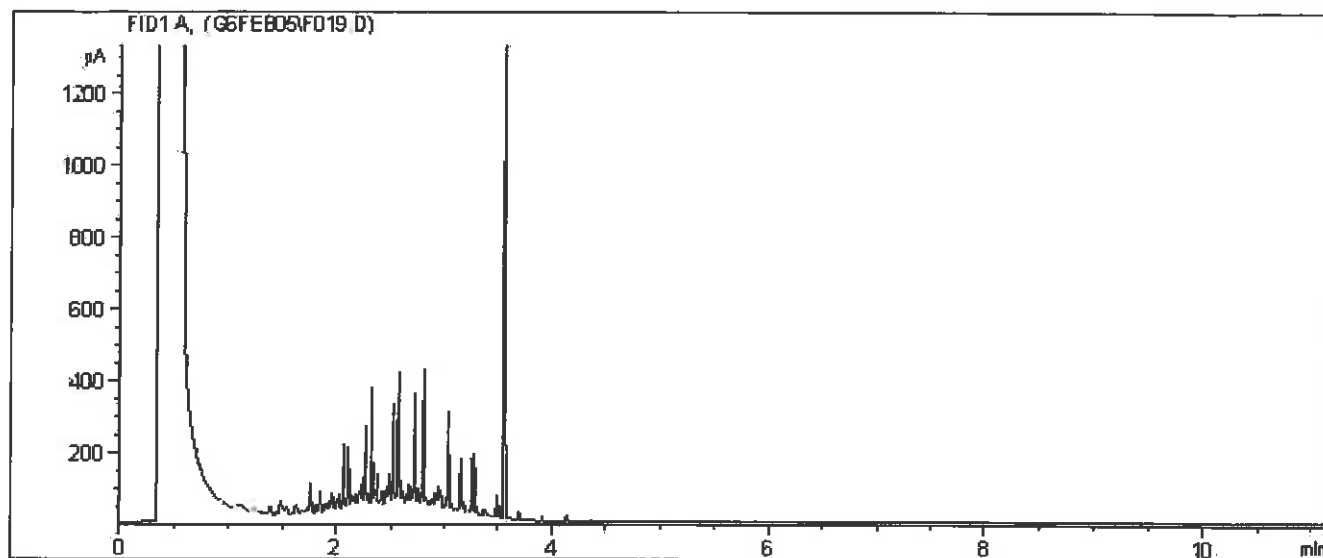
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

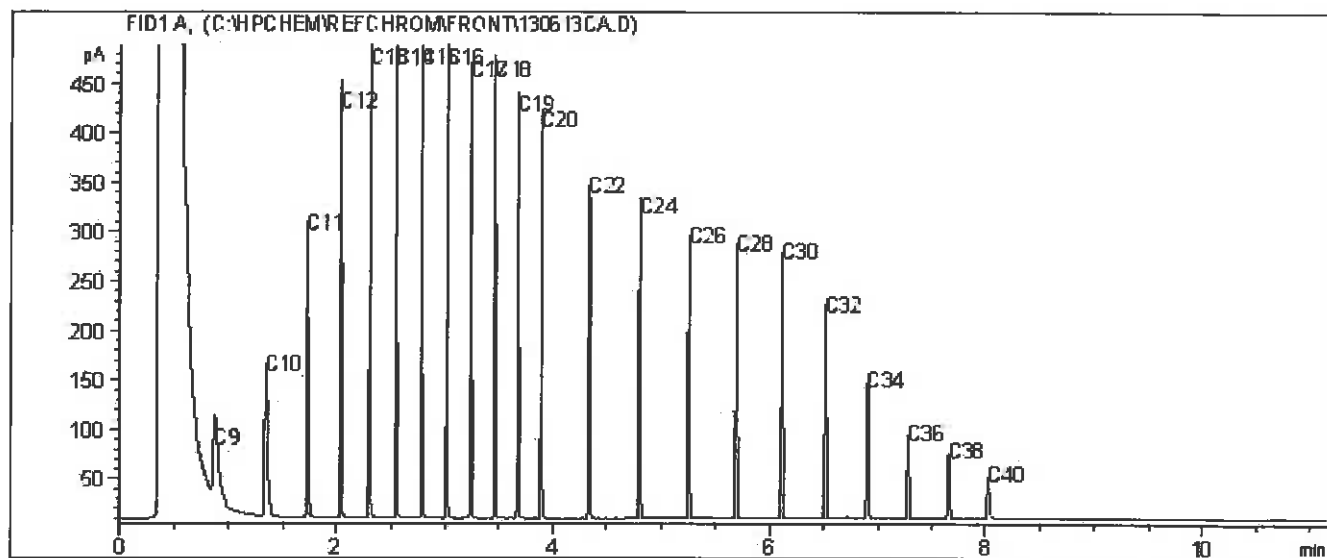
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4079

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-12-6

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

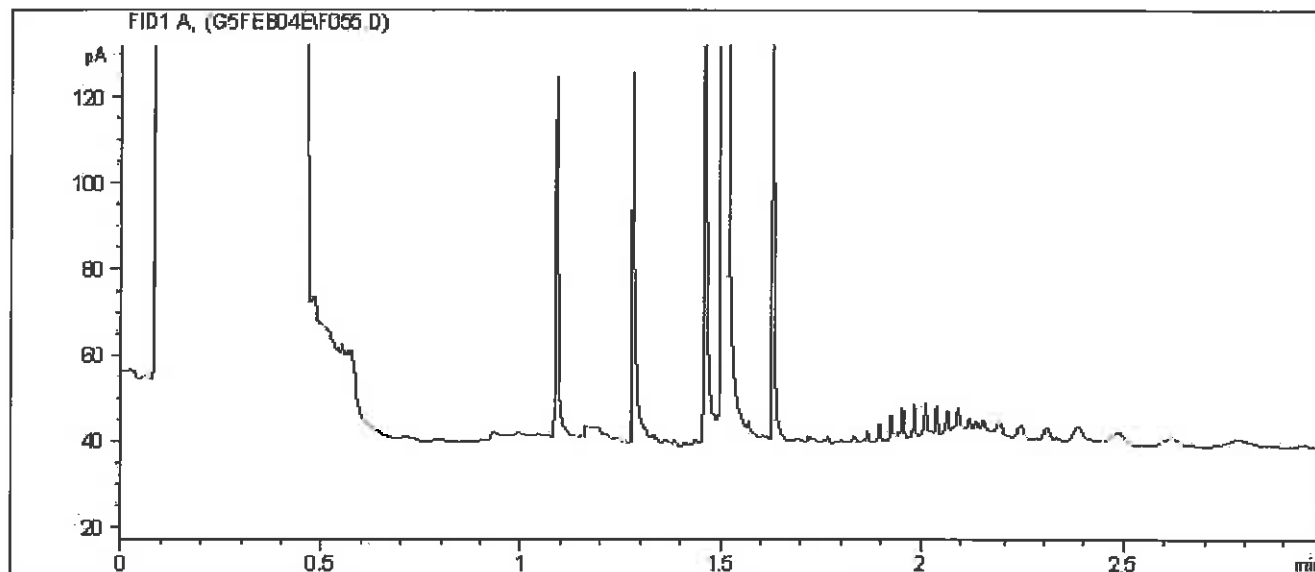
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

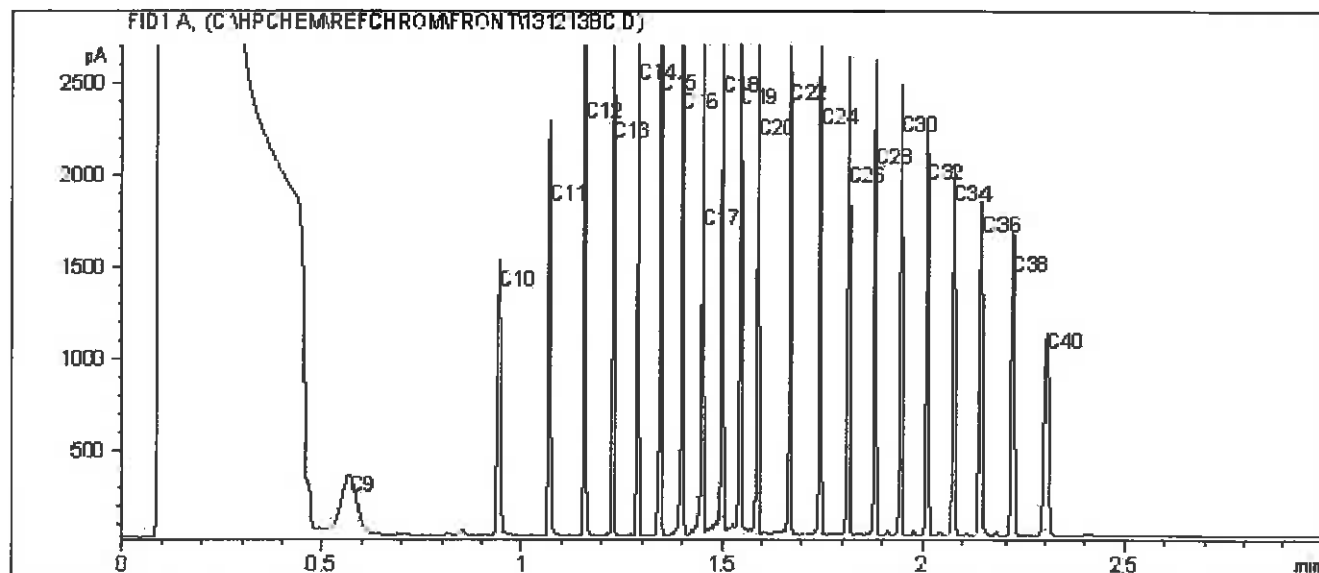
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4080

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-12-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



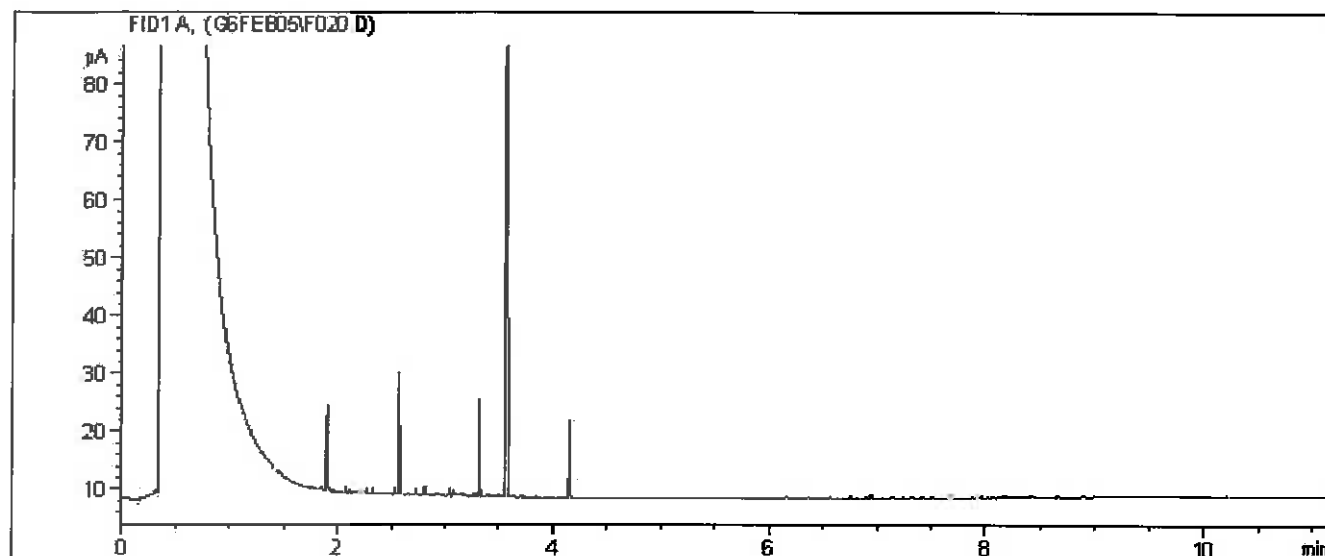
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

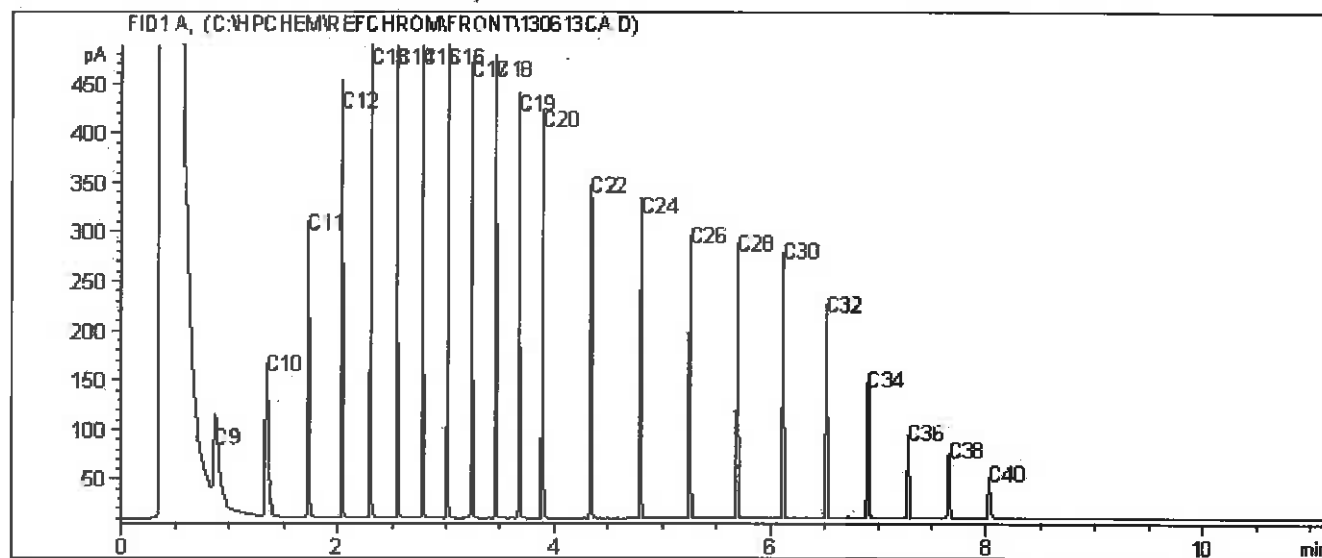
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4080

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: BH13-12-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

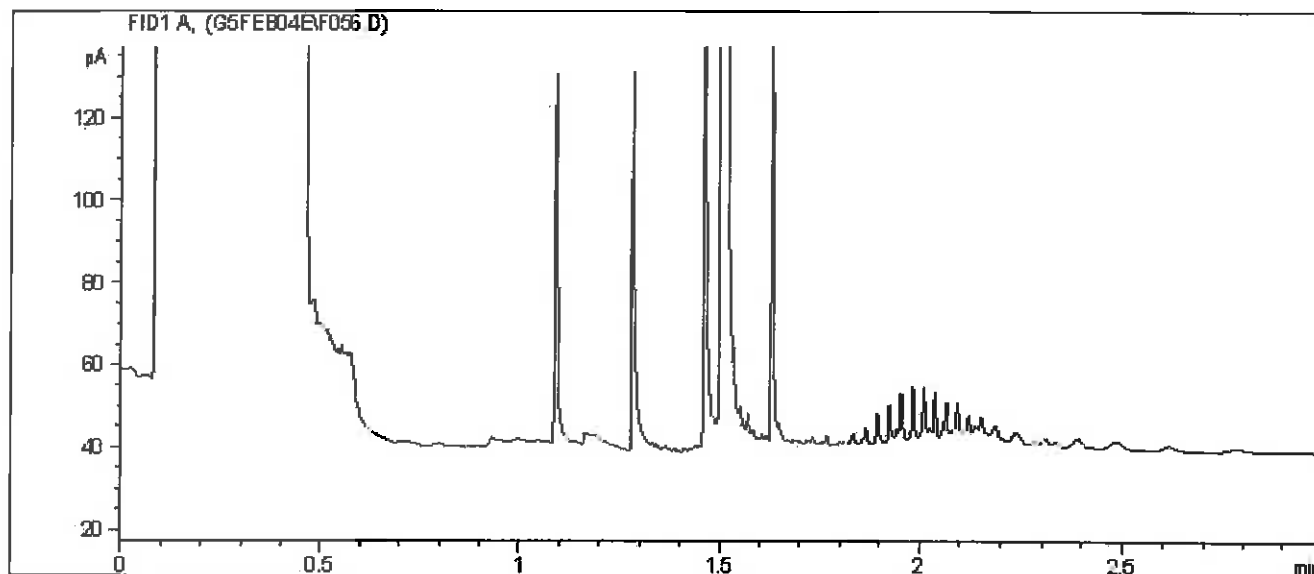
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

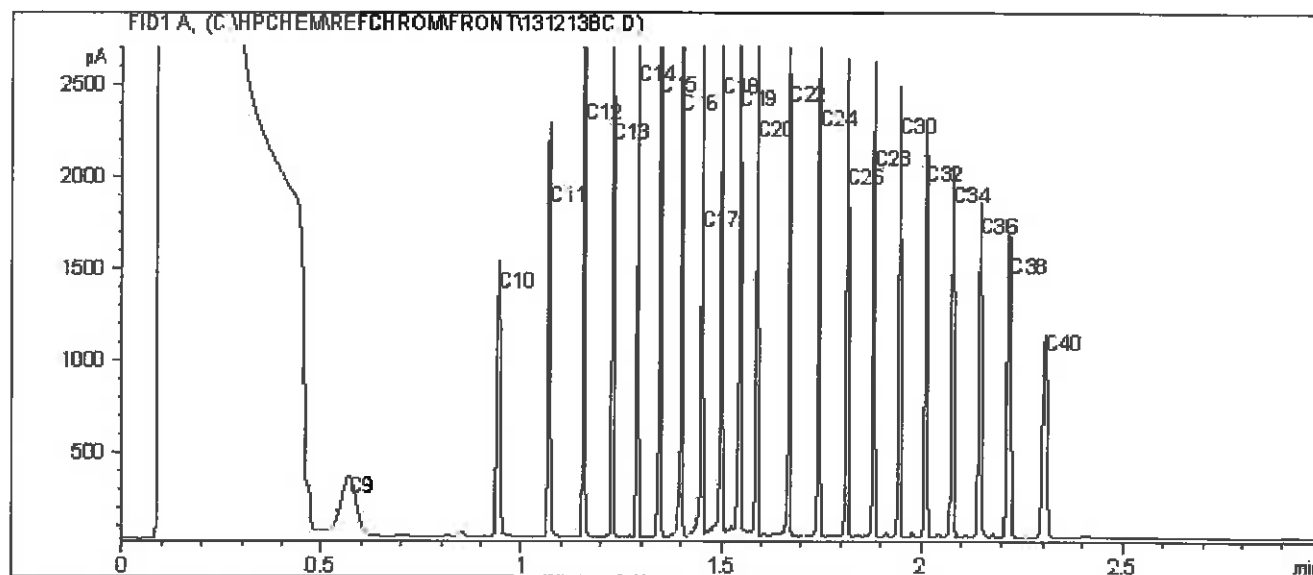
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4081

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-11-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



