



**Evacuation Creek 7612 (Location: 322443)**  
**Encana Oil & Gas (USA) Inc. (Operator: 100185)**

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 (Report of Work Completed and Notice of Intent) to document burial of material with concentrations/levels above COGCC Table 910-1 allowable limits for several PAH constituents and arsenic on a location in the Evacuation Creek Field in Garfield County.

**REPORT OF WORK COMPLETED**

As part of Encana's due diligence efforts in support of well plugging and abandonment and final reclamation, an environmental contractor completed a site assessment of the location which included collection of field notes, photos, and soil from next to the wellhead and beneath a removed tank battery and secondary containment.

There was no visible staining or other evidence of spills or impacts resulting from operations. Lab results confirmed these observations at the wellhead with no indications of soil impacts resulting from operation. Despite the absence of staining or odor, the lab results for material below the tank battery had exceedences for several of the PAH constituents listed in Table 910-1. In response to potential soil impacts, heavy equipment was used to excavate the area of interest to bedrock refusal. When additional sample results continued to show PAH constituent concentrations above allowable limits despite the continued absence of staining or odor, an alternative explanation for identified PAH issues began to be discussed. Upon further discussion, the fact that the pad was constructed on a shale outcrop with shale aggregate made the presence of naturally occurring organic constituents a possible cause of the identified PAH constituents. In consultation with a COGCC Environmental Protection Specialist, shale samples were collected from a cut slope at the site and sent to two labs for analysis.

**NOTICE OF INTENT**

One of the labs pulverized the shale rock before analyzing the sample and consistently returned analytical results for diesel range organics, with one sample returning a relatively high result for one of the PAH constituents previously encountered. The second lab did not pulverize any of the shale samples, and received non-detect results for PAH constituent analysis. This discrepancy between laboratory approaches is consistent with previous encounters of naturally occurring PAH constituents, where the deployment of heavy equipment associated with the construction of well pads or roads, or the drilling of wells is believed to have provided the physical force necessary to mobilize PAH constituents to the extent that detection with standard laboratory analytical methods was possible.

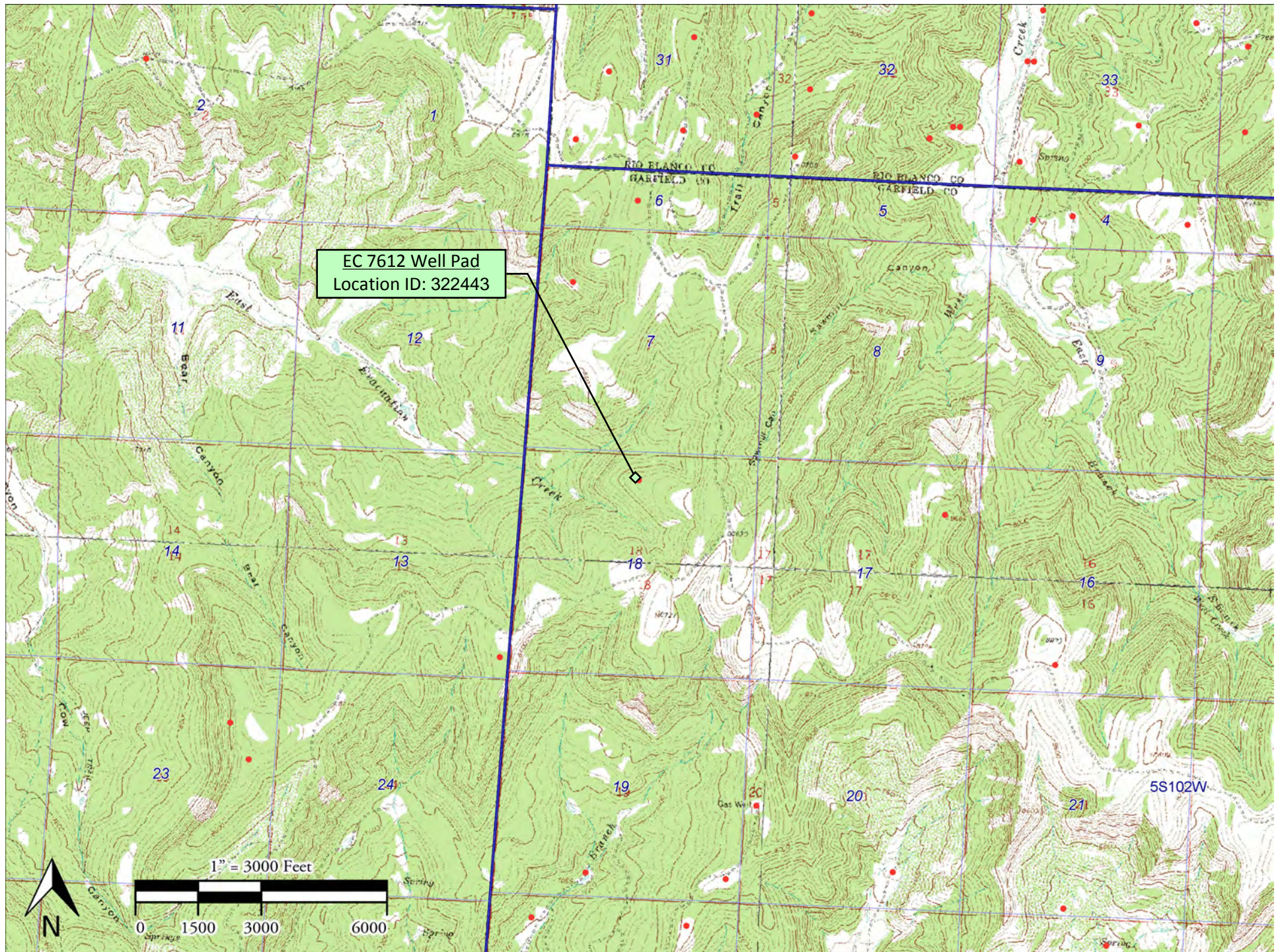
Oil shale contains organic constituents, including the PAH constituents identified during the due diligence sample collection for this location. Arsenic concentrations for the material in the area of interest are above the allowable concentration in Table 910-1, but are within the range of background values for this area. Based on field observations, the known presence of organic constituents in oil shale, Footnote 1 to COGCC Table 910-1, Encana requests that the COGCC consider the PAH and arsenic concentrations identified on this location as consistent with background in the area.

When weather permits, Encana intends to continue with final reclaim efforts for this location.

**ATTACHMENTS**

1. Topographic Location Map
2. Laboratory Results Summary Table
3. Laboratory Reports

# Evacuation Creek 7612 Well Pad



Analytes (BDL = Below Detection Limit; ND = Non Detect)

Organic Compounds in Soil (mg/kg [ppm])																		Inorganics in Soil			Metals in Soil (mg/kg [ppm])													
500			0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		( $<12$ )	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
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-CD)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
220	BDL	220	BDL	BDL	BDL	BDL	BDL	BDL	3.4	5.4	1.90	4.3	3.8	0.66	2.3	BDL	2.1	BDL	0.11	0.072	0.51	8.6	20	400	BDL	16	BDL	18	9.6	0.026	8.1	BDL	BDL	52
270	BDL	270	BDL	BDL	BDL	BDL	BDL	BDL	0.72	1.3	0.46	0.92	0.8	0.12	0.45	BDL	0.43	BDL	BDL	0.15	0.64	8.1	29	340	BDL	30	BDL	26	47	0.03	12	BDL	BDL	110
							BDL	BDL	0.35	0.64	BDL	0.37	0.43	BDL	BDL	BDL	BDL	BDL	BDL					65										
																								21										
																								17										
																								20										
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																								14										
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																								16										
																								18										
																								14										
							BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL															
							BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL															
							BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL															
730	U	730					U	U	U	U	U	U	U	U	U	U	U	U	U	1	0.26	8.8	10											
290	U	290					U	U	U	U	U	U	U	U	U	U	U	U	U	1.5	0.2	9	10											
630	U	630					U	U	U	U	U	U	U	U	U	U	U	U	U	0.94	0.14	8.8	12											
950	U	950					U	U	U	U	U	U	U	U	U	U	U	U	U	1.5	0.21	9	10											
850	U	850					U	U	U	U	U	1.3	U	U	U	U	U	U	U	0.68	0.12	9.1	10											
							BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL															



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Est. 1970

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

## Report Summary

Friday August 01, 2014

Report Number: L711660


Samples Received: 07/23/14

Client Project: EC7612

Description: Evacuation Creek 7612 Site Assessment

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:

  
Jared 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, EPA - TN002

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# REPORT OF ANALYSIS

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

August 01, 2014

Date Received : July 23, 2014  
Description : Evacuation Creek 7612 Site Assessment  
Sample ID : 20140722-EC 7612 (MOISE)  
Collected By : MK  
Collection Date : 07/22/14 09:15

