

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

RECEIVED
4/10/2014

SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by: _____

FACILITY ID: _____

OPERATOR INFORMATION

Name of Operator: _____ OGCC Operator No: _____	Phone Numbers
Address: _____	No: _____
City: _____ State: _____ Zip: _____	Fax: _____
Contact Person: _____	E-Mail: _____

DESCRIPTION OF SPILL OR RELEASE

Date of Incident: _____ Facility Name & No.: _____	County: _____
Type of Facility (well, tank battery, flow line, pit): _____	QtrQtr: _____ Section: _____
Well Name and Number: _____	Township: _____ Range: _____
API Number: _____	Meridian: _____
Specify volume spilled and recovered (in bbls) for the following materials:	
Oil spilled: _____ Oil recov'd: _____ Water spilled: _____ Water recov'd: _____ Other spilled: _____ Other recov'd: _____	
Ground Water impacted? Yes No	Surface Water impacted? Yes No
Contained within berm? Yes No	Area and vertical extent of spill: _____ x _____
Current land use: _____	Weather conditions: _____
Soil/geology description: _____	
IF LESS THAN A MILE , report distance IN FEET to nearest.... Surface water: _____ wetlands: _____ buildings: _____	
Livestock: _____ water wells: _____ Depth to shallowest ground water: _____	
Cause of spill (e.g., equipment failure, human error, etc.): _____ Detailed description of the spill/release incident: _____	

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered): _____

Describe any emergency pits constructed: _____

How was the extent of contamination determined: _____

Further remediation activities proposed (attach separate sheet if needed): _____

Describe measures taken to prevent problem from reoccurring: _____

OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

Date	Agency	Contact	Phone	Response

Spill/Release Tracking No: **2148499**

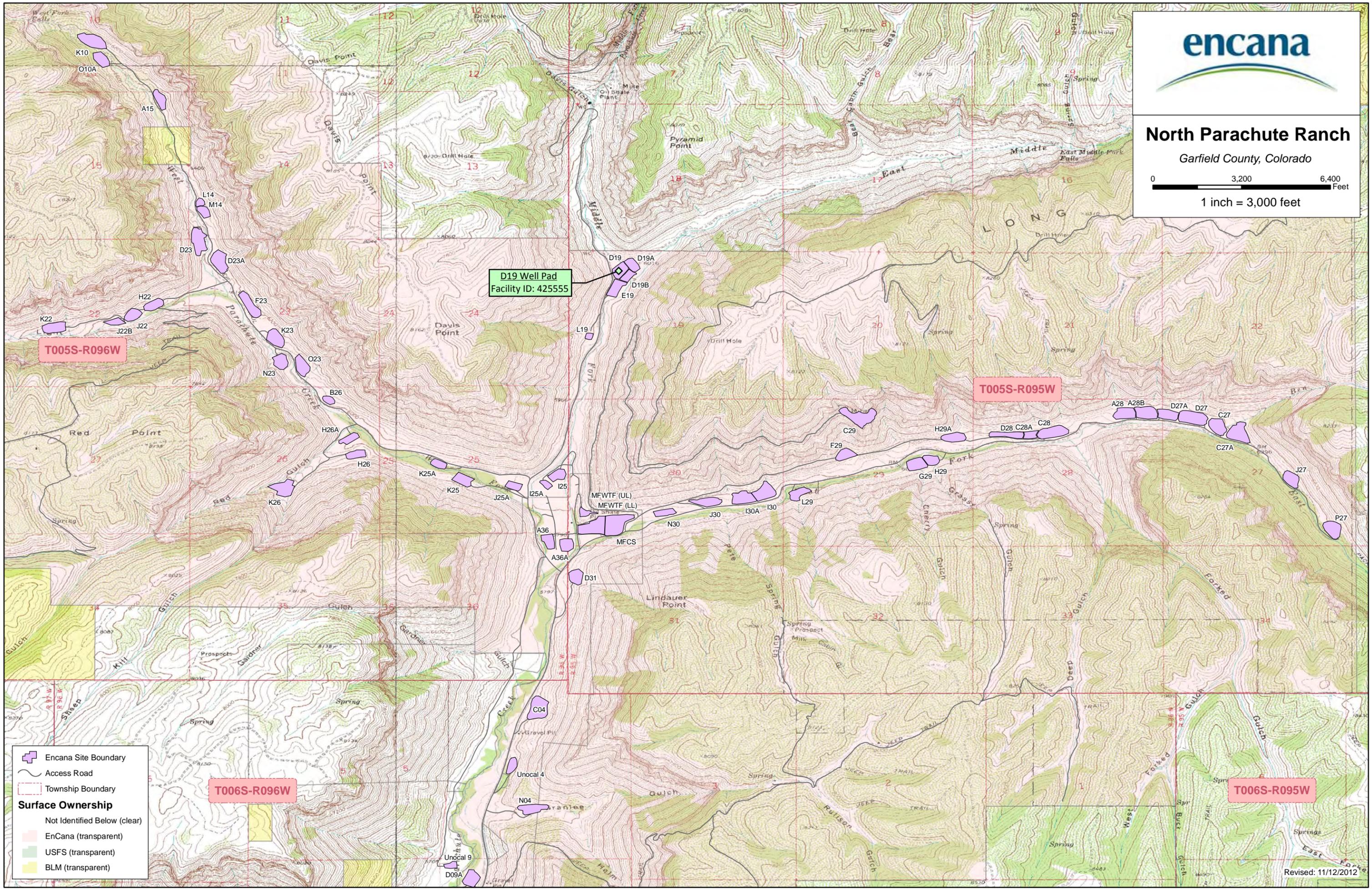


North Parachute Ranch

Garfield County, Colorado



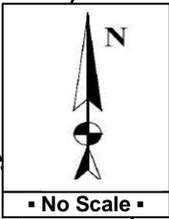
1 inch = 3,000 feet



Encana Site Boundary
 Access Road
 Township Boundary

Surface Ownership

- Not Identified Below (clear)
- EnCana (transparent)
- USFS (transparent)
- BLM (transparent)