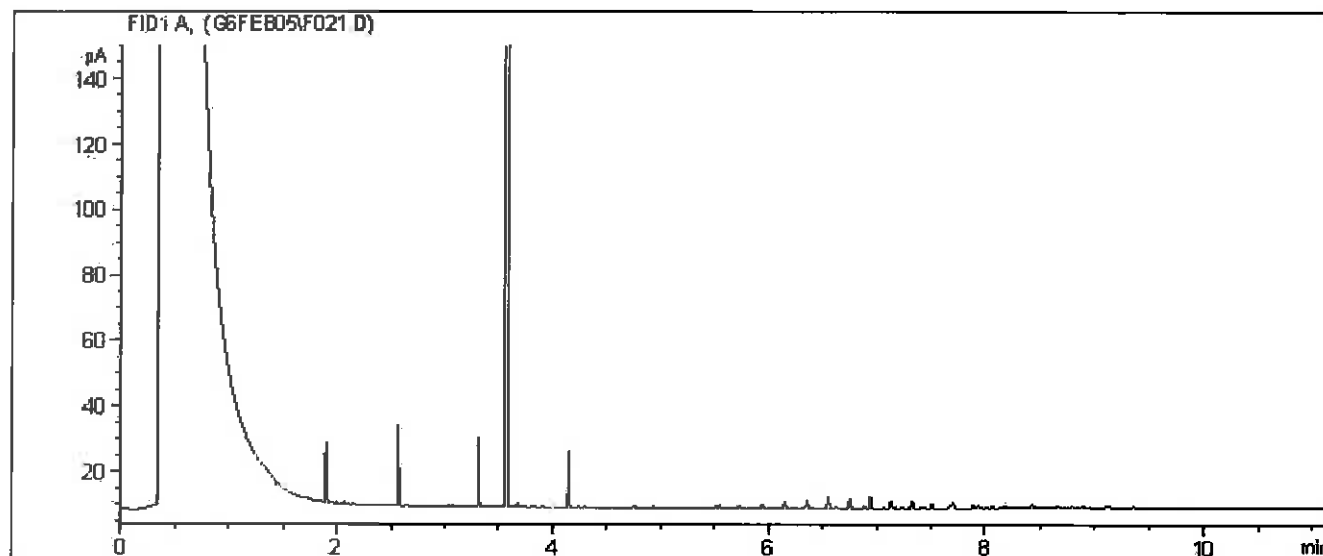
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

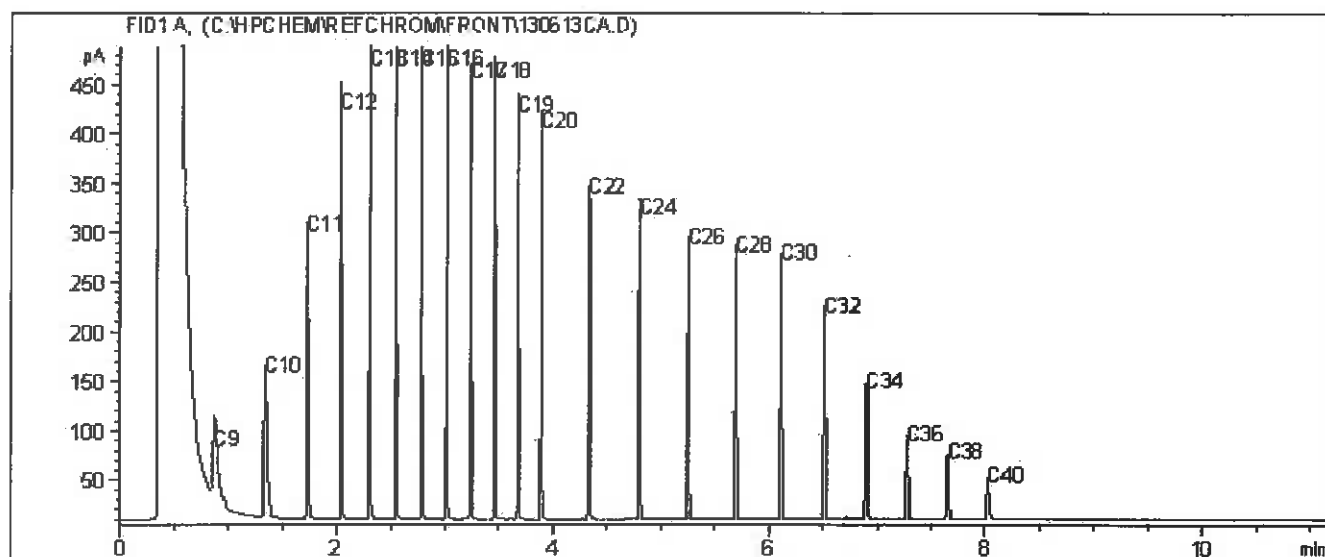
Report Date: 2014/02/06
 Maxxam Job #: B407541
 Maxxam Sample: IO4081

FRANZ ENVIRONMENTAL INC.
 Client Project #: 00069
 Site Reference: LOWER POST, BC
 Client ID: MW13-11-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
 Varsol: C8 - C12

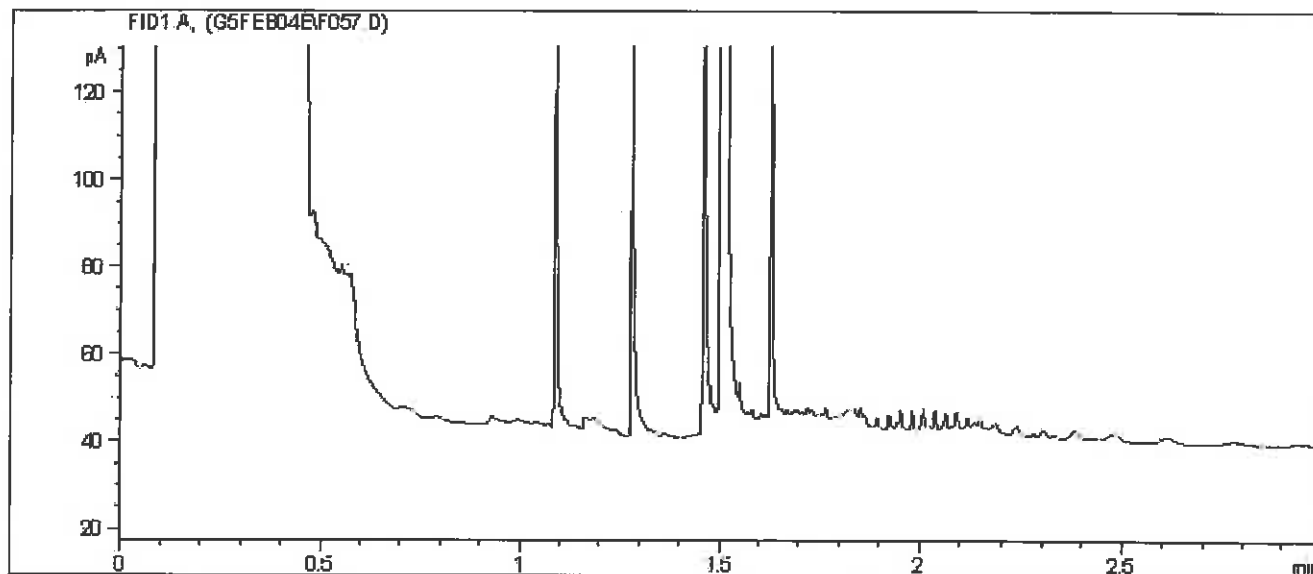
Diesel: C8 - C22
 Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

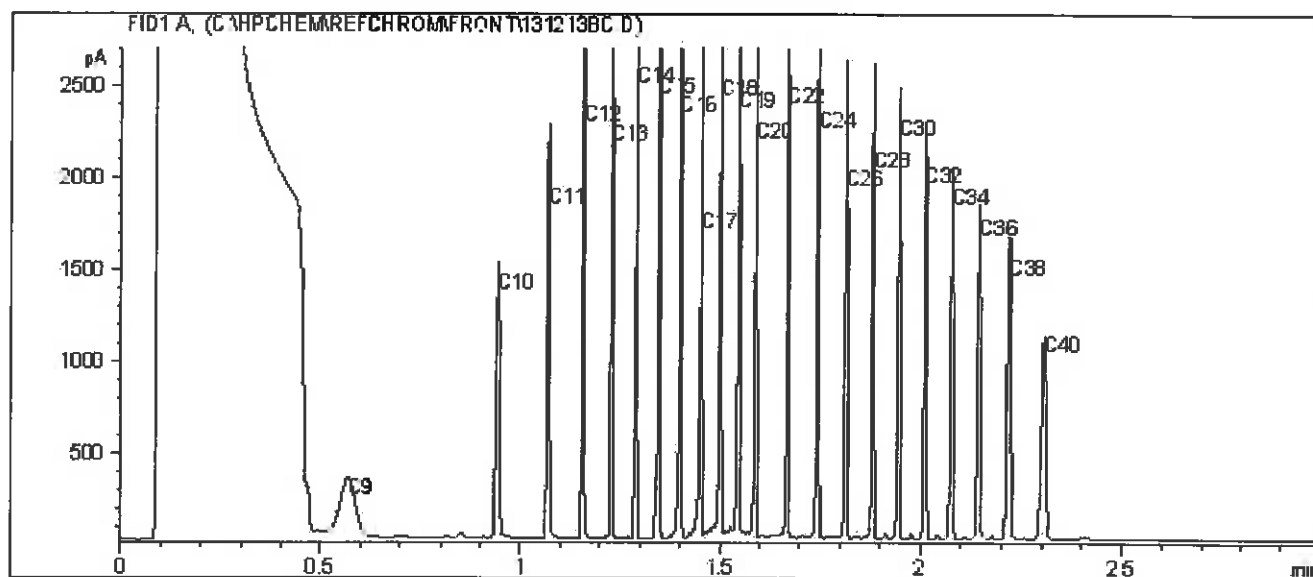
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4082

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-10-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



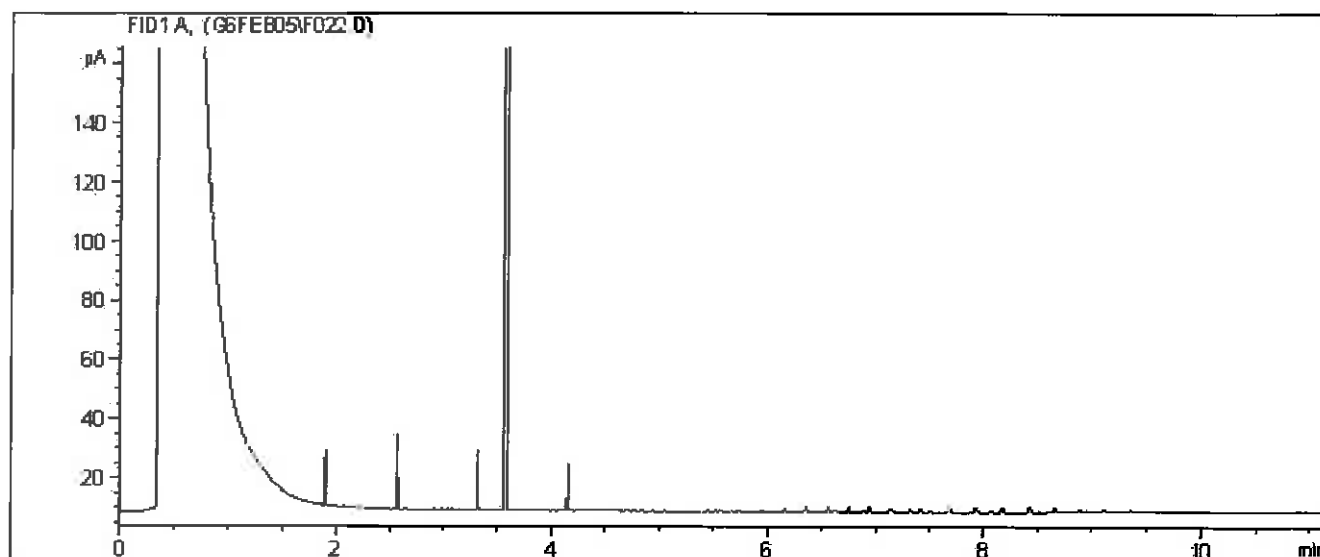
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

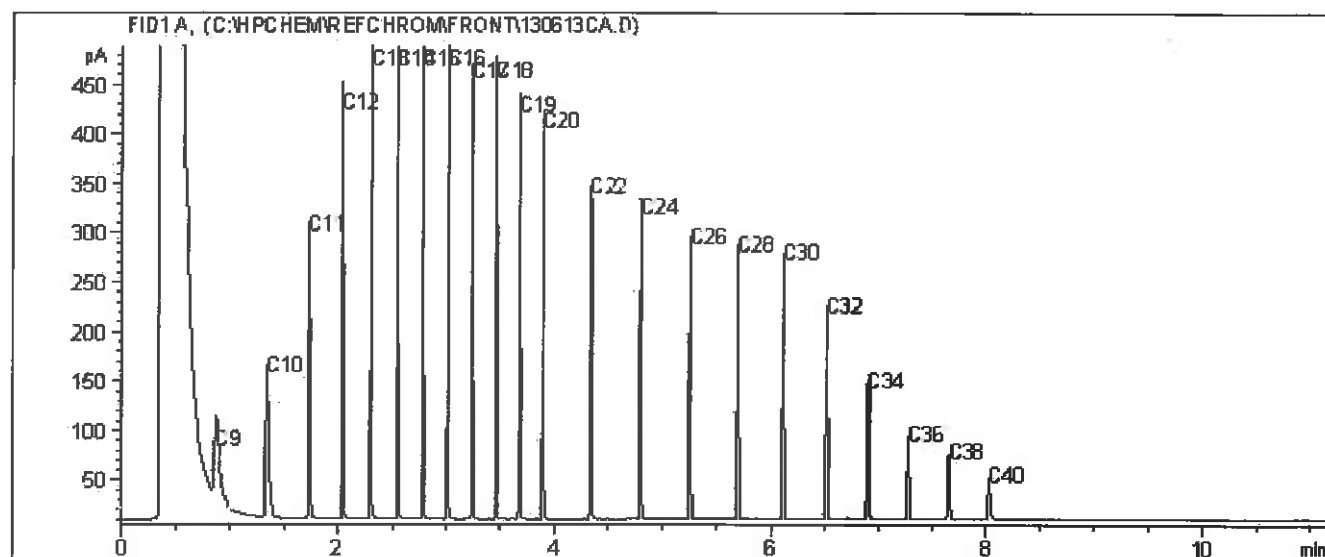
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4082

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-10-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

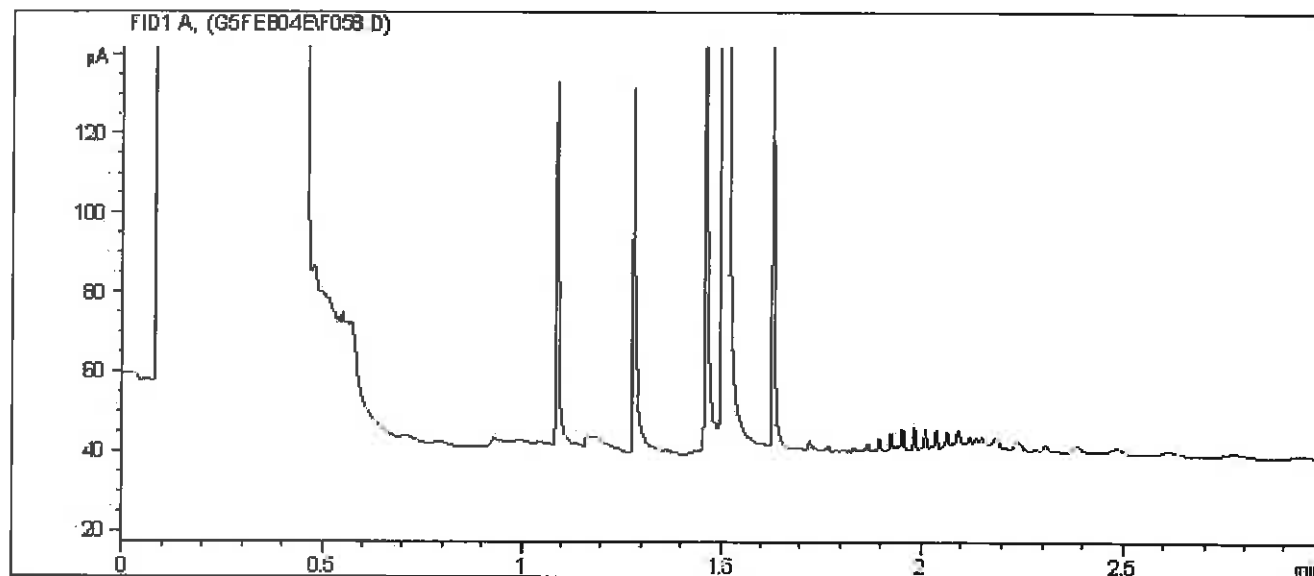
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

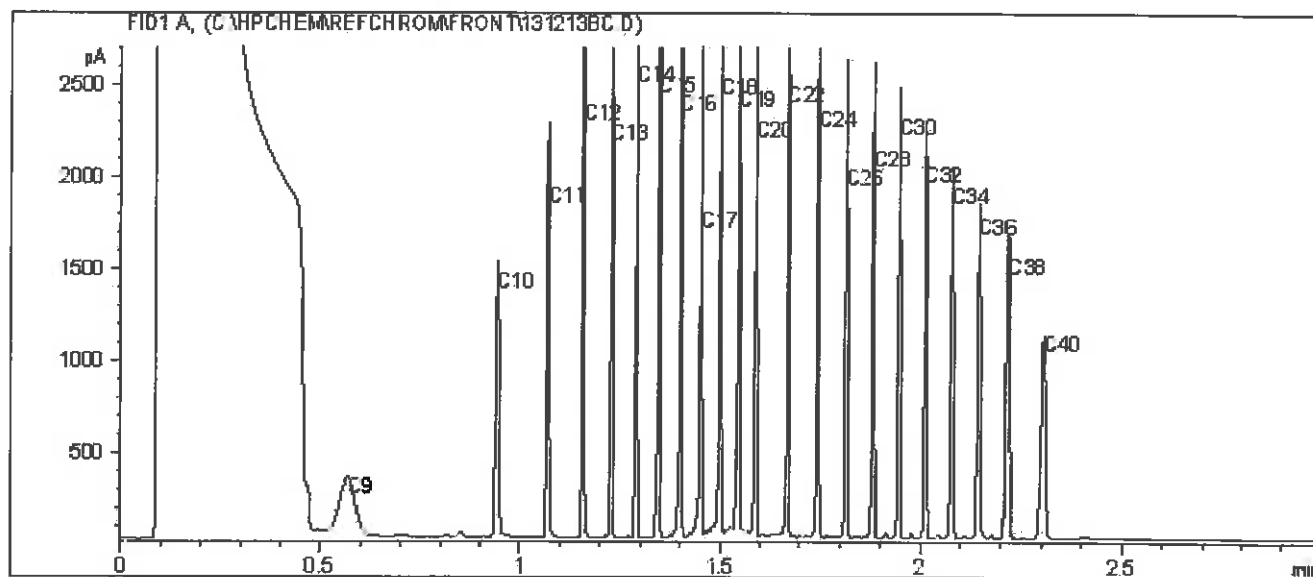
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4083

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-10-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