ESC Sample # : L711660-01

Site ID : EC 7612

Project # : EC7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/29/14	1
Chromium, Trivalent	16.	2.0	mg/kg	Calc.	08/01/14	1
ORP	86.		mV	2580 B-2011	07/30/14	1
pH	8.6		su	9045D	07/26/14	1
Sodium Adsorption Ratio	0.51			Calc.	07/30/14	1
Specific Conductance	7.2		umhos/cm	9050AMod	07/30/14	1
Mercury	0.026	0.020	mg/kg	7471	07/25/14	1
Arsenic	20.	2.0	mg/kg	6010B	07/29/14	1
Barium	400	0.50	mg/kg	6010B	07/29/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/29/14	1
Chromium	16.	1.0	mg/kg	6010B	07/29/14	1
Copper	18.	2.0	mg/kg	6010B	07/29/14	1
Lead	9.6	0.50	mg/kg	6010B	07/30/14	1
Nickel	8.1	2.0	mg/kg	6010B	07/29/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/29/14	1
Silver	BDL	1.0	mg/kg	6010B	07/29/14	1
Zinc	52.	5.0	mg/kg	6010B	07/29/14	1
Benzene	BDL	0.0025	mg/kg	8021	07/25/14	5
Toluene	BDL	0.025	mg/kg	8021	07/25/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	07/25/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	07/25/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	07/25/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.9		% Rec.	8021/8015	07/25/14	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/25/14	5
TPH (GC/FID) High Fraction	220	40.	mg/kg	8015D/DRO	07/31/14	10
Surrogate recovery(%)						
o-Terphenyl	51.2		% Rec.	8015D/DRO	07/31/14	10
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.030	mg/kg	8270C-SIM	07/29/14	5
Acenaphthene	BDL	0.030	mg/kg	8270C-SIM	07/29/14	5
Acenaphthylene	BDL	0.030	mg/kg	8270C-SIM	07/29/14	5
Benzo(a)anthracene	3.4	0.030	mg/kg	8270C-SIM	07/29/14	5
Benzo(a)pyrene	4.3	0.030	mg/kg	8270C-SIM	07/29/14	5

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L711660-01 (PH) - 8.63 @ 20.1c



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Parachute, CO 81635

August 01, 2014

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Description : Evacuation Creek 7612 Site Assessment  
Sample ID : 20140722-EC 7612 (MOISE)  
Collected By : MK  
Collection Date : 07/22/14 09:15

ESC Sample # : L711660-01

Site ID : EC 7612

Project # : EC7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	5.4	0.030	mg/kg	8270C-SIM	07/29/14	5
Benzo(g,h,i)perylene	2.3	0.030	mg/kg	8270C-SIM	07/29/14	5
Benzo(k)fluoranthene	1.9	0.030	mg/kg	8270C-SIM	07/29/14	5
Chrysene	3.8	0.030	mg/kg	8270C-SIM	07/29/14	5
Dibenz(a,h)anthracene	0.66	0.030	mg/kg	8270C-SIM	07/29/14	5
Fluoranthene	2.3	0.030	mg/kg	8270C-SIM	07/29/14	5
Fluorene	BDL	0.030	mg/kg	8270C-SIM	07/29/14	5
Indeno(1,2,3-cd)pyrene	2.1	0.030	mg/kg	8270C-SIM	07/29/14	5
Naphthalene	BDL	0.10	mg/kg	8270C-SIM	07/29/14	5
Phenanthrene	0.11	0.030	mg/kg	8270C-SIM	07/29/14	5
Pyrene	2.8	0.030	mg/kg	8270C-SIM	07/29/14	5
1-Methylnaphthalene	BDL	0.10	mg/kg	8270C-SIM	07/29/14	5
2-Methylnaphthalene	BDL	0.10	mg/kg	8270C-SIM	07/29/14	5
2-Chloronaphthalene	BDL	0.10	mg/kg	8270C-SIM	07/29/14	5
Surrogate Recovery						
p-Terphenyl-d14	81.4		% Rec.	8270C-SIM	07/29/14	5
Nitrobenzene-d5	83.0		% Rec.	8270C-SIM	07/29/14	5
2-Fluorobiphenyl	75.4		% Rec.	8270C-SIM	07/29/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/01/14 09:46 Printed: 08/01/14 09:47  
L711660-01 (PH) - 8.63 @ 20.1c



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# REPORT OF ANALYSIS

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

August 01, 2014

Date Received : July 23, 2014  
Description : Evacuation Creek 7612 Site Assessment  
Sample ID : 20140722-EC 7612 (MOIMID)  
Collected By : MK  
Collection Date : 07/22/14 09:30

ESC Sample # : L711660-02

Site ID : EC 7612

Project # : EC7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/29/14	1
Chromium, Trivalent	30.	2.0	mg/kg	Calc.	08/01/14	1
ORP	84.		mV	2580 B-2011	07/30/14	1
pH	8.1		su	9045D	07/26/14	1
Sodium Adsorption Ratio	0.64			Calc.	07/30/14	1
Specific Conductance	150		umhos/cm	9050AMod	07/30/14	1
Mercury	0.030	0.020	mg/kg	7471	07/25/14	1
Arsenic	29.	2.0	mg/kg	6010B	07/29/14	1
Barium	340	0.50	mg/kg	6010B	07/29/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/29/14	1
Chromium	30.	1.0	mg/kg	6010B	07/29/14	1
Copper	26.	2.0	mg/kg	6010B	07/29/14	1
Lead	47.	0.50	mg/kg	6010B	07/29/14	1
Nickel	12.	2.0	mg/kg	6010B	07/29/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/29/14	1
Silver	BDL	1.0	mg/kg	6010B	07/29/14	1
Zinc	110	5.0	mg/kg	6010B	07/29/14	1
Benzene	BDL	0.0025	mg/kg	8021	07/25/14	5
Toluene	BDL	0.025	mg/kg	8021	07/25/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	07/25/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	07/25/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	07/25/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.4		% Rec.	8021/8015	07/25/14	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/25/14	5
TPH (GC/FID) High Fraction	270	4.0	mg/kg	8015D/DRO	07/31/14	1
Surrogate recovery(%)						
o-Terphenyl	58.8		% Rec.	8015D/DRO	07/31/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L711660-02 (PH) - 8.1 @ 20.0c



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Parachute, CO 81635

August 01, 2014

Date Received : July 23, 2014  
Description : Evacuation Creek 7612 Site Assessment  
Sample ID : 20140722-EC 7612 (MOIMID)  
Collected By : MK  
Collection Date : 07/22/14 09:30

ESC Sample # : L711660-02

Site ID : EC 7612

Project # : EC7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/29/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/29/14	1
Pyrene	0.0087	0.0060	mg/kg	8270C-SIM	07/29/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/29/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/29/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/29/14	1
Surrogate Recovery						
p-Terphenyl-d14	76.6		% Rec.	8270C-SIM	07/29/14	1
Nitrobenzene-d5	75.2		% Rec.	8270C-SIM	07/29/14	1
2-Fluorobiphenyl	64.3		% Rec.	8270C-SIM	07/29/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/01/14 09:46 Printed: 08/01/14 09:47  
L711660-02 (PH) - 8.1 @ 20.0c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L711660-01	WG733890	SAMP	Barium	R2969605	V
L711660-02	WG733468	SAMP	Chromium, Hexavalent	R2969689	T9
	WG733890	SAMP	Lead	R2969605	B5

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
B5	(ESC) - The indicated compound was found in the associated instrument blank as well as the laboratory sample.
T9	(ESC) - Additional method/sample information: The sample result represents blank correction
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

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  
08/01/14 at 09:47:13

TSR Signing Reports: 358  
R5 - Desired TAT

Log all PAHs as PAHSIM. Log all BTEX waters by 8260. Log ALL samples for EDD (COGCC EDD).

Sample: L711660-01 Account: ENCANACO Received: 07/23/14 15:15 Due Date: 07/30/14 00:00 RPT Date: 08/01/14 09:46

Sample: L711660-02 Account: ENCANACO Received: 07/23/14 15:15 Due Date: 07/30/14 00:00 RPT Date: 08/01/14 09:46



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143 Diamond Avenue  
Parachute, CO 81635

## Report Summary

Thursday September 11, 2014

Report Number: L720154


Samples Received: 09/05/14

Client Project: EC 7612

Description: EC 7612 Clearance

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:

  
Jared Willis, ESC Representative

### Laboratory Certification Numbers

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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, EPA - TN002

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Est. 1970

# REPORT OF ANALYSIS

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

September 11, 2014

Date Received : September 05, 2014  
Description : EC 7612 Clearance  
Sample ID : 20140904-EC 7612 CS  
Collected By : MK  
Collection Date : 09/04/14 11:00

ESC Sample # : L720154-01

Site ID : EC 7612

Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.030	mg/kg	8270C-SIM	09/11/14	5
Acenaphthene	BDL	0.030	mg/kg	8270C-SIM	09/11/14	5
Acenaphthylene	BDL	0.030	mg/kg	8270C-SIM	09/11/14	5
Benzo(a)anthracene	0.72	0.030	mg/kg	8270C-SIM	09/11/14	5
Benzo(a)pyrene	0.92	0.030	mg/kg	8270C-SIM	09/11/14	5
Benzo(b)fluoranthene	1.3	0.030	mg/kg	8270C-SIM	09/11/14	5
Benzo(g,h,i)perylene	0.46	0.030	mg/kg	8270C-SIM	09/11/14	5
Benzo(k)fluoranthene	0.46	0.030	mg/kg	8270C-SIM	09/11/14	5
Chrysene	0.80	0.030	mg/kg	8270C-SIM	09/11/14	5
Dibenz(a,h)anthracene	0.12	0.030	mg/kg	8270C-SIM	09/11/14	5
Fluoranthene	0.45	0.030	mg/kg	8270C-SIM	09/11/14	5
Fluorene	BDL	0.030	mg/kg	8270C-SIM	09/11/14	5
Indeno(1,2,3-cd)pyrene	0.43	0.030	mg/kg	8270C-SIM	09/11/14	5
Naphthalene	BDL	0.10	mg/kg	8270C-SIM	09/11/14	5
Phenanthrene	BDL	0.030	mg/kg	8270C-SIM	09/11/14	5
Pyrene	0.40	0.030	mg/kg	8270C-SIM	09/11/14	5
1-Methylnaphthalene	BDL	0.10	mg/kg	8270C-SIM	09/11/14	5
2-Methylnaphthalene	BDL	0.10	mg/kg	8270C-SIM	09/11/14	5
2-Chloronaphthalene	BDL	0.10	mg/kg	8270C-SIM	09/11/14	5
Surrogate Recovery						
p-Terphenyl-d14	66.5		% Rec.	8270C-SIM	09/11/14	5
Nitrobenzene-d5	67.0		% Rec.	8270C-SIM	09/11/14	5
2-Fluorobiphenyl	76.2		% Rec.	8270C-SIM	09/11/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/11/14 11:54 Printed: 09/11/14 11:54

Summary of Remarks For Samples Printed  
09/11/14 at 11:54:51

TSR Signing Reports: 358  
R5 - Desired TAT

Log all PAHs as PAHSIM. Log all BTEX waters by 8260. Log ALL samples for EDD (COGCC EDD).