Middle Fork
Storage Yard

D19A
Well Pad

Disturbed
Area

Disturbed Area

Reserve Pit

Ewall

Access Road

Nwall

Emidbot

Wbot

Wellheads

Swall

Edge of Working Surface

Disturbed Area

D19B
Well Pad

Disturbed Area

Middle Fork Road

Access Road

Edge of Disturbance

● - Below-liner sample location



Pad: D19 [Location ID: 335839]

Area: North Parachute Ranch

Legal: NENW, Sec. 19, T5S, R95W, 6th PM

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 31, 2013

Christopher C. Hines
Encana Oil & Gas
143 Diamond Avenue
Parachute, CO 81635
RE: D19 Pit Bottom

Enclosed are the results of analyses for samples received by Summit Scientific on 10/26/13 08:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury
President / Laboratory Manager



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom

Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
102513-D19Pit(WWall)	R310267-01	Soil	10/25/13 10:45	10/26/13 08:45
102513-D19Pit(WBot)	R310267-02	Soil	10/25/13 10:50	10/26/13 08:45
102513-D19Pit(NWall)	R310267-03	Soil	10/25/13 10:55	10/26/13 08:45
102513-D19Pit(SWall)	R310267-04	Soil	10/25/13 11:00	10/26/13 08:45
102513-D19Pit(EMidBot)	R310267-05	Soil	10/25/13 11:05	10/26/13 08:45
102513-D19Pit(EWall)	R310267-06	Soil	10/25/13 11:10	10/26/13 08:45

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom

Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

R310267

Summit Scientific

741 Corporate Circle Suite 1 • Golden, Colorado 80401
 303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: Encana Oil & Gas
 Address: 143 Diamond Ave
 City/State/Zip: Parachute, CO 81635
 Phone:
 Sampler Name: Matt Kasten
 Project Manager: C. Hines
 E-Mail: chhines@encana.com
 Project Name: D19 Pit Bottom
 Project Number: D19