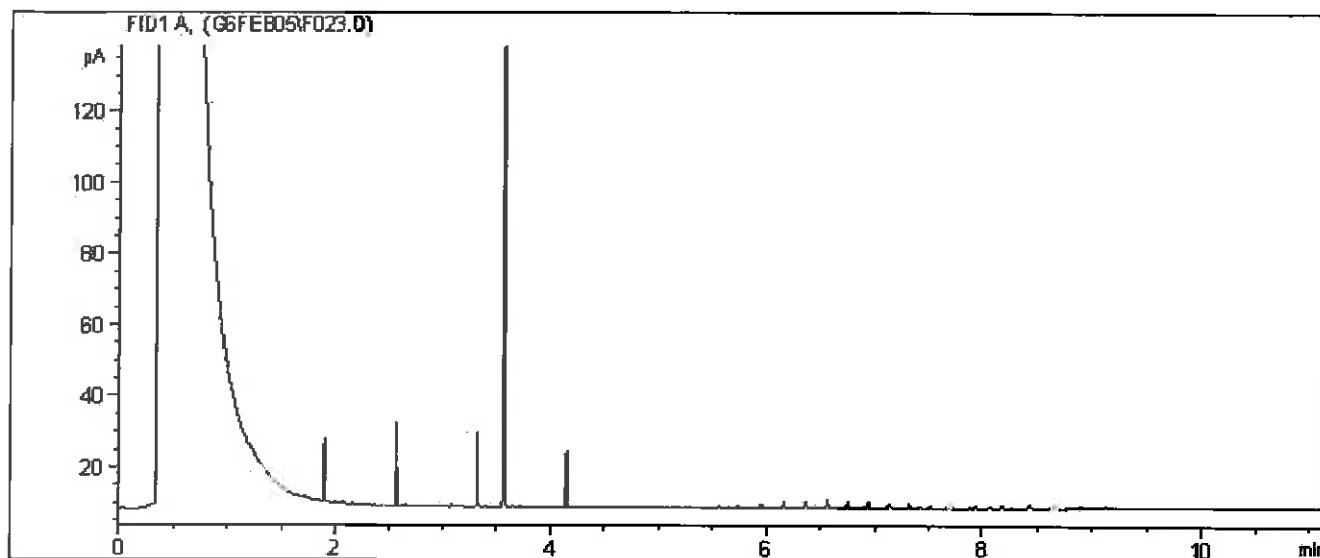
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

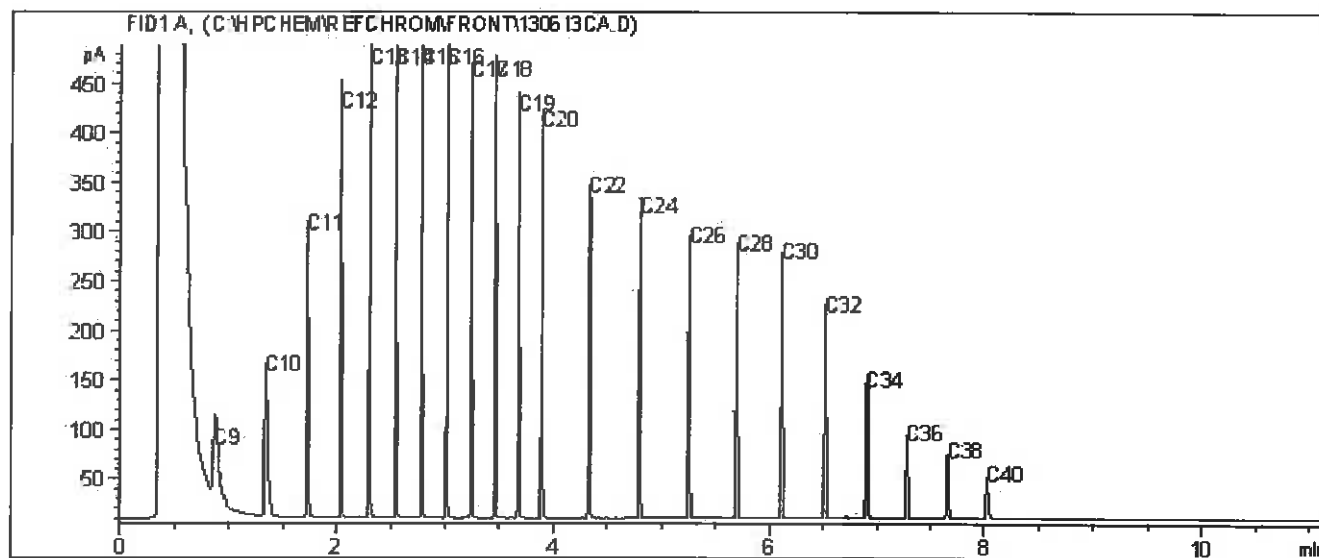
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4083

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-10-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

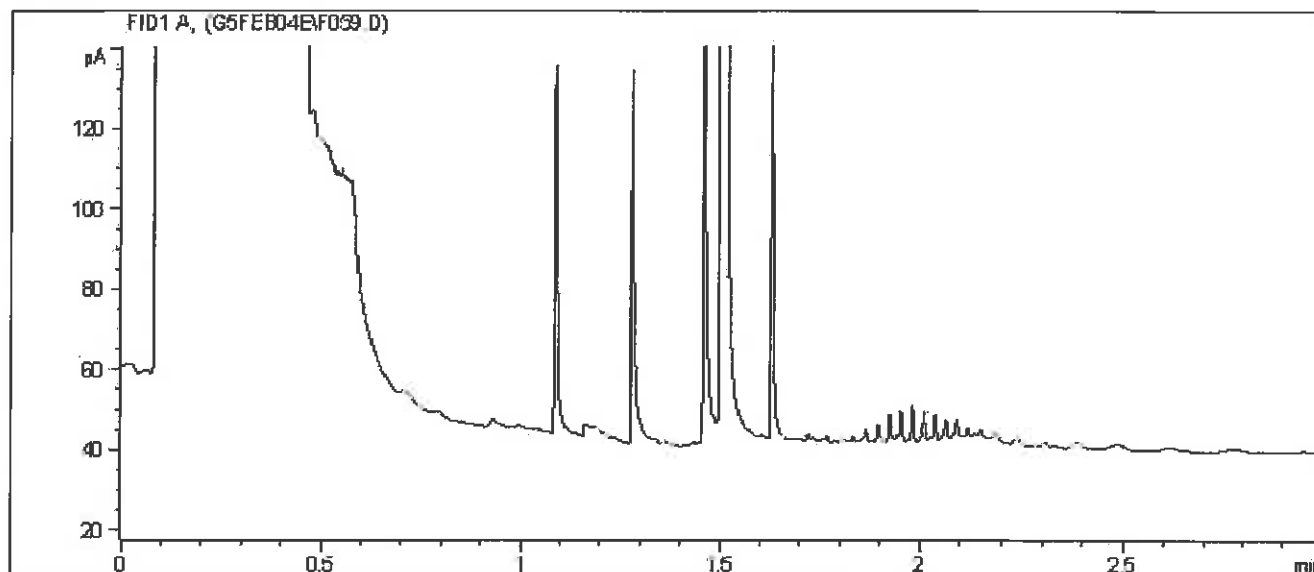
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

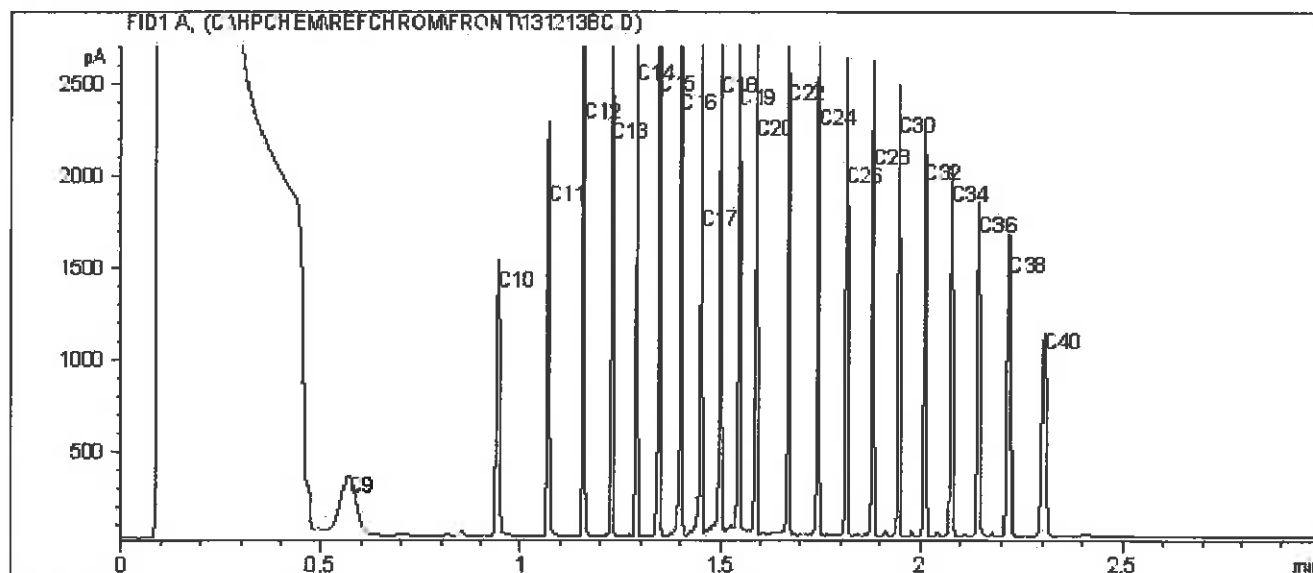
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4088

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-9-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



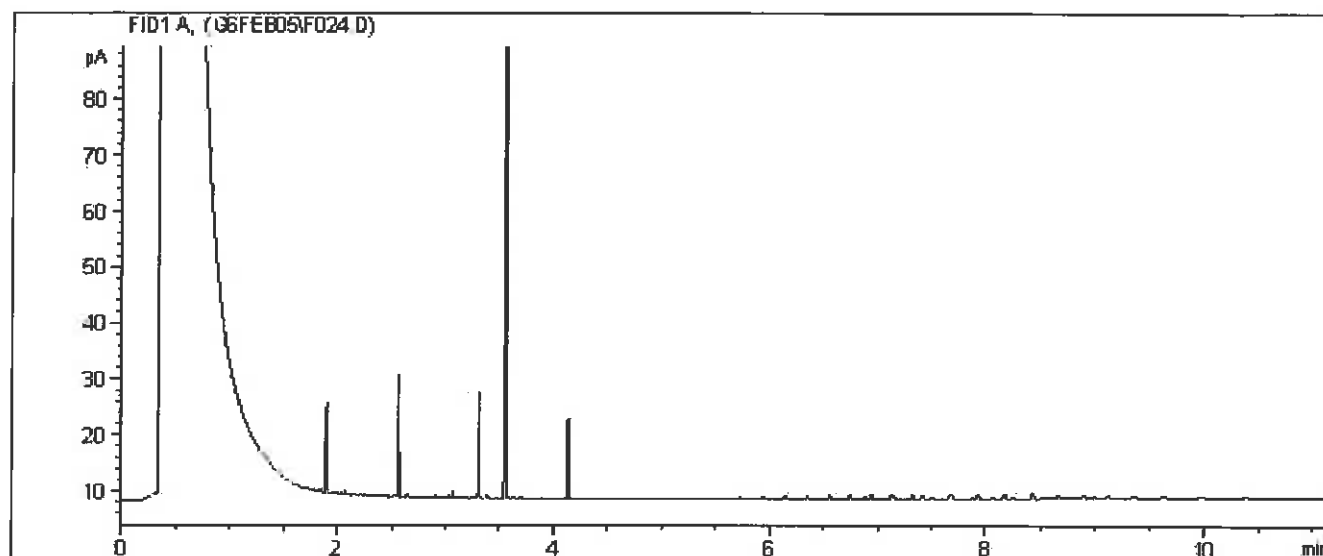
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

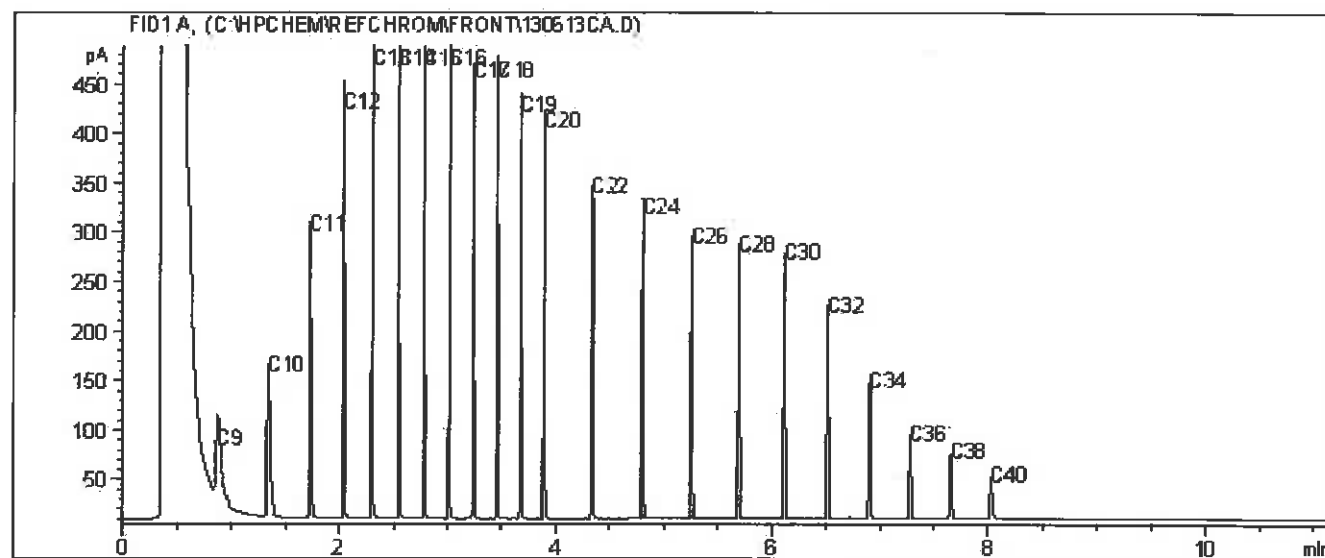
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4088

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-9-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

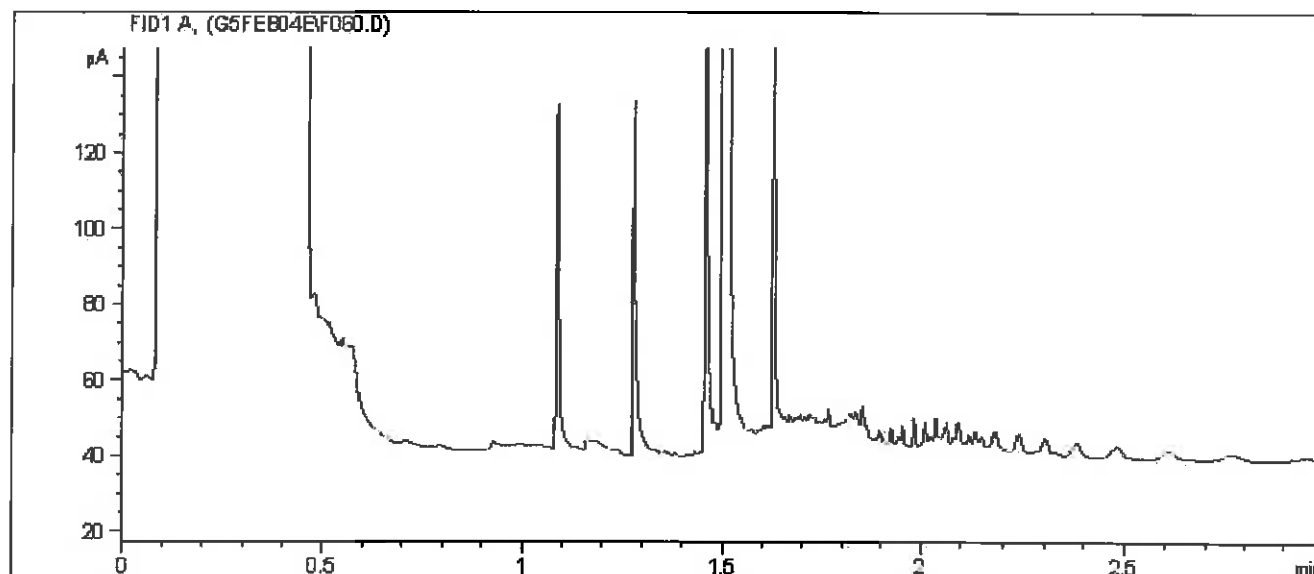
Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

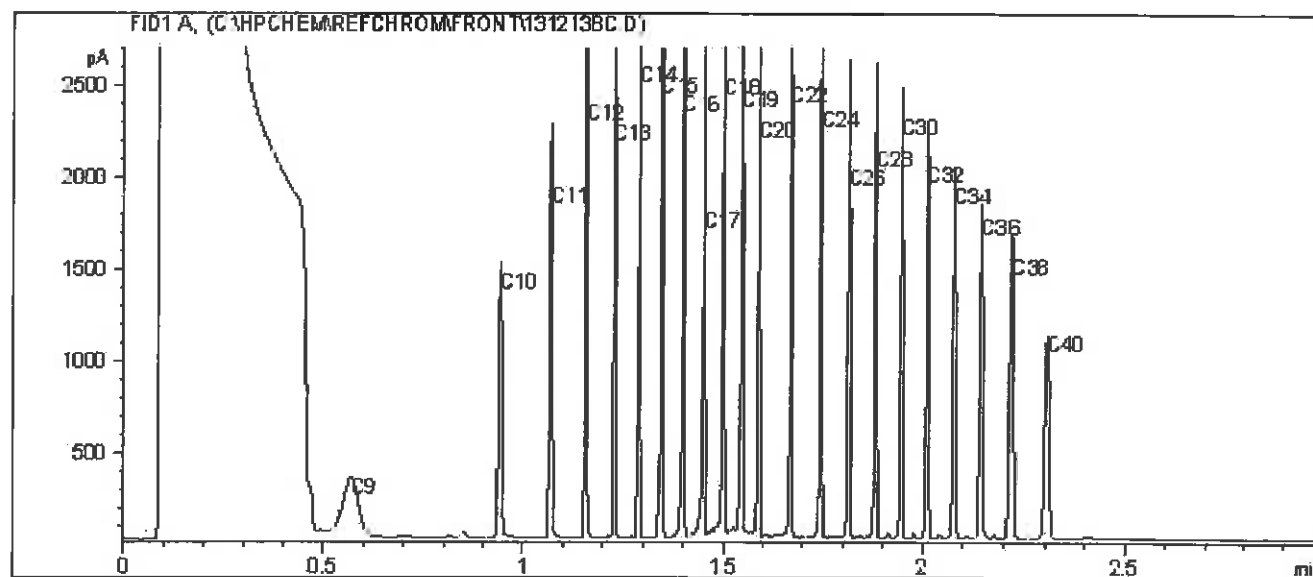
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4089

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-9-4

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



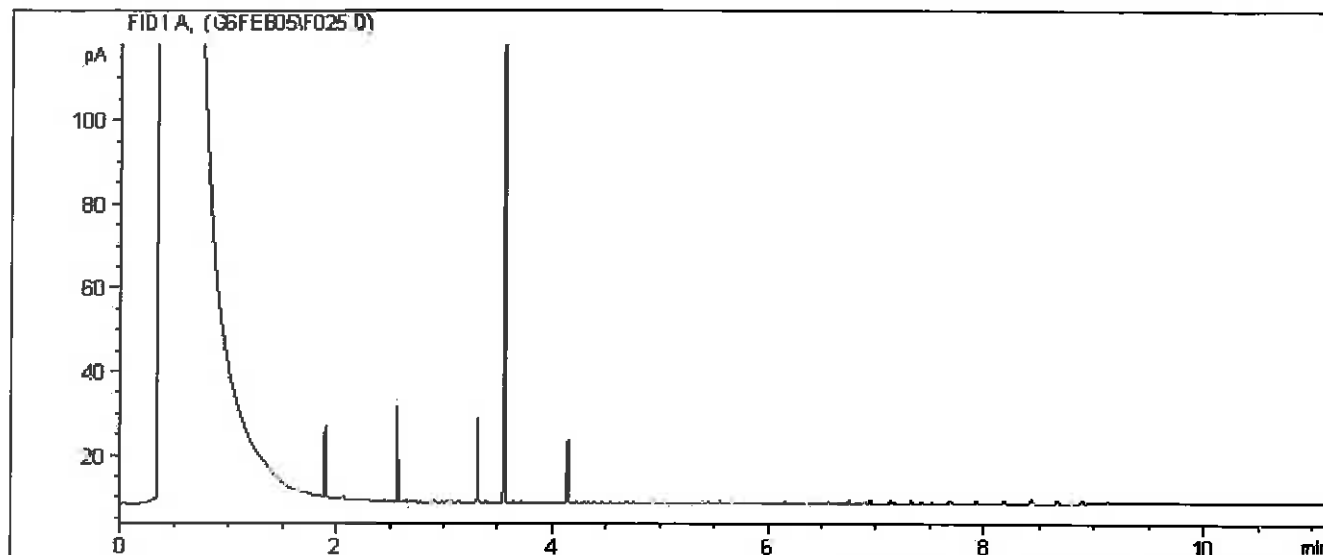
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