Sample: L720154-01 Account: ENCANACO Received: 09/05/14 09:00 Due Date: 09/12/14 00:00 RPT Date: 09/11/14 11:54



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

## Report Summary

Thursday November 06, 2014

Report Number: L730638


Samples Received: 10/30/14

Client Project: EC 7612

Description: EC 7612 PAH Clearance

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:

  
Jared 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, EPA - TN002

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# REPORT OF ANALYSIS

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

November 06, 2014

Date Received : October 30, 2014  
Description : EC 7612 PAH Clearance  
Sample ID : 20141029-EC 7612 (CS) 2FT  
Collected By : Matt Kasten  
Collection Date : 10/29/14 11:10

ESC Sample # : L730638-01

Site ID : EC 7612

Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Acenaphthene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Acenaphthylene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Benzo(a)anthracene	0.35	0.30	mg/kg	8270C-SIM	11/06/14	50
Benzo(a)pyrene	0.37	0.30	mg/kg	8270C-SIM	11/06/14	50
Benzo(b)fluoranthene	0.64	0.30	mg/kg	8270C-SIM	11/06/14	50
Benzo(g,h,i)perylene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Benzo(k)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Chrysene	0.43	0.30	mg/kg	8270C-SIM	11/06/14	50
Dibenz(a,h)anthracene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Fluoranthene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Fluorene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Indeno(1,2,3-cd)pyrene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Naphthalene	BDL	1.0	mg/kg	8270C-SIM	11/06/14	50
Phenanthrene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
Pyrene	BDL	0.30	mg/kg	8270C-SIM	11/06/14	50
1-Methylnaphthalene	BDL	1.0	mg/kg	8270C-SIM	11/06/14	50
2-Methylnaphthalene	BDL	1.0	mg/kg	8270C-SIM	11/06/14	50
2-Chloronaphthalene	BDL	1.0	mg/kg	8270C-SIM	11/06/14	50
Surrogate Recovery						
p-Terphenyl-d14	77.3		% Rec.	8270C-SIM	11/06/14	50
Nitrobenzene-d5	112.		% Rec.	8270C-SIM	11/06/14	50
2-Fluorobiphenyl	86.1		% Rec.	8270C-SIM	11/06/14	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 11/06/14 15:51 Printed: 11/06/14 15:59

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L730638-01	WG752685	SAMP	Acenaphthene	R3002662	J3
	WG752685	SAMP	Acenaphthylene	R3002662	J3
	WG752685	SAMP	Benzo(a)anthracene	R3002662	J3
	WG752685	SAMP	Benzo(b)fluoranthene	R3002662	J3
	WG752685	SAMP	Benzo(g,h,i)perylene	R3002662	J3
	WG752685	SAMP	Dibenz(a,h)anthracene	R3002662	J3
	WG752685	SAMP	Fluorene	R3002662	J3
	WG752685	SAMP	Indeno(1,2,3-cd)pyrene	R3002662	J3
	WG752685	SAMP	Phenanthrene	R3002662	J3
	WG752685	SAMP	Pyrene	R3002662	J3
	WG752685	SAMP	1-Methylnaphthalene	R3002662	J3
	WG752685	SAMP	2-Methylnaphthalene	R3002662	J3
	WG752685	SAMP	2-Chloronaphthalene	R3002662	J3
	WG752685	SAMP	p-Terphenyl-d14	R3002662	J7
	WG752685	SAMP	Nitrobenzene-d5	R3002662	J7
	WG752685	SAMP	2-Fluorobiphenyl	R3002662	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

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.



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

## Report Summary

Tuesday September 17, 2013

Report Number: L655778


Samples Received: 09/05/13

Client Project: EVAC CREEK 7612

Description: Evacuation Creek 7612 Backgrounds

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

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGN) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:40

ESC Sample # : L655778-01

Site ID : EVAC CREEK 7612

Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	30.	1.0	mg/kg	6010B	09/15/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGN) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:40

ESC Sample # : L655778-02

Site ID : EVAC CREEK 7612

Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	26.	1.0	mg/kg	6010B	09/15/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGN) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:40

ESC Sample # : L655778-03

Site ID : EVAC CREEK 7612

Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	24.	1.0	mg/kg	6010B	09/15/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGN) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:40

ESC Sample # : L655778-04  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	19.	1.0	mg/kg	6010B	09/15/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGN) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:40

ESC Sample # : L655778-05  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	35.	1.0	mg/kg	6010B	09/15/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:45

ESC Sample # : L655778-06  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	14.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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# REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:45

ESC Sample # : L655778-07

Site ID : EVAC CREEK 7612

Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	18.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:45

ESC Sample # : L655778-08  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	16.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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Reported: 09/17/13 17:59 Printed: 09/17/13 18:00



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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:45

ESC Sample # : L655778-09  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	18.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:45

ESC Sample # : L655778-10  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	14.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
The reported analytical results relate only to the sample submitted.  
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Reported: 09/17/13 17:59 Printed: 09/17/13 18:00



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REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGMWD) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:50

ESC Sample # : L655778-11  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	22.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Est. 1970

REPORT OF ANALYSIS

September 17, 2013

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

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGMWD) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:50

ESC Sample # : L655778-12  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	12.	1.0	mg/kg	6010B	09/13/13	1

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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGMWD) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:50

ESC Sample # : L655778-13  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	21.	1.0	mg/kg	6010B	09/13/13	1

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Det. Limit - Practical Quantitation Limit(PQL)  
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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGMWD) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:50

ESC Sample # : L655778-14  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	20.	1.0	mg/kg	6010B	09/13/13	1

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September 17, 2013

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Parachute, CO 81635

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGMWD) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:50

ESC Sample # : L655778-15  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	35.	1.0	mg/kg	6010B	09/13/13	1

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September 17, 2013

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143 Diamond Avenue  
Parachute, CO 81635

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGE) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:55

ESC Sample # : L655778-16  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	65.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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143 Diamond Avenue  
Parachute, CO 81635

Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGE) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:55

ESC Sample # : L655778-17  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	21.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGE) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:55

ESC Sample # : L655778-18  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	17.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGE) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:55

ESC Sample # : L655778-19  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	20.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGE) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 09:55

ESC Sample # : L655778-20  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	24.	1.0	mg/kg	6010B	09/13/13	1

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Det. Limit - Practical Quantitation Limit(PQL)  
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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGSW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 10:00

ESC Sample # : L655778-21  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	11.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGSW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 10:00

ESC Sample # : L655778-22  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	13.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGSW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 10:00

ESC Sample # : L655778-23  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	16.	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGSW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 10:00

ESC Sample # : L655778-24  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	9.3	1.0	mg/kg	6010B	09/13/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Date Received : September 05, 2013  
Description : Evacuation Creek 7612 Backgrounds  
Sample ID : 090413-EVACCREEK7612(BGSW) 8 IN  
Collected By : Matt Kasten  
Collection Date : 09/04/13 10:00

ESC Sample # : L655778-25  
  
Site ID : EVAC CREEK 7612  
Project # : EVAC CREEK 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.2	1.0	mg/kg	6010B	09/11/13	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L655778-24	WG681028	SAMP	Arsenic	R2816200	J3

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

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  
09/17/13 at 18:00:26

TSR Signing Reports: 358  
RX - Priority Rush

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: L655778-01 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/17/13 17:59

Sample: L655778-02 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -01

Sample: L655778-03 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -01

Sample: L655778-04 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -01

Sample: L655778-05 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/17/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -01

Sample: L655778-06 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59

Sample: L655778-07 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -06

Sample: L655778-08 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -06

Sample: L655778-09 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -06

Sample: L655778-10 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -06

Sample: L655778-11 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59

Sample: L655778-12 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -11

Sample: L655778-13 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -11

Sample: L655778-14 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -11

Sample: L655778-15 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -11

Sample: L655778-16 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59

Sample: L655778-17 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -16

Sample: L655778-18 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -16

Sample: L655778-19 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -16

Sample: L655778-20 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -16

Sample: L655778-21 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59

Sample: L655778-22 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -21

Sample: L655778-23 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -21

Sample: L655778-24 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -21

Sample: L655778-25 Account: ENCANACO Received: 09/05/13 09:00 Due Date: 09/12/13 00:00 RPT Date: 09/17/13 17:59  
Use container from -21



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

## Report Summary

Tuesday November 04, 2014

Report Number: L730600


Samples Received: 10/30/14

Client Project: EC 7612

Description: EC 7612 PAH Background

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:

  
Jared 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, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

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# REPORT OF ANALYSIS

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

November 04, 2014

Date Received : October 30, 2014  
Description : EC 7612 PAH Background  
Sample ID : 20141029-EC-2612 (BGS)  
Collected By : Matt Kasten  
Collection Date : 10/29/14 11:15

