

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AMENDED REPORT
☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-31189	² Pool Code 17610	³ Pool Name DEVILS FORK GALLUP (ASSOCIATED)
⁴ Property Code 40060	⁵ Property Name ESCRITO E13-2407	⁶ Well Number 01H
⁷ OGRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6687'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	13	24N	7W		1992'	NORTH	225'	WEST	RIO ARRIBA

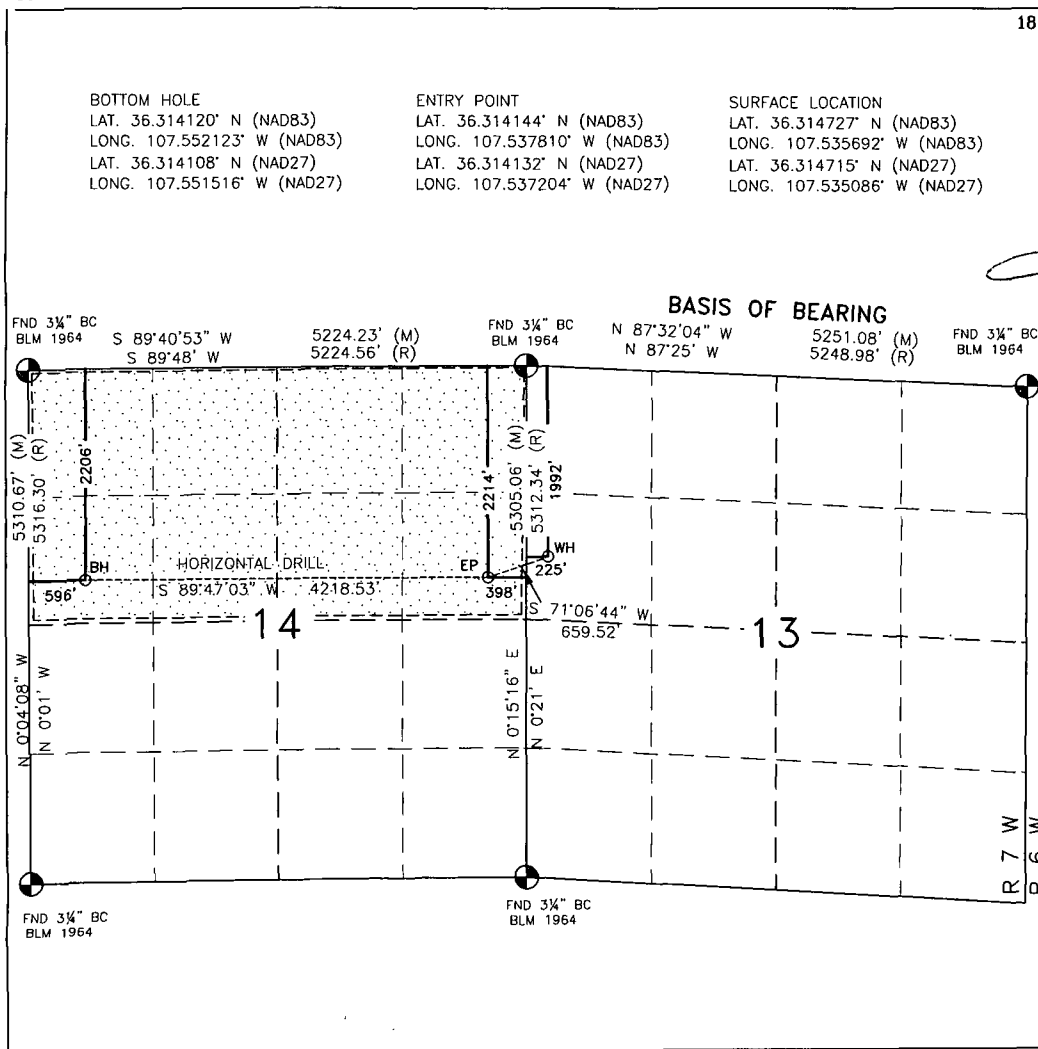
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	14	24N	7W		2206'	NORTH	596'	WEST	RIO ARRIBA

¹² Dedicated Acres 320.00 Ac. N/2 - SEC. 14	PROJECT AREA	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD NOV 14 '13 OIL CONS. DIV.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION DIST. 3

16



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Robynn Haden 11/12/13
Signature Date

Robynn Haden
Printed Name

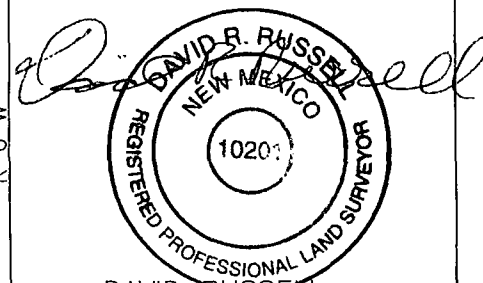
robynn.haden@encana.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

As-Built Survey OCTOBER 01, 2013
Date of Survey FEBRUARY 12, 2013

Signature and Seal of Professional Surveyor:



DAVID RUSSELL
Certificate Number 10201

N

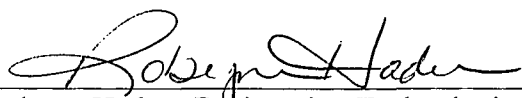
DEVIATION SURVEYS

MD (Feet)	Inclination (Degree)
616	.70
861	.90
1167	.60
1472	.60
1787	.30
2102	.70
2417	.70
2732	1.10
3047	.30
3363	.10
3678	.40
3992	.50
4307	.90
4621	.30
4861	.60

RCVD NOV 14 '13
OIL CONS. DIV.
DIST. 3

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.



Robynn Haden, Engineering Technologist

11/12/13

11/12/13

ACKNOWLEDGMENT

State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 12th day of November, 2013 by Robynn Haden as Attorney in Fact of Encana Oil & Gas (USA) Inc., on behalf of said corporation.

In witness whereof, I hereunto set my hand and official seal.

Notary Public:


PAULINE A. HERBERT-ALLEN

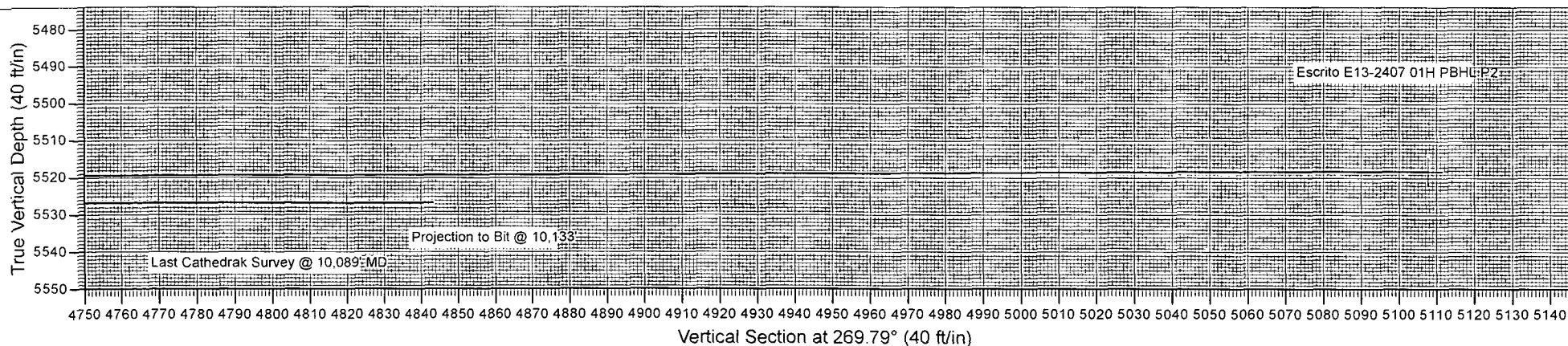
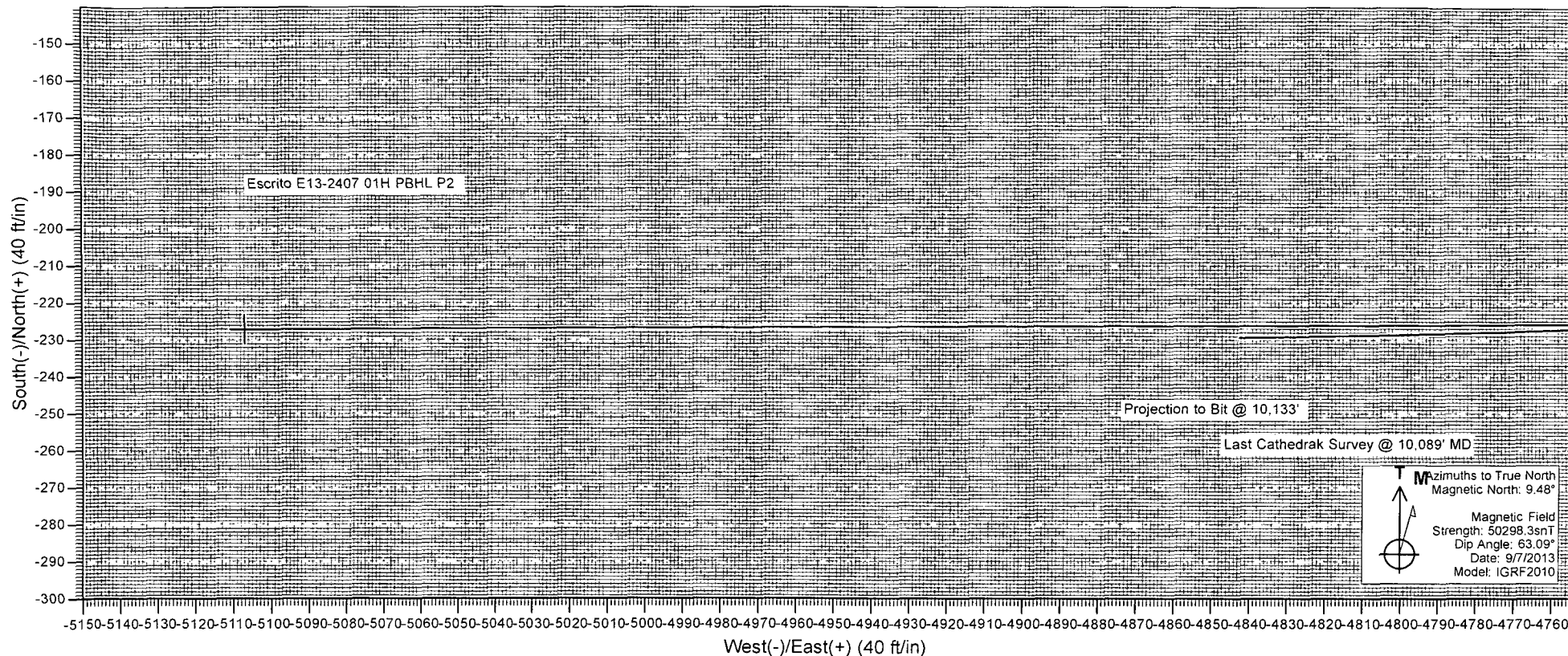
My Commission Expires: June 26, 2016







Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	Rio Arriba County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	S13-T24N-R7W		
Site Position:		Northing:	1,936,350.91 ft
From:	Lat/Long	Easting:	1,261,640.97 ft
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in
		Latitude:	36.314731
		Longitude:	-107.535693
		Grid Convergence:	-0.76 °

Well	Escrito E13-2407 01H		
Well Position	+N/-S	0.0 ft	Northing: 1,936,350.91 ft
	+E/-W	0.0 ft	Easting: 1,261,640.97 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36.314731
		Longitude:	-107.535693
		Ground Level:	6,690.0 ft

Wellbore	Hz		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	9/7/2013	(°)
			9.48
		Dip Angle	(°)
		63.09	
		Field Strength	(nT)
		50,298	

Design	FINAL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
		Direction	(°)
		269.79	

Survey Program	Date 10/3/2013		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
616.0	10,133.0	Survey #1 (Hz)	Geolink MWD
			Description
			Geolink MWD