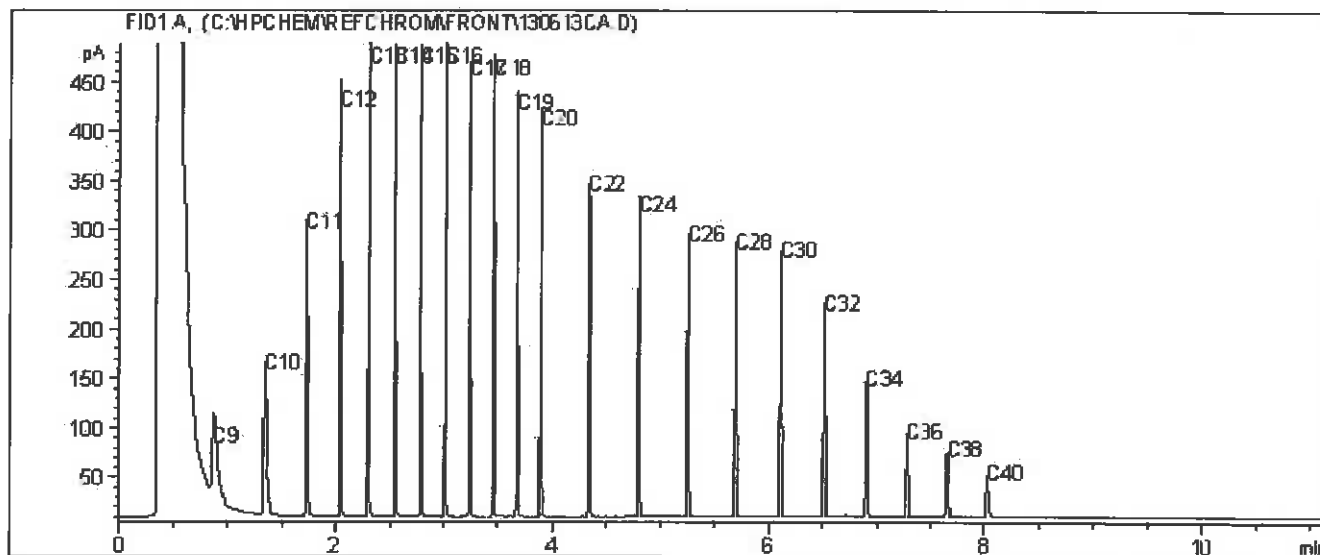
Report Date: 2014/02/06
Maxxam Job #: B407541
Maxxam Sample: IO4089

FRANZ ENVIRONMENTAL INC.
Client Project #: 00069
Site Reference: LOWER POST, BC
Client ID: MW13-9-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
Your Project #: LOWER POST
Your C.O.C. #: 42343705, 42343706

Attention: Richard Wells
FRANZ ENVIRONMENTAL INC.
FRANZENV-VAN
1080 MAINLAND STREET
SUITE 308
VANCOUVER, BC
CANADA V6B 2T4

Report Date: 2013/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3B3704
Received: 2013/12/09, 13:10

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	5	2013/12/10	2013/12/10	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	5	N/A	2013/12/11	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	5	2013/12/10	2013/12/12	BBY8SOP-00030	CCME Soil Tier 1
Moisture	5	N/A	2013/12/11	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	5	2013/12/10	2013/12/12	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	5	N/A	2013/12/13	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	5	N/A	2013/12/13	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	5	N/A	2013/12/13	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	5	2013/12/10	2013/12/11	BBY8SOP-00029	BC Env Lab Manual
Volatile HC-BTEX	5	N/A	2013/12/11	BBY WI-00033	BC MOE Lab Method

* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

16 Dec 2013 12:15:50 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
Email: CIreland@maxxam.ca
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IG7751	IG7752	IG7758	IG7760	IG7762	
Sampling Date	2013/12/07	2013/12/07	2013/12/07	2013/12/07	2013/12/07	
UNITS	BH13-2-9	BH13-2-10	BH13-3-9	BH13-3-10	DUP-00069-100	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	36	17	<10	15
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10
Reached Baseline at C50	mg/kg	YES	YES	YES	YES	N/A
Surrogate Recovery (%)						7315457
O-TERPHENYL (sur.)	%	116	125	126	108	102
						7315457

PHYSICAL TESTING (SOIL)

Maxxam ID	IG7751	IG7752	IG7758	IG7760	IG7762	
Sampling Date	2013/12/07	2013/12/07	2013/12/07	2013/12/07	2013/12/07	
UNITS	BH13-2-9	BH13-2-10	BH13-3-9	BH13-3-10	DUP-00069-100	QC Batch
Physical Properties						
Moisture	%	14	14	19	14	16
						0.30
						7315341

TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IG7751	IG7752	IG7758	IG7760	IG7762	
Sampling Date	2013/12/07	2013/12/07	2013/12/07	2013/12/07	2013/12/07	
UNITS	BH13-2-9	BH13-2-10	BH13-3-9	BH13-3-10	DUP-00069-100	QC Batch
Calculated Parameters						
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	100
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	100
Hydrocarbons						
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	100
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	100
Surrogate Recovery (%)						7317168
O-TERPHENYL (sur.)	%	107	107	108	100	94
						7317168

CCME&CSR BTEX/F1/NPH IN SOIL (SOIL)

Maxxam ID	IG7751	IG7752	IG7758	IG7760	IG7762	
Sampling Date	2013/12/07	2013/12/07	2013/12/07	2013/12/07	2013/12/07	
UNITS	BH13-2-9	BH13-2-10	BH13-3-9	BH13-3-10	DUP-00069-100	RDL QC Batch
Calculated Parameters						
F1 (C6-C10) - BTEX	<10	<10	<10	<10	<10	10 7313147
Volatiles						
VPH (VH6 to 10 - BTEX)	<10	<10	<10	<10	<10	10 7313118
Methyl-tert-butylether (MTBE)	<0.10	<0.10	<0.10	<0.10	<0.10	0.10 7315142
Benzene	<0.0050	0.029	<0.0050	<0.0050	<0.0050	0.0050 7315142
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	0.020 7315142
Ethylbenzene	<0.010	0.11	<0.010	<0.010	<0.010	0.010 7315142
m & p-Xylene	<0.040	<0.040	<0.040	<0.040	<0.040	0.040 7315142
o-Xylene	<0.040	<0.040	<0.040	<0.040	<0.040	0.040 7315142
Styrene	<0.030	<0.030	<0.030	<0.030	<0.030	0.030 7315142
Xylenes (Total)	<0.040	<0.040	<0.040	<0.040	<0.040	0.040 7315142
VH C6-C10	<10	<10	<10	<10	<10	10 7315142
(C6-C10)	<10	<10	<10	<10	<10	10 7315142
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	102	103	102	102	101	7315142
4-BROMOFLUOROBENZENE (sur.)	93	96	94	93	94	7315142
D10-ETHYLBENZENE (sur.)	94	91	92	93	96	7315142
D4-1,2-DICHLOROETHANE (sur.)	102	101	102	101	100	7315142

CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IG7751	IG7752	IG7758	IG7760	IG7762	
Sampling Date	2013/12/07	2013/12/07	2013/12/07	2013/12/07	2013/12/07	
UNITS	BH13-2-9	BH13-2-10	BH13-3-9	BH13-3-10	DUP-00069-100	QC Batch
Calculated Parameters						
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.31	0.31	0.31	0.10
Benzo(a)pyrene equivalency	N/A	<0.10	<0.10	<0.10	<0.10	0.10
Polycyclic Aromatics						
Naphthalene	mg/kg	<0.010	0.025	<0.010	<0.010	0.010
2-Methylnaphthalene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Acenaphthene	mg/kg	<0.0050	0.026	<0.0050	<0.0050	0.0050
Fluorene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Phenanthrene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)anthracene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Chrysene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(b)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Low Molecular Weight PAH's	mg/kg	<0.050	0.051	<0.050	<0.050	0.050
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Total PAH	mg/kg	<0.050	0.051	<0.050	<0.050	0.050
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	98	93	100	89	93
D8-ACENAPHTHYLENE (sur.)	%	102	99	104	93	94
D8-NAPHTHALENE (sur.)	%	96	92	102	91	92
TERPHENYL-D14 (sur.)	%	102	95	103	90	94

N/A = Not Applicable

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

Package 1 2.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7315142	1,4-Difluorobenzene (sur.)	2013/12/10	98	70 - 130	100	70 - 130	102	%		
7315142	4-BROMOFLUOROBENZENE (sur.)	2013/12/10	101	70 - 130	101	70 - 130	94	%		
7315142	D10-ETHYLBENZENE (sur.)	2013/12/10	98	50 - 130	85	50 - 130	82	%		
7315142	D4-1,2-DICHLOROETHANE (sur.)	2013/12/10	97	70 - 130	96	70 - 130	100	%		
7315142	Benzene	2013/12/10	91	60 - 140	86	60 - 140	<0.0050	mg/kg	NC	40
7315142	Toluene	2013/12/10	92	60 - 140	86	60 - 140	<0.020	mg/kg	NC	40
7315142	Ethylbenzene	2013/12/10	99	60 - 140	94	60 - 140	<0.010	mg/kg	NC	40
7315142	m & p-Xylene	2013/12/10	98	60 - 140	93	60 - 140	<0.040	mg/kg	NC	40
7315142	o-Xylene	2013/12/10	102	60 - 140	96	60 - 140	<0.040	mg/kg	NC	40
7315142	VH C6-C10	2013/12/10			98	60 - 140	<10	mg/kg	NC	40
7315142	(C6-C10)	2013/12/10			101	60 - 140	<10	mg/kg		
7315142	Methyl-tert-butyl ether (MTBE)	2013/12/10					<0.10	mg/kg		
7315142	Styrene	2013/12/10					<0.030	mg/kg		
7315142	Xylenes (Total)	2013/12/10					<0.040	mg/kg	NC	40
7315341	Moisture	2013/12/11					<0.30	%	5.2	20
7315457	O-TERPHENYL (sur.)	2013/12/12	106	50 - 130	100	50 - 130	100	%		
7315457	F2 (C10-C16 Hydrocarbons)	2013/12/12	86	50 - 130	91	80 - 120	<10	mg/kg	28.0	40
7315457	F3 (C16-C34 Hydrocarbons)	2013/12/12	107	50 - 130	100	80 - 120	<10	mg/kg	NC	40
7315457	F4 (C34-C50 Hydrocarbons)	2013/12/12	109	50 - 130	100	80 - 120	<10	mg/kg	NC	40
7315457	Reached Baseline at C50	2013/12/12					YES, RDL=N/A	mg/kg	NC	50
7317168	O-TERPHENYL (sur.)	2013/12/11	98	50 - 130	97	50 - 130	102	%		
7317168	EPH (C10-C19)	2013/12/11	101	50 - 130	106	50 - 130	<100	mg/kg	NC	40
7317168	EPH (C19-C32)	2013/12/11	101	50 - 130	106	50 - 130	<100	mg/kg	NC	40
7317961	D10-ANTHRACENE (sur.)	2013/12/11			103	60 - 130	108	%		
7317961	D8-ACENAPHTHYLENE (sur.)	2013/12/11			109	50 - 130	109	%		
7317961	D8-NAPHTHALENE (sur.)	2013/12/11			106	50 - 130	107	%		
7317961	TERPHENYL-D14 (sur.)	2013/12/11			106	60 - 130	111	%		
7317961	Naphthalene	2013/12/11			100	50 - 130	<0.010	mg/kg		
7317961	2-Methylnaphthalene	2013/12/11			105	50 - 130	<0.020	mg/kg		
7317961	Acenaphthylene	2013/12/11			102	50 - 130	<0.0050	mg/kg		
7317961	Acenaphthene	2013/12/11			106	50 - 130	<0.0050	mg/kg		
7317961	Fluorene	2013/12/11			103	50 - 130	<0.020	mg/kg		
7317961	Phenanthrene	2013/12/11			97	60 - 130	<0.020	mg/kg		
7317961	Anthracene	2013/12/11			104	60 - 130	<0.0040	mg/kg		
7317961	Fluoranthene	2013/12/11			99	60 - 130	<0.020	mg/kg		
7317961	Pyrene	2013/12/11			102	60 - 130	<0.020	mg/kg		
7317961	Benzo(a)anthracene	2013/12/11			87	60 - 130	<0.020	mg/kg		
7317961	Chrysene	2013/12/11			90	60 - 130	<0.020	mg/kg		
7317961	Benzo(b&f)fluoranthene	2013/12/11			92	60 - 130	<0.020	mg/kg		

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7317961	Benzo(k)fluoranthene	2013/12/11			85	60 - 130	<0.020	mg/kg		
7317961	Benzo(e)pyrene	2013/12/11			97	60 - 130	<0.020	mg/kg		
7317961	Indeno(1,2,3-cd)pyrene	2013/12/11			96	60 - 130	<0.050	mg/kg		
7317961	Dibenz(a,h)anthracene	2013/12/11			96	60 - 130	<0.050	mg/kg		
7317961	Benzo(g,h,i)perylene	2013/12/11			96	60 - 130	<0.050	mg/kg		
7317961	Benzo(b)fluoranthene	2013/12/11				60 - 130	<0.020	mg/kg		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B3B3704

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reimer, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxam Environmental Services Corporation

Child of Country Report

242

Child's Name 167160

Child's Date of Birth 10/13/10

Child's Sex Male

Child's Race White

Child's Religion None

Child's Nationality USA

Child's Address

Child's City San Francisco

Child's State CA

Child's Zip 94114

Child's Country USA

Child's Parent(s)

Child's Parent(s) Address

Child's Parent(s) City San Francisco

Child's Parent(s) State CA

Child's Parent(s) Zip 94114

Child's Parent(s) Country USA

Child's School

Child's School Address

Child's School City San Francisco

Child's School State CA

Child's School Zip 94114

Child's School Country USA

Child's Name	Child's Date of Birth	Child's Sex	Child's Race	Child's Religion	Child's Nationality	Child's Address	Child's City	Child's State	Child's Zip	Child's Country	Child's Parent(s)	Child's Parent(s) Address	Child's Parent(s) City	Child's Parent(s) State	Child's Parent(s) Zip	Child's Parent(s) Country	Child's School	Child's School Address	Child's School City	Child's School State	Child's School Zip	Child's School Country	
167160	10/13/10	Male	White	None	USA		San Francisco	CA	94114	USA		San Francisco	CA	94114	USA								
167161	10/13/11	Male	White	None	USA		San Francisco	CA	94114	USA		San Francisco	CA	94114	USA								
167162	09/01/10	Male	White	None	USA		San Francisco	CA	94114	USA		San Francisco	CA	94114	USA								

Child's Parent(s)

Child's Parent(s) Address

Child's Parent(s) City San Francisco

Child's Parent(s) State CA

Child's Parent(s) Zip 94114

Child's Parent(s) Country USA

Child's School

Child's School Address

Child's School City San Francisco

Child's School State CA

Child's School Zip 94114

Child's School Country USA

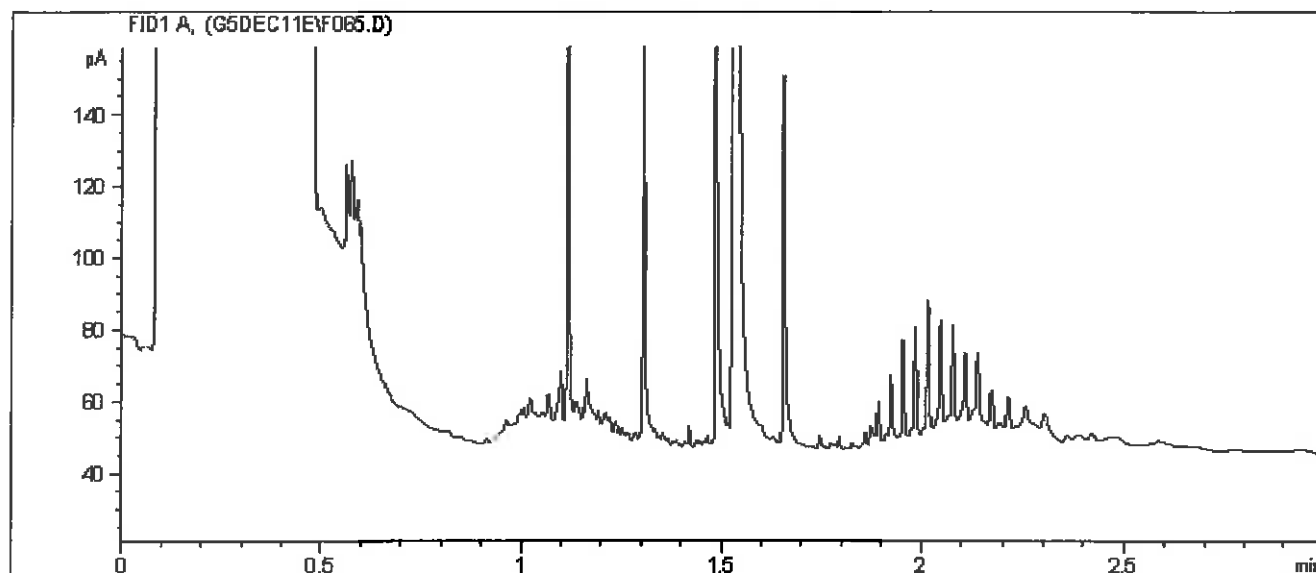


Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7751

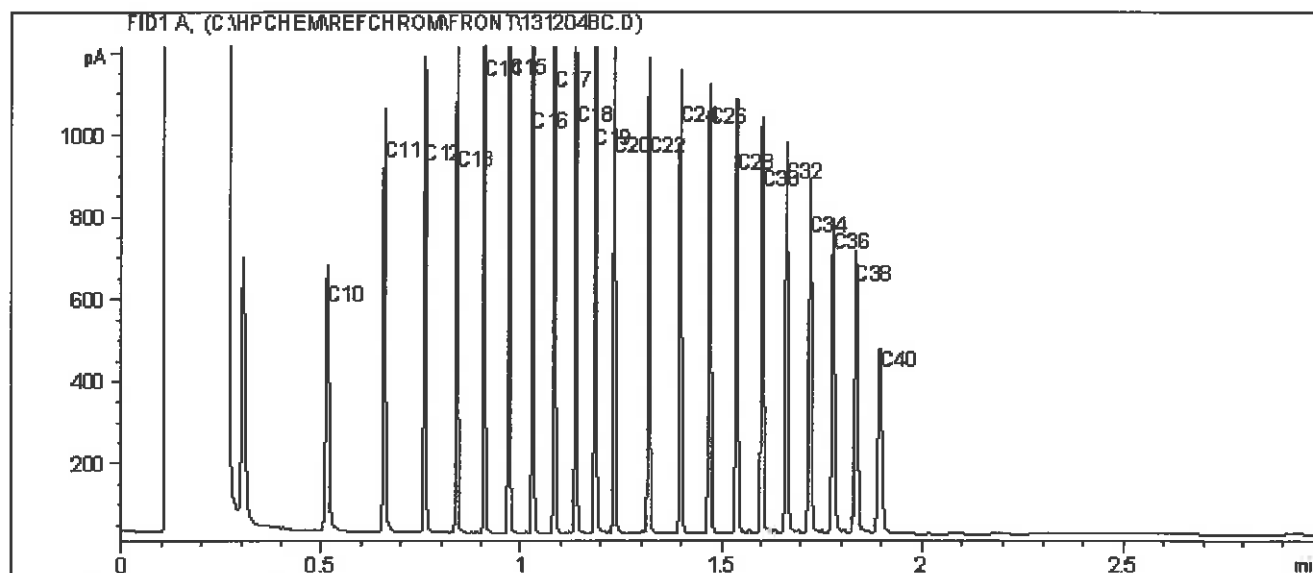
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-2-9