ESC Sample # : L730600-01

Site ID : EC7612

Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Surrogate Recovery						
p-Terphenyl-d14	79.6		% Rec.	8270C-SIM	11/04/14	1
Nitrobenzene-d5	94.1		% Rec.	8270C-SIM	11/04/14	1
2-Fluorobiphenyl	88.8		% Rec.	8270C-SIM	11/04/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Est. 1970

# REPORT OF ANALYSIS

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

November 04, 2014

Date Received : October 30, 2014  
Description : EC 7612 PAH Background  
  
Sample ID : 20141029-EC-2612 (BGE)  
  
Collected By : Matt Kasten  
Collection Date : 10/29/14 11:20

ESC Sample # : L730600-02  
  
Site ID : EC7612  
  
Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Surrogate Recovery						
p-Terphenyl-d14	91.1		% Rec.	8270C-SIM	11/04/14	1
Nitrobenzene-d5	109.		% Rec.	8270C-SIM	11/04/14	1
2-Fluorobiphenyl	96.7		% Rec.	8270C-SIM	11/04/14	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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# REPORT OF ANALYSIS

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

November 04, 2014

Date Received : October 30, 2014  
Description : EC 7612 PAH Background  
Sample ID : 20141029-EC-2612 (BG MID)  
Collected By : Matt Kasten  
Collection Date : 10/29/14 11:25

ESC Sample # : L730600-03

Site ID : EC7612

Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Surrogate Recovery						
p-Terphenyl-d14	81.3		% Rec.	8270C-SIM	11/04/14	1
Nitrobenzene-d5	101.		% Rec.	8270C-SIM	11/04/14	1
2-Fluorobiphenyl	91.3		% Rec.	8270C-SIM	11/04/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

November 04, 2014

Date Received : October 30, 2014  
Description : EC 7612 PAH Background  
Sample ID : 20141029-EC-2612 (BGW)  
Collected By : Matt Kasten  
Collection Date : 10/29/14 11:30

ESC Sample # : L730600-04

Site ID : EC7612

Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Surrogate Recovery						
p-Terphenyl-d14	83.1		% Rec.	8270C-SIM	11/04/14	1
Nitrobenzene-d5	103.		% Rec.	8270C-SIM	11/04/14	1
2-Fluorobiphenyl	92.7		% Rec.	8270C-SIM	11/04/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

November 04, 2014

Date Received : October 30, 2014  
Description : EC 7612 PAH Background  
  
Sample ID : 20141029-EC-2612 (BGN)  
  
Collected By : Matt Kasten  
Collection Date : 10/29/14 11:35

ESC Sample # : L730600-05  
  
Site ID : EC7612  
  
Project # : EC 7612

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/04/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/04/14	1
Surrogate Recovery						
p-Terphenyl-d14	84.4		% Rec.	8270C-SIM	11/04/14	1
Nitrobenzene-d5	109.		% Rec.	8270C-SIM	11/04/14	1
2-Fluorobiphenyl	92.3		% Rec.	8270C-SIM	11/04/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Summary of Remarks For Samples Printed  
11/04/14 at 12:30:57

TSR Signing Reports: 358  
R5 - Desired TAT

Log all PAHs as PAHSIM. Log all BTEX waters by 8260. Log ALL samples for EDD (COGCC EDD).  
Accounting - pending coded invoices!

Sample: L730600-01 Account: ENCANACO Received: 10/30/14 09:00 Due Date: 11/06/14 00:00 RPT Date: 11/04/14 12:30  
Sample: L730600-02 Account: ENCANACO Received: 10/30/14 09:00 Due Date: 11/06/14 00:00 RPT Date: 11/04/14 12:30  
Sample: L730600-03 Account: ENCANACO Received: 10/30/14 09:00 Due Date: 11/06/14 00:00 RPT Date: 11/04/14 12:30  
Sample: L730600-04 Account: ENCANACO Received: 10/30/14 09:00 Due Date: 11/06/14 00:00 RPT Date: 11/04/14 12:30  
Sample: L730600-05 Account: ENCANACO Received: 10/30/14 09:00 Due Date: 11/06/14 00:00 RPT Date: 11/04/14 12:30



17-Nov-2014

Christopher Hines  
Encana Oil and Gas (USA) Inc.  
143 Diamond Avenue  
Parachute, CO 81635

Re: **EC 7612 Shale BG 10.29.14**

Work Order: **1411105**

Dear Christopher,

ALS Environmental received 5 samples on 01-Nov-2014 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 29.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Work Order:** 1411105

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1411105-01	20141029-EC 7612 (Shale BG) (1)	Rock		10/29/2014 12:00	11/1/2014 09:45	<input type="checkbox"/>
1411105-02	20141029-EC 7612 (Shale BG) (2)	Rock		10/29/2014 12:05	11/1/2014 09:45	<input type="checkbox"/>
1411105-03	20141029-EC 7612 (Shale BG) (3)	Rock		10/29/2014 12:10	11/1/2014 09:45	<input type="checkbox"/>
1411105-04	20141029-EC 7612 (Shale BG) (4)	Rock		10/29/2014 12:15	11/1/2014 09:45	<input type="checkbox"/>
1411105-05	20141029-EC 7612 (Shale BG) (5)	Rock		10/29/2014 12:20	11/1/2014 09:45	<input type="checkbox"/>

---

---

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Work Order:** 1411105

---

**Case Narrative**

The darkest parts of the rocks were crushed by Driesenga and Associates, and divided into 5 separate samples, before analysis by ALS-Holland.

Batch 64868 pH and % Moisture hold time was measured from the day the samples were taken, per the Chain of Custody, 10/29/14. The rocks were crushed on 11/7/14 and 11/8/14, which is the date the samples were available for analyses. All samples were analyzed for pH and % Moisture after the lab designated 7 day hold time had expired. Results should be considered as estimated for pH and % Moisture.

Batch 64877 MS/MSD data for PAHs is not related to this project's samples. No data requires qualification.

Batch 64878 sample 1411105-01 MS recovery for DRO was above control limit. However, the MSD recovery and the RPD between the MS and MSD were in control. The RPD between the MS/MSD recoveries for the DRO surrogate was above control limits. The individual MS/MSD recoveries met quality control criteria. No qualification is required for DRO.

Batch 64878 samples 1411105-01, 1411105-03 through 1411105-05 DRO surrogate recoveries were high due to matrix interference. No qualification is required for DRO.

Batch 64973 sample 1411105-02 was re-extracted for PAH past holding time due to extremely low surrogate recoveries in the original extract. All PAHs were also non-detect in the first analysis. The PAH reporting limits may be biased low for the reported results for sample 1411105-02.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (1)  
**Collection Date:** 10/29/2014 12:00 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-01  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>ADMINISTRATIVE</b>							
Administrative	Complete		Method:ADMIN				Analyst: D&A
	11/10/14		0		-dry	1	11/10/2014
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
DRO (C10-C28)	730		Method:SW8015M	21	mg/Kg-dry	5	Analyst: CW
Surr: 4-Terphenyl-d14	216	S		39-133	%REC	5	11/12/2014 12:59
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
GRO (C6-C10)	U		Method:SW8015	2.6	mg/Kg-dry	1	Analyst: CW
Surr: Toluene-d8	115			50-150	%REC	1	11/11/2014 19:45
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method:SW846 6010C				Analyst: JEC
Calcium	65			5.0	mg/L	10	11/14/2014 11:12
Magnesium	67			2.0	mg/L	10	11/14/2014 11:12
Sodium	13			2.0	mg/L	10	11/14/2014 11:12
<b>SODIUM ADSORPTION RATIO</b>							
			Method:USDA H60 METHOD 2				Analyst: JEC
Sodium Adsorption Ratio	0.26			0.010	none	1	11/14/2014
<b>METALS BY ICP-MS</b>							
			Method:SW6020A				Analyst: ML
Arsenic	10			1.7	mg/Kg-dry	4	11/12/2014 22:06
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method:SW846 8270D				Analyst: RS
Acenaphthene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Anthracene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Benzo(a)anthracene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Benzo(a)pyrene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Benzo(b)fluoranthene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Benzo(k)fluoranthene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Chrysene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Dibenzo(a,h)anthracene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Fluoranthene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Fluorene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Indeno(1,2,3-cd)pyrene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Naphthalene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Pyrene	U			0.0069	mg/Kg-dry	1	11/11/2014 21:42
Surr: 2-Fluorobiphenyl	63.3			12-100	%REC	1	11/11/2014 21:42
Surr: 4-Terphenyl-d14	68.9			25-137	%REC	1	11/11/2014 21:42
Surr: Nitrobenzene-d5	63.8			37-107	%REC	1	11/11/2014 21:42