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Formations /
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Comments
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
616.0	0.70	299.60	616.0	1.9	-3.3	3.3	0.11	0.11	
677.0	0.80	279.50	677.0	2.1	-4.0	4.0	0.46	0.16	
739.0	0.70	269.20	739.0	2.2	-4.8	4.8	0.27	-0.16	
800.0	0.40	123.60	800.0	2.1	-5.0	5.0	1.73	-0.49	
861.0	0.90	108.40	861.0	1.8	-4.4	4.4	0.86	0.82	
922.0	0.80	125.70	922.0	1.4	-3.6	3.6	0.45	-0.16	
983.0	0.90	129.80	983.0	0.8	-2.9	2.9	0.19	0.16	
1,044.0	0.80	130.90	1,043.9	0.2	-2.2	2.2	0.17	-0.16	
1,105.0	0.50	99.50	1,104.9	-0.1	-1.6	1.6	0.75	-0.49	
1,167.0	0.60	122.00	1,166.9	-0.3	-1.1	1.1	0.38	0.16	
1,228.0	0.80	99.50	1,227.9	-0.5	-0.4	0.4	0.55	0.33	
1,289.0	0.60	74.60	1,288.9	-0.5	0.4	-0.4	0.59	-0.33	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
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Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
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MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,351.0	0.30	75.90	1,350.9	-0.4	0.8	-0.8	0.48	-0.48	
1,412.0	0.50	51.60	1,411.9	-0.2	1.2	-1.2	0.42	0.33	
1,472.0	0.60	40.30	1,471.9	0.2	1.6	-1.6	0.25	0.17	
1,535.0	0.30	83.00	1,534.9	0.5	2.0	-2.0	0.68	-0.48	
1,598.0	0.70	48.40	1,597.9	0.8	2.4	-2.4	0.77	0.63	
1,661.0	0.50	82.20	1,660.9	1.1	3.0	-3.0	0.63	-0.32	
1,724.0	0.30	65.30	1,723.9	1.2	3.4	-3.4	0.37	-0.32	
1,787.0	0.30	54.40	1,786.9	1.3	3.7	-3.7	0.09	0.00	
1,850.0	0.30	107.90	1,849.9	1.4	4.0	-4.0	0.43	0.00	
1,913.0	0.10	144.60	1,912.9	1.3	4.2	-4.2	0.36	-0.32	
1,976.0	0.10	142.00	1,975.9	1.2	4.2	-4.3	0.01	0.00	
2,039.0	0.40	127.20	2,038.9	1.0	4.5	-4.5	0.48	0.48	
2,102.0	0.70	111.50	2,101.9	0.7	5.0	-5.0	0.53	0.48	
2,165.0	0.60	133.60	2,164.9	0.4	5.6	-5.6	0.43	-0.16	
2,228.0	0.30	171.10	2,227.9	0.0	5.9	-5.9	0.64	-0.48	
2,291.0	1.20	170.30	2,290.9	-0.8	6.0	-6.0	1.43	1.43	
2,354.0	0.70	307.80	2,353.9	-1.2	5.8	-5.8	2.83	-0.79	
2,417.0	0.70	266.80	2,416.9	-1.0	5.1	-5.1	0.78	0.00	
2,480.0	0.90	254.60	2,479.9	-1.2	4.2	-4.2	0.42	0.32	
2,543.0	1.00	239.60	2,542.9	-1.6	3.3	-3.3	0.42	0.16	
2,606.0	1.00	256.70	2,605.9	-2.0	2.3	-2.3	0.47	0.00	
2,669.0	0.90	231.80	2,668.9	-2.4	1.4	-1.4	0.67	-0.16	
2,732.0	1.10	236.10	2,731.8	-3.1	0.5	-0.5	0.34	0.32	
2,795.0	0.90	231.80	2,794.8	-3.7	-0.4	0.4	0.34	-0.32	
2,858.0	0.60	212.60	2,857.8	-4.3	-1.0	1.0	0.61	-0.48	
2,921.0	1.20	204.80	2,920.8	-5.2	-1.4	1.5	0.97	0.95	
2,984.0	1.00	205.60	2,983.8	-6.3	-2.0	2.0	0.32	-0.32	
3,047.0	0.30	156.60	3,046.8	-6.9	-2.1	2.2	1.32	-1.11	
3,110.0	0.50	167.30	3,109.8	-7.3	-2.0	2.0	0.34	0.32	
3,173.0	0.40	151.90	3,172.8	-7.8	-1.8	1.9	0.25	-0.16	
3,237.0	0.30	162.10	3,236.8	-8.2	-1.7	1.7	0.18	-0.16	
3,300.0	0.40	65.50	3,299.8	-8.2	-1.4	1.5	0.84	0.16	
3,363.0	0.10	259.10	3,362.8	-8.1	-1.3	1.3	0.79	-0.48	
3,426.0	0.20	279.50	3,425.8	-8.1	-1.4	1.5	0.18	0.16	
3,489.0	0.70	251.50	3,488.8	-8.2	-1.9	2.0	0.84	0.79	
3,552.0	0.60	266.10	3,551.8	-8.4	-2.6	2.6	0.31	-0.16	
3,615.0	0.20	224.00	3,614.8	-8.5	-3.0	3.1	0.75	-0.63	
3,678.0	0.40	232.40	3,677.8	-8.7	-3.3	3.3	0.32	0.32	
3,741.0	0.70	99.50	3,740.8	-8.9	-3.1	3.1	1.61	0.48	
3,804.0	0.50	110.40	3,803.8	-9.1	-2.4	2.5	0.36	-0.32	
3,867.0	0.60	121.90	3,866.8	-9.3	-1.9	1.9	0.24	0.16	
3,929.0	1.10	114.10	3,928.8	-9.7	-1.1	1.1	0.83	0.81	
3,992.0	0.50	71.10	3,991.8	-9.9	-0.3	0.3	1.29	-0.95	
4,055.0	1.10	14.70	4,054.8	-9.2	0.2	-0.1	1.46	0.95	
4,118.0	0.80	34.40	4,117.8	-8.3	0.6	-0.5	0.70	-0.48	
4,181.0	1.00	33.70	4,180.8	-7.5	1.1	-1.1	0.32	0.32	
4,244.0	0.90	18.50	4,243.7	-6.5	1.6	-1.5	0.43	-0.16	
4,307.0	0.90	5.90	4,306.7	-5.6	1.8	-1.8	0.31	0.00	
4,370.0	0.30	347.40	4,369.7	-4.9	1.8	-1.8	0.99	-0.95	
4,433.0	0.40	44.60	4,432.7	-4.6	1.9	-1.9	0.55	0.16	
4,496.0	0.60	66.90	4,495.7	-4.3	2.4	-2.4	0.44	0.32	
4,558.0	0.40	99.50	4,557.7	-4.2	2.9	-2.9	0.55	-0.32	
4,621.0	0.30	117.90	4,620.7	-4.3	3.2	-3.2	0.24	-0.16	