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

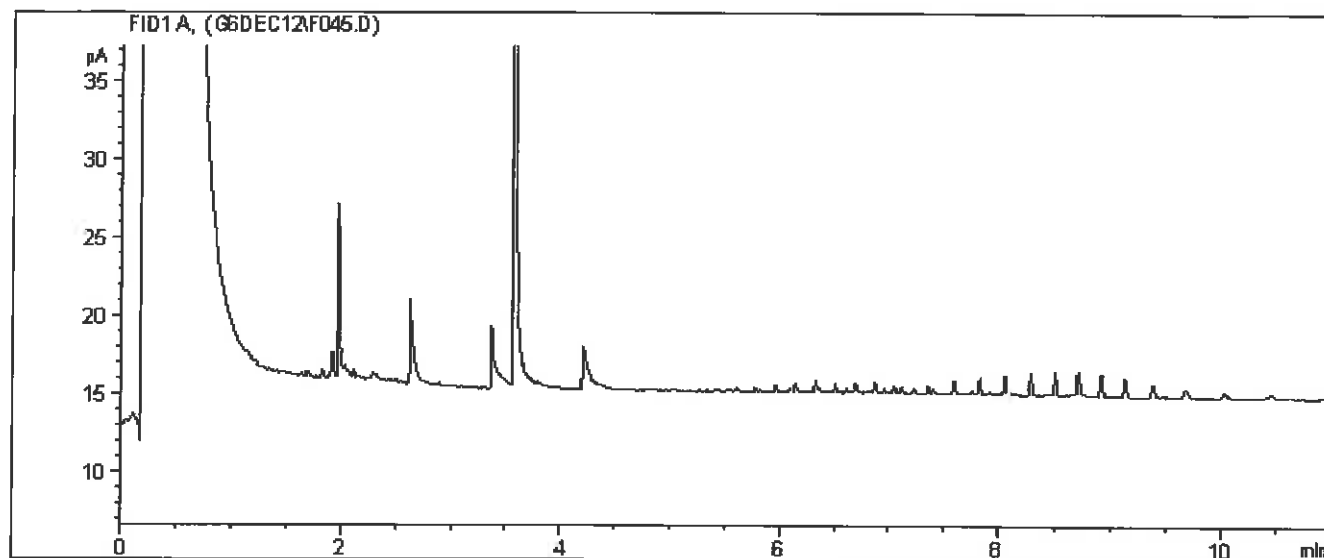
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7751

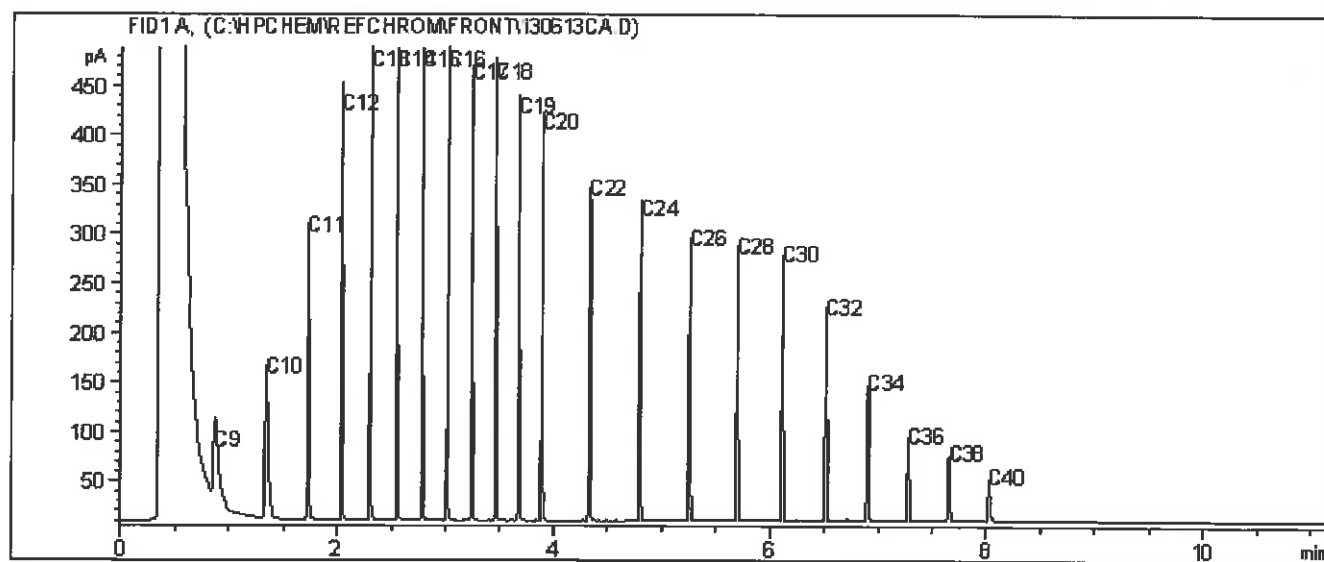
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-2-9

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

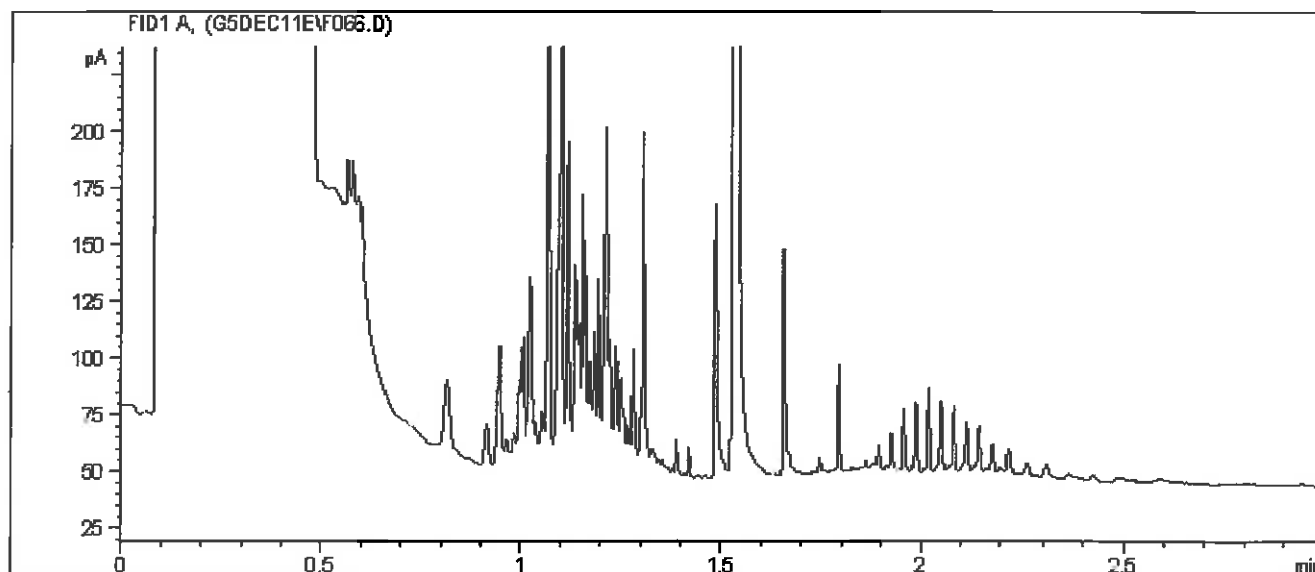
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7752

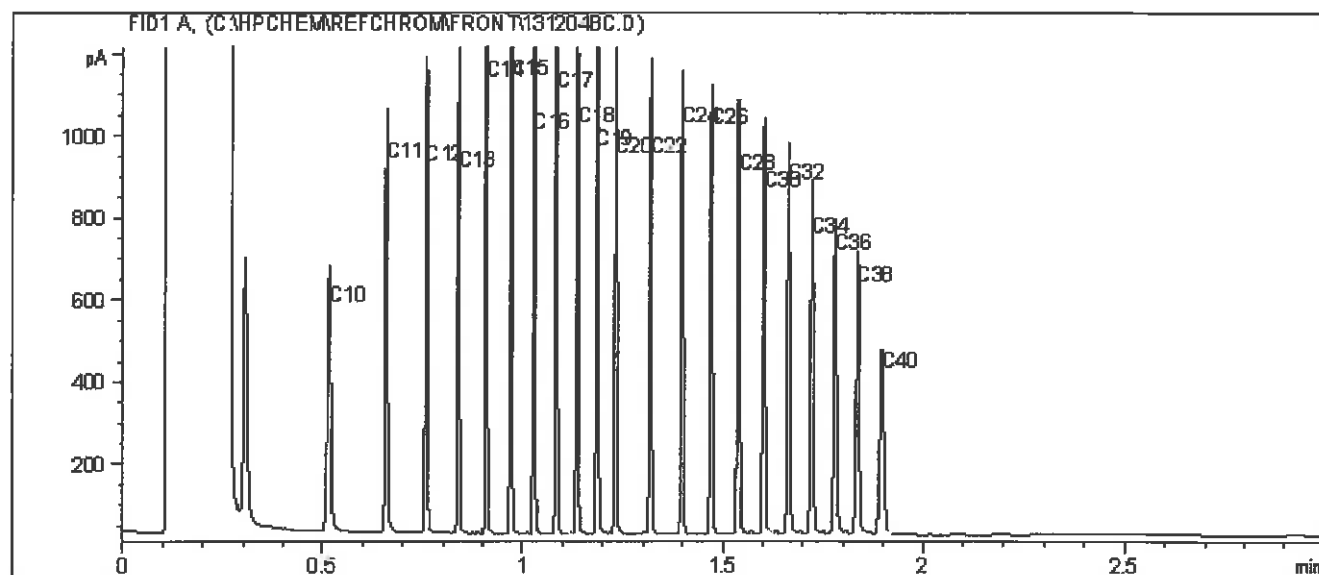
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-2-10

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

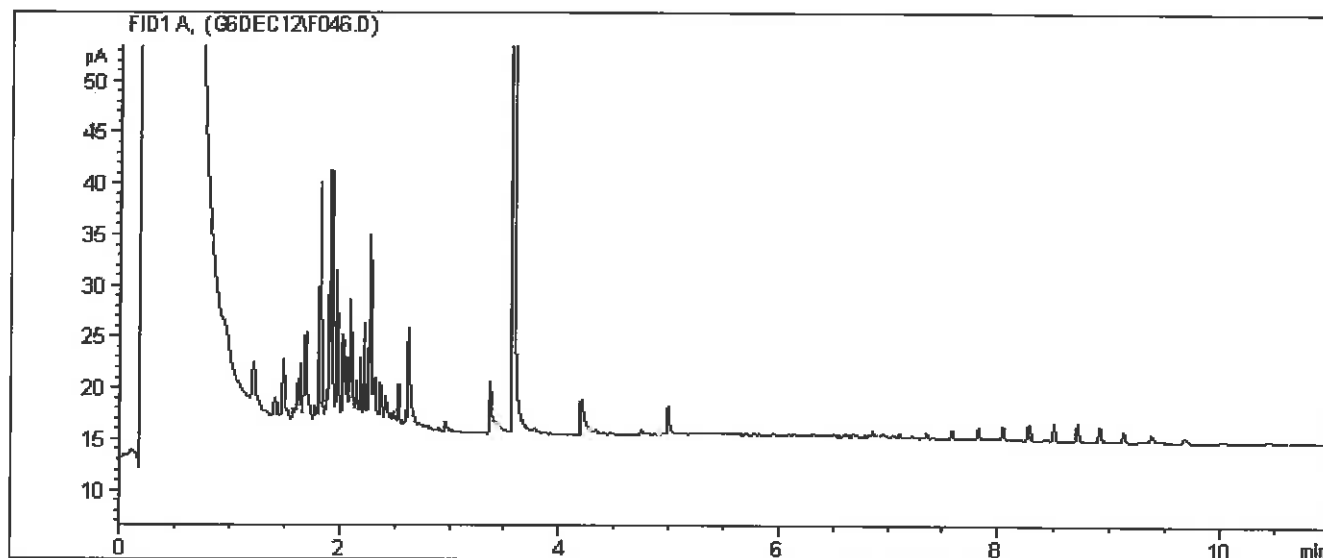
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7752

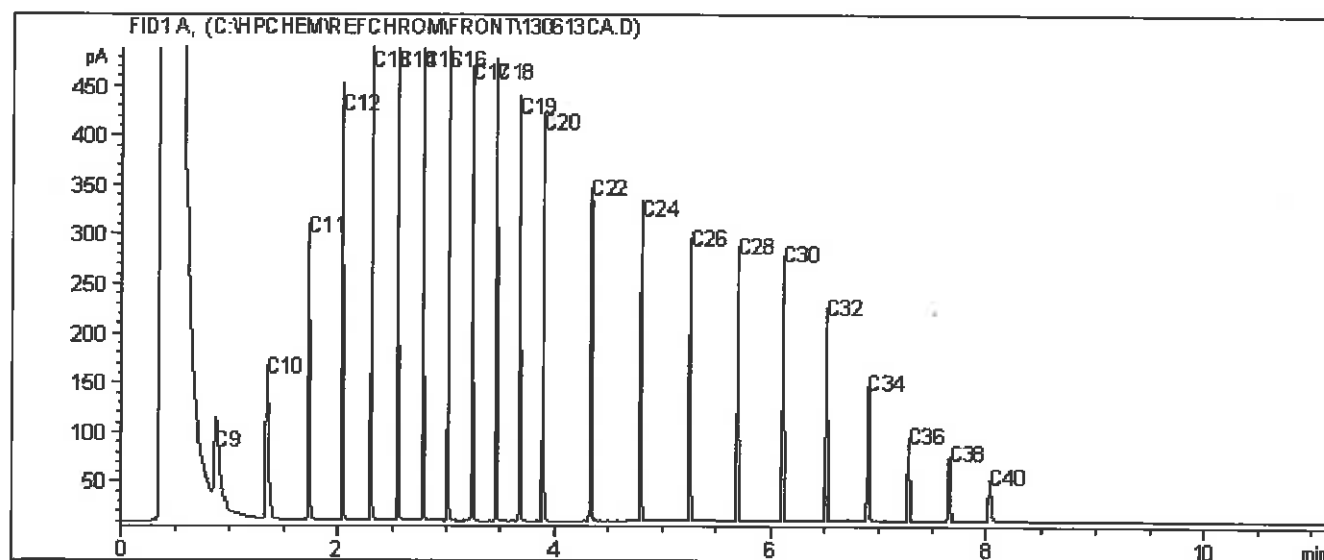
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-2-10

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

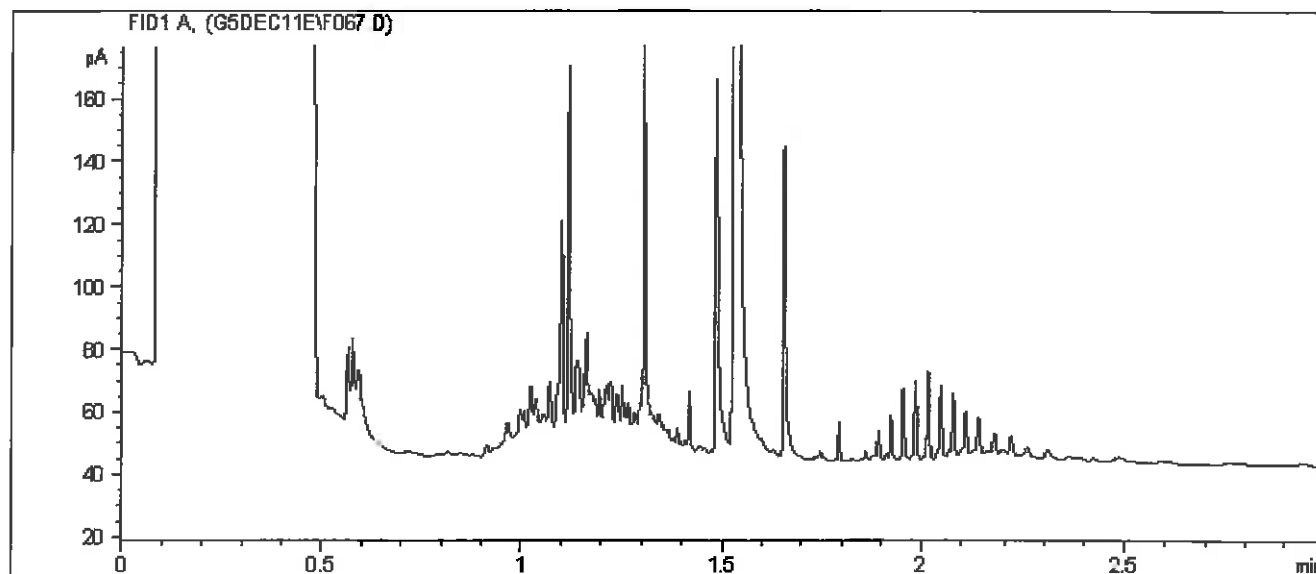
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7758

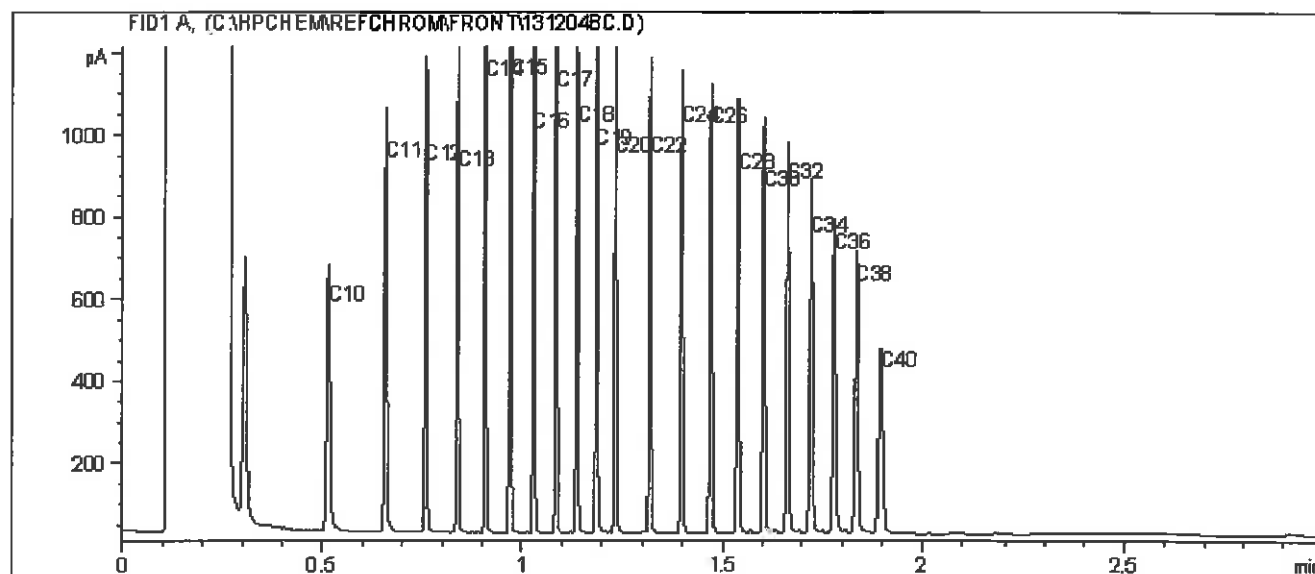
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-3-9