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group USA, Corp**

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (1)  
**Collection Date:** 10/29/2014 12:00 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-01  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	1.0		0.028	0.25	mmhos/cm @25°C	50	11/14/2014 13:50
<b>MOISTURE</b>			Method:A2540 G				Analyst: <b>EVB</b>
Moisture	4.3	H	0.025	0.050	% of sample	1	11/10/2014 18:00
<b>PH</b>			Method:SW9045D		Prep: EXTRACT / 11/10/14		Analyst: <b>STP</b>
pH	8.8	H	0		s.u.	1	11/11/2014 09:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (2)  
**Collection Date:** 10/29/2014 12:05 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-02  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015M		Prep: SW3541 / 11/13/14		Analyst: <b>CW</b>
<b>DRO (C10-C28)</b>	<b>290</b>	H	<b>1.5</b>	<b>4.2</b>	<b>mg/Kg-dry</b>	1	11/13/2014 19:07
Surr: 4-Terphenyl-d14	131			39-133	%REC	1	11/13/2014 19:07
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015		Prep: SW5035 / 11/11/14		Analyst: <b>CW</b>
<b>GRO (C6-C10)</b>	U		1.1	2.6	mg/Kg-dry	1	11/11/2014 20:10
Surr: Toluene-d8	117			50-150	%REC	1	11/11/2014 20:10
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method:SW846 6010C		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Calcium</b>	<b>75</b>		<b>0.32</b>	<b>5.0</b>	<b>mg/L</b>	10	11/14/2014 11:18
<b>Magnesium</b>	<b>100</b>		<b>0.33</b>	<b>2.0</b>	<b>mg/L</b>	10	11/14/2014 11:18
<b>Sodium</b>	<b>12</b>		<b>0.16</b>	<b>2.0</b>	<b>mg/L</b>	10	11/14/2014 11:18
<b>SODIUM ADSORPTION RATIO</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>0.20</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	1	11/14/2014
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 11/12/14		Analyst: <b>ML</b>
<b>Arsenic</b>	<b>10</b>		<b>0.31</b>	<b>1.5</b>	<b>mg/Kg-dry</b>	4	11/12/2014 22:55
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method:SW846 8270D		Prep: SW3541 / 11/13/14		Analyst: <b>RM</b>
Acenaphthene	U	H	0.0010	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Anthracene	U	H	0.0013	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Benzo(a)anthracene	U	H	0.0013	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Benzo(a)pyrene	U	H	0.0022	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Benzo(b)fluoranthene	U	H	0.0020	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Benzo(k)fluoranthene	U	H	0.0014	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Chrysene	U	H	0.0016	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Dibenzo(a,h)anthracene	U	H	0.0025	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Fluoranthene	U	H	0.0024	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Fluorene	U	H	0.0023	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Indeno(1,2,3-cd)pyrene	U	H	0.0022	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Naphthalene	U	H	0.0025	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Pyrene	U	H	0.0023	0.0067	mg/Kg-dry	1	11/13/2014 23:14
Surr: 2-Fluorobiphenyl	72.1			12-100	%REC	1	11/13/2014 23:14
Surr: 4-Terphenyl-d14	66.7			25-137	%REC	1	11/13/2014 23:14
Surr: Nitrobenzene-d5	56.2			37-107	%REC	1	11/13/2014 23:14
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>1.5</b>		<b>0.0055</b>	<b>0.050</b>	<b>mmhos/cm @25°C</b>	10	11/14/2014 13:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (2)  
**Collection Date:** 10/29/2014 12:05 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-02  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MOISTURE</b>			Method:A2540 G				Analyst: <b>EVB</b>
Moisture	2.9	H	0.025	0.050	% of sample	1	11/10/2014 18:00
<b>PH</b>			Method:SW9045D				Analyst: <b>STP</b>
pH	9.0	H	0		s.u.	1	11/11/2014 09:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (3)  
**Collection Date:** 10/29/2014 12:10 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-03  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015M		Prep: SW3541 / 11/11/14		Analyst: <b>CW</b>
<b>DRO (C10-C28)</b>	<b>630</b>		<b>7.9</b>	<b>22</b>	<b>mg/Kg-dry</b>	<b>5</b>	11/12/2014 01:27
Surr: 4-Terphenyl-d14	172	S		39-133	%REC	5	11/12/2014 01:27
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015		Prep: SW5035 / 11/11/14		Analyst: <b>CW</b>
<b>GRO (C6-C10)</b>	<b>U</b>		<b>1.1</b>	<b>2.7</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/11/2014 21:00
Surr: Toluene-d8	113			50-150	%REC	1	11/11/2014 21:00
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method:SW846 6010C		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Calcium</b>	<b>69</b>		<b>0.32</b>	<b>5.0</b>	<b>mg/L</b>	<b>10</b>	11/14/2014 11:24
<b>Magnesium</b>	<b>71</b>		<b>0.33</b>	<b>2.0</b>	<b>mg/L</b>	<b>10</b>	11/14/2014 11:24
<b>Sodium</b>	<b>7.0</b>		<b>0.16</b>	<b>2.0</b>	<b>mg/L</b>	<b>10</b>	11/14/2014 11:24
<b>SODIUM ADSORPTION RATIO</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>0.14</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	<b>1</b>	11/14/2014
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 11/12/14		Analyst: <b>ML</b>
<b>Arsenic</b>	<b>12</b>		<b>0.32</b>	<b>1.5</b>	<b>mg/Kg-dry</b>	<b>4</b>	11/12/2014 23:01
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method:SW846 8270D		Prep: SW3541 / 11/11/14		Analyst: <b>RS</b>
Acenaphthene	U		0.0010	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Anthracene	U		0.0014	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Benzo(a)anthracene	U		0.0014	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Benzo(a)pyrene	U		0.0023	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Benzo(b)fluoranthene	U		0.0020	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Benzo(k)fluoranthene	U		0.0015	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Chrysene	U		0.0017	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Dibenzo(a,h)anthracene	U		0.0026	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Fluoranthene	U		0.0024	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Fluorene	U		0.0023	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Indeno(1,2,3-cd)pyrene	U		0.0023	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Naphthalene	U		0.0026	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Pyrene	U		0.0024	0.0070	mg/Kg-dry	1	11/11/2014 22:28
Surr: 2-Fluorobiphenyl	57.9			12-100	%REC	1	11/11/2014 22:28
Surr: 4-Terphenyl-d14	64.2			25-137	%REC	1	11/11/2014 22:28
Surr: Nitrobenzene-d5	60.2			37-107	%REC	1	11/11/2014 22:28
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>0.94</b>		<b>0.028</b>	<b>0.25</b>	<b>mmhos/cm @25°C 50</b>		11/14/2014 13:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (3)  
**Collection Date:** 10/29/2014 12:10 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-03  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MOISTURE</b>			Method:A2540 G				Analyst: <b>EVB</b>
Moisture	6.6	H	0.025	0.050	% of sample	1	11/10/2014 18:00
<b>PH</b>			Method:SW9045D				Analyst: <b>STP</b>
pH	8.8	H	0		s.u.	1	11/11/2014 09:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (4)  
**Collection Date:** 10/29/2014 12:15 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-04  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015M		Prep: SW3541 / 11/11/14		Analyst: <b>CW</b>
<b>DRO (C10-C28)</b>	<b>950</b>		<b>15</b>	<b>42</b>	<b>mg/Kg-dry</b>	10	11/12/2014 01:54
Surr: 4-Terphenyl-d14	284	S		39-133	%REC	10	11/12/2014 01:54
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015		Prep: SW5035 / 11/11/14		Analyst: <b>CW</b>
<b>GRO (C6-C10)</b>	U		1.1	2.6	mg/Kg-dry	1	11/12/2014 01:37
Surr: Toluene-d8	119			50-150	%REC	1	11/12/2014 01:37
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method:SW846 6010C		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Calcium</b>	<b>90</b>		<b>0.32</b>	<b>5.0</b>	<b>mg/L</b>	10	11/14/2014 11:29
<b>Magnesium</b>	<b>120</b>		<b>0.33</b>	<b>2.0</b>	<b>mg/L</b>	10	11/14/2014 11:29
<b>Sodium</b>	<b>13</b>		<b>0.16</b>	<b>2.0</b>	<b>mg/L</b>	10	11/14/2014 11:29
<b>SODIUM ADSORPTION RATIO</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>0.21</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	1	11/14/2014
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 11/12/14		Analyst: <b>ML</b>
<b>Arsenic</b>	<b>10</b>		<b>0.30</b>	<b>1.4</b>	<b>mg/Kg-dry</b>	4	11/12/2014 23:07
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method:SW846 8270D		Prep: SW3541 / 11/11/14		Analyst: <b>RS</b>
Acenaphthene	U		0.0010	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Anthracene	U		0.0013	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Benzo(a)anthracene	U		0.0013	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Benzo(a)pyrene	U		0.0022	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Benzo(b)fluoranthene	U		0.0020	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Benzo(k)fluoranthene	U		0.0014	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Chrysene	U		0.0016	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Dibenzo(a,h)anthracene	U		0.0025	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Fluoranthene	U		0.0023	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Fluorene	U		0.0023	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Indeno(1,2,3-cd)pyrene	U		0.0022	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Naphthalene	U		0.0025	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Pyrene	U		0.0023	0.0067	mg/Kg-dry	1	11/11/2014 22:52
Surr: 2-Fluorobiphenyl	70.2			12-100	%REC	1	11/11/2014 22:52
Surr: 4-Terphenyl-d14	78.4			25-137	%REC	1	11/11/2014 22:52
Surr: Nitrobenzene-d5	69.7			37-107	%REC	1	11/11/2014 22:52
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>1.5</b>		<b>0.028</b>	<b>0.25</b>	<b>mmhos/cm @25°C</b>	50	11/14/2014 13:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (4)  
**Collection Date:** 10/29/2014 12:15 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-04  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MOISTURE</b>			Method:A2540 G				Analyst: <b>EVB</b>
Moisture	2.9	H	0.025	0.050	% of sample	1	11/10/2014 18:00
<b>PH</b>			Method:SW9045D				Analyst: <b>STP</b>
pH	9.0	H	0		s.u.	1	11/11/2014 09:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (5)  
**Collection Date:** 10/29/2014 12:20 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-05  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015M		Prep: SW3541 / 11/11/14		Analyst: <b>CW</b>
<b>DRO (C10-C28)</b>	<b>850</b>		<b>7.6</b>	<b>21</b>	<b>mg/Kg-dry</b>	5	11/12/2014 02:22
Surr: 4-Terphenyl-d14	301	S		39-133	%REC	5	11/12/2014 02:22
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>							
			Method:SW8015		Prep: SW5035 / 11/11/14		Analyst: <b>CW</b>
<b>GRO (C6-C10)</b>	U		1.1	2.6	mg/Kg-dry	1	11/11/2014 20:35
Surr: Toluene-d8	117			50-150	%REC	1	11/11/2014 20:35
<b>SOLUBLE CATIONS FOR SAR</b>							
			Method:SW846 6010C		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Calcium</b>	<b>41</b>		<b>0.32</b>	<b>5.0</b>	<b>mg/L</b>	10	11/14/2014 11:35
<b>Magnesium</b>	<b>52</b>		<b>0.33</b>	<b>2.0</b>	<b>mg/L</b>	10	11/14/2014 11:35
<b>Sodium</b>	<b>5.1</b>		<b>0.16</b>	<b>2.0</b>	<b>mg/L</b>	10	11/14/2014 11:35
<b>SODIUM ADSORPTION RATIO</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>0.12</b>		<b>0.010</b>	<b>0.010</b>	<b>none</b>	1	11/14/2014
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 11/12/14		Analyst: <b>ML</b>
<b>Arsenic</b>	<b>10</b>		<b>0.32</b>	<b>1.5</b>	<b>mg/Kg-dry</b>	4	11/12/2014 23:13
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>							
			Method:SW846 8270D		Prep: SW3541 / 11/11/14		Analyst: <b>RS</b>
Acenaphthene	U		0.0010	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Anthracene	U		0.0013	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Benzo(a)anthracene	U		0.0013	0.0068	mg/Kg-dry	1	11/11/2014 23:15
<b>Benzo(a)pyrene</b>	<b>1.3</b>		<b>0.0022</b>	<b>0.0068</b>	<b>mg/Kg-dry</b>	1	11/11/2014 23:15
Benzo(b)fluoranthene	U		0.0020	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Benzo(k)fluoranthene	U		0.0014	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Chrysene	U		0.0016	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Dibenzo(a,h)anthracene	U		0.0025	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Fluoranthene	U		0.0024	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Fluorene	U		0.0023	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Indeno(1,2,3-cd)pyrene	U		0.0022	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Naphthalene	U		0.0025	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Pyrene	U		0.0023	0.0068	mg/Kg-dry	1	11/11/2014 23:15
Surr: 2-Fluorobiphenyl	67.8			12-100	%REC	1	11/11/2014 23:15
Surr: 4-Terphenyl-d14	73.3			25-137	%REC	1	11/11/2014 23:15
Surr: Nitrobenzene-d5	66.1			37-107	%REC	1	11/11/2014 23:15
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>							
			Method:USDA H60 METHOD 2		Prep: USDA Method 20B / 11/14/14		Analyst: <b>JB</b>
<b>Electrical Conductivity @ Saturation</b>	<b>0.68</b>		<b>0.0055</b>	<b>0.050</b>	<b>mmhos/cm @25°C</b>	10	11/14/2014 13:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Project:** EC 7612 Shale BG 10.29.14  
**Sample ID:** 20141029-EC 7612 (Shale BG) (5)  
**Collection Date:** 10/29/2014 12:20 PM