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative			Matrix			Analyze For:			Special Instructions
				HCl	None	Other (Specify)	Soil	Groundwater	Other (Specify)	SPON	SPON	SPON	
1052-D19P1 (small)	10/25/13	5:05	2	X	X		X	X					CR3
1053-D19P1 (small)	10/25/13	5:07	2	X	X		X	X					CR3
1054-D19P1 (small)	10/25/13	5:08	2	X	X		X	X					CR3
1055-D19P1 (small)	10/25/13	5:09	2	X	X		X	X					CR3
1056-D19P1 (small)	10/25/13	5:10	2	X	X		X	X					CR3
1057-D19P1 (small)	10/25/13	5:11	2	X	X		X	X					CR3
1058-D19P1 (small)	10/25/13	5:12	2	X	X		X	X					CR3
1059-D19P1 (small)	10/25/13	5:13	2	X	X		X	X					CR3
1060-D19P1 (small)	10/25/13	5:14	2	X	X		X	X					CR3
1061-D19P1 (small)	10/25/13	5:15	2	X	X		X	X					CR3
1062-D19P1 (small)	10/25/13	5:16	2	X	X		X	X					CR3
1063-D19P1 (small)	10/25/13	5:17	2	X	X		X	X					CR3
1064-D19P1 (small)	10/25/13	5:18	2	X	X		X	X					CR3
1065-D19P1 (small)	10/25/13	5:19	2	X	X		X	X					CR3
1066-D19P1 (small)	10/25/13	5:20	2	X	X		X	X					CR3
1067-D19P1 (small)	10/25/13	5:21	2	X	X		X	X					CR3
1068-D19P1 (small)	10/25/13	5:22	2	X	X		X	X					CR3
1069-D19P1 (small)	10/25/13	5:23	2	X	X		X	X					CR3
1070-D19P1 (small)	10/25/13	5:24	2	X	X		X	X					CR3
1071-D19P1 (small)	10/25/13	5:25	2	X	X		X	X					CR3
1072-D19P1 (small)	10/25/13	5:26	2	X	X		X	X					CR3
1073-D19P1 (small)	10/25/13	5:27	2	X	X		X	X					CR3
1074-D19P1 (small)	10/25/13	5:28	2	X	X		X	X					CR3
1075-D19P1 (small)	10/25/13	5:29	2	X	X		X	X					CR3
1076-D19P1 (small)	10/25/13	5:30	2	X	X		X	X					CR3
1077-D19P1 (small)	10/25/13	5:31	2	X	X		X	X					CR3
1078-D19P1 (small)	10/25/13	5:32	2	X	X		X	X					CR3
1079-D19P1 (small)	10/25/13	5:33	2	X	X		X	X					CR3
1080-D19P1 (small)	10/25/13	5:34	2	X	X		X	X					CR3
1081-D19P1 (small)	10/25/13	5:35	2	X	X		X	X					CR3
1082-D19P1 (small)	10/25/13	5:36	2	X	X		X	X					CR3
1083-D19P1 (small)	10/25/13	5:37	2	X	X		X	X					CR3
1084-D19P1 (small)	10/25/13	5:38	2	X	X		X	X					CR3
1085-D19P1 (small)	10/25/13	5:39	2	X	X		X	X					CR3
1086-D19P1 (small)	10/25/13	5:40	2	X	X		X	X					CR3
1087-D19P1 (small)	10/25/13	5:41	2	X	X		X	X					CR3
1088-D19P1 (small)	10/25/13	5:42	2	X	X		X	X					CR3
1089-D19P1 (small)	10/25/13	5:43	2	X	X		X	X					CR3
1090-D19P1 (small)	10/25/13	5:44	2	X	X		X	X					CR3
1091-D19P1 (small)	10/25/13	5:45	2	X	X		X	X					CR3
1092-D19P1 (small)	10/25/13	5:46	2	X	X		X	X					CR3
1093-D19P1 (small)	10/25/13	5:47	2	X	X		X	X					CR3
1094-D19P1 (small)	10/25/13	5:48	2	X	X		X	X					CR3
1095-D19P1 (small)	10/25/13	5:49	2	X	X		X	X					CR3
1096-D19P1 (small)	10/25/13	5:50	2	X	X		X	X					CR3
1097-D19P1 (small)	10/25/13	5:51	2	X	X		X	X					CR3
1098-D19P1 (small)	10/25/13	5:52	2	X	X		X	X					CR3
1099-D19P1 (small)	10/25/13	5:53	2	X	X		X	X					CR3
1100-D19P1 (small)	10/25/13	5:54	2	X	X		X	X					CR3
1101-D19P1 (small)	10/25/13	5:55	2	X	X		X	X					CR3
1102-D19P1 (small)	10/25/13	5:56	2	X	X		X	X					CR3
1103-D19P1 (small)	10/25/13	5:57	2	X	X		X	X					CR3
1104-D19P1 (small)	10/25/13	5:58	2	X	X		X	X					CR3
1105-D19P1 (small)	10/25/13	5:59	2	X	X		X	X					CR3
1106-D19P1 (small)	10/25/13	6:00	2	X	X		X	X					CR3
1107-D19P1 (small)	10/25/13	6:01	2	X	X		X	X					CR3
1108-D19P1 (small)	10/25/13	6:02	2	X	X		X	X					CR3
1109-D19P1 (small)	10/25/13	6:03	2	X	X		X	X					CR3
1110-D19P1 (small)	10/25/13	6:04	2	X	X		X	X					CR3
1111-D19P1 (small)	10/25/13	6:05	2	X	X		X	X					CR3
1112-D19P1 (small)	10/25/13	6:06	2	X	X		X	X					CR3
1113-D19P1 (small)	10/25/13	6:07	2	X	X		X	X					CR3
1114-D19P1 (small)	10/25/13	6:08	2	X	X		X	X					CR3
1115-D19P1 (small)	10/25/13	6:09	2	X	X		X	X					CR3
1116-D19P1 (small)	10/25/13	6:10	2	X	X		X	X					CR3
1117-D19P1 (small)	10/25/13	6:11	2	X	X		X	X					CR3
1118-D19P1 (small)	10/25/13	6:12	2	X	X		X	X					CR3
1119-D19P1 (small)	10/25/13	6:13	2	X	X		X	X					CR3
1120-D19P1 (small)	10/25/13	6:14	2	X	X		X	X					CR3
1121-D19P1 (small)	10/25/13	6:15	2	X	X		X	X					CR3
1122-D19P1 (small)	10/25/13	6:16	2	X	X		X	X					CR3
1123-D19P1 (small)	10/25/13	6:17	2	X	X		X	X					CR3
1124-D19P1 (small)	10/25/13	6:18	2	X	X		X	X					CR3
1125-D19P1 (small)	10/25/13	6:19	2	X	X		X	X					CR3
1126-D19P1 (small)	10/25/13	6:20	2	X	X		X	X					CR3
1127-D19P1 (small)	10/25/13	6:21	2	X	X		X	X					CR3
1128-D19P1 (small)	10/25/13	6:22	2	X	X		X	X					CR3
1129-D19P1 (small)	10/25/13	6:23	2	X	X		X	X					CR3
1130-D19P1 (small)	10/25/13	6:24	2	X	X		X	X					CR3
1131-D19P1 (small)	10/25/13	6:25	2	X	X		X	X					CR3
1132-D19P1 (small)	10/25/13	6:26	2	X	X		X	X					CR3
1133-D19P1 (small)	10/25/13	6:27	2	X	X		X	X					CR3
1134-D19P1 (small)	10/25/13	6:28	2	X	X		X	X					CR3
1135-D19P1 (small)	10/25/13	6:29	2	X	X		X	X					CR3
1136-D19P1 (small)	10/25/13	6:30	2	X	X		X	X					CR3
1137-D19P1 (small)	10/25/13	6:31	2	X	X		X	X					CR3
1138-D19P1 (small)	10/25/13	6:32	2	X	X		X	X					CR3
1139-D19P1 (small)	10/25/13	6:33	2	X	X		X	X					CR3
1140-D19P1 (small)	10/25/13	6:34	2	X	X		X	X					CR3
1141-D19P1 (small)	10/25/13	6:35	2	X	X		X	X					CR3
1142-D19P1 (small)	10/25/13	6:36	2	X	X		X	X					CR3
1143-D19P1 (small)	10/25/13	6:37	2	X	X		X	X					CR3
1144-D19P1 (small)	10/25/13	6:38	2	X	X		X	X					CR3
1145-D19P1 (small)	10/25/13	6:39	2	X	X		X	X					CR3
1146-D19P1 (small)	10/25/13	6:40	2	X	X		X	X					CR3
1147-D19P1 (small)	10/25/13	6:41	2	X	X		X	X					CR3
1148-D19P1 (small)	10/25/13	6:42	2	X	X		X	X					CR3
1149-D19P1 (small)	10/25/13	6:43	2	X	X		X	X					CR3
1150-D19P1 (small)	10/25/13	6:44	2	X	X		X	X					CR3
1151-D19P1 (small)	10/25/13	6:45	2	X	X		X	X					CR3
1152-D19P1 (small)	10/25/13	6:46	2	X	X		X	X					CR3
1153-D19P1 (small)	10/25/13	6:47	2	X	X		X	X					CR3
1154-D19P1 (small)	10/25/13	6:48	2	X	X		X	X					CR3