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

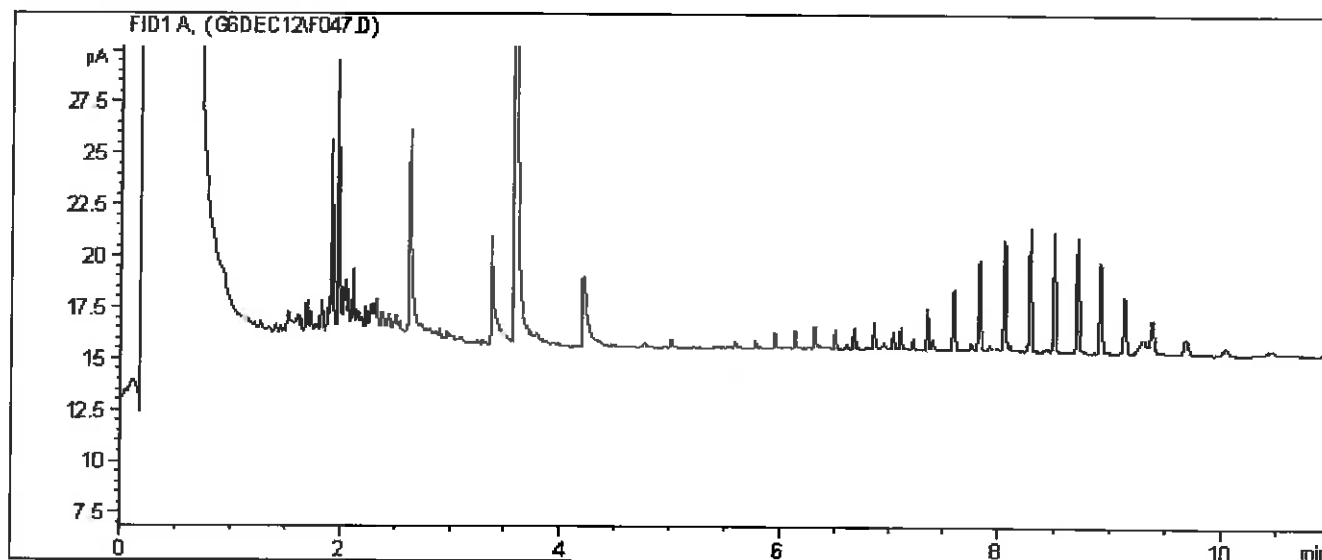
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7758

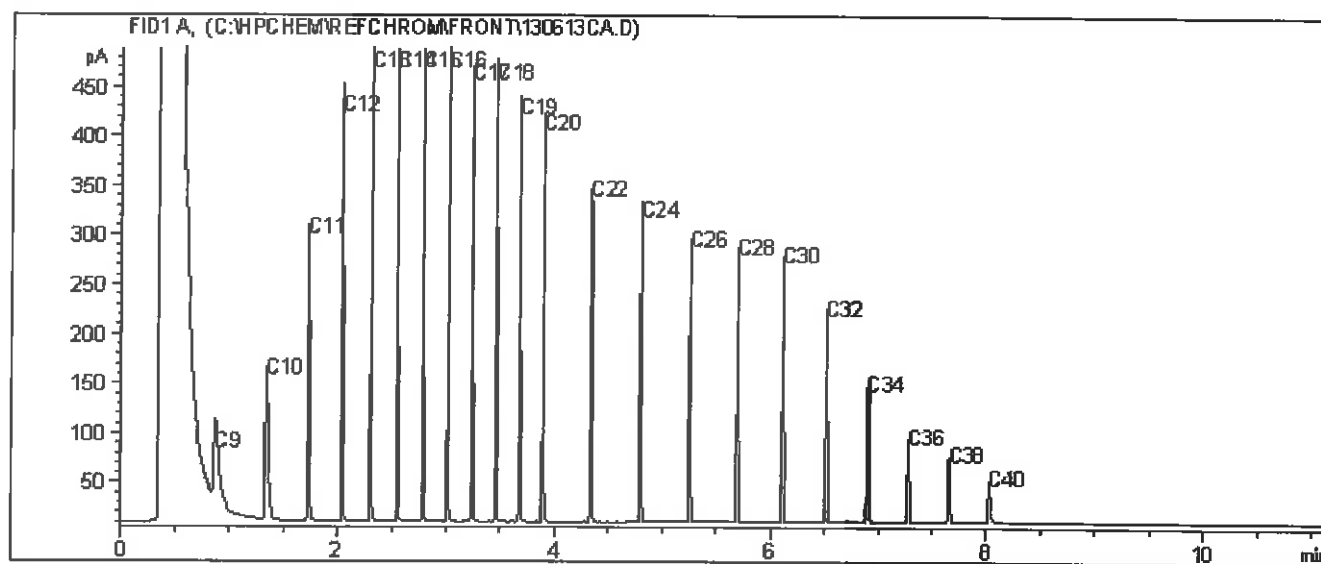
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-3-9

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

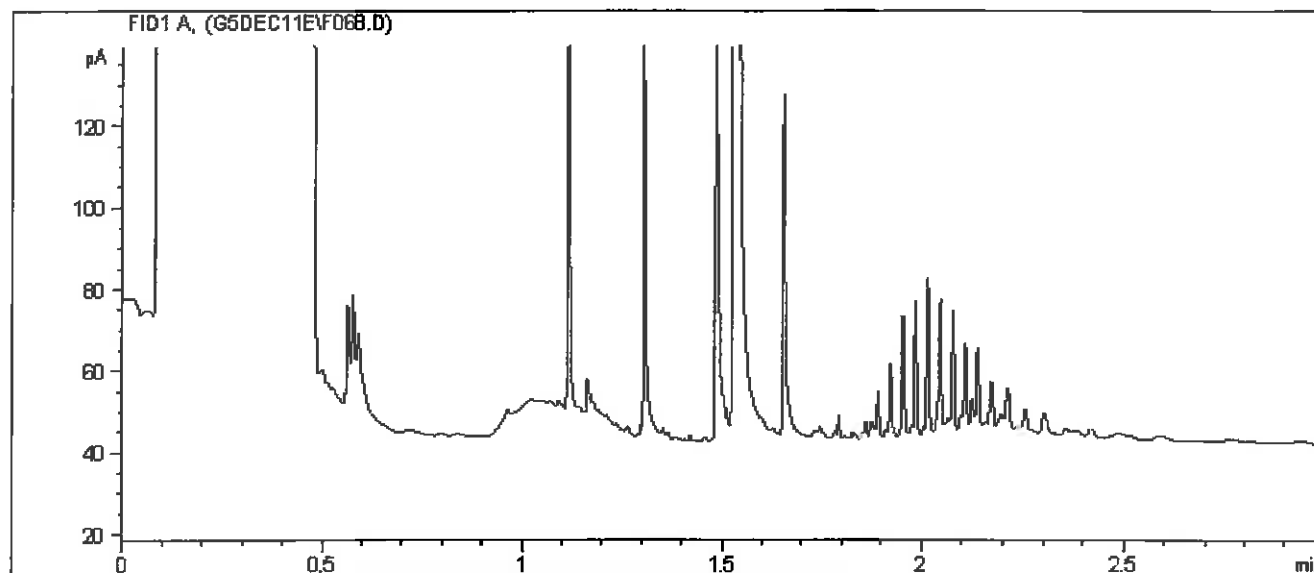
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7760

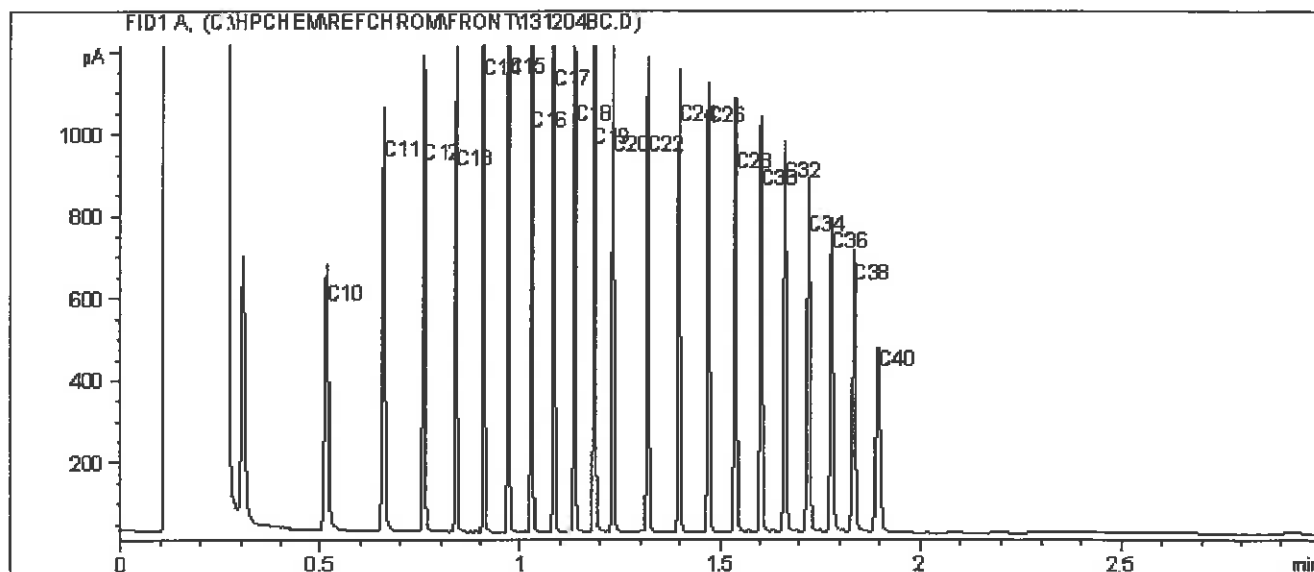
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-3-10

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

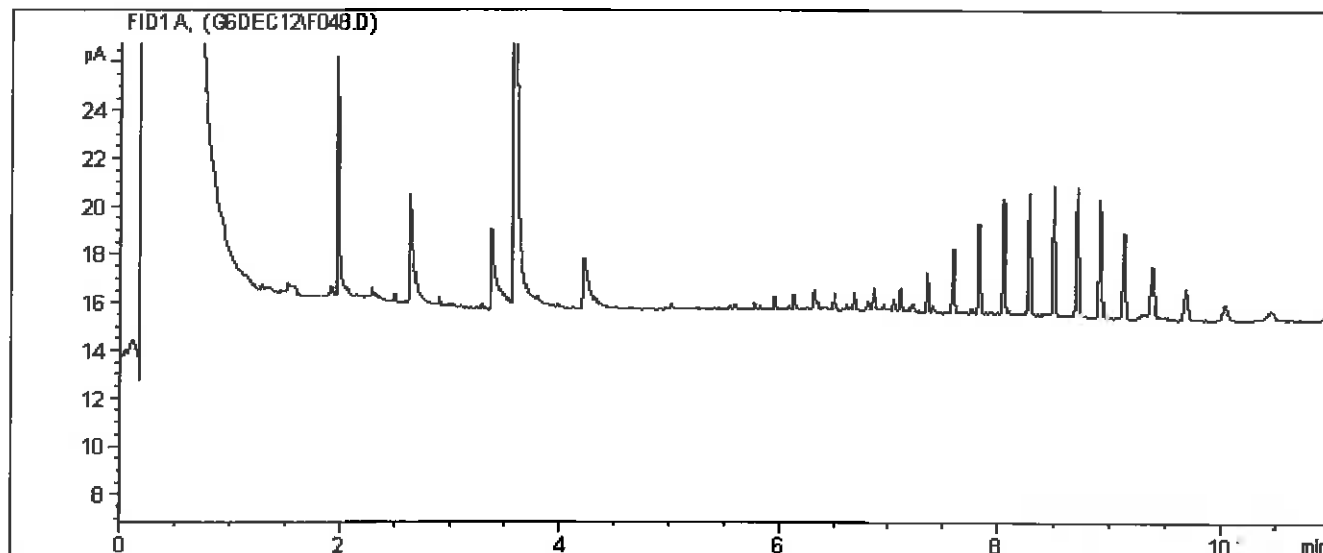
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7760

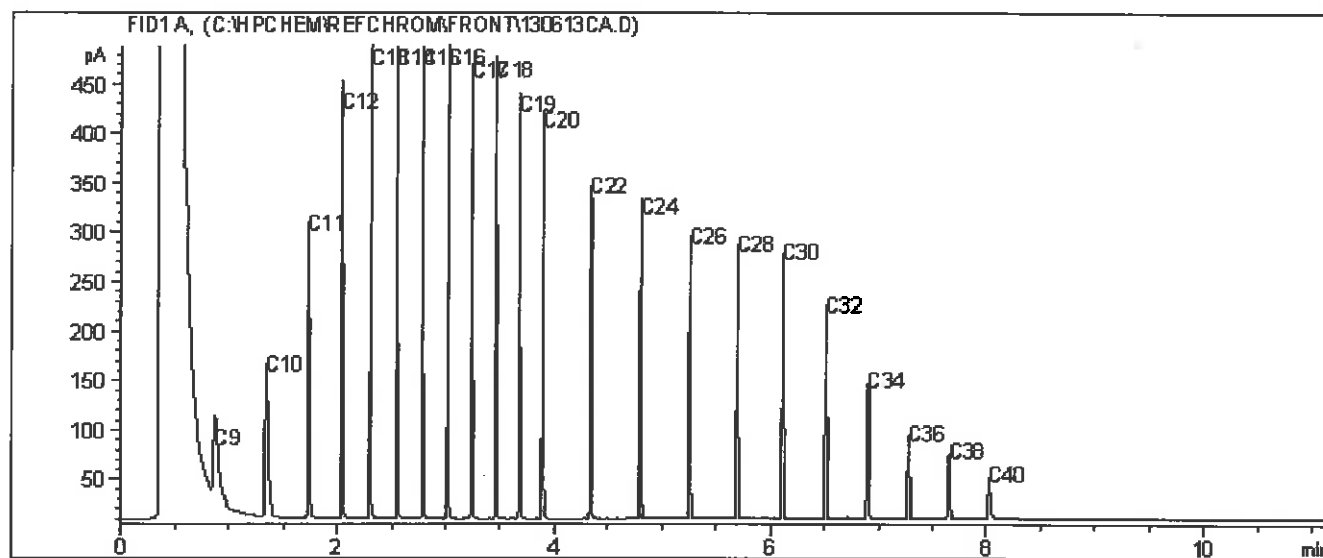
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: BH13-3-10

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

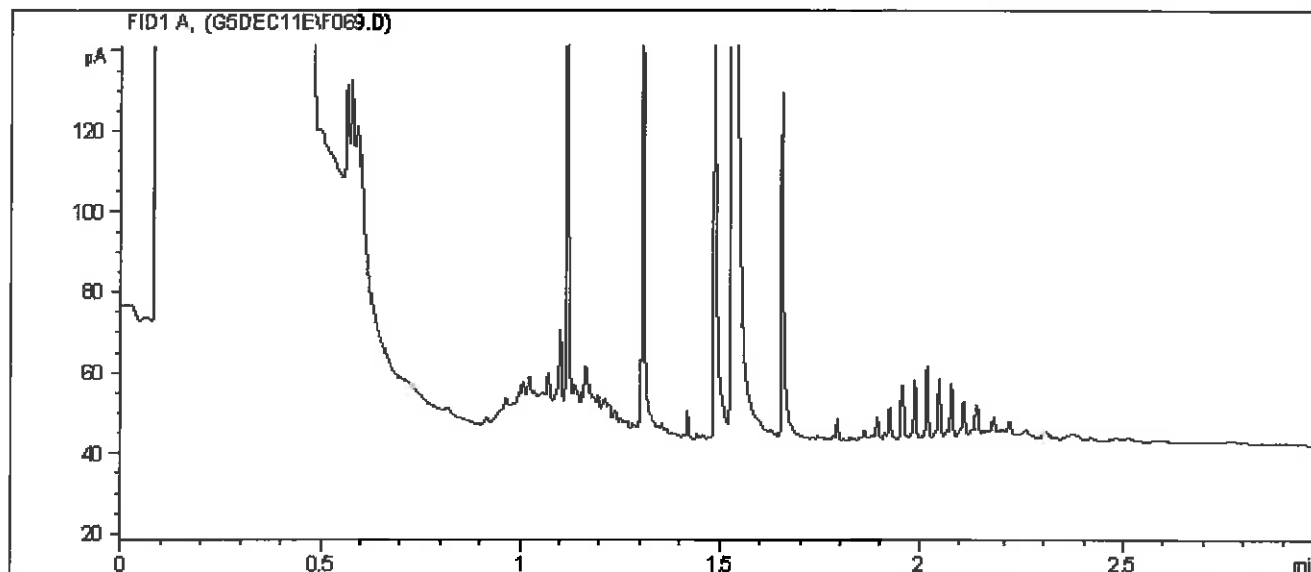
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7762

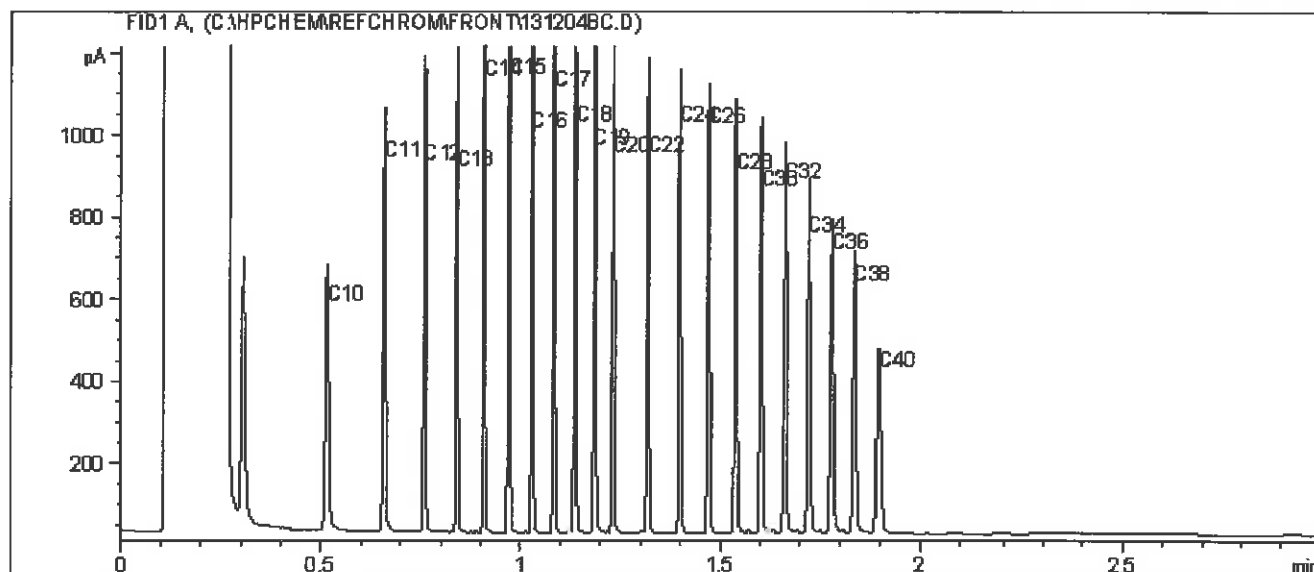
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: DUP-00069-100