**Work Order:** 1411105  
**Lab ID:** 1411105-05  
**Matrix:** ROCK

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MOISTURE</b>			Method: <b>A2540 G</b>				Analyst: <b>EVB</b>
Moisture	2.7	H	0.025	0.050	% of sample	1	11/10/2014 18:00
<b>PH</b>			Method: <b>SW9045D</b>				Analyst: <b>STP</b>
pH	9.1	H	0		s.u.	1	11/11/2014 09:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 17-Nov-14

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64878** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: <b>DBLKS1-64878-64878</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/11/2014 05:12 PM</b>		
Client ID:		Run ID: <b>GC8_141111A</b>				SeqNo: <b>3031296</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	5.0								
Surr: 4-Terphenyl-d14	1.371	0	2	0	68.5	39-133	0			

LCS		Sample ID: <b>DLCSS1-64878-64878</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/11/2014 05:39 PM</b>		
Client ID:		Run ID: <b>GC8_141111A</b>				SeqNo: <b>3031297</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	177.7	5.0	200	0	88.8	61-109	0			
Surr: 4-Terphenyl-d14	1.19	0	2	0	59.5	39-133	0			

MS		Sample ID: <b>1411105-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/12/2014 12:05 PM</b>		
Client ID: <b>20141029-EC 7612 (Shale BG) (1)</b>		Run ID: <b>GC8_141111A</b>				SeqNo: <b>3031317</b>		Prep Date: <b>11/11/2014</b>		DF: <b>5</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	1091	40	319.9	702.7	121	48-110	0			S
Surr: 4-Terphenyl-d14	1.622	0	3.199	0	50.7	39-133	0			

MSD		Sample ID: <b>1411105-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/12/2014 12:32 PM</b>		
Client ID: <b>20141029-EC 7612 (Shale BG) (1)</b>		Run ID: <b>GC8_141111A</b>				SeqNo: <b>3031318</b>		Prep Date: <b>11/11/2014</b>		DF: <b>5</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	974	40	320.5	702.7	84.7	48-110	1091	11.4	30	
Surr: 4-Terphenyl-d14	4.224	0	3.205	0	132	39-133	1.622	89	30	R

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64973** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-64973-64973</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/13/2014 04:50 PM</b>		
Client ID:		Run ID: <b>GC8_141113B</b>				SeqNo: <b>3036186</b>		Prep Date: <b>11/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	5.0								
<i>Surr: 4-Terphenyl-d14</i>	1.486	0	2	0	74.3	39-133	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-64973-64973</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/13/2014 05:17 PM</b>		
Client ID:		Run ID: <b>GC8_141113B</b>				SeqNo: <b>3036187</b>		Prep Date: <b>11/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	189.6	5.0	200	0	94.8	61-109	0			
<i>Surr: 4-Terphenyl-d14</i>	1.241	0	2	0	62.1	39-133	0			

<b>MS</b>		Sample ID: <b>1411559-02A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/13/2014 05:45 PM</b>		
Client ID:		Run ID: <b>GC8_141113B</b>				SeqNo: <b>3036188</b>		Prep Date: <b>11/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	244.6	8.0	319.6	0	76.5	48-110	0			
<i>Surr: 4-Terphenyl-d14</i>	1.601	0	3.196	0	50.1	39-133	0			

<b>MSD</b>		Sample ID: <b>1411559-02A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/13/2014 06:12 PM</b>		
Client ID:		Run ID: <b>GC8_141113B</b>				SeqNo: <b>3036189</b>		Prep Date: <b>11/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	237.7	8.3	332.4	0	71.5	48-110	244.6	2.84	30	
<i>Surr: 4-Terphenyl-d14</i>	1.399	0	3.324	0	42.1	39-133	1.601	13.5	30	

The following samples were analyzed in this batch: 1411105-02A

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64897**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-64897-64897</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/11/2014 06:04 PM</b>		
Client ID:		Run ID: <b>GC9_141111A</b>				SeqNo: <b>3030161</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	U	2,500								
<i>Surr: Toluene-d8</i>	6191	0	5000	0	124	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-64897-64897</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/11/2014 05:39 PM</b>		
Client ID:		Run ID: <b>GC9_141111A</b>				SeqNo: <b>3030160</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	489400	2,500	500000	0	97.9	70-130	0			
<i>Surr: Toluene-d8</i>	5722	0	5000	0	114	50-150	0			

<b>MS</b>		Sample ID: <b>1411499-07A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/12/2014 05:49 AM</b>		
Client ID:		Run ID: <b>GC9_141111A</b>				SeqNo: <b>3030185</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	380800	2,500	500000	0	76.2	70-130	0			
<i>Surr: Toluene-d8</i>	4347	0	5000	0	86.9	50-150	0			

<b>MSD</b>		Sample ID: <b>1411499-07A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/12/2014 06:14 AM</b>		
Client ID:		Run ID: <b>GC9_141111A</b>				SeqNo: <b>3030186</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	366000	2,500	500000	0	73.2	70-130	380800	3.97	30	
<i>Surr: Toluene-d8</i>	3939	0	5000	0	78.8	50-150	4347	9.85	30	

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64887** Instrument ID **ICP2** Method: **SW846 6010C**

DUP				Sample ID: 1411105-05ADUP			Units:mg/L		Analysis Date: 11/14/2014 11:41 AM		
Client ID: 20141029-EC 7612 (Shale BG) (5)				Run ID: ICP2_141114A		SeqNo: 3035340		Prep Date: 11/14/2014		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Calcium	56.63	5.0	0	0	0	0-0	41.14	31.7			
Magnesium	73.13	2.0	0	0	0	0-0	51.54	34.6			
Sodium	7.679	2.0	0	0	0	0-0	5.054	41.2			

DUP				Sample ID: 1411105-05ADUP				Units:none			Analysis Date: 11/14/2014			
Client ID: 20141029-EC 7612 (Shale BG) (5)				Run ID: SAR_141114A				SeqNo:3035439			Prep Date: 11/14/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Sodium Adsorption Ratio	0.1589	0.010	0	0	0		0.1239	24.7	50					

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64935** Instrument ID **ICPMS1** Method: **SW6020A**

<b>MBLK</b>		Sample ID: <b>MBLK-64935-64935</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/12/2014 09:54 PM</b>		
Client ID:		Run ID: <b>ICPMS1_141112A</b>				SeqNo: <b>3032341</b>		Prep Date: <b>11/12/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.25								

<b>LCS</b>		Sample ID: <b>LCS-64935-64935</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/12/2014 10:00 PM</b>		
Client ID:		Run ID: <b>ICPMS1_141112A</b>				SeqNo: <b>3032344</b>		Prep Date: <b>11/12/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.45	0.25	5	0	89	80-120	0			

