

				Analytes (BDL = Below Detection Limit; ND = Non Detect)																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])														
Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																	(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000				
Location	Sample Date:	Sample Matrix	Matrix Notes	TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	Naphthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver	Zinc
J24NW	09/10/13	Cuttings	composite 1	160	BDL	160	BDL	BDL	BDL	BDL	0.013	BDL	0.012	0.01	BDL	BDL	0.036	BDL	0.014	0.052	BDL	0.24	0.017	2.1	18	9.1	3.1	4400	0.37	9.9	BDL	16	8.4	0.052	8.7	BDL	BDL	39
J24NW	09/10/13	Cuttings	composite 2	60	BDL	60	0.0032	BDL	BDL	BDL	0.01	BDL	BDL	BDL	BDL	BDL	0.015	BDL	0.0083	0.035	BDL	0.14	0.013	1.4	10	9.2	3.6											
J24NW	09/10/13	Cuttings	composite 3	26	BDL	26	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.009	BDL	BDL	0.017	BDL	0.096	0.039	1.6	21	9.1	3											



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Est. 1970

Chris Hines  
EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

## Report Summary

Tuesday September 24, 2013

Report Number: L656703


Samples Received: 09/11/13

Client Project: J24NW

Description: J24NW Cuttings

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

  
Jarred Willis , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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# REPORT OF ANALYSIS

Chris Hines  
EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

September 24, 2013

Date Received : September 11, 2013  
Description : J24NW Cuttings  
Sample ID : 091013-J24NW (CUT1)  
Collected By : Matt Kasten  
Collection Date : 09/10/13 09:15

ESC Sample # : L656703-01

Site ID : J24NW

Project # : J24NW

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	610000		col/g	9215B	09/11/13	100000
Nitrate	BDL	1.0	mg/kg	9056	09/13/13	1
Sulfate	290	50.	mg/kg	9056	09/13/13	1
Chromium,Hexavalent	BDL	10.	mg/kg	3060A/7196A	09/14/13	5
Chromium,Trivalent	BDL	10.	mg/kg	Calc.	09/24/13	1
ORP	160		mV	2580 B-2011	09/17/13	1
pH	9.1		su	9045D	09/17/13	1
Sodium Adsorption Ratio	18.			Calc.	09/18/13	1
Specific Conductance	2100		umhos/cm	9050AMod	09/14/13	1
Mercury	0.052	0.020	mg/kg	7471	09/16/13	1
Arsenic	3.1	1.0	mg/kg	6010B	09/23/13	1
Barium	4400	0.25	mg/kg	6010B	09/23/13	1
Cadmium	0.37	0.25	mg/kg	6010B	09/23/13	1
Chromium	9.9	0.50	mg/kg	6010B	09/23/13	1
Copper	16.	1.0	mg/kg	6010B	09/23/13	1
Iron	9800	5.0	mg/kg	6010B	09/23/13	1
Lead	8.4	0.25	mg/kg	6010B	09/23/13	1
Nickel	8.7	1.0	mg/kg	6010B	09/23/13	1
Selenium	BDL	1.0	mg/kg	6010B	09/23/13	1
Silver	BDL	0.50	mg/kg	6010B	09/23/13	1
Zinc	39.	1.5	mg/kg	6010B	09/23/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/12/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/12/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/12/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/12/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/12/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.9		% Rec.	8021/8015	09/12/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	09/12/13	5
TPH (GC/FID) High Fraction	160	4.0	mg/kg	8015D/DRO	09/17/13	1
Surrogate recovery(%)						
o-Terphenyl	74.4		% Rec.	8015D/DRO	09/17/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L656703-01 (PH) - 9.1@21.5c  
L656703-01 (CR6) - Diluted due to sample color interference.