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

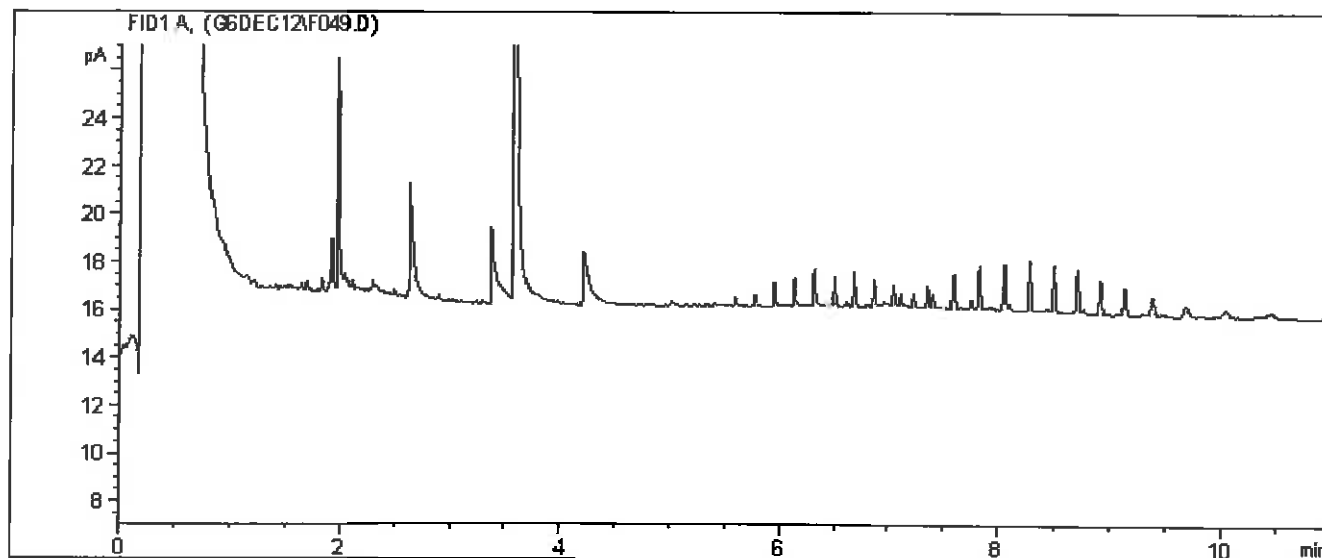
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3704
Maxxam Sample: IG7762

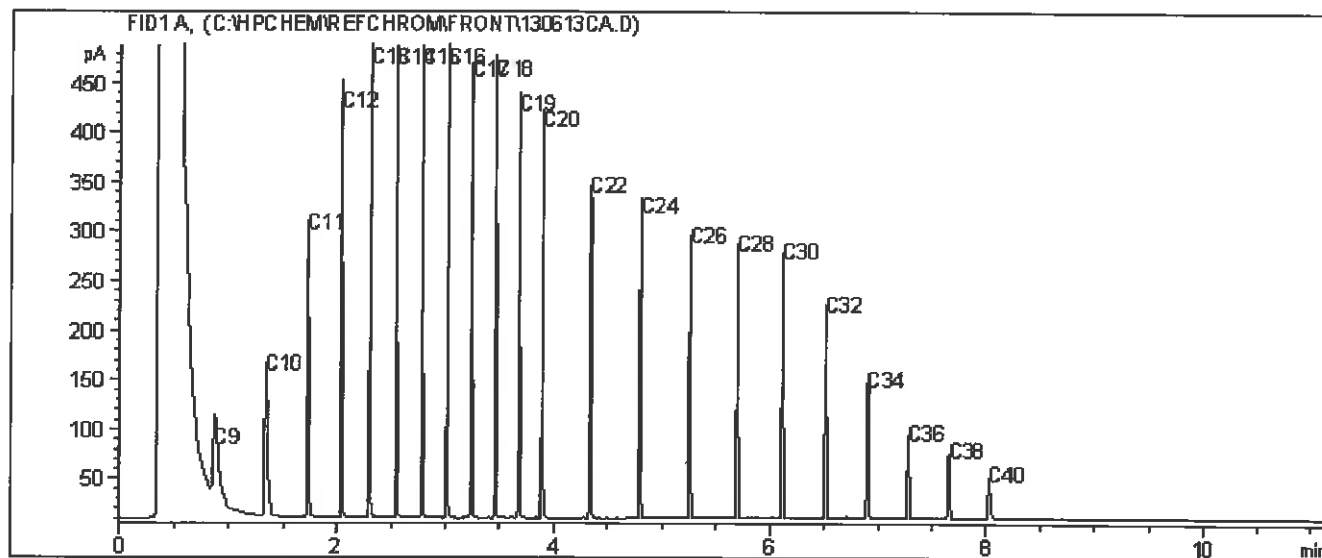
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: DUP-00069-100

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 700266127
Your Project #: LOWER POST
Your C.O.C. #: 42343704

Attention: Richard Wells
FRANZ ENVIRONMENTAL INC.
FRANZEN-VAN
1080 MAINLAND STREET
SUITE 308
VANCOUVER, BC
CANADA V6B 2T4

Report Date: 2013/12/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3B3708
Received: 2013/12/09, 13:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	3	2013/12/10	2013/12/10	BBY8-SOP-00010	EPA 8260C
CCME Hydrocarbons (F2-F4 in water)	3	2013/12/12	2013/12/12	BBY8SOP-00030	CCME Soil Tier1
Hardness Total (calculated as CaCO3)	3	N/A	2013/12/13	BBY7SOP-00002	EPA 6020A
Mercury (Total) by CVAf	3	2013/12/12	2013/12/13	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2013/12/09	2013/12/13	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	3	2013/12/12	2013/12/12	BBY7SOP-00002	EPA 6020A
Nitrate + Nitrite (N)	3	N/A	2013/12/10	BBY6SOP-00010	SM 4500NO3-I
Nitrite (N) by CFA	3	N/A	2013/12/10	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	3	N/A	2013/12/11	BBY6SOP-00010	SM 4500NO3-I
PAH in Water by GC/MS (SIM)	3	2013/12/11	2013/12/12	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	3	N/A	2013/12/13	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Water by GC/FID	3	N/A	2013/12/16	BBY WI-00033	BC MOE Lab Method
Extrac. Petroleum HC in Water by GC/FID	3	2013/12/12	2013/12/13	BBY8SOP-00029	BC Env Lab Manual
Volatile F1-BTEX	3	N/A	2013/12/11	BBY WI-00033	BC MOE Lab Method

* Results relate only to the items tested.

Encryption Key



Shanaz Akbar

16 Dec 2013 17:05:03 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Crystal Ireland, B.Sc., Account Specialist
Email: Cireland@maxxam.ca
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IG7767	IG7768	IG7769	
Sampling Date	2013/12/06 14:45	2013/12/06 15:15	2013/12/06 15:15	
	DW-TREATED	DW-UNTREATED	DUP-00069-10	
UNITS				QC Batch
Extractable Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.20	<0.20	0.20
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	0.20
F4 (C34-C50 Hydrocarbons)	mg/L	<3.0	<3.0	3.0
Reached Baseline at C50	mg/L	YES	YES	N/A
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	90	89	90
				7318402

TOTAL PETROLEUM HYDROCARBONS (WATER)

Maxxam ID	IG7767	IG7768	IG7769	
Sampling Date	2013/12/06 14:45	2013/12/06 15:15	2013/12/06 15:15	
	DW-TREATED	DW-UNTREATED	DUP-00069-10	
UNITS				QC Batch
Calculated Parameters				
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	0.20
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	0.20
Ext. Pet. Hydrocarbon				
EPH (C10-C19)	mg/L	<0.20	<0.20	0.20
EPH (C19-C32)	mg/L	<0.20	<0.20	0.20
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	112	111	111
				7318364

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

CCME&CSR BTEX/F1/VPH IN WATER (WATER)

Maxxam ID	IG7767	IG7768	IG7769	
Sampling Date	2013/12/06	2013/12/06	2013/12/06	15:15
	14:45			
	DW-TREATED	DW-UNTREATED	DUP-00069-10	QC Batch
UNITS				RDL
Calculated Parameters				
F1 (C6-C10) - BTEX	ug/L	<300	<300	7313378
Volatiles				
VPH (VH6 to 10 - BTEX)	ug/L	<300	<300	7313378
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	7315979
Benzene	ug/L	<0.40	<0.40	7315979
Toluene	ug/L	<0.40	0.57	7315979
Ethylbenzene	ug/L	<0.40	<0.40	7315979
m & p-Xylene	ug/L	<0.40	<0.40	7315979
o-Xylene	ug/L	<0.40	<0.40	7315979
Styrene	ug/L	<0.40	<0.40	7315979
Xylenes (Total)	ug/L	<0.40	<0.40	7315979
VH C6-C10	ug/L	<300	<300	7315979
(C6-C10)	ug/L	<300	<300	7315979
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	104	103	7315979
4-BROMOFLUOROBENZENE (sur.)	%	91	94	7315979
D4-1,2-DICHLOROETHANE (sur.)	%	102	105	7315979

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IG7767	IG7768	IG7769	
Sampling Date	2013/12/06 14:45	2013/12/06 15:15	2013/12/06 15:15	
	DW-TREATED	DW-UNTREATED	DUP-00069-10	
Calculated Parameters				QC Batch
Total Hardness (CaCO3)	39.9	371	371	0.50
Units	mg/L			7313272
Elements				
Total Mercury (Hg)	<0.010	<0.010	<0.010	0.010
				7319077

Maxxam Job #: B3B3708
Report Date: 2013/12/16

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IG7767	IG7768	IG7769	
Sampling Date	2013/12/06 14:45	2013/12/06 15:15	2013/12/06 15:15	
UNITS	DW-TREATED	DW-UNTREATED	DUP-00069-10	QC Batch
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	<3.0	<3.0	3.0
Total Antimony (Sb)	ug/L	<0.50	<0.50	0.50
Total Arsenic (As)	ug/L	1.22	1.94	0.10
Total Barium (Ba)	ug/L	5.1	99.2	1.0
Total Beryllium (Be)	ug/L	<0.10	<0.10	0.10
Total Bismuth (Bi)	ug/L	<1.0	<1.0	1.0
Total Boron (B)	ug/L	<50	<50	50
Total Cadmium (Cd)	ug/L	<0.010	<0.010	0.010
Total Chromium (Cr)	ug/L	<1.0	<1.0	1.0
Total Cobalt (Co)	ug/L	<0.50	<0.50	0.50
Total Copper (Cu)	ug/L	5.61	1.06	0.20
Total Iron (Fe)	ug/L	129	842	5.0
Total Lead (Pb)	ug/L	0.27	<0.20	0.20
Total Lithium (Li)	ug/L	<5.0	<5.0	5.0
Total Manganese (Mn)	ug/L	5.0	30.9	1.0
Total Molybdenum (Mo)	ug/L	3.4	3.5	1.0
Total Nickel (Ni)	ug/L	<1.0	<1.0	1.0
Total Selenium (Se)	ug/L	<0.10	<0.10	0.10
Total Silicon (Si)	ug/L	5130	5300	100
Total Silver (Ag)	ug/L	<0.020	<0.020	0.020
Total Strontium (Sr)	ug/L	27.5	421	1.0
Total Thallium (Tl)	ug/L	<0.050	<0.050	0.050
Total Tin (Sn)	ug/L	<5.0	<5.0	5.0
Total Titanium (Ti)	ug/L	<5.0	<5.0	5.0
Total Uranium (U)	ug/L	3.21	3.42	0.10
Total Vanadium (V)	ug/L	<5.0	<5.0	5.0
Total Zinc (Zn)	ug/L	<5.0	<5.0	5.0
Total Zirconium (Zr)	ug/L	<0.50	<0.50	0.50
Total Calcium (Ca)	mg/L	7.13	90.7	0.050
Total Magnesium (Mg)	mg/L	5.36	35.2	0.050
Total Potassium (K)	mg/L	1.22	1.97	0.050
Total Sodium (Na)	mg/L	166	7.51	0.050
Total Sulphur (S)	mg/L	12.7	12.2	3.0

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Your P.O. #: 700266127
Sampler Initials: GB

NITRITE & NITRATE (WATER)

Maxxam ID		IG7767	IG7768	IG7769	
Sampling Date		2013/12/06 14:45	2013/12/06 15:15	2013/12/06 15:15	
	UNITS	DW-TREATED	DW-UNTREATED	DUP-00069-10	QC Batch
ANIONS					
Nitrite (N)	mg/L	<0.0050	<0.0050	<0.0050	7316141
Calculated Parameters					
Nitrate (N)	mg/L	<0.020	0.025	<0.020	7312598
Nutrients					
Nitrate plus Nitrite (N)	mg/L	<0.020	0.025	<0.020	7316130

Maxxam Job #: B3B3708
Report Date: 2013/12/16

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

CCME PAH IN WATER BY GC-MS (WATER)

Maxxam ID	IG7767	IG7768	IG7769	
Sampling Date	2013/12/06 14:45	2013/12/06 15:15	2013/12/06 15:15	
	DW-TREATED	DW-UNTREATED	DUP-00069-10	
UNITS				QC Batch
Polycyclic Aromatics				
Low Molecular Weight PAH's	ug/L	<0.50	<0.50	7312791
High Molecular Weight PAH's	ug/L	<0.050	<0.050	7312791
Total PAH	ug/L	<0.50	<0.50	7312791
Naphthalene	ug/L	<0.10	<0.10	7317854
2-Methylnaphthalene	ug/L	<0.10	<0.10	7317854
Quinoline	ug/L	<0.50	<0.50	7317854
Acenaphthylene	ug/L	<0.050	<0.050	7317854
Acenaphthene	ug/L	<0.050	<0.050	7317854
Fluorene	ug/L	<0.050	<0.050	7317854
Phenanthrene	ug/L	<0.050	<0.050	7317854
Anthracene	ug/L	<0.010	<0.010	7317854
Acridine	ug/L	<0.050	<0.050	7317854
Fluoranthene	ug/L	<0.020	<0.020	7317854
Pyrene	ug/L	<0.020	<0.020	7317854
Benzo(a)anthracene	ug/L	<0.010	<0.010	7317854
Chrysene	ug/L	<0.050	<0.050	7317854
Benzo(b&j)fluoranthene	ug/L	<0.050	<0.050	7317854
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	7317854
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	7317854
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	7317854
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	7317854
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	7317854
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	118	117	7317854
D8-ACENAPHTHYLENE (sur.)	%	111	113	7317854
D8-NAPHTHALENE (sur.)	%	113	114	7317854
D9-Acridine	%	80	79	7317854
TERPHENYL-D14 (sur.)	%	64	65	7317854

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

Package 1	2.7 C
-----------	-------

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Maxxam Job #: B3B3708
Report Date: 2013/12/16

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7315979	1,4-Difluorobenzene (sur.)	2013/12/10	103	70 - 130	103	70 - 130	105	%		
7315979	4-BROMOFLUOROBENZENE (sur.)	2013/12/10	101	70 - 130	100	70 - 130	91	%		
7315979	D4-1,2-DICHLOROETHANE (sur.)	2013/12/10	95	70 - 130	98	70 - 130	101	%		
7315979	Methyl-tert-butylether (MTBE)	2013/12/10	88	70 - 130	89	70 - 130	<4.0	ug/L		
7315979	Benzene	2013/12/10	88	70 - 130	90	70 - 130	<0.40	ug/L	NC	30
7315979	Toluene	2013/12/10	93	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
7315979	Ethylbenzene	2013/12/10	97	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
7315979	m & p-Xylene	2013/12/10	96	70 - 130	96	70 - 130	<0.40	ug/L	NC	30
7315979	o-Xylene	2013/12/10	100	70 - 130	100	70 - 130	<0.40	ug/L	NC	30
7315979	Styrene	2013/12/10	99	70 - 130	100	70 - 130	<0.40	ug/L	NC	30
7315979	(C6-C10)	2013/12/10			74	70 - 130	<300	ug/L	NC	30
7315979	Xylenes (Total)	2013/12/10					<0.40	ug/L	NC	30
7315979	VH C6-C10	2013/12/10					<300	ug/L		
7316130	Nitrate plus Nitrite (N)	2013/12/10	108	80 - 120	105	80 - 120	<0.020	mg/L	NC	25
7316141	Nitrite (N)	2013/12/10	108	80 - 120	102	80 - 120	<0.0050	mg/L		
7317854	D10-ANTHRACENE (sur.)	2013/12/12	120	60 - 130	117	60 - 130	122	%		
7317854	D8-ACENAPHTHYLENE (sur.)	2013/12/12	116	50 - 130	110	50 - 130	114	%		
7317854	D8-NAPHTHALENE (sur.)	2013/12/12	112	50 - 130	111	50 - 130	112	%		
7317854	D9-Acridine	2013/12/12	91	50 - 130	84	50 - 130	82	%		
7317854	TERPHENYL-D14 (sur.)	2013/12/12	91	60 - 130	99	60 - 130	99	%		
7317854	Naphthalene	2013/12/12	99	40 - 130	75	50 - 130	<0.10	ug/L	NC	40
7317854	2-Methylnaphthalene	2013/12/12	102	40 - 130	69	50 - 130	<0.10	ug/L	NC	40
7317854	Quinoline	2013/12/12	109	40 - 130	112	50 - 130	<0.50	ug/L	NC	40
7317854	Acenaphthylene	2013/12/12	105	40 - 130	86	50 - 130	<0.050	ug/L	NC	40
7317854	Acenaphthene	2013/12/12	107	40 - 130	87	50 - 130	<0.050	ug/L	NC	40
7317854	Fluorene	2013/12/12	104	40 - 130	91	50 - 130	<0.050	ug/L	NC	40
7317854	Phenanthrene	2013/12/12	103	40 - 130	95	60 - 130	<0.050	ug/L	NC	40
7317854	Anthracene	2013/12/12	106	40 - 130	101	60 - 130	<0.010	ug/L	NC	40
7317854	Acridine	2013/12/12	87	40 - 130	77	50 - 130	<0.050	ug/L	NC	40
7317854	Fluoranthene	2013/12/12	102	40 - 130	101	60 - 130	<0.020	ug/L	NC	40
7317854	Pyrene	2013/12/12	104	40 - 130	104	60 - 130	<0.020	ug/L	NC	40
7317854	Benzo(a)anthracene	2013/12/12	80	40 - 130	88	60 - 130	<0.010	ug/L	NC	40
7317854	Chrysene	2013/12/12	80	40 - 130	92	60 - 130	<0.050	ug/L	NC	40
7317854	Benzo(b,f)fluoranthene	2013/12/12	79	40 - 130	85	60 - 130	<0.050	ug/L	NC	40
7317854	Benzo(k)fluoranthene	2013/12/12	78	40 - 130	91	60 - 130	<0.050	ug/L	NC	40
7317854	Benzo(a)pyrene	2013/12/12	78	40 - 130	93	60 - 130	<0.0090	ug/L	NC	40
7317854	Indeno(1,2,3-cd)pyrene	2013/12/12	73	40 - 130	88	60 - 130	<0.050	ug/L	NC	40
7317854	Dibenz(a,h)anthracene	2013/12/12	68	40 - 130	81	60 - 130	<0.050	ug/L	NC	40
7317854	Benzo(g,h,i)perylene	2013/12/12	74	40 - 130	89	60 - 130	<0.050	ug/L	NC	40