<b>MS</b>		Sample ID: <b>1411105-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/12/2014 10:12 PM</b>		
Client ID: <b>20141029-EC 7612 (Shale BG) (1)</b>		Run ID: <b>ICPMS1_141112A</b>				SeqNo: <b>3032350</b>		Prep Date: <b>11/12/2014</b>		DF: <b>4</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	16.46	1.6	8.078	9.607	84.8	75-125	0			

<b>MSD</b>		Sample ID: <b>1411105-01AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/12/2014 10:18 PM</b>		
Client ID: <b>20141029-EC 7612 (Shale BG) (1)</b>		Run ID: <b>ICPMS1_141112A</b>				SeqNo: <b>3032352</b>		Prep Date: <b>11/12/2014</b>		DF: <b>4</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	17.55	1.6	8.026	9.607	98.9	75-125	16.46	6.42	25	

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64877** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-64877-64877</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/11/2014 05:13 PM</b>		
Client ID:		Run ID: <b>SVMS5_141111A</b>				SeqNo: <b>3030887</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	6.7								
Anthracene	U	6.7								
Benzo(a)anthracene	U	6.7								
Benzo(a)pyrene	U	6.7								
Benzo(b)fluoranthene	U	6.7								
Benzo(k)fluoranthene	U	6.7								
Chrysene	U	6.7								
Dibenzo(a,h)anthracene	U	6.7								
Fluoranthene	U	6.7								
Fluorene	U	6.7								
Indeno(1,2,3-cd)pyrene	U	6.7								
Naphthalene	U	6.7								
Pyrene	U	6.7								
Surr: 2-Fluorobiphenyl	1217	0	1667	0	73	12-100	0			
Surr: 4-Terphenyl-d14	1632	0	1667	0	97.9	25-137	0			
Surr: Nitrobenzene-d5	1209	0	1667	0	72.5	37-107	0			

LCS		Sample ID: <b>SLCSS1-64877-64877</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/11/2014 05:37 PM</b>		
Client ID:		Run ID: <b>SVMS5_141111A</b>				SeqNo: <b>3030890</b>		Prep Date: <b>11/11/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	596	6.7	666.7	0	89.4	45-110	0			
Anthracene	681.7	6.7	666.7	0	102	55-105	0			
Benzo(a)anthracene	684.3	6.7	666.7	0	103	50-110	0			
Benzo(a)pyrene	709	6.7	666.7	0	106	50-110	0			
Benzo(b)fluoranthene	731.7	6.7	666.7	0	110	45-115	0			
Benzo(k)fluoranthene	725	6.7	666.7	0	109	45-115	0			
Chrysene	713.3	6.7	666.7	0	107	55-110	0			
Dibenzo(a,h)anthracene	736.7	6.7	666.7	0	110	40-125	0			
Fluoranthene	719.7	6.7	666.7	0	108	55-115	0			
Fluorene	623	6.7	666.7	0	93.4	50-110	0			
Indeno(1,2,3-cd)pyrene	729	6.7	666.7	0	109	40-120	0			
Naphthalene	569.3	6.7	666.7	0	85.4	40-105	0			
Pyrene	699.3	6.7	666.7	0	105	45-125	0			
Surr: 2-Fluorobiphenyl	1235	0	1667	0	74.1	12-100	0			
Surr: 4-Terphenyl-d14	1603	0	1667	0	96.2	25-137	0			
Surr: Nitrobenzene-d5	1261	0	1667	0	75.7	37-107	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Encana Oil and Gas (USA) Inc.  
 Work Order: 1411105  
 Project: EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64877** Instrument ID **SVMS5** Method: **SW846 8270D**

MS				Sample ID: 1411435-01B MS			Units: µg/Kg		Analysis Date: 11/11/2014 08:32 PM		
Client ID:			Run ID: SVMS5_141111A			SeqNo:3030894		Prep Date: 11/11/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1109	13	1256	0	88.3	45-110	0				
Anthracene	1278	13	1256	0	102	55-105	0				
Benzo(a)anthracene	1283	13	1256	0	102	50-110	0				
Benzo(a)pyrene	1312	13	1256	0	104	50-110	0				
Benzo(b)fluoranthene	1397	13	1256	0	111	45-115	0				
Benzo(k)fluoranthene	1410	13	1256	0	112	45-115	0				
Chrysene	1276	13	1256	0	102	55-110	0				
Dibenzo(a,h)anthracene	1223	13	1256	0	97.4	40-125	0				
Fluoranthene	1329	13	1256	0	106	55-115	0				
Fluorene	1181	13	1256	0	94	50-110	0				
Indeno(1,2,3-cd)pyrene	1299	13	1256	0	103	40-120	0				
Naphthalene	1044	13	1256	0	83.1	40-105	0				
Pyrene	1300	13	1256	0	103	45-125	0				
Surr: 2-Fluorobiphenyl	2292	0	3140	0	73	12-100	0				
Surr: 4-Terphenyl-d14	2832	0	3140	0	90.2	25-137	0				
Surr: Nitrobenzene-d5	2352	0	3140	0	74.9	37-107	0				

MSD				Sample ID: 1411435-01B MSD				Units: µg/Kg		Analysis Date: 11/11/2014 08:55 PM	
Client ID:			Run ID: SVMS5_141111A			SeqNo: 3030896		Prep Date: 11/11/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1168	13	1272	0	91.8	45-110	1109	5.2	30		
Anthracene	1349	13	1272	0	106	55-105	1278	5.4	30	S	
Benzo(a)anthracene	1347	13	1272	0	106	50-110	1283	4.91	30		
Benzo(a)pyrene	1398	13	1272	0	110	50-110	1312	6.34	30		
Benzo(b)fluoranthene	1540	13	1272	0	121	45-115	1397	9.73	30	S	
Benzo(k)fluoranthene	1494	13	1272	0	117	45-115	1410	5.74	30	S	
Chrysene	1357	13	1272	0	107	55-110	1276	6.15	30		
Dibenzo(a,h)anthracene	1293	13	1272	0	102	40-125	1223	5.53	30		
Fluoranthene	1404	13	1272	0	110	55-115	1329	5.51	30		
Fluorene	1267	13	1272	0	99.6	50-110	1181	7.04	30		
Indeno(1,2,3-cd)pyrene	1361	13	1272	0	107	40-120	1299	4.63	30		
Naphthalene	1108	13	1272	0	87.1	40-105	1044	5.96	30		
Pyrene	1376	13	1272	0	108	45-125	1300	5.7	30		
Surr: 2-Fluorobiphenyl	2423	0	3180	0	76.2	12-100	2292	5.57	40		
Surr: 4-Terphenyl-d14	3022	0	3180	0	95.1	25-137	2832	6.5	40		
Surr: Nitrobenzene-d5	2539	0	3180	0	79.9	37-107	2352	7.67	40		

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64972** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-64972-64972</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/13/2014 04:53 PM</b>		
Client ID:		Run ID: <b>SVMS8_141113A</b>				SeqNo: <b>3035371</b>		Prep Date: <b>11/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	6.7								
Anthracene	U	6.7								
Benzo(a)anthracene	U	6.7								
Benzo(a)pyrene	U	6.7								
Benzo(b)fluoranthene	U	6.7								
Benzo(k)fluoranthene	U	6.7								
Chrysene	U	6.7								
Dibenzo(a,h)anthracene	U	6.7								
Fluoranthene	U	6.7								
Fluorene	U	6.7								
Indeno(1,2,3-cd)pyrene	U	6.7								
Naphthalene	U	6.7								
Pyrene	U	6.7								
Surr: 2-Fluorobiphenyl	1317	0	1667	0	79	12-100	0			
Surr: 4-Terphenyl-d14	1583	0	1667	0	95	25-137	0			
Surr: Nitrobenzene-d5	1108	0	1667	0	66.5	37-107	0			

LCS		Sample ID: <b>SLCSS1-64972-64972</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/13/2014 06:16 PM</b>		
Client ID:		Run ID: <b>SVMS8_141113A</b>				SeqNo: <b>3035374</b>		Prep Date: <b>11/13/2014</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	518	6.7	666.7	0	77.7	45-110	0			
Anthracene	638.3	6.7	666.7	0	95.7	55-105	0			
Benzo(a)anthracene	634.3	6.7	666.7	0	95.1	50-110	0			
Benzo(a)pyrene	710	6.7	666.7	0	106	50-110	0			
Benzo(b)fluoranthene	693	6.7	666.7	0	104	45-115	0			
Benzo(k)fluoranthene	713.7	6.7	666.7	0	107	45-115	0			
Chrysene	666	6.7	666.7	0	99.9	55-110	0			
Dibenzo(a,h)anthracene	678.3	6.7	666.7	0	102	40-125	0			
Fluoranthene	597.7	6.7	666.7	0	89.6	55-115	0			
Fluorene	556	6.7	666.7	0	83.4	50-110	0			
Indeno(1,2,3-cd)pyrene	697.3	6.7	666.7	0	105	40-120	0			
Naphthalene	467	6.7	666.7	0	70	40-105	0			
Pyrene	713	6.7	666.7	0	107	45-125	0			
Surr: 2-Fluorobiphenyl	1126	0	1667	0	67.5	12-100	0			
Surr: 4-Terphenyl-d14	1505	0	1667	0	90.3	25-137	0			
Surr: Nitrobenzene-d5	933	0	1667	0	56	37-107	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64972** Instrument ID **SVMS8** Method: **SW846 8270D**