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EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

September 24, 2013

Date Received : September 11, 2013  
Description : J24NW Cuttings  
Sample ID : 091013-J24NW (CUT1)  
Collected By : Matt Kasten  
Collection Date : 09/10/13 09:15

ESC Sample # : L656703-01

Site ID : J24NW

Project # : J24NW

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Acenaphthene	0.013	0.0060	mg/kg	8270C-SIM	09/18/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(a)anthracene	0.012	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(b)fluoranthene	0.010	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Chrysene	0.036	0.0060	mg/kg	8270C-SIM	09/18/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Fluoranthene	0.014	0.0060	mg/kg	8270C-SIM	09/18/13	1
Fluorene	0.052	0.0060	mg/kg	8270C-SIM	09/18/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Naphthalene	0.24	0.020	mg/kg	8270C-SIM	09/18/13	1
Phenanthrene	0.14	0.0060	mg/kg	8270C-SIM	09/18/13	1
Pyrene	0.017	0.0060	mg/kg	8270C-SIM	09/18/13	1
1-Methylnaphthalene	0.14	0.020	mg/kg	8270C-SIM	09/18/13	1
2-Methylnaphthalene	0.53	0.020	mg/kg	8270C-SIM	09/18/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	09/18/13	1
Surrogate Recovery						
Nitrobenzene-d5	77.5		% Rec.	8270C-SIM	09/18/13	1
2-Fluorobiphenyl	74.0		% Rec.	8270C-SIM	09/18/13	1
p-Terphenyl-d14	84.1		% Rec.	8270C-SIM	09/18/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L656703-01 (PH) - 9.1@21.5c

L656703-01 (CR6) - Diluted due to sample color interference.



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# REPORT OF ANALYSIS

Chris Hines  
EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

September 24, 2013

Date Received : September 11, 2013  
Description : J24NW Cuttings  
Sample ID : 091013-J24NW (CUT2)  
Collected By : Matt Kasten  
Collection Date : 09/10/13 09:20

ESC Sample # : L656703-02

Site ID : J24NW

Project # : J24NW

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	89000000		col/g	9215B	09/18/13	1000000
Nitrate	BDL	1.0	mg/kg	9056	09/14/13	1
Sulfate	200	50.	mg/kg	9056	09/14/13	1
pH	9.2		su	9045D	09/17/13	1
Sodium Adsorption Ratio	10.			Calc.	09/18/13	1
Specific Conductance	1400		umhos/cm	9050AMod	09/14/13	1
Arsenic	3.6	1.0	mg/kg	6010B	09/23/13	1
Iron	7400	5.0	mg/kg	6010B	09/17/13	1
Benzene	0.0032	0.0025	mg/kg	8021/8015	09/16/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/16/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/16/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/16/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/16/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.7		% Rec.	8021/8015	09/16/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	09/16/13	5
TPH (GC/FID) High Fraction	60.	4.0	mg/kg	8015D/DRO	09/13/13	1
Surrogate recovery(%)						
o-Terphenyl	83.8		% Rec.	8015D/DRO	09/13/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Acenaphthene	0.010	0.0060	mg/kg	8270C-SIM	09/18/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Chrysene	0.015	0.0060	mg/kg	8270C-SIM	09/18/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Fluoranthene	0.0083	0.0060	mg/kg	8270C-SIM	09/18/13	1
Fluorene	0.035	0.0060	mg/kg	8270C-SIM	09/18/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Naphthalene	0.14	0.020	mg/kg	8270C-SIM	09/18/13	1
Phenanthrene	0.089	0.0060	mg/kg	8270C-SIM	09/18/13	1
Pyrene	0.013	0.0060	mg/kg	8270C-SIM	09/18/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L656703-02 (PH) - 9.2@21.3c



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# REPORT OF ANALYSIS

September 24, 2013

Chris Hines  
EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

ESC Sample # : L656703-02

Date Received : September 11, 2013  
Description : J24NW Cuttings

Site ID : J24NW

Sample ID : 091013-J24NW (CUT2)