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7318364	O-TERPHENYL (sur.)	2013/12/13	108	50 - 130	103	50 - 130	108	%		
7318364	EPH (C10-C19)	2013/12/13	128	50 - 130	113	50 - 130	<0.20	mg/L	NC	30
7318364	EPH (C19-C32)	2013/12/13	111	50 - 130	100	50 - 130	<0.20	mg/L	NC	30
7318402	F2 (C10-C16 Hydrocarbons)	2013/12/12	93	80 - 120	105	80 - 120	<0.20	mg/L	NC	40
7318402	O-TERPHENYL (sur.)	2013/12/12	109	50 - 130	90	50 - 130	92	%		
7318402	F3 (C16-C34 Hydrocarbons)	2013/12/12					<0.20	mg/L	NC	40
7318402	F4 (C34-C50 Hydrocarbons)	2013/12/12					<3.0	mg/L	NC	40
7318402	Reached Baseline at C50	2013/12/12					YES, RDL=N/A	mg/L	NC	40
7318828	Total Aluminum (Al)	2013/12/12	105	80 - 120	106	80 - 120	<3.0	ug/L	NC	20
7318828	Total Antimony (Sb)	2013/12/12	105	80 - 120	101	80 - 120	<0.50	ug/L		
7318828	Total Arsenic (As)	2013/12/12	109	80 - 120	102	80 - 120	<0.10	ug/L		
7318828	Total Barium (Ba)	2013/12/12	99	80 - 120	100	80 - 120	<1.0	ug/L	1.7	20
7318828	Total Beryllium (Be)	2013/12/12	104	80 - 120	103	80 - 120	<0.10	ug/L		
7318828	Total Bismuth (Bi)	2013/12/12	95	80 - 120	100	80 - 120	<1.0	ug/L		
7318828	Total Cadmium (Cd)	2013/12/12	102	80 - 120	103	80 - 120	<0.010	ug/L	NC	20
7318828	Total Chromium (Cr)	2013/12/12	99	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7318828	Total Cobalt (Co)	2013/12/12	95	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7318828	Total Copper (Cu)	2013/12/12	94	80 - 120	101	80 - 120	<0.20	ug/L	4.1	20
7318828	Total Iron (Fe)	2013/12/12	NC	80 - 120	113	80 - 120	<5.0	ug/L	1.1	20
7318828	Total Lead (Pb)	2013/12/12	97	80 - 120	102	80 - 120	<0.20	ug/L	2.1	20
7318828	Total Lithium (Li)	2013/12/12	106	80 - 120	104	80 - 120	<5.0	ug/L		
7318828	Total Manganese (Mn)	2013/12/12	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.1	20
7318828	Total Molybdenum (Mo)	2013/12/12	NC	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7318828	Total Nickel (Ni)	2013/12/12	95	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7318828	Total Selenium (Se)	2013/12/12	111	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
7318828	Total Silver (Ag)	2013/12/12	100	80 - 120	93	80 - 120	<0.020	ug/L	NC	20
7318828	Total Strontium (Sr)	2013/12/12	NC	80 - 120	102	80 - 120	<1.0	ug/L		
7318828	Total Thallium (Tl)	2013/12/12	99	80 - 120	112	80 - 120	<0.050	ug/L		
7318828	Total Tin (Sn)	2013/12/12	101	80 - 120	92	80 - 120	<5.0	ug/L		
7318828	Total Titanium (Ti)	2013/12/12	99	80 - 120	101	80 - 120	<5.0	ug/L		
7318828	Total Uranium (U)	2013/12/12	101	80 - 120	101	80 - 120	<0.10	ug/L		
7318828	Total Vanadium (V)	2013/12/12	104	80 - 120	100	80 - 120	<5.0	ug/L		
7318828	Total Zinc (Zn)	2013/12/12	NC	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
7318828	Total Boron (B)	2013/12/12					<50	ug/L	NC	20
7318828	Total Silicon (Si)	2013/12/12					<100	ug/L		

Maxxam Job #: B3B3708
Report Date: 2013/12/16

FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST
Your P.O. #: 700266127
Sampler Initials: GB

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7318928	Total Zirconium (Zr)	2013/12/12					<0.50	ug/L		
7319077	Total Mercury (Hg)	2013/12/13	109	80 - 120	112	80 - 120	<0.010	ug/L	NC	20

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B3B3708

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reimer, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

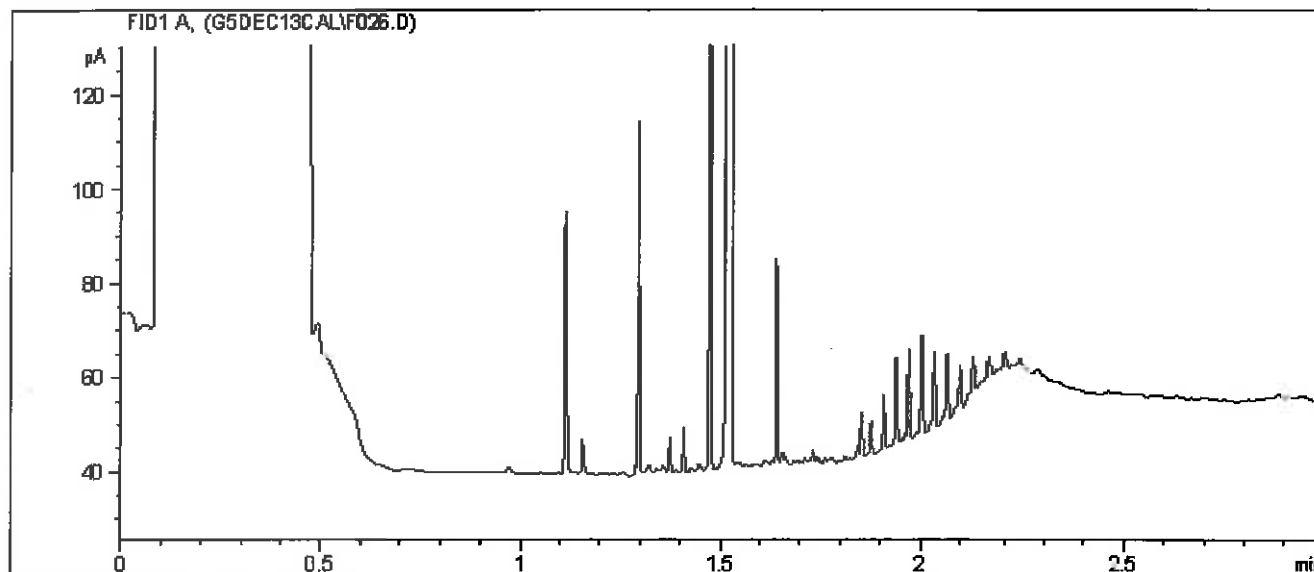
Request Information				Project Information				Laboratory Use Only			
Company Name	Contact Name	Company Address	City/State/Zip	Customer #	Project Name	Project Manager	Turnaround Time (TAT) Requested	Material ID	Material Description	Project Manager	Turnaround Time (TAT) Requested
MAXAM	MAXAM FRANKFORD	1410-7777 County Street Frankford, PA 19042	PA 19042	8365708	COAST GUARD	COAST GUARD	24-48 HRS	8365708	COAST GUARD	COAST GUARD	24-48 HRS
Client Name	Client Address	Client City/State/Zip	Client Phone	Project Name	Project Manager	Project Manager	Turnaround Time (TAT) Requested	Material ID	Material Description	Project Manager	Turnaround Time (TAT) Requested
MAXAM	MAXAM FRANKFORD	1410-7777 County Street Frankford, PA 19042	PA 19042	COAST GUARD	COAST GUARD	COAST GUARD	24-48 HRS	8365708	COAST GUARD	COAST GUARD	24-48 HRS
Phone	Fax	Project Name	Project Manager	Project Name	Project Manager	Project Manager	Turnaround Time (TAT) Requested	Material ID	Material Description	Project Manager	Turnaround Time (TAT) Requested
(800) 734-7274	(800) 731-7289	COAST GUARD	COAST GUARD	COAST GUARD	COAST GUARD	COAST GUARD	24-48 HRS	8365708	COAST GUARD	COAST GUARD	24-48 HRS
Sample ID	Sample Description	Sample Location	Sample Date	Sample Time	Sample Method	Sample Results	Sample Comments	Sample ID	Sample Description	Sample Location	Sample Date
167767	DW-Treated	13/12/06	14:45	14:45	Water	Water	Water	167767	DW-Treated	13/12/06	14:45
167768	DW-Untreated	13/12/06	15:15	15:15	Water	Water	Water	167768	DW-Untreated	13/12/06	15:15
167769	Dup-00019-10	13/12/06	15:15	15:15	Water	Water	Water	167769	Dup-00019-10	13/12/06	15:15
167770								167770			
167771								167771			
167772								167772			
167773								167773			
167774								167774			
167775								167775			
167776								167776			
167777								167777			
167778								167778			
167779								167779			
167780								167780			

Report Date: 2013/12/16
Maxxam Job #: B3B3708
Maxxam Sample: IG7767

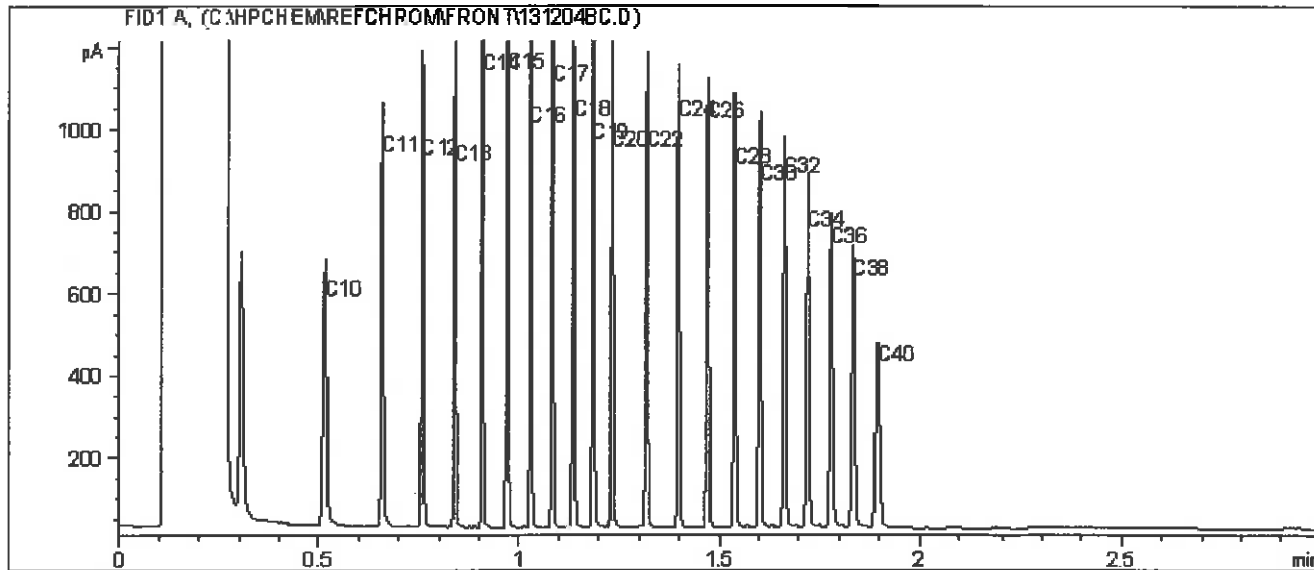
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: DW-TREATED

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

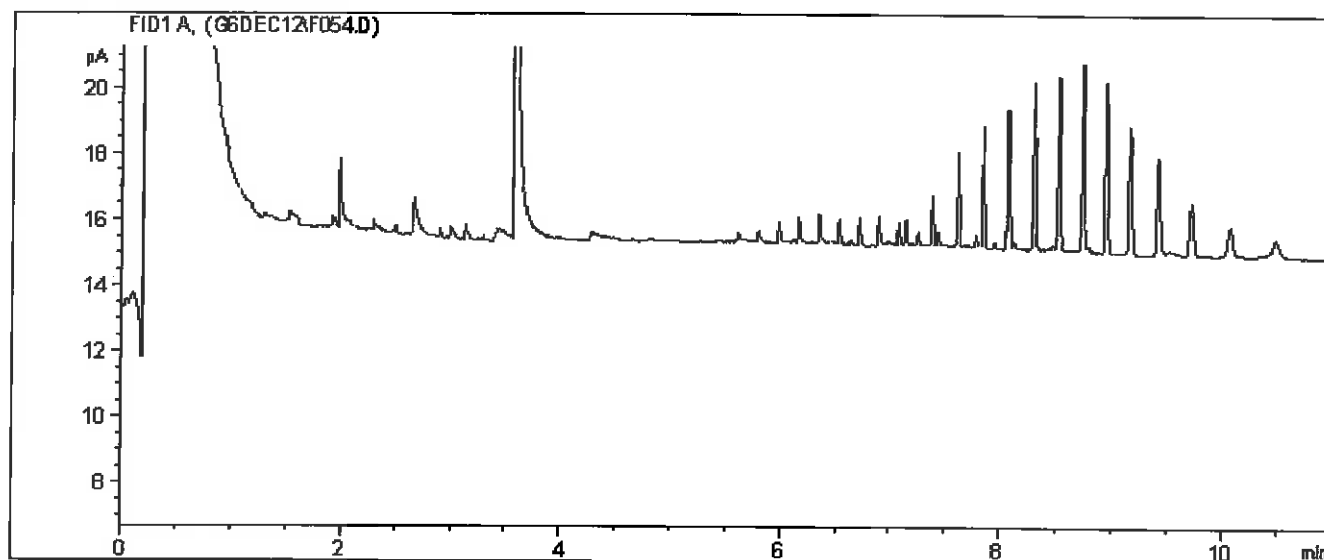
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3708
Maxxam Sample: IG7767

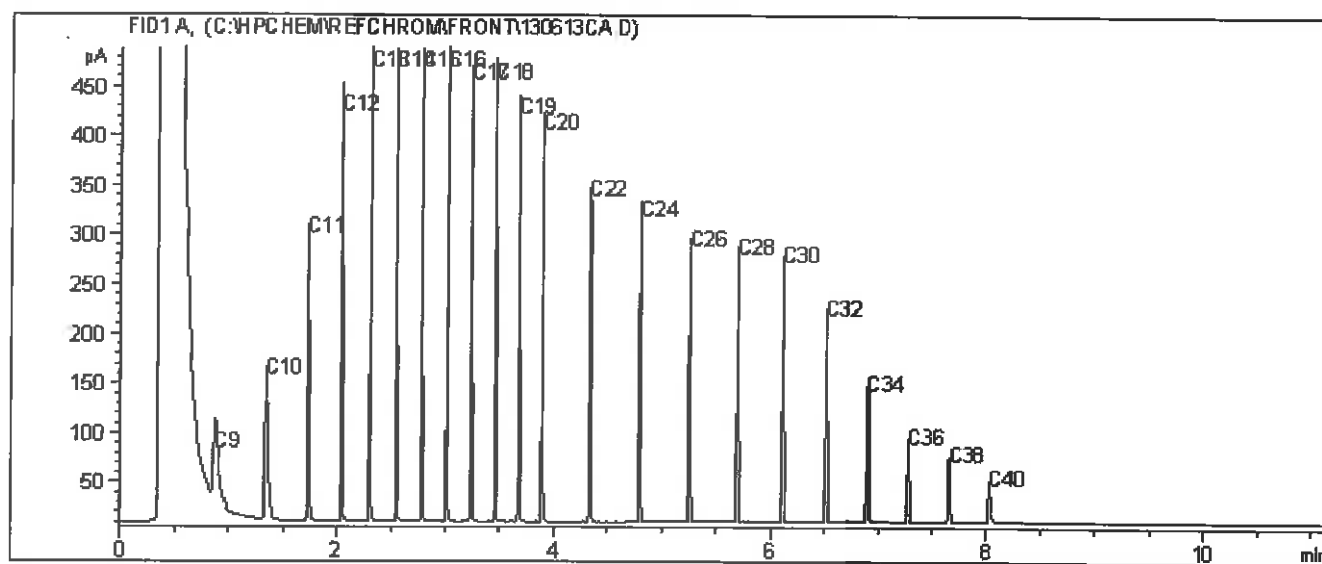
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: DW-TREATED

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

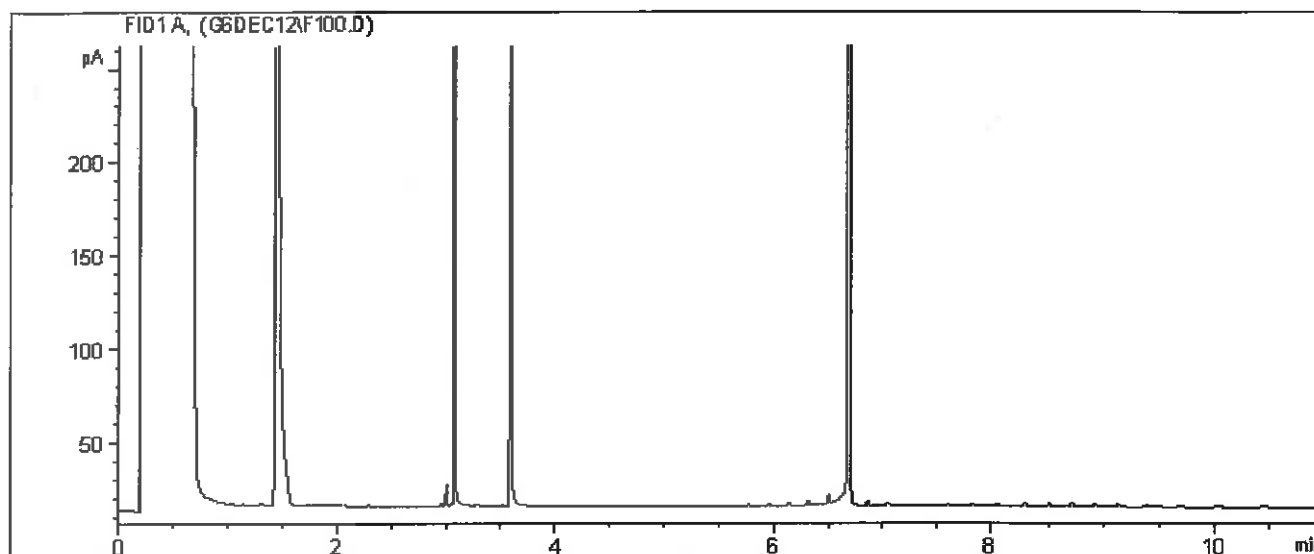
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16
Maxxam Job #: B3B3708
Maxxam Sample: IG7767 Lab-Dup

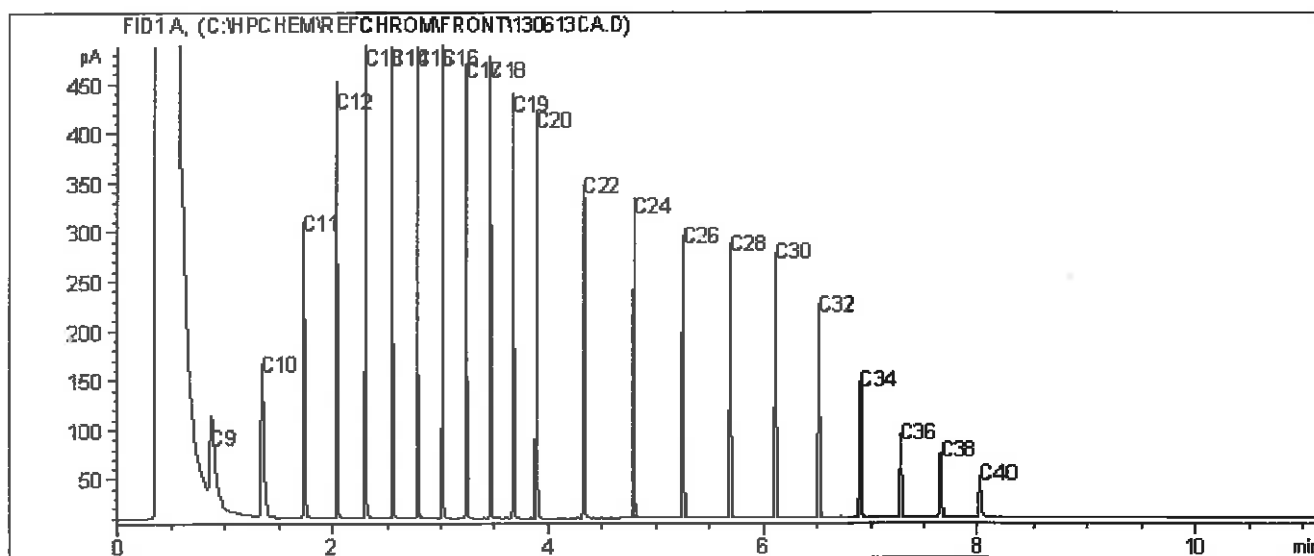
FRANZ ENVIRONMENTAL INC.
Client Project #: LOWER POST

Client ID: DW-TREATED

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12

Diesel: C8 - C22
Lubricating Oils: C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.