MS				Sample ID: <b>1411204-14B MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>11/13/2014 08:29 PM</b>	
Client ID:		Run ID: <b>SVMS8_141113A</b>			SeqNo: <b>3035378</b>		Prep Date: <b>11/13/2014</b>		DF: <b>5</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1202	65	1303	0	92.2	45-110	0			
Anthracene	1293	65	1303	0	99.2	55-105	0			
Benzo(a)anthracene	1254	65	1303	63.77	91.4	50-110	0			
Benzo(a)pyrene	1427	65	1303	75.21	104	50-110	0			
Benzo(b)fluoranthene	1261	65	1303	58.86	92.2	45-115	0			
Benzo(k)fluoranthene	1336	65	1303	19.62	101	45-115	0			
Chrysene	1385	65	1303	40.88	103	55-110	0			
Dibenzo(a,h)anthracene	1411	65	1303	0	108	40-125	0			
Fluoranthene	1251	65	1303	83.39	89.6	55-115	0			
Fluorene	1215	65	1303	0	93.2	50-110	0			
Indeno(1,2,3-cd)pyrene	1508	65	1303	45.78	112	40-120	0			
Naphthalene	1059	65	1303	21.26	79.6	40-105	0			
Pyrene	1134	65	1303	70.31	81.6	45-125	0			
Surr: 2-Fluorobiphenyl	2590	0	3258	0	79.5	12-100	0			
Surr: 4-Terphenyl-d14	2342	0	3258	0	71.9	25-137	0			
Surr: Nitrobenzene-d5	2062	0	3258	0	63.3	37-107	0			

MSD				Sample ID: <b>1411204-14B MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>11/13/2014 08:49 PM</b>	
Client ID:		Run ID: <b>SVMS8_141113A</b>			SeqNo: <b>3035379</b>		Prep Date: <b>11/13/2014</b>		DF: <b>5</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1135	65	1293	0	87.7	45-110	1202	5.77	30	
Anthracene	1303	65	1293	0	101	55-105	1293	0.734	30	
Benzo(a)anthracene	1267	65	1293	63.77	93.1	50-110	1254	1.04	30	
Benzo(a)pyrene	1477	65	1293	75.21	108	50-110	1427	3.48	30	
Benzo(b)fluoranthene	1303	65	1293	58.86	96.2	45-115	1261	3.29	30	
Benzo(k)fluoranthene	1348	65	1293	19.62	103	45-115	1336	0.927	30	
Chrysene	1283	65	1293	40.88	96.1	55-110	1385	7.58	30	
Dibenzo(a,h)anthracene	1455	65	1293	0	112	40-125	1411	3.08	30	
Fluoranthene	1290	65	1293	83.39	93.3	55-115	1251	3.07	30	
Fluorene	1161	65	1293	0	89.7	50-110	1215	4.59	30	
Indeno(1,2,3-cd)pyrene	1494	65	1293	45.78	112	40-120	1508	0.982	30	
Naphthalene	1035	65	1293	21.26	78.4	40-105	1059	2.32	30	
Pyrene	1080	65	1293	70.31	78.1	45-125	1134	4.87	30	
Surr: 2-Fluorobiphenyl	2421	0	3233	0	74.9	12-100	2590	6.72	40	
Surr: 4-Terphenyl-d14	2279	0	3233	0	70.5	25-137	2342	2.73	40	
Surr: Nitrobenzene-d5	1953	0	3233	0	60.4	37-107	2062	5.45	40	

The following samples were analyzed in this batch:

1411105-02A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64868** Instrument ID **WETCHEM** Method: **SW9045D**

DUP		Sample ID: 1411232-01A DUP					Units: s.u.		Analysis Date: 11/11/2014 09:15 AM	
Client ID:		Run ID: WETCHEM_141111A			SeqNo: 3027618		Prep Date: 11/10/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.42	0	0	0	0	0-0	6.42	0	20	

DUP		Sample ID: 1411233-01A DUP					Units: s.u.		Analysis Date: 11/11/2014 09:15 AM		
Client ID:		Run ID: WETCHEM_141111A			SeqNo: 3027620		Prep Date: 11/10/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	6.97	0	0	0	0	0-0	6.94	0.431	20		

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **64887** Instrument ID **WETCHEM** Method: **USDA H60 Method**

<b>DUP</b>		Sample ID: <b>1411105-05A DUP</b>				Units: <b>mmhos/cm @25°C</b>		Analysis Date: <b>11/14/2014 01:50 PM</b>		
Client ID: <b>20141029-EC 7612 (Shale BG) (5)</b>			Run ID: <b>WETCHEM_141114L</b>			SeqNo: <b>3035809</b>		Prep Date: <b>11/14/2014</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	0.937	0.050	0	0	0		0.68	31.8	50	

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Encana Oil and Gas (USA) Inc.  
**Work Order:** 1411105  
**Project:** EC 7612 Shale BG 10.29.14

## QC BATCH REPORT

Batch ID: **R152319** Instrument ID **MOIST** Method: **A2540 G**

<b>MBLK</b>				Sample ID: <b>WBLKS-R152319</b>				Units: % of sample			Analysis Date: <b>11/10/2014 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_141110E</b>				SeqNo: <b>3030738</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

Moisture U 0.050

LCS		Sample ID: LCS-R152319				Units: % of sample		Analysis Date: 11/10/2014 06:00 PM		
Client ID:		Run ID: MOIST_141110E			SeqNo: 3030734		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP				Sample ID: 1411105-01A DUP				Units: % of sample			Analysis Date: 11/10/2014 06:00 PM			
Client ID: 20141029-EC 7612 (Shale BG) (1)				Run ID: MOIST_141110E				SeqNo: 3030709			Prep Date:		DF: 1	
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 4.28 0.050 0 0 0 0-0 4.32 0.93 20 H

<b>DUP</b>				Sample ID: <b>1411400-06A DUP</b>				Units: % of sample		Analysis Date: <b>11/10/2014 06:00 PM</b>			
Client ID:				Run ID: <b>MOIST_141110E</b>				SeqNo: <b>3030720</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture 19.43 0.050 0 0 0 0-0 18.9 2.77 20

The following samples were analyzed in this batch:

1411105-01A	1411105-02A	1411105-03A
1411105-04A	1411105-05A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH  
+1 513 733 5336Fort Collins, CO  
+1 970 490 1511Everett, WA  
+1 425 356 2600Holland, MI  
+1 616 399 6070

## Chain of Custody Form

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+1 717 944 5541Salt Lake City, UT  
+1 801 266 7700York, PA  
+1 717 505 5280

Page 1 of 1

COC ID: 13122

## Environmental

Customer Information				Project Information				ALS Project Manager: ALS Work Order #: 141105											
Parameter/Method Request for Analysis																			
Purchase Order		Project Name	EC 7612 SHALE BA	A	PAH														
Work Order		Project Number	EC 7612	B	TPH (DRO + GRO)														
Company Name	ENCANA	Bill To Company		C	PH														
Send Report To	CHRIS HINES	Invoice Attn		D	SAR														
Address	2035 RODE	Address		E	EC														
	173 DIAMOND AVE.			F	ARSENIC														
City/State/Zip	PARACHUTE, CO 81635	City/State/Zip		G															
Phone	970-285-2653	Phone		H															
Fax		Fax		I															
e-Mail Address	CHRIS.HINES@ENCANA.COM	e-Mail Address		J															

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	20141029 - EC 7612 (SHALE BA)	20141029	1200	ROCK	-	NA	X	X	X	X	X	X					
2	" " " (2)		1205														
3	" " " (3)		1210														
4	" " " (4)		1215														
5	" " " (5)		1220														
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign CHRIS HINES		Shipment Method		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date: STD TAT	
Relinquished by: [Signature]		Date: 2014-10-31	Time: 11:05	Received by: [Signature]		Received at Laboratory: 11/11/14		Notes: WILL CALL TO DISCUSS	
Relinquished by: [Signature]		Date: 10/31/14	Time: 1700	Checked by (Laboratory): [Signature]		Cooler ID		Cooler Temp: 14.0°C	QC Package: (Check One Box Below)
Logged by (Laboratory): DPS		Date: 11/4/14	Time: 1415	Checked by (Laboratory): [Signature]					<input type="checkbox"/> Level II Std QC <input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> Level IV SW846/CLP <input type="checkbox"/> Other
Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>3</sub> 7-Other 8-4°C 9-5035									

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
 3. The Chain of Custody is a legal document. All information must be completed accurately.

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Sample Receipt Checklist

Client Name: **ENCANA2**

Date/Time Received: **01-Nov-14 09:45**

Work Order: **1411105**

Received by: **DS**

Checklist completed by <u>Diane Shaw</u>	04-Nov-14	Reviewed by: <u>Ann Preston</u>	10-Nov-14
eSignature	Date	eSignature	Date

Matrices: **Rock**  
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.0 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>11/4/2014 2:21:03 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

-----

Client Contacted:	Date Contacted:	Person Contacted:
Contacted By:	Regarding:	

Comments:

CorrectiveAction:

From: (616) 399-6670  
 Nick Martinez  
 ALS Environmental  
 127 E. 1st Street  
 Parachute, CO 81635

Origin ID: RULA



Ship Date: 31OCT14  
 ActWgt: 43.0 LB  
 CAC: 2294840/MET3550

Dim: 24 X 15 X 15 IN

Delivery Address Bar Code



Ref # 103114-1  
 Invoice #  
 PO # Parachute  
 Dept #

SHIP TO: (616) 399-6670

BILL RENDER

sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

HOLLAND, MI 49424

2 of 2

SATURDAY 12:00P  
 PRIORITY OVERNIGHT

MP# 7717 0887 5904

8262

Metric 7717 0887 5570

8261

49424

MI-LIN

GRR

**XO HLMA**

522010F14BAC3

## After printing this label:

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