Project # : J24NW

Collected By : Matt Kasten  
Collection Date : 09/10/13 09:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1-Methylnaphthalene	0.11	0.020	mg/kg	8270C-SIM	09/18/13	1
2-Methylnaphthalene	0.32	0.020	mg/kg	8270C-SIM	09/18/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	09/18/13	1
Surrogate Recovery						
Nitrobenzene-d5	87.2		% Rec.	8270C-SIM	09/18/13	1
2-Fluorobiphenyl	82.6		% Rec.	8270C-SIM	09/18/13	1
p-Terphenyl-d14	95.0		% Rec.	8270C-SIM	09/18/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L656703-02 (PH) - 9.2@21.3c



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# REPORT OF ANALYSIS

Chris Hines  
EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

September 24, 2013

Date Received : September 11, 2013  
Description : J24NW Cuttings  
Sample ID : 091013-J24NW (CUT3)  
Collected By : Matt Kasten  
Collection Date : 09/10/13 09:25

ESC Sample # : L656703-03

Site ID : J24NW

Project # : J24NW

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	99000000		col/g	9215B	09/18/13	1000000
Nitrate	BDL	1.0	mg/kg	9056	09/14/13	1
Sulfate	240	50.	mg/kg	9056	09/14/13	1
pH	9.1		su	9045D	09/17/13	1
Sodium Adsorption Ratio	21.			Calc.	09/18/13	1
Specific Conductance	1600		umhos/cm	9050AMod	09/14/13	1
Arsenic	3.0	1.0	mg/kg	6010B	09/23/13	1
Iron	6600	5.0	mg/kg	6010B	09/17/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/16/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/16/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/16/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/16/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/16/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.6		% Rec.	8021/8015	09/16/13	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/16/13	5
TPH (GC/FID) High Fraction	26.	4.0	mg/kg	8015D/DRO	09/13/13	1
Surrogate recovery(%)						
o-Terphenyl	54.7		% Rec.	8015D/DRO	09/13/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Chrysene	0.0090	0.0060	mg/kg	8270C-SIM	09/18/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Fluorene	0.017	0.0060	mg/kg	8270C-SIM	09/18/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1
Naphthalene	0.096	0.020	mg/kg	8270C-SIM	09/18/13	1
Phenanthrene	0.039	0.0060	mg/kg	8270C-SIM	09/18/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	09/18/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L656703-03 (PH) - 9.1@21.3c



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# REPORT OF ANALYSIS

Chris Hines  
EnCana Oil & Gas Inc. - CO  
143 Diamond Avenue  
Parachute, CO 81635

September 24, 2013

Date Received : September 11, 2013  
Description : J24NW Cuttings  
Sample ID : 091013-J24NW (CUT3)  
Collected By : Matt Kasten  
Collection Date : 09/10/13 09:25

ESC Sample # : L656703-03

Site ID : J24NW

Project # : J24NW

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1-Methylnaphthalene	0.050	0.020	mg/kg	8270C-SIM	09/18/13	1
2-Methylnaphthalene	0.17	0.020	mg/kg	8270C-SIM	09/18/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	09/18/13	1
Surrogate Recovery						
Nitrobenzene-d5	76.9		% Rec.	8270C-SIM	09/18/13	1
2-Fluorobiphenyl	76.0		% Rec.	8270C-SIM	09/18/13	1
p-Terphenyl-d14	71.4		% Rec.	8270C-SIM	09/18/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/24/13 17:40 Printed: 09/24/13 17:40  
L656703-03 (PH) - 9.1@21.3c



Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L656703-01	WG681794	SAMP	Standard Plate Count	R2817635	T8
	WG681651	SAMP	Chromium,Hexavalent	R2816460	O

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
09/24/13 at 17:40:57

TSR Signing Reports: 358  
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L656703-01 Account: ENCANACO Received: 09/11/13 09:30 Due Date: 09/18/13 00:00 RPT Date: 09/24/13 17:40

Sample: L656703-02 Account: ENCANACO Received: 09/11/13 09:30 Due Date: 09/19/13 00:00 RPT Date: 09/24/13 17:40

Sample: L656703-03 Account: ENCANACO Received: 09/11/13 09:30 Due Date: 09/19/13 00:00 RPT Date: 09/24/13 17:40