ANALYTICAL REPORT

March 02, 2017

EnCana Oil & Gas - Parachute, CO

Sample Delivery Group:	L892693
Samples Received:	02/28/2017
Project Number:	NPR QRT
Description:	NPR Quarterly 1st
Site:	NPR
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Shane Gambill
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

[1]Cp: Cover Page 1

[2]Tc: Table of Contents 2

[3]Ss: Sample Summary 3

[4]Cn: Case Narrative 4

[5]Sr: Sample Results 5

20170227-ENPR12ST L892693-01 5

[6]Gl: Glossary of Terms 7

[7]Al: Accreditations & Locations 8

[8]Sc: Chain of Custody 9

20170227-ENPR12ST L892693-01 GW

Collected by	Collected date/time	Received date/time
MK / BKR	02/27/17 14:00	02/28/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG956460	1	02/28/17 17:30	02/28/17 18:01	MMF
Wet Chemistry by Method 2320 B-2011	WG955784	1	02/28/17 13:07	02/28/17 13:07	AMC
Wet Chemistry by Method 350.1	WG956148	1	02/28/17 14:56	02/28/17 14:56	DR
Wet Chemistry by Method 4500S2 D-2011	WG956567	1	02/28/17 15:26	02/28/17 15:26	KK
Wet Chemistry by Method 9040C	WG956888	1	03/02/17 08:38	03/02/17 08:38	MA
Wet Chemistry by Method 9050A	WG956790	1	03/01/17 14:00	03/01/17 14:00	KK
Wet Chemistry by Method 9056A	WG956380	1	02/28/17 18:29	02/28/17 18:29	KCF
Wet Chemistry by Method 9056A	WG957140	5	03/02/17 13:03	03/02/17 13:03	SAM
Metals (ICP) by Method 6010B	WG956641	1	03/01/17 09:16	03/01/17 12:47	CCE
Volatile Organic Compounds (GC) by Method RSK175	WG956668	1	03/01/17 11:28	03/01/17 11:28	MJ
Volatile Organic Compounds (GC/MS) by Method 8260B	WG956574	1	03/01/17 04:19	03/01/17 04:19	LRL

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Gl
7 Al
8 Sc

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Shane Gambill
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L892693-01	20170227-ENPR12ST	9040C

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	521		10.0	1	02/28/2017 18:01	WG956460

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Alkalinity	281		20.0	1	02/28/2017 13:07	WG955784
Alkalinity,Bicarbonate	268		20.0	1	02/28/2017 13:07	WG955784
Alkalinity,Carbonate	ND		20.0	1	02/28/2017 13:07	WG955784

Wet Chemistry by Method 350.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	02/28/2017 14:56	WG956148

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	02/28/2017 15:26	WG956567

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.36		1	03/02/2017 08:38	WG956888

Sample Narrative:

9040C L892693-01 WG956888: 8.36 at 11.6c

Wet Chemistry by Method 9050A

Analyte	Result umhos/cm	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	829		1	03/01/2017 14:00	WG956790

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	02/28/2017 18:29	WG956380
Chloride	8.23		1.00	1	02/28/2017 18:29	WG956380
Fluoride	0.762		0.100	1	02/28/2017 18:29	WG956380
Nitrate as (N)	1.01		0.100	1	02/28/2017 18:29	WG956380
Nitrite as (N)	ND		0.100	1	02/28/2017 18:29	WG956380
Sulfate	129		25.0	5	03/02/2017 13:03	WG957140

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	03/01/2017 12:47	WG956641
Barium,Dissolved	0.0563		0.00500	1	03/01/2017 12:47	WG956641
Cadmium,Dissolved	ND		0.00200	1	03/01/2017 12:47	WG956641
Calcium,Dissolved	54.1		1.00	1	03/01/2017 12:47	WG956641
Chromium,Dissolved	ND		0.0100	1	03/01/2017 12:47	WG956641
Copper,Dissolved	ND		0.0100	1	03/01/2017 12:47	WG956641
Iron,Dissolved	ND		0.100	1	03/01/2017 12:47	WG956641

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lead,Dissolved	ND		0.00500	1	03/01/2017 12:47	WG956641
Magnesium,Dissolved	45.8		1.00	1	03/01/2017 12:47	WG956641
Manganese,Dissolved	ND		0.0100	1	03/01/2017 12:47	WG956641
Potassium,Dissolved	3.35		1.00	1	03/01/2017 12:47	WG956641
Selenium,Dissolved	ND		0.0100	1	03/01/2017 12:47	WG956641
Silver,Dissolved	ND		0.00500	1	03/01/2017 12:47	WG956641
Sodium,Dissolved	60.5		1.00	1	03/01/2017 12:47	WG956641

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	03/01/2017 11:28	WG956668
Ethane	ND		0.0130	1	03/01/2017 11:28	WG956668
Ethene	ND		0.0130	1	03/01/2017 11:28	WG956668