Cathedral Energy Services

Survey Report

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Wellbore: Hz
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North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,684.0	0.90	112.40	4,683.7	-4.6	3.8	-3.8	0.96	0.95	
4,747.0	0.30	257.90	4,746.7	-4.8	4.1	-4.1	1.84	-0.95	
4,810.0	0.70	241.60	4,809.7	-5.0	3.6	-3.6	0.67	0.63	
4,840.0	0.70	264.80	4,839.7	-5.1	3.3	-3.3	0.94	0.00	
4,861.0	0.60	240.40	4,860.7	-5.2	3.1	-3.1	1.39	-0.48	
4,893.0	0.60	213.90	4,892.7	-5.4	2.8	-2.8	0.86	0.00	
4,924.0	2.60	229.50	4,923.7	-6.0	2.2	-2.2	6.54	6.45	
4,956.0	5.90	232.70	4,955.6	-7.5	0.4	-0.3	10.34	10.31	
4,987.0	9.40	235.00	4,986.3	-9.9	-3.0	3.0	11.33	11.29	
5,019.0	12.20	238.70	5,017.8	-13.2	-8.0	8.1	9.01	8.75	
5,050.0	14.90	241.40	5,047.9	-16.8	-14.3	14.4	8.94	8.71	
5,082.0	17.20	242.00	5,078.6	-21.0	-22.1	22.2	7.21	7.19	
5,113.0	19.40	239.70	5,108.1	-25.7	-30.6	30.7	7.47	7.10	
5,145.0	22.30	237.60	5,138.0	-31.7	-40.3	40.4	9.36	9.06	
5,176.0	25.90	236.90	5,166.3	-38.5	-51.0	51.1	11.65	11.61	
5,208.0	29.40	236.80	5,194.6	-46.6	-63.4	63.6	10.94	10.94	
5,239.0	33.10	237.60	5,221.1	-55.3	-76.9	77.1	12.01	11.94	
5,270.0	35.20	240.20	5,246.8	-64.3	-91.8	92.0	8.25	6.77	
5,302.0	37.40	242.70	5,272.6	-73.4	-108.5	108.7	8.28	6.87	
5,333.0	40.20	244.60	5,296.7	-82.0	-125.9	126.2	9.81	9.03	
5,365.0	43.20	246.60	5,320.6	-90.7	-145.2	145.6	10.25	9.37	
5,396.0	46.80	247.20	5,342.5	-99.3	-165.4	165.8	11.69	11.61	
5,428.0	50.60	247.70	5,363.6	-108.6	-187.6	188.0	11.93	11.87	
5,459.0	53.90	248.90	5,382.6	-117.6	-210.4	210.8	11.08	10.65	
5,490.0	56.50	249.20	5,400.3	-126.7	-234.2	234.6	8.42	8.39	
5,522.0	60.60	249.90	5,417.0	-136.2	-259.7	260.2	12.95	12.81	
5,553.0	64.40	251.20	5,431.3	-145.4	-285.7	286.2	12.81	12.26	
5,585.0	67.60	253.10	5,444.3	-154.3	-313.5	314.0	11.38	10.00	
5,616.0	69.90	254.80	5,455.6	-162.3	-341.2	341.8	9.01	7.42	
5,648.0	73.40	255.60	5,465.6	-170.1	-370.6	371.2	11.19	10.94	
5,679.0	76.30	256.40	5,473.7	-177.3	-399.6	400.3	9.68	9.35	
5,710.0	77.30	256.60	5,480.8	-184.4	-429.0	429.6	3.29	3.23	
5,742.0	78.10	256.40	5,487.6	-191.7	-459.4	460.1	2.57	2.50	
5,773.0	79.60	258.30	5,493.6	-198.3	-489.1	489.8	7.72	4.84	
5,804.0	80.00	260.70	5,499.1	-203.9	-519.0	519.8	7.73	1.29	
5,836.0	80.00	263.80	5,504.7	-208.1	-550.3	551.0	9.54	0.00	
5,867.0	80.10	266.30	5,510.0	-210.8	-580.7	581.5	7.95	0.32	
5,911.0	81.10	266.50	5,517.2	-213.5	-624.0	624.8	2.32	2.27	
5,960.0	83.20	268.20	5,523.9	-215.7	-672.5	673.3	5.49	4.29	
5,992.0	83.70	268.10	5,527.6	-216.8	-704.3	705.1	1.59	1.56	
6,055.0	84.30	269.30	5,534.1	-218.2	-766.9	767.7	2.12	0.95	
6,118.0	85.90	269.50	5,539.5	-218.8	-829.7	830.5	2.56	2.54	
6,181.0	87.80	269.80	5,543.0	-219.2	-892.6	893.4	3.05	3.02	
6,244.0	90.00	271.20	5,544.2	-218.7	-955.6	956.3	4.14	3.49	
6,307.0	91.30	271.50	5,543.5	-217.2	-1,018.5	1,019.3	2.12	2.06	
6,370.0	91.40	271.40	5,542.0	-215.6	-1,081.5	1,082.3	0.22	0.16	
6,433.0	91.00	269.90	5,540.7	-214.9	-1,144.5	1,145.3	2.46	-0.63	
6,496.0	91.50	269.30	5,539.3	-215.3	-1,207.5	1,208.2	1.24	0.79	
6,560.0	90.10	268.80	5,538.4	-216.4	-1,271.4	1,272.2	2.32	-2.19	
6,623.0	90.40	268.60	5,538.1	-217.8	-1,334.4	1,335.2	0.57	0.48	
6,686.0	90.30	268.90	5,537.7	-219.2	-1,397.4	1,398.2	0.50	-0.16	
6,749.0	90.40	269.70	5,537.4	-220.0	-1,460.4	1,461.2	1.28	0.16	
6,812.0	90.80	271.00	5,536.7	-219.6	-1,523.4	1,524.2	2.16	0.63	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,875.0	90.20	271.00	5,536.2	-218.5	-1,586.4	1,587.2	0.95	-0.95	
6,938.0	89.70	271.70	5,536.2	-217.0	-1,649.4	1,650.2	1.37	-0.79	
7,001.0	90.20	271.10	5,536.3	-215.4	-1,712.4	1,713.1	1.24	0.79	
7,064.0	89.60	271.20	5,536.4	-214.2	-1,775.3	1,776.1	0.97	-0.95	
7,127.0	90.00	269.90	5,536.6	-213.6	-1,838.3	1,839.1	2.16	0.63	
7,190.0	89.70	269.00	5,536.8	-214.2	-1,901.3	1,902.1	1.51	-0.48	
7,253.0	90.10	269.50	5,536.9	-215.0	-1,964.3	1,965.1	1.02	0.63	
7,316.0	90.10	269.70	5,536.8	-215.4	-2,027.3	2,028.1	0.32	0.00	
7,379.0	89.90	268.30	5,536.8	-216.5	-2,090.3	2,091.1	2.24	-0.32	
7,442.0	90.30	266.70	5,536.6	-219.3	-2,153.3	2,154.0	2.62	0.63	
7,505.0	90.40	265.80	5,536.3	-223.4	-2,216.1	2,216.9	1.44	0.16	
7,567.0	90.50	264.80	5,535.8	-228.5	-2,277.9	2,278.7	1.62	0.16	
7,630.0	89.40	265.70	5,535.8	-233.7	-2,340.7	2,341.5	2.26	-1.75	
7,693.0	89.30	266.60	5,536.5	-237.9	-2,403.5	2,404.4	1.44	-0.16	
7,756.0	89.90	268.40	5,537.0	-240.7	-2,466.5	2,467.3	3.01	0.95	
7,819.0	90.60	271.10	5,536.7	-241.0	-2,529.5	2,530.3	4.43	1.11	
7,882.0	90.60	272.40	5,536.0	-239.0	-2,592.4	2,593.3	2.06	0.00	
7,945.0	90.30	273.90	5,535.6	-235.6	-2,655.3	2,656.2	2.43	-0.48	
8,008.0	90.40	274.60	5,535.2	-230.9	-2,718.2	2,719.0	1.12	0.16	
8,071.0	90.20	273.80	5,534.8	-226.3	-2,781.0	2,781.8	1.31	-0.32	
8,134.0	90.80	272.40	5,534.3	-222.9	-2,843.9	2,844.7	2.42	0.95	
8,197.0	90.40	268.30	5,533.6	-222.5	-2,906.9	2,907.7	6.54	-0.63	
8,260.0	91.30	270.90	5,532.7	-222.9	-2,969.9	2,970.7	4.37	1.43	
8,324.0	91.20	269.80	5,531.3	-222.6	-3,033.8	3,034.6	1.73	-0.16	
8,387.0	90.80	269.80	5,530.2	-222.8	-3,096.8	3,097.6	0.63	-0.63	
8,450.0	89.70	269.60	5,529.9	-223.1	-3,159.8	3,160.6	1.77	-1.75	
8,513.0	89.60	269.90	5,530.3	-223.4	-3,222.8	3,223.6	0.50	-0.16	
8,576.0	89.20	269.00	5,531.0	-224.0	-3,285.8	3,286.6	1.56	-0.64	
8,639.0	90.40	269.40	5,531.2	-224.9	-3,348.8	3,349.6	2.01	1.90	
8,702.0	91.20	270.20	5,530.3	-225.1	-3,411.8	3,412.6	1.80	1.27	
8,765.0	90.00	268.50	5,529.7	-225.8	-3,474.8	3,475.6	3.30	-1.90	
8,828.0	90.60	269.00	5,529.3	-227.2	-3,537.8	3,538.6	1.24	0.95	
8,891.0	90.20	269.80	5,528.9	-227.8	-3,600.8	3,601.6	1.42	-0.63	
8,954.0	90.40	270.20	5,528.6	-227.8	-3,663.8	3,664.6	0.71	0.32	
9,017.0	89.90	270.40	5,528.4	-227.5	-3,726.8	3,727.6	0.85	-0.79	
9,080.0	90.40	271.10	5,528.2	-226.7	-3,789.8	3,790.6	1.37	0.79	
9,143.0	89.80	271.10	5,528.1	-225.5	-3,852.7	3,853.5	0.95	-0.95	
9,206.0	89.40	271.70	5,528.6	-223.9	-3,915.7	3,916.5	1.14	-0.63	
9,269.0	89.50	269.70	5,529.2	-223.2	-3,978.7	3,979.5	3.18	0.16	
9,332.0	90.90	270.90	5,528.9	-222.8	-4,041.7	4,042.5	2.93	2.22	
9,395.0	89.80	270.50	5,528.6	-222.1	-4,104.7	4,105.5	1.86	-1.75	
9,458.0	90.10	272.20	5,528.6	-220.6	-4,167.7	4,168.5	2.74	0.48	
9,521.0	90.30	271.70	5,528.4	-218.4	-4,230.6	4,231.4	0.85	0.32	
9,585.0	89.80	270.10	5,528.3	-217.4	-4,294.6	4,295.4	2.62	-0.78	
9,648.0	90.50	269.80	5,528.2	-217.5	-4,357.6	4,358.4	1.21	1.11	
9,711.0	90.50	269.20	5,527.6	-218.0	-4,420.6	4,421.4	0.95	0.00	
9,774.0	89.80	268.60	5,527.5	-219.2	-4,483.6	4,484.4	1.46	-1.11	
9,836.0	90.00	268.60	5,527.6	-220.8	-4,546.6	4,546.4	0.32	0.32	
9,899.0	90.40	268.50	5,527.3	-222.4	-4,608.6	4,609.4	0.65	0.63	
9,963.0	90.40	267.90	5,526.9	-224.4	-4,672.5	4,673.3	0.94	0.00	
10,026.0	90.00	267.90	5,526.7	-226.7	-4,735.5	4,736.3	0.63	-0.63	
10,089.0	90.00	268.80	5,526.7	-228.5	-4,798.5	4,799.3	1.43	0.00	Last Cathedrak Survey @ 10,089' MD
10,133.0	90.00	268.80	5,526.7	-229.4	-4,842.5	4,843.3	0.00	0.00	Projection to Bit @ 10,133'