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

**102513-D19Pit(WWall)
R310267-01 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/25/13 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	8100	50	mg/kg	1	3102818	10/28/13	10/30/13	8015M	

Date Sampled: 10/25/13 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		163 %	30-150		"	"	"	"	S-02

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/25/13 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0034	0.0020	mg/kg	1	3102819	10/28/13	10/29/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.025	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	25	0.50	"	"	"	"	"	"	

Date Sampled: 10/25/13 10:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

102513-D19Pit(WBot)
R310267-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/25/13 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	580	50	mg/kg	1	3102818	10/28/13	10/30/13	8015M	

Date Sampled: **10/25/13 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		111 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/25/13 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0054	0.0020	mg/kg	1	3102819	10/28/13	10/29/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.0	0.50	"	"	"	"	"	"	

Date Sampled: **10/25/13 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.0 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

**102513-D19Pit(NWall)
 R310267-03 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/25/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1600	50	mg/kg	1	3102818	10/28/13	10/30/13	8015M	

Date Sampled: **10/25/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		122 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/25/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	3102819	10/28/13	10/29/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.1	0.50	"	"	"	"	"	"	

Date Sampled: **10/25/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

**102513-D19Pit(SWall)
R310267-04 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/25/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	8500	50	mg/kg	1	3102818	10/28/13	10/30/13	8015M	

Date Sampled: 10/25/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		64.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/25/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0033	0.0020	mg/kg	1	3102819	10/28/13	10/30/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.020	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	49	0.50	"	"	"	"	"	"	

Date Sampled: 10/25/13 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

**102513-D19Pit(EMidBot)
R310267-05 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	350	50	mg/kg	1	3102818	10/28/13	10/30/13	8015M	

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	3102819	10/28/13	10/30/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.011	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	110	5.0	"	10	"	"	"	"	

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	3102811	10/28/13	10/28/13	EPA 8270D SIM	
Acenaphthylene	ND	0.00500	"	"	"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom

Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

**102513-D19Pit(EMidBot)
R310267-05 (Soil)**

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	3102811	10/28/13	10/28/13	EPA 8270D SIM	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	"
Chrysene	ND	0.00500	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Fluorene	0.0429	0.00500	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	"
Naphthalene	0.106	0.00500	"	"	"	"	"	"	"
Phenanthrene	0.0496	0.00500	"	"	"	"	"	"	"
Pyrene	0.00601	0.00500	"	"	"	"	"	"	"

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		80.6 %	50-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.3 %	50-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 10/25/13 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	11.5	0.0891	mg/kg dry	1	3102804	10/28/13	10/29/13	EPA 6020A	
Barium	1690	0.0891	"	"	"	"	"	"	
Cadmium	0.508	0.0891	"	"	"	"	"	"	
Chromium	22.3	0.445	"	"	"	"	"	"	
Copper	16.1	0.445	"	"	"	"	"	"	
Lead	18.0	0.0891	"	"	"	"	"	"	
Nickel	15.8	0.0891	"	"	"	"	"	"	
Selenium	0.142	0.0445	"	"	"	"	"	"	
Silver	0.0948	0.0891	"	"	"	"	"	"	
Zinc	35.6	8.91	"	"	"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

**102513-D19Pit(EMidBot)
R310267-05 (Soil)**

Summit Scientific

Total Mercury by EPA Method 7471/7470/245.1

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	0.0453	0.0426	mg/kg dry	1	3102803	10/28/13	10/28/13	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.17	mg/kg dry	1	3102901	10/29/13	10/29/13	EPA 7196	

Calculated Analytes

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	21.1	1.00	mg/kg	1	3103107	10/31/13	10/31/13	Calculation	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	970	9.71	mg/kg dry	1	3102810	10/28/13	10/29/13	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	87.2	4.86	"	"	"	"	"	"	
Sodium	1260	4.86	"	"	"	"	"	"	

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.4		units	"	3102821	10/28/13	10/31/13	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

**102513-D19Pit(EMidBot)
 R310267-05 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.62	0.0100	mmhos/cm	1	3102808	10/28/13	10/28/13	SM 2510B	

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.13	0.100	pH Units	"	3102913	10/29/13	10/30/13	EPA 9045	

Date Sampled: **10/25/13 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.3		%	"	3102820	10/28/13	10/30/13	% calculation	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

**102513-D19Pit(EWall)
R310267-06 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/25/13 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	10000	50	mg/kg	1	3102818	10/28/13	10/30/13	8015M	

Date Sampled: 10/25/13 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		191 %	30-150		"	"	"	"	S-02

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/25/13 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	3102819	10/28/13	10/30/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	130	5.0	"	10	"	"	"	"	

Date Sampled: 10/25/13 11:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD		Notes
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch 3102818 - EPA 3550A