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	03/01/2017 04:19	WG956574
Toluene	ND		0.00100	1	03/01/2017 04:19	WG956574
Ethylbenzene	ND		0.00100	1	03/01/2017 04:19	WG956574
Total Xylenes	ND		0.00300	1	03/01/2017 04:19	WG956574
Methyl tert-butyl ether	ND		0.00100	1	03/01/2017 04:19	WG956574
(S) Toluene-d8	*103*		*80.0-120*		*03/01/2017 04:19*	WG956574
(S) Dibromofluoromethane	*99.6*		*76.0-123*		*03/01/2017 04:19*	WG956574
(S) 4-Bromofluorobenzene	*111*		*80.0-120*		*03/01/2017 04:19*	WG956574

1 Cp
2 Tc
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Abbreviations and Definitions

SDG	Sample Delivery Group.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

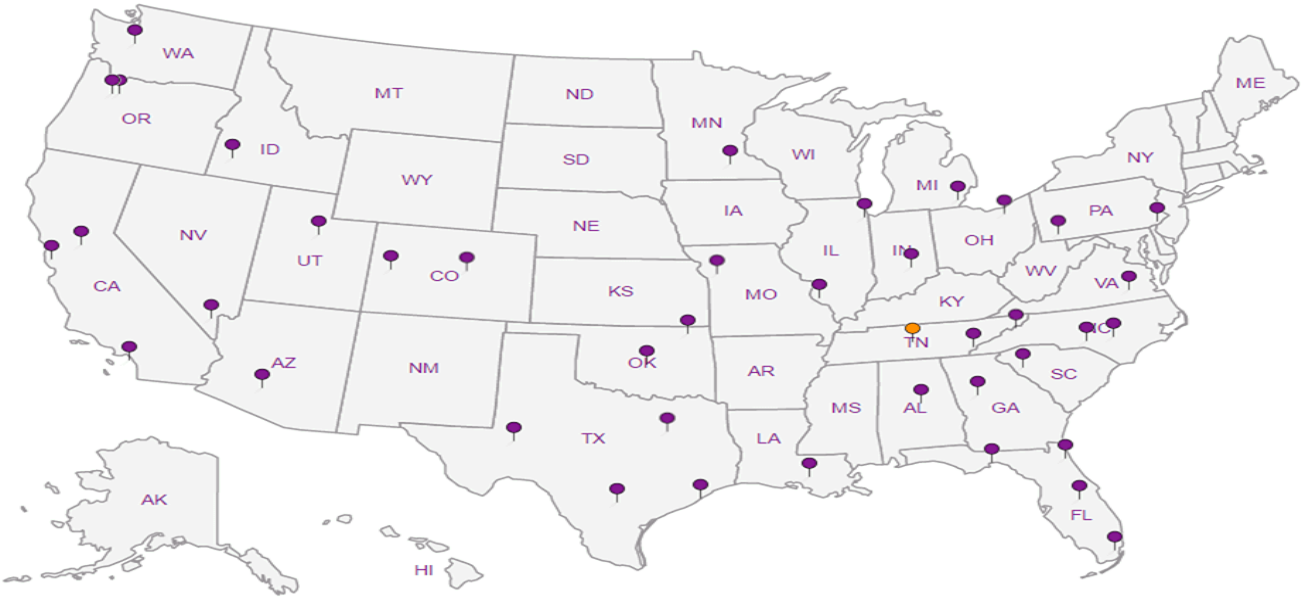
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
A2LA – ISO 17025 [5]	1461.02
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
Encana
143 Diamond Avenue
Parachute, CO 81635

Billing Information: **ENCANACO**

Report to: **Brett Middleton**

Email To: **brett.middleton@encana.com**

Project Description: **NPR QUARTERLY 1st**

City/State Collected:

Phone: **(970) 285-2739**
Fax:

Client Project # **NPR QRT**

Lab Project # **ENCANACO**

Collected by (print): **MK / BKR**

Site/Facility ID # **NPR**

P.O. #

Collected by (signature): [signature]
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
X Two Day 50%
___ Three Day 25%

Date Results Needed: COB 3/2/17

Email? ___No ✓Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALK/ALKBI/ALKCA	Br,Cl,F,SO4,NO2,NO3	Dissolved Metals (See Remarks)	Ammonia (H2SO4)	RSK175 (HCL)	Sulfide (NaOH+ZnAc)	BTEXM (8260)(HCL)	pH/SPCOND/TDS			Rem./Contaminant	Sample # (lab only)
20170227-ENPR 12ST	Grab	GW		2/27/17	1400	11	X	X	X	X	X	X	X	X			NO PRES	01

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 842697

C227

Acctnum:
Template:
Prelogin:
TSR:
Cooler:
Shipped Via:

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other **Surface Water**

Remarks: **Metals-As,Ba,Cd,Cr,Cu,Pb,Ag,Ca,Fe,K,Mg,Mn,Na,Se** NOT Preserved yet!!

pH ___ Temp ___
Flow ___ Other ___

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___	Condition: (lab use only)
[signature]	2/27/17	1400	[signature]		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1 °C Bottles Received: 12	COC Seal Intact: ___Y ___N ✓NA
[signature]	2/27/17	1700			
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 02817 Time: 9:00	pH Checked: NCF:
			[signature]		

ESC LAB SCIENCES
Cooler Receipt Form

Client: Kacawach	SDG#	382653	
Cooler Received/Opened On: 2/28/17	Temperature:	3.1	
Received By: Rickey Mosley			
Signature: [signature]			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?		✓	
Preservation Correct / Checked?		✓	