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
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Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Escrito E13-2407 01H P - actual wellpath misses target center by 264.6ft at 10133.0ft MD (5526.7 TVD, -229.4 N, -4842.5 E) - Point	0.00	0.00	5,518.2	-227.1	-5,107.0	1,936,191.71	1,256,531.45	36.314106	-107.553025
Escrito E13-2407 01H P - actual wellpath misses target center by 264.5ft at 10133.0ft MD (5526.7 TVD, -229.4 N, -4842.5 E) - Point	0.00	0.00	5,524.2	-227.1	-5,107.0	1,936,191.71	1,256,531.45	36.314106	-107.553025

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
5,843.0	5,505.9	7"	7.000	7.500

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,089.0	5,526.7	-228.5	-4,798.5	Last Cathedrak Survey @ 10,089' MD
10,133.0	5,526.7	-229.4	-4,842.5	Projection to Bit @ 10,133'

Checked By: _____ Approved By: _____ Date: _____

RCVD NOV 14 '13
OIL CONS. DIV.
DIST. 3

EnCana Oil & Gas (USA) Inc

Rio Arriba County, NM

S13-T24N-R7W

Escrito E13-2407 01H

Hz

Design: FINAL

Survey Report - Geographic

03 October, 2013

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	Rio Arriba County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	S13-T24N-R7W			
Site Position:		Northing:	1,936,350.92 ft	Latitude: 36.314731
From:	Lat/Long	Easting:	1,261,640.97 ft	Longitude: -107.535693
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -0.76 °

Well	Escrito E13-2407 01H			
Well Position	+N/-S	0.0 ft	Northing:	1,936,350.92 ft
	+E/-W	0.0 ft	Easting:	1,261,640.97 ft
Position Uncertainty	0.0 ft		Wellhead Elevation:	ft
			Ground Level:	6,690.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/7/2013	9.48	63.09	50,298

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	269.79	

Survey Program	Date 10/3/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
616.0	10,133.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,936,350.92	1,261,640.97	36.314731	-107.535693
616.0	0.70	299.60	616.0	1.9	-3.3	1,936,352.82	1,261,637.72	36.314736	-107.535704
677.0	0.80	279.50	677.0	2.1	-4.0	1,936,353.08	1,261,636.98	36.314737	-107.535707
739.0	0.70	269.20	739.0	2.2	-4.8	1,936,353.16	1,261,636.18	36.314737	-107.535710
800.0	0.40	123.60	800.0	2.1	-5.0	1,936,353.04	1,261,635.98	36.314737	-107.535710
861.0	0.90	108.40	861.0	1.8	-4.4	1,936,352.76	1,261,636.61	36.314736	-107.535708
922.0	0.80	125.70	922.0	1.4	-3.6	1,936,352.35	1,261,637.40	36.314735	-107.535705
983.0	0.90	129.80	983.0	0.8	-2.9	1,936,351.79	1,261,638.11	36.314733	-107.535703
1,044.0	0.80	130.90	1,043.9	0.2	-2.2	1,936,351.19	1,261,638.79	36.314732	-107.535701
1,105.0	0.50	99.50	1,104.9	-0.1	-1.6	1,936,350.86	1,261,639.37	36.314731	-107.535699
1,167.0	0.60	122.00	1,166.9	-0.3	-1.1	1,936,350.64	1,261,639.91	36.314730	-107.535697
1,228.0	0.80	99.50	1,227.9	-0.5	-0.4	1,936,350.39	1,261,640.60	36.314730	-107.535695

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
1,289.0	0.60	74.60	1,288.9	-0.5	0.4	1,936,350.39	1,261,641.33	36.314730	-107.535692
1,351.0	0.30	75.90	1,350.9	-0.4	0.8	1,936,350.51	1,261,641.80	36.314730	-107.535690
1,412.0	0.50	51.60	1,411.9	-0.2	1.2	1,936,350.71	1,261,642.16	36.314731	-107.535689
1,472.0	0.60	40.30	1,471.9	0.2	1.6	1,936,351.11	1,261,642.58	36.314732	-107.535688
1,535.0	0.30	83.00	1,534.9	0.5	2.0	1,936,351.38	1,261,642.96	36.314732	-107.535687
1,598.0	0.70	48.40	1,597.9	0.8	2.4	1,936,351.65	1,261,643.41	36.314733	-107.535685
1,661.0	0.50	82.20	1,660.9	1.1	3.0	1,936,351.93	1,261,643.98	36.314734	-107.535683
1,724.0	0.30	65.30	1,723.9	1.2	3.4	1,936,352.03	1,261,644.40	36.314734	-107.535682
1,787.0	0.30	54.40	1,786.9	1.3	3.7	1,936,352.19	1,261,644.69	36.314735	-107.535681
1,850.0	0.30	107.90	1,849.9	1.4	4.0	1,936,352.24	1,261,644.98	36.314735	-107.535680
1,913.0	0.10	144.60	1,912.9	1.3	4.2	1,936,352.14	1,261,645.17	36.314735	-107.535679
1,976.0	0.10	142.00	1,975.9	1.2	4.2	1,936,352.05	1,261,645.23	36.314734	-107.535679
2,039.0	0.40	127.20	2,038.9	1.0	4.5	1,936,351.87	1,261,645.44	36.314734	-107.535678
2,102.0	0.70	111.50	2,101.9	0.7	5.0	1,936,351.59	1,261,645.97	36.314733	-107.535676
2,165.0	0.60	133.60	2,164.9	0.4	5.6	1,936,351.21	1,261,646.56	36.314732	-107.535674
2,228.0	0.30	171.10	2,227.9	0.0	5.9	1,936,350.82	1,261,646.82	36.314731	-107.535673
2,291.0	1.20	170.30	2,290.9	-0.8	6.0	1,936,350.00	1,261,646.94	36.314729	-107.535673
2,354.0	0.70	307.80	2,353.9	-1.2	5.8	1,936,349.59	1,261,646.74	36.314728	-107.535674
2,417.0	0.70	266.80	2,416.9	-1.0	5.1	1,936,349.81	1,261,646.06	36.314728	-107.535676
2,480.0	0.90	254.60	2,479.9	-1.2	4.2	1,936,349.67	1,261,645.20	36.314728	-107.535679
2,543.0	1.00	239.60	2,542.9	-1.6	3.3	1,936,349.28	1,261,644.24	36.314727	-107.535682
2,606.0	1.00	256.70	2,605.9	-2.0	2.3	1,936,348.88	1,261,643.23	36.314726	-107.535686
2,669.0	0.90	231.80	2,668.9	-2.4	1.4	1,936,348.46	1,261,642.30	36.314724	-107.535689
2,732.0	1.10	236.10	2,731.8	-3.1	0.5	1,936,347.83	1,261,641.40	36.314723	-107.535692
2,795.0	0.90	231.80	2,794.8	-3.7	-0.4	1,936,347.20	1,261,640.50	36.314721	-107.535695
2,858.0	0.60	212.60	2,857.8	-4.3	-1.0	1,936,346.63	1,261,639.92	36.314719	-107.535697
2,921.0	1.20	204.80	2,920.8	-5.2	-1.4	1,936,345.76	1,261,639.46	36.314717	-107.535698
2,984.0	1.00	205.60	2,983.8	-6.3	-2.0	1,936,344.67	1,261,638.93	36.314714	-107.535700
3,047.0	0.30	156.60	3,046.8	-6.9	-2.1	1,936,344.02	1,261,638.75	36.314712	-107.535700
3,110.0	0.50	167.30	3,109.8	-7.3	-2.0	1,936,343.60	1,261,638.87	36.314711	-107.535700
3,173.0	0.40	151.90	3,172.8	-7.8	-1.8	1,936,343.14	1,261,639.03	36.314710	-107.535700
3,237.0	0.30	162.10	3,236.8	-8.2	-1.7	1,936,342.78	1,261,639.18	36.314709	-107.535699
3,300.0	0.40	65.50	3,299.8	-8.2	-1.4	1,936,342.71	1,261,639.43	36.314708	-107.535698
3,363.0	0.10	259.10	3,362.8	-8.1	-1.3	1,936,342.79	1,261,639.57	36.314709	-107.535698
3,426.0	0.20	279.50	3,425.8	-8.1	-1.4	1,936,342.80	1,261,639.41	36.314709	-107.535698
3,489.0	0.70	251.50	3,488.8	-8.2	-1.9	1,936,342.70	1,261,638.94	36.314708	-107.535700
3,552.0	0.60	266.10	3,551.8	-8.4	-2.6	1,936,342.57	1,261,638.24	36.314708	-107.535702
3,615.0	0.20	224.00	3,614.8	-8.5	-3.0	1,936,342.47	1,261,637.84	36.314708	-107.535704
3,678.0	0.40	232.40	3,677.8	-8.7	-3.3	1,936,342.26	1,261,637.58	36.314707	-107.535704
3,741.0	0.70	99.50	3,740.8	-8.9	-3.1	1,936,342.06	1,261,637.78	36.314707	-107.535704
3,804.0	0.50	110.40	3,803.8	-9.1	-2.4	1,936,341.89	1,261,638.42	36.314706	-107.535702
3,867.0	0.60	121.90	3,866.8	-9.3	-1.9	1,936,341.61	1,261,638.95	36.314705	-107.535700
3,929.0	1.10	114.10	3,928.8	-9.7	-1.1	1,936,341.19	1,261,639.77	36.314704	-107.535697
3,992.0	0.50	71.10	3,991.8	-9.9	-0.3	1,936,341.02	1,261,640.58	36.314704	-107.535694
4,055.0	1.10	14.70	4,054.8	-9.2	0.2	1,936,341.69	1,261,641.00	36.314706	-107.535693
4,118.0	0.80	34.40	4,117.8	-8.3	0.6	1,936,342.63	1,261,641.41	36.314708	-107.535691
4,181.0	1.00	33.70	4,180.8	-7.5	1.1	1,936,343.44	1,261,641.98	36.314711	-107.535690
4,244.0	0.90	18.50	4,243.7	-6.5	1.6	1,936,344.36	1,261,642.45	36.314713	-107.535688
4,307.0	0.90	5.90	4,306.7	-5.6	1.8	1,936,345.32	1,261,642.67	36.314716	-107.535687
4,370.0	0.30	347.40	4,369.7	-4.9	1.8	1,936,345.98	1,261,642.70	36.314718	-107.535687
4,433.0	0.40	44.60	4,432.7	-4.6	1.9	1,936,346.29	1,261,642.82	36.314718	-107.535687
4,496.0	0.60	66.90	4,495.7	-4.3	2.4	1,936,346.57	1,261,643.28	36.314719	-107.535685
4,558.0	0.40	99.50	4,557.7	-4.2	2.9	1,936,346.66	1,261,643.79	36.314719	-107.535683
4,621.0	0.30	117.90	4,620.7	-4.3	3.2	1,936,346.54	1,261,644.16	36.314719	-107.535682
4,684.0	0.90	112.40	4,683.7	-4.6	3.8	1,936,346.26	1,261,644.75	36.314718	-107.535680

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,747.0	0.30	257.90	4,746.7	-4.8	4.1	1,936,346.04	1,261,645.05	36.314718	-107.535679
4,810.0	0.70	241.60	4,809.7	-5.0	3.6	1,936,345.83	1,261,644.55	36.314717	-107.535681
4,840.0	0.70	264.80	4,839.7	-5.1	3.3	1,936,345.73	1,261,644.20	36.314717	-107.535682
4,861.0	0.60	240.40	4,860.7	-5.2	3.1	1,936,345.66	1,261,643.98	36.314717	-107.535683
4,893.0	0.60	213.90	4,892.7	-5.4	2.8	1,936,345.44	1,261,643.73	36.314716	-107.535684
4,924.0	2.60	229.50	4,923.7	-6.0	2.2	1,936,344.86	1,261,643.10	36.314715	-107.535686
4,956.0	5.90	232.70	4,955.6	-7.5	0.4	1,936,343.42	1,261,641.22	36.314711	-107.535692
4,987.0	9.40	235.00	4,986.3	-9.9	-3.0	1,936,341.04	1,261,637.85	36.314704	-107.535703
5,019.0	12.20	238.70	5,017.8	-13.2	-8.0	1,936,337.86	1,261,632.77	36.314695	-107.535720
5,050.0	14.90	241.40	5,047.9	-16.8	-14.3	1,936,334.33	1,261,626.43	36.314685	-107.535742
5,082.0	17.20	242.00	5,078.6	-21.0	-22.1	1,936,330.24	1,261,618.58	36.314673	-107.535768
5,113.0	19.40	239.70	5,108.1	-25.7	-30.6	1,936,325.61	1,261,610.02	36.314660	-107.535797
5,145.0	22.30	237.60	5,138.0	-31.7	-40.3	1,936,319.80	1,261,600.23	36.314644	-107.535830
5,176.0	25.90	236.90	5,166.3	-38.5	-51.0	1,936,313.09	1,261,589.50	36.314625	-107.535866
5,208.0	29.40	236.80	5,194.6	-46.6	-63.4	1,936,305.14	1,261,576.96	36.314603	-107.535908
5,239.0	33.10	237.60	5,221.1	-55.3	-76.9	1,936,296.61	1,261,563.33	36.314579	-107.535954
5,270.0	35.20	240.20	5,246.8	-64.3	-91.8	1,936,287.83	1,261,548.31	36.314554	-107.536005
5,302.0	37.40	242.70	5,272.6	-73.4	-108.5	1,936,279.01	1,261,531.55	36.314530	-107.536061
5,333.0	40.20	244.60	5,296.7	-82.0	-125.9	1,936,270.63	1,261,514.03	36.314506	-107.536120
5,365.0	43.20	246.60	5,320.6	-90.7	-145.2	1,936,262.11	1,261,494.53	36.314482	-107.536186
5,396.0	46.80	247.20	5,342.5	-99.3	-165.4	1,936,253.78	1,261,474.25	36.314458	-107.536255
5,428.0	50.60	247.70	5,363.6	-108.6	-187.6	1,936,244.86	1,261,451.93	36.314433	-107.536330
5,459.0	53.90	248.90	5,382.6	-117.6	-210.4	1,936,236.11	1,261,429.04	36.314408	-107.536407
5,490.0	56.50	249.20	5,400.3	-126.7	-234.2	1,936,227.33	1,261,405.15	36.314383	-107.536488
5,522.0	60.60	249.90	5,417.0	-136.2	-259.7	1,936,218.14	1,261,379.45	36.314357	-107.536575
5,553.0	64.40	251.20	5,431.3	-145.4	-285.7	1,936,209.33	1,261,353.41	36.314332	-107.536663
5,585.0	67.60	253.10	5,444.3	-154.3	-313.5	1,936,200.75	1,261,325.47	36.314307	-107.536757
5,616.0	69.90	254.80	5,455.6	-162.3	-341.2	1,936,193.14	1,261,297.60	36.314285	-107.536851
5,648.0	73.40	255.60	5,465.6	-170.1	-370.6	1,936,185.77	1,261,268.14	36.314264	-107.536951
5,679.0	76.30	256.40	5,473.7	-177.3	-399.6	1,936,178.92	1,261,239.02	36.314244	-107.537050
5,710.0	77.30	256.60	5,480.8	-184.4	-429.0	1,936,172.27	1,261,209.58	36.314225	-107.537149
5,742.0	78.10	256.40	5,487.6	-191.7	-459.4	1,936,165.37	1,261,179.08	36.314205	-107.537252
5,773.0	79.60	258.30	5,493.6	-198.3	-489.1	1,936,159.11	1,261,149.32	36.314186	-107.537353
5,804.0	80.00	260.70	5,499.1	-203.9	-519.0	1,936,153.95	1,261,119.25	36.314171	-107.537455
5,836.0	80.00	263.80	5,504.7	-208.1	-550.3	1,936,150.12	1,261,087.98	36.314159	-107.537561
5,867.0	80.10	266.30	5,510.0	-210.8	-580.7	1,936,147.89	1,261,057.53	36.314152	-107.537664
5,911.0	81.10	266.50	5,517.2	-213.5	-624.0	1,936,145.74	1,261,014.17	36.314145	-107.537811
5,960.0	83.20	268.20	5,523.9	-215.7	-672.5	1,936,144.14	1,260,965.66	36.314139	-107.537976
5,992.0	83.70	268.10	5,527.6	-216.8	-704.3	1,936,143.53	1,260,933.88	36.314136	-107.538083
6,055.0	84.30	269.30	5,534.1	-218.2	-766.9	1,936,142.95	1,260,871.23	36.314132	-107.538296
6,118.0	85.90	269.50	5,539.5	-218.8	-829.7	1,936,143.12	1,260,808.46	36.314130	-107.538509
6,181.0	87.80	269.80	5,543.0	-219.2	-892.6	1,936,143.58	1,260,745.56	36.314129	-107.538722
6,244.0	90.00	271.20	5,544.2	-218.7	-955.6	1,936,144.96	1,260,682.59	36.314130	-107.538936
6,307.0	91.30	271.50	5,543.5	-217.2	-1,018.5	1,936,147.28	1,260,619.64	36.314134	-107.539150
6,370.0	91.40	271.40	5,542.0	-215.6	-1,081.5	1,936,149.71	1,260,556.71	36.314139	-107.539364
6,433.0	91.00	269.90	5,540.7	-214.9	-1,144.5	1,936,151.27	1,260,493.74	36.314141	-107.539577
6,496.0	91.50	269.30	5,539.3	-215.3	-1,207.5	1,936,151.66	1,260,430.76	36.314140	-107.539791
6,560.0	90.10	268.80	5,538.4	-216.4	-1,271.4	1,936,151.45	1,260,366.77	36.314137	-107.540008
6,623.0	90.40	268.60	5,538.1	-217.8	-1,334.4	1,936,150.86	1,260,303.77	36.314133	-107.540222
6,686.0	90.30	268.90	5,537.7	-219.2	-1,397.4	1,936,150.32	1,260,240.77	36.314129	-107.540436
6,749.0	90.40	269.70	5,537.4	-220.0	-1,460.4	1,936,150.39	1,260,177.77	36.314127	-107.540650
6,812.0	90.80	271.00	5,536.7	-219.6	-1,523.4	1,936,151.61	1,260,114.79	36.314128	-107.540863
6,875.0	90.20	271.00	5,536.2	-218.5	-1,586.4	1,936,153.55	1,260,051.82	36.314131	-107.541077
6,938.0	89.70	271.70	5,536.2	-217.0	-1,649.4	1,936,155.87	1,259,988.85	36.314135	-107.541291
7,001.0	90.20	271.10	5,536.3	-215.4	-1,712.4	1,936,158.25	1,259,925.90	36.314139	-107.541505

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,064.0	89.60	271.20	5,536.4	-214.2	-1,775.3	1,936,160.35	1,259,862.93	36.314143	-107.541718
7,127.0	90.00	269.90	5,536.6	-213.6	-1,838.3	1,936,161.79	1,259,799.95	36.314144	-107.541932
7,190.0	89.70	269.00	5,536.8	-214.2	-1,901.3	1,936,162.02	1,259,736.95	36.314143	-107.542146
7,253.0	90.10	269.50	5,536.9	-215.0	-1,964.3	1,936,162.04	1,259,673.95	36.314140	-107.542360
7,316.0	90.10	269.70	5,536.8	-215.4	-2,027.3	1,936,162.43	1,259,610.95	36.314139	-107.542574
7,379.0	89.90	268.30	5,536.8	-216.5	-2,090.3	1,936,162.17	1,259,547.96	36.314136	-107.542787
7,442.0	90.30	266.70	5,536.6	-219.3	-2,153.3	1,936,160.26	1,259,484.99	36.314129	-107.543001
7,505.0	90.40	265.80	5,536.3	-223.4	-2,216.1	1,936,156.98	1,259,422.07	36.314117	-107.543214
7,567.0	90.50	264.80	5,535.8	-228.5	-2,277.9	1,936,152.72	1,259,360.22	36.314103	-107.543424
7,630.0	89.40	265.70	5,535.8	-233.7	-2,340.7	1,936,148.34	1,259,297.38	36.314089	-107.543637
7,693.0	89.30	266.60	5,536.5	-237.9	-2,403.5	1,936,144.94	1,259,234.47	36.314077	-107.543850
7,756.0	89.90	268.40	5,537.0	-240.7	-2,466.5	1,936,143.03	1,259,171.51	36.314070	-107.544064
7,819.0	90.60	271.10	5,536.7	-241.0	-2,529.5	1,936,143.59	1,259,108.52	36.314069	-107.544278
7,882.0	90.60	272.40	5,536.0	-239.0	-2,592.4	1,936,146.35	1,259,045.58	36.314074	-107.544492
7,945.0	90.30	273.90	5,535.6	-235.6	-2,655.3	1,936,150.65	1,258,982.73	36.314084	-107.544705
8,008.0	90.40	274.60	5,535.2	-230.9	-2,718.2	1,936,156.15	1,258,919.97	36.314097	-107.544918
8,071.0	90.20	273.80	5,534.8	-226.3	-2,781.0	1,936,161.60	1,258,857.21	36.314109	-107.545131
8,134.0	90.80	272.40	5,534.3	-222.9	-2,843.9	1,936,165.85	1,258,794.36	36.314119	-107.545345
8,197.0	90.40	268.30	5,533.6	-222.5	-2,906.9	1,936,167.07	1,258,731.39	36.314120	-107.545559
8,260.0	91.30	270.90	5,532.7	-222.9	-2,969.9	1,936,167.46	1,258,668.40	36.314118	-107.545772
8,324.0	91.20	269.80	5,531.3	-222.6	-3,033.8	1,936,168.71	1,258,604.43	36.314119	-107.545990
8,387.0	90.80	269.80	5,530.2	-222.8	-3,096.8	1,936,169.32	1,258,541.44	36.314119	-107.546203
8,450.0	89.70	269.60	5,529.9	-223.1	-3,159.8	1,936,169.83	1,258,478.45	36.314118	-107.546417
8,513.0	89.60	269.90	5,530.3	-223.4	-3,222.8	1,936,170.39	1,258,415.45	36.314117	-107.546631
8,576.0	89.20	269.00	5,531.0	-224.0	-3,285.8	1,936,170.63	1,258,352.47	36.314115	-107.546845
8,639.0	90.40	269.40	5,531.2	-224.9	-3,348.8	1,936,170.58	1,258,289.47	36.314113	-107.547058
8,702.0	91.20	270.20	5,530.3	-225.1	-3,411.8	1,936,171.20	1,258,226.48	36.314112	-107.547272
8,765.0	90.00	268.50	5,529.7	-225.8	-3,474.8	1,936,171.32	1,258,163.49	36.314110	-107.547486
8,828.0	90.60	269.00	5,529.3	-227.2	-3,537.8	1,936,170.79	1,258,100.49	36.314107	-107.547700
8,891.0	90.20	269.80	5,528.9	-227.8	-3,600.8	1,936,170.96	1,258,037.50	36.314105	-107.547914
8,954.0	90.40	270.20	5,528.6	-227.8	-3,663.8	1,936,171.80	1,257,974.50	36.314105	-107.548127
9,017.0	89.90	270.40	5,528.4	-227.5	-3,726.8	1,936,172.97	1,257,911.51	36.314106	-107.548341
9,080.0	90.40	271.10	5,528.2	-226.7	-3,789.8	1,936,174.63	1,257,848.54	36.314108	-107.548555
9,143.0	89.80	271.10	5,528.1	-225.5	-3,852.7	1,936,176.68	1,257,785.57	36.314111	-107.548769
9,206.0	89.40	271.70	5,528.6	-223.9	-3,915.7	1,936,179.05	1,257,722.62	36.314115	-107.548982
9,269.0	89.50	269.70	5,529.2	-223.2	-3,978.7	1,936,180.66	1,257,659.64	36.314117	-107.549196
9,332.0	90.90	270.90	5,528.9	-222.8	-4,041.7	1,936,181.83	1,257,596.66	36.314118	-107.549410
9,395.0	89.80	270.50	5,528.6	-222.1	-4,104.7	1,936,183.43	1,257,533.68	36.314120	-107.549624
9,458.0	90.10	272.20	5,528.6	-220.6	-4,167.7	1,936,185.75	1,257,470.73	36.314124	-107.549838
9,521.0	90.30	271.70	5,528.4	-218.4	-4,230.6	1,936,188.73	1,257,407.80	36.314130	-107.550051
9,585.0	89.80	270.10	5,528.3	-217.4	-4,294.6	1,936,190.59	1,257,343.83	36.314133	-107.550268
9,648.0	90.50	269.80	5,528.2	-217.5	-4,357.6	1,936,191.37	1,257,280.83	36.314133	-107.550482
9,711.0	90.50	269.20	5,527.6	-218.0	-4,420.6	1,936,191.66	1,257,217.83	36.314131	-107.550696
9,774.0	89.80	268.60	5,527.5	-219.2	-4,483.6	1,936,191.29	1,257,154.84	36.314128	-107.550910
9,836.0	90.00	268.60	5,527.6	-220.8	-4,545.6	1,936,190.60	1,257,092.84	36.314124	-107.551120
9,899.0	90.40	268.50	5,527.3	-222.4	-4,608.6	1,936,189.84	1,257,029.85	36.314119	-107.551334
9,963.0	90.40	267.90	5,526.9	-224.4	-4,672.5	1,936,188.68	1,256,965.86	36.314114	-107.551551
10,026.0	90.00	267.90	5,526.7	-226.7	-4,735.5	1,936,187.21	1,256,902.88	36.314107	-107.551765
10,089.0	90.00	268.80	5,526.7	-228.5	-4,798.5	1,936,186.23	1,256,839.88	36.314102	-107.551978
Last Cathedrak Survey @ 10,089' MD									
10,133.0	90.00	268.80	5,526.7	-229.4	-4,842.5	1,936,185.89	1,256,795.89	36.314100	-107.552128
Projection to Bit @ 10,133'									

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Rio Arriba County, NM
Site: S13-T24N-R7W
Well: Escrito E13-2407 01H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito E13-2407 01H
TVD Reference: KB @ 6706.0ft (Aztec 950)
MD Reference: KB @ 6706.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Escrito E13-2407 01H P	0.00	0.00	5,518.2	-227.1	-5,107.0	1,936,191.72	1,256,531.45	36.314106	-107.553025
- actual wellpath misses target center by 264.6ft at 10133.0ft MD (5526.7 TVD, -229.4 N, -4842.5 E)									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
5,843.0	5,505.9	7"	7.000	7.500

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,089.0	5,526.7	-228.5	-4,798.5	Last Cathedrak Survey @ 10,089' MD
10,133.0	5,526.7	-229.4	-4,842.5	Projection to Bit @ 10,133'

Checked By: _____ Approved By: _____ Date: _____