Blank (3102818-BLK1)			Prepared: 10/28/13 Analyzed: 10/29/13								
C10-C28 (DRO)	ND	50	mg/kg								
LCS (3102818-BS1)			Prepared: 10/28/13 Analyzed: 10/29/13								
C10-C28 (DRO)	443	50	mg/kg	501	88.4	73-134					
LCS (3102818-BS2)			Prepared: 10/28/13 Analyzed: 10/30/13								
C10-C28 (DRO)	456	50	mg/kg	501	91.0	73-134					
LCS Dup (3102818-BSD1)			Prepared: 10/28/13 Analyzed: 10/30/13								
C10-C28 (DRO)	453	50	mg/kg	501	90.4	73-134	2.25			11	
LCS Dup (3102818-BSD2)			Prepared: 10/28/13 Analyzed: 10/30/13								
C10-C28 (DRO)	471	50	mg/kg	501	94.0	73-134	3.22			11	
Matrix Spike (3102818-MS1)			Source: R310272-01		Prepared: 10/28/13 Analyzed: 10/30/13						
C10-C28 (DRO)	455	50	mg/kg	496	ND	91.7	50-148				
Matrix Spike (3102818-MS2)			Source: R310272-02		Prepared: 10/28/13 Analyzed: 10/30/13						
C10-C28 (DRO)	463	50	mg/kg	480	ND	96.5	50-148				
Matrix Spike Dup (3102818-MSD1)			Source: R310272-01		Prepared: 10/28/13 Analyzed: 10/30/13						
C10-C28 (DRO)	482	50	mg/kg	495	ND	97.4	50-148	5.87		13	
Matrix Spike Dup (3102818-MSD2)			Source: R310272-02		Prepared: 10/28/13 Analyzed: 10/30/13						
C10-C28 (DRO)	453	50	mg/kg	483	ND	93.8	50-148	2.27		13	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 3102819 - EPA 5030 Soil MS

Blank (3102819-BLK1)

Prepared: 10/28/13 Analyzed: 10/29/13

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0397		109	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

LCS (3102819-BS1)

Prepared: 10/28/13 Analyzed: 10/29/13

Benzene	0.0824	0.0020	mg/kg	0.100		82.4	58-130			
Toluene	0.0944	0.0050	"	0.100		94.4	61-134			
Ethylbenzene	0.111	0.0050	"	0.100		111	74-139			
m,p-Xylene	0.215	0.010	"	0.200		107	73-137			
o-Xylene	0.108	0.0050	"	0.100		108	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0435		"	0.0397		110	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

LCS (3102819-BS2)

Prepared: 10/28/13 Analyzed: 10/30/13

Benzene	0.0826	0.0020	mg/kg	0.100		82.6	58-130			
Toluene	0.0941	0.0050	"	0.100		94.1	61-134			
Ethylbenzene	0.109	0.0050	"	0.100		109	74-139			
m,p-Xylene	0.211	0.010	"	0.200		105	73-137			
o-Xylene	0.107	0.0050	"	0.100		107	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0442		"	0.0397		111	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 3102819 - EPA 5030 Soil MS

LCS Dup (3102819-BSD1)

Prepared: 10/28/13 Analyzed: 10/29/13

Benzene	0.0829	0.0020	mg/kg	0.100		82.9	58-130	0.690	13	
Toluene	0.0946	0.0050	"	0.100		94.6	61-134	0.254	16	
Ethylbenzene	0.111	0.0050	"	0.100		111	74-139	0.108	12	
m,p-Xylene	0.215	0.010	"	0.200		107	73-137	0.112	14	
o-Xylene	0.108	0.0050	"	0.100		108	73-141	0.416	12	
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0397		109	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	21-167			

LCS Dup (3102819-BSD2)

Prepared: 10/28/13 Analyzed: 10/30/13

Benzene	0.0820	0.0020	mg/kg	0.100		82.0	58-130	0.838	13	
Toluene	0.0928	0.0050	"	0.100		92.8	61-134	1.44	16	
Ethylbenzene	0.110	0.0050	"	0.100		110	74-139	0.848	12	
m,p-Xylene	0.213	0.010	"	0.200		106	73-137	0.836	14	
o-Xylene	0.107	0.0050	"	0.100		107	73-141	0.393	12	
Surrogate: 1,2-Dichloroethane-d4	0.0427		"	0.0397		108	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.7	21-167			

Matrix Spike (3102819-MS1)

Source: R310272-01

Prepared: 10/28/13 Analyzed: 10/30/13

Benzene	0.0793	0.0020	mg/kg	0.0943	ND	84.1	30-131			
Toluene	0.0909	0.0050	"	0.0943	ND	96.4	30-134			
Ethylbenzene	0.104	0.0050	"	0.0943	ND	110	22-153			
m,p-Xylene	0.201	0.010	"	0.189	ND	107	10-159			
o-Xylene	0.101	0.0050	"	0.0943	ND	107	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0375		115	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0377		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0377		100	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting		Spike Level	Source Result	%REC		RPD		Notes
	Result	Limit			Units	Result	%REC	Limits	

Batch 3102819 - EPA 5030 Soil MS

Matrix Spike (3102819-MS2)	Source: R310272-02			Prepared: 10/28/13		Analyzed: 10/30/13			
Benzene	0.0784	0.0020	mg/kg	0.0986	ND	79.5	30-131		
Toluene	0.0919	0.0050	"	0.0986	ND	93.2	30-134		
Ethylbenzene	0.110	0.0050	"	0.0986	ND	111	22-153		
m,p-Xylene	0.212	0.010	"	0.197	ND	108	10-159		
o-Xylene	0.107	0.0050	"	0.0986	ND	109	31-151		
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0392		107	23-173		
Surrogate: Toluene-d8	0.0388		"	0.0394		98.3	20-170		
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0394		101	21-167		

Matrix Spike Dup (3102819-MSD1)	Source: R310272-01			Prepared: 10/28/13		Analyzed: 10/30/13			
Benzene	0.0798	0.0020	mg/kg	0.0945	ND	84.4	30-131	0.581	34
Toluene	0.0904	0.0050	"	0.0945	ND	95.7	30-134	0.530	30
Ethylbenzene	0.106	0.0050	"	0.0945	ND	112	22-153	1.27	24
m,p-Xylene	0.203	0.010	"	0.189	ND	107	10-159	0.890	68
o-Xylene	0.103	0.0050	"	0.0945	ND	109	31-151	1.96	38
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0375		110	23-173		
Surrogate: Toluene-d8	0.0370		"	0.0378		97.8	20-170		
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0378		100	21-167		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 3102811 - EPA 5030 Soil MS

Blank (3102811-BLK1)

Prepared & Analyzed: 10/28/13

Acenaphthene	ND	0.00500	mg/kg							
Acenaphthylene	ND	0.00500	"							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Benzo (g,h,i) perylene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Naphthalene	ND	0.00500	"							
Phenanthrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0168</i>		<i>"</i>	<i>0.0174</i>	<i>96.7</i>	<i>50-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0180</i>		<i>"</i>	<i>0.0172</i>	<i>105</i>	<i>50-150</i>				

LCS (3102811-BS1)

Prepared & Analyzed: 10/28/13

Acenaphthene	0.0184	0.00500	mg/kg	0.0167	110	50-150				
Acenaphthylene	0.0188	0.00500	"	0.0167	113	50-150				
Anthracene	0.0147	0.00500	"	0.0167	88.0	50-150				
Benzo (a) anthracene	0.0186	0.00500	"	0.0167	111	50-150				
Benzo (b) fluoranthene	0.0180	0.00500	"	0.0167	108	50-150				
Benzo (k) fluoranthene	0.0159	0.00500	"	0.0167	95.4	50-150				
Benzo (g,h,i) perylene	0.0180	0.00500	"	0.0167	108	50-150				
Benzo (a) pyrene	0.0170	0.00500	"	0.0167	102	50-150				
Chrysene	0.0173	0.00500	"	0.0167	104	50-150				
Dibenz (a,h) anthracene	0.0168	0.00500	"	0.0167	101	50-150				
Fluoranthene	0.0162	0.00500	"	0.0167	97.3	50-150				
Fluorene	0.0185	0.00500	"	0.0167	111	50-150				
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0167	98.6	50-150				
Naphthalene	0.0167	0.00500	"	0.0167	100	50-150				
Phenanthrene	0.0171	0.00500	"	0.0167	103	50-150				
Pyrene	0.0189	0.00500	"	0.0167	113	50-150				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0197</i>		<i>"</i>	<i>0.0174</i>	<i>113</i>	<i>50-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0181</i>		<i>"</i>	<i>0.0172</i>	<i>105</i>	<i>50-150</i>				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom

Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 3102811 - EPA 5030 Soil MS

LCS Dup (3102811-BSD1)

Prepared & Analyzed: 10/28/13

Acenaphthene	0.0190	0.00500	mg/kg	0.0167		114	50-150	3.51	20	
Acenaphthylene	0.0194	0.00500	"	0.0167		116	50-150	2.82	20	
Anthracene	0.0136	0.00500	"	0.0167		81.7	50-150	7.50	20	
Benzo (a) anthracene	0.0196	0.00500	"	0.0167		117	50-150	5.19	20	
Benzo (b) fluoranthene	0.0196	0.00500	"	0.0167		118	50-150	8.62	20	
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0167		107	50-150	11.6	20	
Benzo (g,h,i) perylene	0.0185	0.00500	"	0.0167		111	50-150	2.27	20	
Benzo (a) pyrene	0.0190	0.00500	"	0.0167		114	50-150	11.0	20	
Chrysene	0.0174	0.00500	"	0.0167		104	50-150	0.257	20	
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0167		95.8	50-150	5.01	20	
Fluoranthene	0.0150	0.00500	"	0.0167		90.3	50-150	7.54	20	
Fluorene	0.0188	0.00500	"	0.0167		113	50-150	1.56	20	
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0167		113	50-150	13.7	20	
Naphthalene	0.0181	0.00500	"	0.0167		109	50-150	8.11	20	
Phenanthrene	0.0155	0.00500	"	0.0167		92.7	50-150	10.2	20	
Pyrene	0.0183	0.00500	"	0.0167		110	50-150	3.12	20	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0179</i>		"	<i>0.0174</i>		<i>103</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0144</i>		"	<i>0.0172</i>		<i>83.8</i>	<i>50-150</i>			

Matrix Spike (3102811-MS1)

Source: R310228-01

Prepared & Analyzed: 10/28/13

Acenaphthene	0.0176	0.00500	mg/kg	0.0167	ND	106	50-150			
Acenaphthylene	0.0160	0.00500	"	0.0167	ND	96.1	50-150			
Anthracene	0.0134	0.00500	"	0.0167	0.000589	76.8	50-150			
Benzo (a) anthracene	0.0244	0.00500	"	0.0167	ND	146	50-150			
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0167	ND	139	50-150			
Benzo (k) fluoranthene	0.0152	0.00500	"	0.0167	ND	91.0	50-150			
Benzo (g,h,i) perylene	0.0121	0.00500	"	0.0167	ND	72.7	50-150			
Benzo (a) pyrene	0.0187	0.00500	"	0.0167	ND	112	50-150			
Chrysene	0.0165	0.00500	"	0.0167	0.00146	90.1	50-150			
Dibenz (a,h) anthracene	0.0142	0.00500	"	0.0167	ND	85.3	50-150			
Fluoranthene	0.0140	0.00500	"	0.0167	ND	84.0	50-150			
Fluorene	0.0257	0.00500	"	0.0167	0.00570	120	50-150			
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0167	ND	82.9	50-150			
Naphthalene	0.0155	0.00500	"	0.0167	0.000754	88.3	50-150			
Phenanthrene	0.0350	0.00500	"	0.0167	0.0142	125	50-150			
Pyrene	0.0181	0.00500	"	0.0167	ND	108	50-150			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0187</i>		"	<i>0.0174</i>		<i>108</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0152</i>		"	<i>0.0172</i>		<i>88.4</i>	<i>50-150</i>			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 3102811 - EPA 5030 Soil MS

Matrix Spike Dup (3102811-MSD1)	Source: R310228-01			Prepared & Analyzed: 10/28/13						
Acenaphthene	0.0171	0.00500	mg/kg	0.0167	ND	103	50-150	3.02	20	
Acenaphthylene	0.0168	0.00500	"	0.0167	ND	101	50-150	4.88	20	
Anthracene	0.0139	0.00500	"	0.0167	0.000589	80.0	50-150	3.86	20	
Benzo (a) anthracene	0.0227	0.00500	"	0.0167	ND	136	50-150	6.93	20	
Benzo (b) fluoranthene	0.0213	0.00500	"	0.0167	ND	128	50-150	8.44	20	
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0167	ND	85.2	50-150	6.64	20	
Benzo (g,h,i) perylene	0.0140	0.00500	"	0.0167	ND	84.0	50-150	14.5	20	
Benzo (a) pyrene	0.0176	0.00500	"	0.0167	ND	106	50-150	5.75	20	
Chrysene	0.0150	0.00500	"	0.0167	0.00146	81.3	50-150	9.40	20	
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0167	ND	93.7	50-150	9.37	20	
Fluoranthene	0.0143	0.00500	"	0.0167	ND	85.7	50-150	1.90	20	
Fluorene	0.0222	0.00500	"	0.0167	0.00570	99.1	50-150	14.4	20	
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0167	ND	92.2	50-150	10.6	20	
Naphthalene	0.0162	0.00500	"	0.0167	0.000754	92.5	50-150	4.43	20	
Phenanthrene	0.0286	0.00500	"	0.0167	0.0142	86.0	50-150	20.2	20	
Pyrene	0.0174	0.00500	"	0.0167	ND	105	50-150	3.59	20	
Surrogate: 2-Methylnaphthalene-d10	0.0171		"	0.0174		98.5	50-150			
Surrogate: Fluoranthene-d10	0.0170		"	0.0172		98.8	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 3102804 - EPA 3050B

Blank (3102804-BLK1)

Prepared: 10/28/13 Analyzed: 10/29/13

Arsenic	ND	0.100	mg/kg wet						
Barium	ND	0.100	"						
Cadmium	ND	0.100	"						
Chromium	ND	0.500	"						
Copper	ND	0.500	"						
Lead	ND	0.100	"						
Nickel	ND	0.100	"						
Selenium	ND	0.0500	"						
Silver	ND	0.100	"						
Zinc	ND	10.0	"						

LCS (3102804-BS1)

Prepared: 10/28/13 Analyzed: 10/29/13

Arsenic	2.31	0.100	mg/kg wet	2.50	92.6	80-120		
Barium	227	0.100	"	225	101	80-120		
Cadmium	0.984	0.100	"	1.00	98.2	80-120		
Chromium	11.0	0.500	"	10.0	110	80-120		
Copper	21.6	0.500	"	20.0	108	80-120		
Lead	7.87	0.100	"	7.51	105	80-120		
Nickel	15.1	0.100	"	15.0	101	80-120		
Selenium	1.34	0.0500	"	1.25	107	80-120		
Silver	0.213	0.100	"	0.250	85.3	80-120		
Zinc	6.01	10.0	"	7.51	80.0	80-120		

LCS Dup (3102804-BSD1)

Prepared: 10/28/13 Analyzed: 10/29/13

Arsenic	2.54	0.100	mg/kg wet	2.50	102	80-120	9.29	20
Barium	232	0.100	"	225	103	80-120	2.08	20
Cadmium	1.00	0.100	"	1.00	99.9	80-120	1.70	20
Chromium	11.5	0.500	"	10.0	115	80-120	4.34	20
Copper	22.1	0.500	"	20.0	111	80-120	2.26	20
Lead	7.93	0.100	"	7.52	105	80-120	0.698	20
Nickel	15.9	0.100	"	15.0	106	80-120	5.33	20
Selenium	1.33	0.0500	"	1.25	106	80-120	0.579	20
Silver	0.220	0.100	"	0.250	88.2	80-120	3.31	20
Zinc	6.35	10.0	"	7.52	84.5	80-120	5.47	20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch 3102804 - EPA 3050B

Matrix Spike (3102804-MS1)	Source: R310246-01			Prepared: 10/28/13		Analyzed: 10/29/13					
Arsenic	11.2	0.112	mg/kg dry	2.80	10.9	8.97	75-125				QM-07
Barium	314	0.112	"	252	249	26.0	75-125				QM-07
Cadmium	5.23	0.112	"	1.12	4.89	31.0	75-125				QM-07
Chromium	24.1	0.561	"	11.2	11.3	114	75-125				
Copper	43.4	0.561	"	22.4	27.0	73.1	75-125				QM-07
Lead	19.5	0.112	"	8.41	10.1	112	75-125				
Nickel	48.1	0.112	"	16.8	35.8	73.2	75-125				QM-07
Selenium	5.73	0.0561	"	1.40	6.21	NR	75-125				QM-07
Silver	0.433	0.112	"	0.280	0.245	67.1	75-125				QM-07
Zinc	73.4	11.2	"	8.41	70.2	38.4	75-125				QM-07

Matrix Spike Dup (3102804-MSD1)	Source: R310246-01			Prepared: 10/28/13		Analyzed: 10/29/13					
Arsenic	12.2	0.112	mg/kg dry	2.81	10.9	45.5	75-125	8.81	25		QM-07
Barium	340	0.112	"	253	249	36.0	75-125	7.84	25		QM-07
Cadmium	5.29	0.112	"	1.13	4.89	35.5	75-125	0.988	25		QM-07
Chromium	20.9	0.562	"	11.3	11.3	85.2	75-125	14.0	25		
Copper	40.7	0.562	"	22.5	27.0	60.9	75-125	6.30	25		QM-07
Lead	20.0	0.112	"	8.46	10.1	117	75-125	2.47	25		
Nickel	47.7	0.112	"	16.9	35.8	70.4	75-125	0.866	25		QM-07
Selenium	6.40	0.0562	"	1.41	6.21	13.3	75-125	11.0	25		QM-07
Silver	0.373	0.112	"	0.281	0.245	45.4	75-125	14.9	25		QM-07
Zinc	66.0	11.2	"	8.46	70.2	NR	75-125	10.7	25		QM-07

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Total Mercury by EPA Method 7471/7470/245.1 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch 3102803 - EPA 7471A

Blank (3102803-BLK1)			Prepared & Analyzed: 10/28/13								
Mercury	ND	0.0500	mg/kg wet								
LCS (3102803-BS1)			Prepared & Analyzed: 10/28/13								
Mercury	0.425	0.0500	mg/kg wet	0.400		106	80-120				
LCS Dup (3102803-BSD1)			Prepared & Analyzed: 10/28/13								
Mercury	0.406	0.0500	mg/kg wet	0.400		102	80-120	4.53	20		
Matrix Spike (3102803-MS1)			Source: R310246-01		Prepared & Analyzed: 10/28/13						
Mercury	0.512	0.0576	mg/kg dry	0.461	0.0511	100	80-120				
Matrix Spike Dup (3102803-MSD1)			Source: R310246-01		Prepared & Analyzed: 10/28/13						
Mercury	0.504	0.0568	mg/kg dry	0.454	0.0511	99.7	80-120	1.66	20		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Hexavalent Chromium by EPA 7196 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch 3102901 - General Preparation

Blank (3102901-BLK1)		Prepared & Analyzed: 10/29/13									
Chromium, Hexavalent	ND	1.00	mg/kg wet								
LCS (3102901-BS1)		Prepared & Analyzed: 10/29/13									
Chromium, Hexavalent	109	1.25	mg/kg wet	118	92.5	85-115					
LCS Dup (3102901-BSD1)		Prepared & Analyzed: 10/29/13									
Chromium, Hexavalent	103	1.25	mg/kg wet	117	87.5	85-115	5.63	20			
Duplicate (3102901-DUP1)		Source: R310269-29		Prepared & Analyzed: 10/29/13							
Chromium, Hexavalent	ND	1.15	mg/kg dry	0.229							20
Matrix Spike (3102901-MS1)		Source: R310269-29		Prepared & Analyzed: 10/29/13							
Chromium, Hexavalent	42.7	1.15	mg/kg dry	46.0	0.229	92.4	85-115				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom
Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch 3102810 - EPA 3050B

Blank (3102810-BLK1)

Prepared & Analyzed: 10/28/13

Calcium	ND	10.0	mg/kg wet							
Magnesium	ND	5.00	"							
Sodium	ND	5.00	"							

LCS (3102810-BS1)

Prepared & Analyzed: 10/28/13

Calcium	371	10.0	mg/kg wet	400		92.7	80-120			
Magnesium	183	5.00	"	201		91.3	80-120			
Sodium	448	5.00	"	501		89.4	80-120			

LCS Dup (3102810-BSD1)

Prepared & Analyzed: 10/28/13

Calcium	415	10.0	mg/kg wet	401		104	80-120	11.2	20	
Magnesium	206	5.00	"	201		102	80-120	11.7	20	
Sodium	499	5.00	"	501		99.5	80-120	10.8	20	

Matrix Spike (3102810-MS1)

Source: R310247-01

Prepared & Analyzed: 10/28/13

Calcium	1740	11.8	mg/kg dry	474	1070	143	75-125			QM-07
Magnesium	333	5.92	"	238	72.1	110	75-125			
Sodium	2800	5.92	"	593	2960	NR	75-125			QM-07

Matrix Spike Dup (3102810-MSD1)

Source: R310247-01

Prepared & Analyzed: 10/28/13

Calcium	1690	11.9	mg/kg dry	477	1070	131	75-125	2.95	25	QM-07
Magnesium	317	5.94	"	239	72.1	103	75-125	4.85	25	
Sodium	3120	5.94	"	596	2960	26.1	75-125	10.8	25	QM-07

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
 143 Diamond Avenue
 Parachute CO, 81635

Project: D19 Pit Bottom
 Project Number: D19
 Project Manager: Christopher C. Hines

Reported:
 10/31/13 22:57

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting		Spike Level	Source		%REC		RPD		Notes
	Result	Limit		Units	Result	%REC	Limits	RPD	Limit	

Batch 3102808 - General Preparation

Blank (3102808-BLK1)			Prepared & Analyzed: 10/28/13							
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
Duplicate (3102808-DUP1)			Source: R310246-01		Prepared & Analyzed: 10/28/13					
Specific Conductance (EC)	2.89	0.0100	mmhos/cm	2.62	9.81	20				

Batch 3102913 - General Preparation

LCS (3102913-BS1)			Prepared: 10/29/13 Analyzed: 10/30/13							
pH	7.98	0.100	pH Units	8.00	99.8	0-200				
LCS (3102913-BS2)			Prepared: 10/29/13 Analyzed: 10/30/13							
pH	7.97	0.100	pH Units	8.00	99.6	0-200				
Duplicate (3102913-DUP1)			Source: R310295-03		Prepared: 10/29/13 Analyzed: 10/30/13					
pH	8.13	0.100	pH Units	8.10	0.370	20				
Duplicate (3102913-DUP2)			Source: R310295-04		Prepared: 10/29/13 Analyzed: 10/30/13					
pH	7.87	0.100	pH Units	7.95	1.01	20				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Encana Oil & Gas
143 Diamond Avenue
Parachute CO, 81635

Project: D19 Pit Bottom

Project Number: D19
Project Manager: Christopher C. Hines

Reported:
10/31/13 22:57

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference