

16
KC

DEVIATION SURVEYS

Escrito L32-2408 01H

API: 30-045-35451

CONFIDENTIAL

MD (Feet)	Inclination (Degree)
758'	0.40
1074'	0.90
1390'	0.70
1706'	0.80
2022'	0.80
2338'	1.10
2648'	0.80
2955'	0.50
3261'	1.00
3568'	3.80
3879'	5.30
4195'	3.70
4511'	2.60
4733'	2.30
4891'	15.30

OPERATOR CERTIFICATION

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

Cristi Bauer

Cristi Bauer, Operations Technician

12/1/14

Date

ACKNOWLEDGMENT

State of Colorado
City and County of Denver

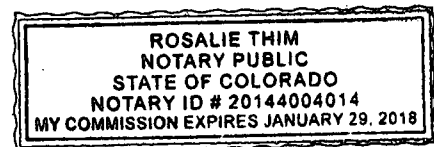
This instrument was acknowledged before me on this 1st day of December, 2014 by Cristi Bauer as Operations Technician of Encana Oil & Gas (USA) Inc., authorized agent for Encana Oil & Gas (USA) Inc., on behalf of said corporation.

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

Notary Public:

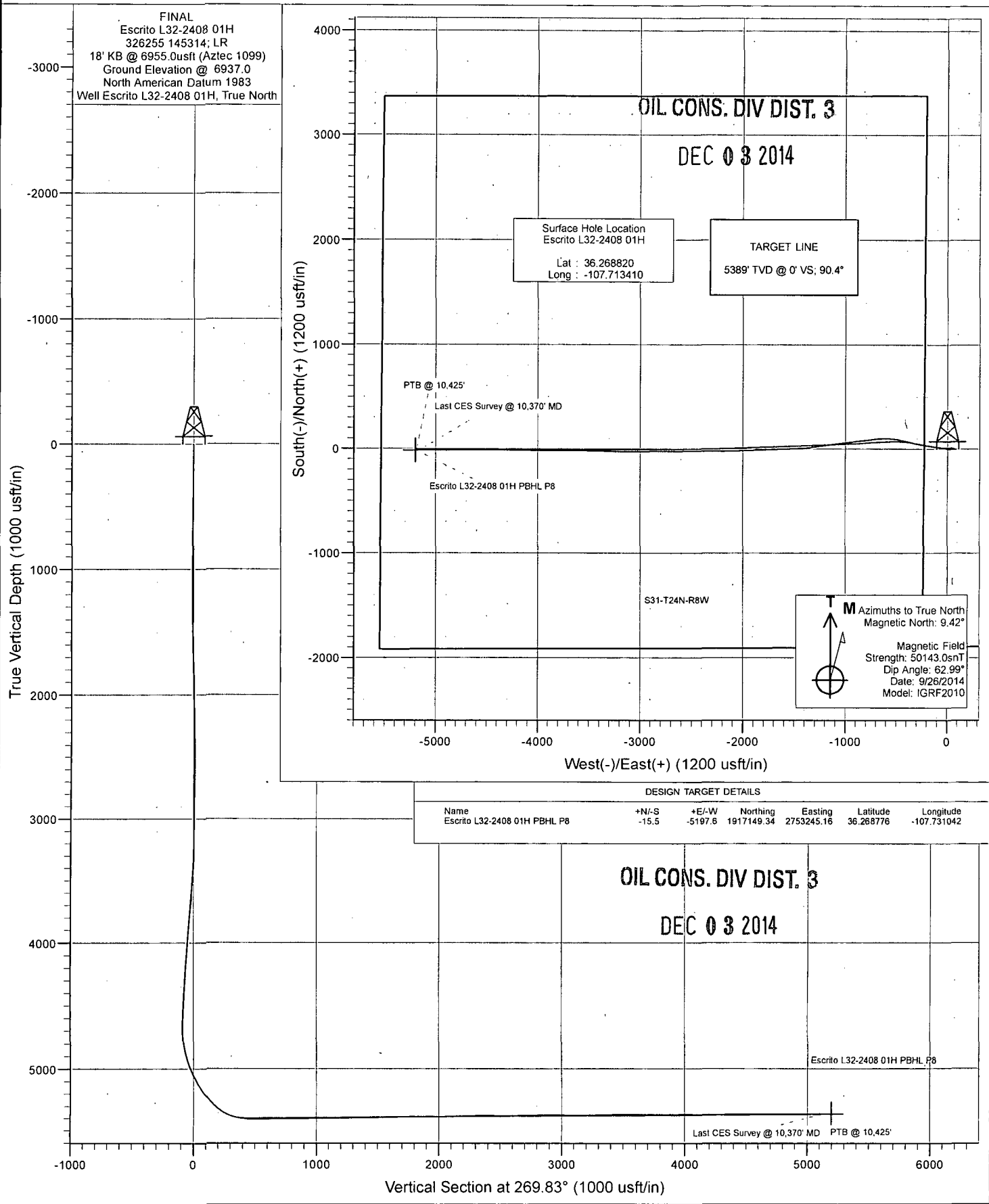
Rosalie Thim

My Commission Expires:

1/29/18

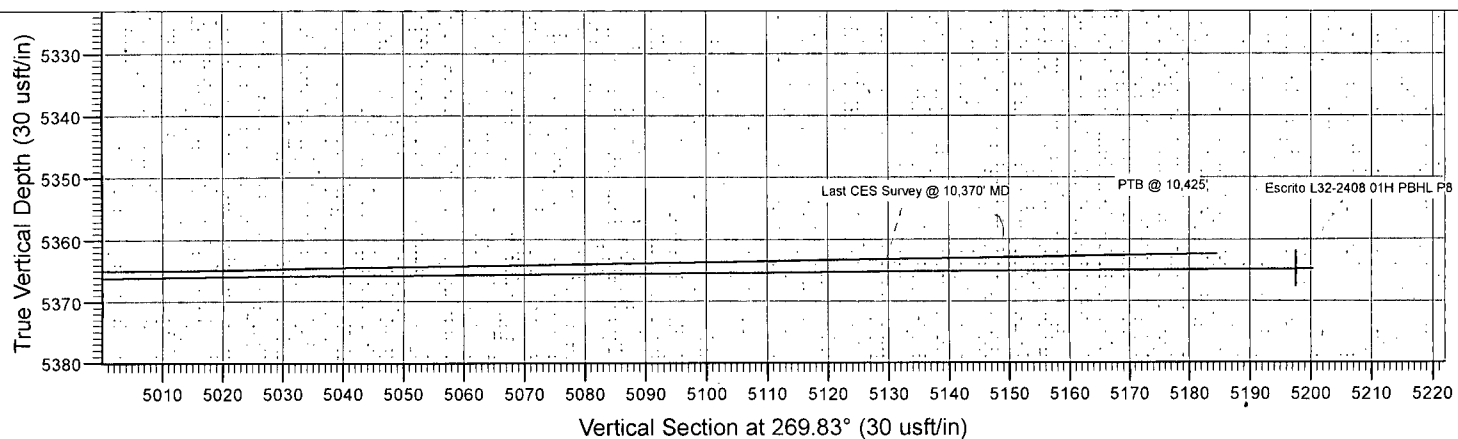
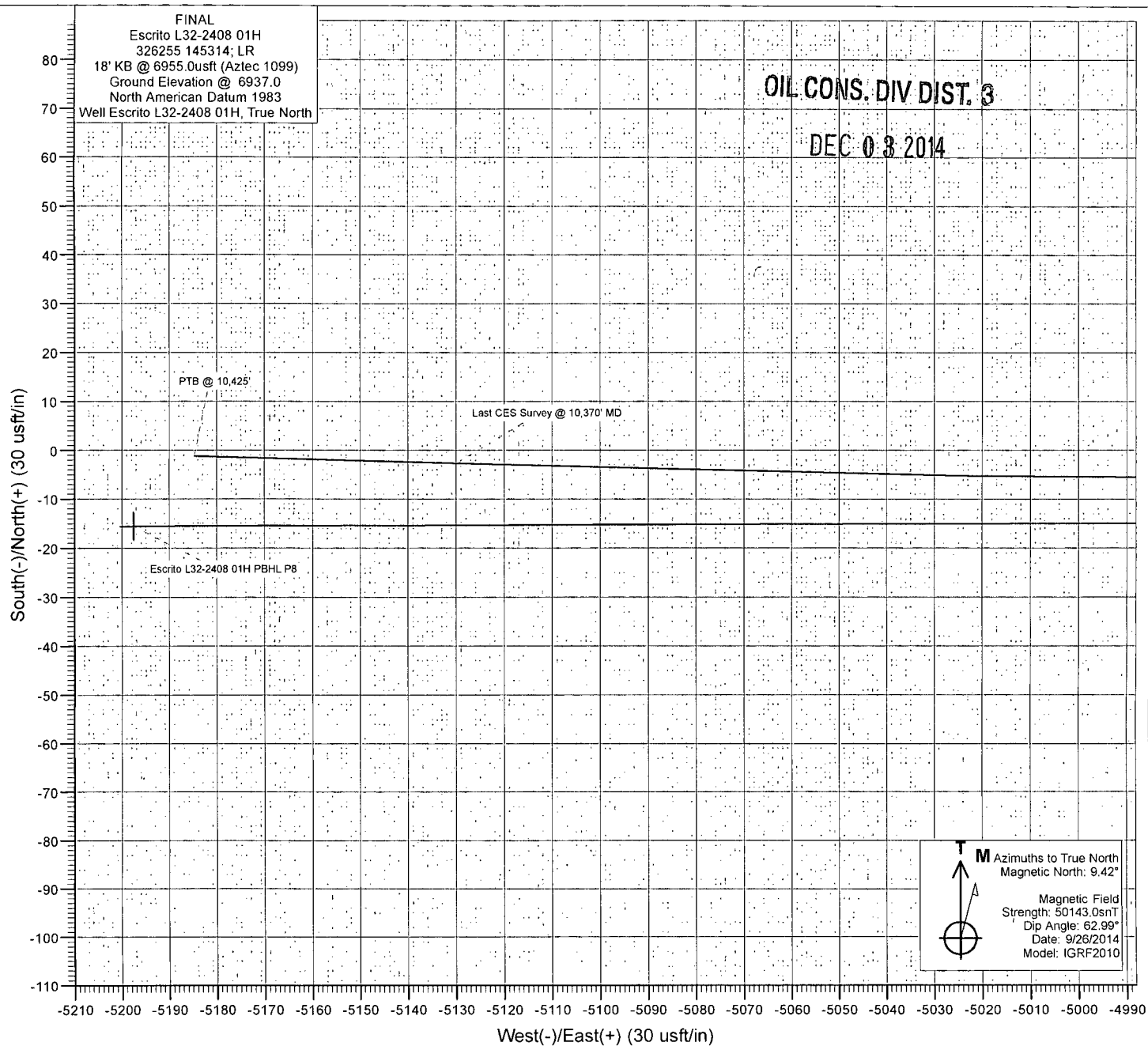


Project: San Juan County, NM
 Site: S32-T24N-R8W (Escrito)
 Well: Escrito L32-2408 01H
 Wellbore: HZ
 Design: FINAL





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Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S32-T24N-R8W (Escrito)
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Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Escrito L32-2408 01H
TVD Reference: 18' KB @ 6955.0usft (Aztec 1099)
MD Reference: 18' KB @ 6955.0usft (Aztec 1099)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project San Juan County, NM
Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Western Zone
System Datum: Mean Sea Level

Site S32-T24N-R8W (Escrito)
Site Position: Northing: 1,917,171.32 usft Latitude: 36.268820
From: Lat/Long Easting: 2,758,442.71 usft Longitude: -107.713410
Position Uncertainty: 0.0 usft Slot Radius: 13-3/16" Grid Convergence: 0.07 °

Well Escrito L32-2408 01H
Well Position +N/-S 0.0 usft Northing: 1,917,171.32 usft Latitude: 36.268820
 +E/-W 0.0 usft Easting: 2,758,442.71 usft Longitude: -107.713410
Position Uncertainty 0.0 usft Wellhead Elevation: usft Ground Level: 6,937.0 usft

Wellbore HZ
Magnetics Model Name Sample Date Declination Dip Angle Field Strength
 (°) (°) (nT)
 IGRF2010 9/26/2014 9.42 62.99 50,143

Design FINAL
Audit Notes:
Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.0
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
 (usft) (usft) (usft) (°)
 0.0 0.0 0.0 269.83

Survey Program Date 10/4/2014
From **To**
 (usft) (usft)
 569.0 10,425.0
Survey (Wellbore) Survey #1 (HZ)
Tool Name Geolink MWD
Description Geolink MWD

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
569.0	0.80	45.70	569.0	2.8	2.8	-2.9	0.14	0.14	
632.0	0.60	74.60	632.0	3.2	3.5	-3.5	0.63	-0.32	
695.0	0.60	69.80	695.0	3.4	4.1	-4.1	0.08	0.00	
758.0	0.40	65.40	758.0	3.6	4.6	-4.6	0.32	-0.32	
822.0	0.40	50.00	822.0	3.8	5.0	-5.0	0.17	0.00	
885.0	0.80	54.50	885.0	4.2	5.5	-5.5	0.64	0.63	
948.0	0.80	38.20	948.0	4.8	6.1	-6.2	0.36	0.00	
1,011.0	0.80	37.70	1,011.0	5.5	6.7	-6.7	0.01	0.00	
1,074.0	0.90	59.00	1,073.9	6.1	7.4	-7.4	0.52	0.16	
1,137.0	0.30	37.30	1,136.9	6.5	7.9	-7.9	1.00	-0.95	
1,201.0	0.50	312.90	1,200.9	6.8	7.8	-7.8	0.87	0.31	
1,264.0	0.80	283.00	1,263.9	7.1	7.2	-7.2	0.70	0.48	

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 Wellbore: HZ
 Design: FINAL

Local Co-ordinate Reference: Well Escrito L32-2408 01H
 TVD Reference: 18' KB @ 6955.0usft (Aztec 1099)
 MD Reference: 18' KB @ 6955.0usft (Aztec 1099)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,327.0	0.60	305.00	1,326.9	7.4	6.5	-6.5	0.53	-0.32	
1,390.0	0.70	301.30	1,389.9	7.8	5.9	-5.9	0.17	0.16	
1,454.0	1.00	272.00	1,453.9	8.0	5.0	-5.0	0.81	0.47	
1,516.0	1.30	277.30	1,515.9	8.1	3.7	-3.8	0.51	0.48	
1,580.0	0.90	271.40	1,579.9	8.2	2.5	-2.5	0.65	-0.62	
1,643.0	1.30	279.40	1,642.9	8.3	1.3	-1.3	0.68	0.63	
1,706.0	0.80	276.50	1,705.9	8.5	0.2	-0.2	0.80	-0.79	
1,769.0	1.10	283.30	1,768.9	8.7	-0.8	0.8	0.51	0.48	
1,832.0	1.20	280.60	1,831.9	9.0	-2.1	2.1	0.18	0.16	
1,898.0	0.80	270.80	1,897.8	9.1	-3.2	3.2	0.66	-0.61	
1,959.0	1.20	272.80	1,958.8	9.1	-4.3	4.3	0.66	0.66	
2,022.0	0.80	274.50	2,021.8	9.2	-5.4	5.4	0.64	-0.63	
2,085.0	1.00	251.30	2,084.8	9.1	-6.3	6.3	0.65	0.32	
2,148.0	0.70	245.70	2,147.8	8.7	-7.2	7.2	0.49	-0.48	
2,212.0	0.80	243.20	2,211.8	8.4	-8.0	7.9	0.16	0.16	
2,275.0	0.60	255.00	2,274.8	8.1	-8.7	8.7	0.39	-0.32	
2,338.0	1.10	240.30	2,337.8	7.7	-9.5	9.5	0.86	0.79	
2,401.0	1.10	242.10	2,400.8	7.1	-10.6	10.6	0.05	0.00	
2,464.0	0.70	243.30	2,463.8	6.7	-11.5	11.4	0.64	-0.63	
2,525.0	0.60	204.00	2,524.8	6.2	-11.9	11.9	0.73	-0.16	
2,587.0	0.60	86.30	2,586.8	5.9	-11.7	11.7	1.66	0.00	
2,648.0	0.80	112.30	2,647.8	5.8	-11.0	11.0	0.61	0.33	
2,709.0	1.00	84.70	2,708.8	5.7	-10.1	10.1	0.77	0.33	
2,770.0	0.70	79.40	2,769.7	5.8	-9.2	9.2	0.51	-0.49	
2,831.0	0.70	75.60	2,830.7	5.9	-8.5	8.5	0.08	0.00	
2,893.0	0.80	73.60	2,892.7	6.2	-7.7	7.7	0.17	0.16	
2,955.0	0.50	94.90	2,954.7	6.3	-7.0	7.0	0.61	-0.48	
3,016.0	0.70	125.70	3,015.7	6.0	-6.4	6.4	0.61	0.33	
3,077.0	0.30	164.10	3,076.7	5.6	-6.1	6.1	0.82	-0.66	
3,139.0	0.80	156.30	3,138.7	5.1	-5.9	5.9	0.81	0.81	
3,200.0	0.70	124.40	3,199.7	4.5	-5.4	5.4	0.69	-0.16	
3,261.0	1.00	156.40	3,260.7	3.8	-4.9	4.9	0.90	0.49	
3,323.0	1.50	120.90	3,322.7	2.9	-4.0	4.0	1.45	0.81	
3,384.0	3.20	101.60	3,383.6	2.1	-1.6	1.6	3.04	2.79	
3,445.0	3.90	102.60	3,444.5	1.3	2.1	-2.1	1.15	1.15	
3,507.0	4.70	96.70	3,506.4	0.6	6.7	-6.7	1.47	1.29	
3,568.0	3.80	95.80	3,567.2	0.1	11.2	-11.2	1.48	-1.48	
3,629.0	4.20	90.70	3,628.0	-0.1	15.4	-15.4	0.88	0.66	
3,689.0	5.40	82.70	3,687.8	0.2	20.4	-20.4	2.29	2.00	
3,753.0	5.50	88.80	3,751.5	0.6	26.4	-26.5	0.92	0.16	
3,816.0	4.90	89.50	3,814.3	0.7	32.2	-32.2	0.96	-0.95	
3,879.0	5.30	89.60	3,877.0	0.8	37.8	-37.8	0.64	0.63	
3,942.0	4.70	93.50	3,939.8	0.6	43.2	-43.2	1.09	-0.95	
4,006.0	4.40	89.90	4,003.6	0.5	48.3	-48.3	0.65	-0.47	
4,069.0	3.70	89.90	4,066.4	0.5	52.8	-52.8	1.11	-1.11	
4,132.0	3.50	96.00	4,129.3	0.3	56.7	-56.7	0.69	-0.32	
4,195.0	3.70	97.70	4,192.2	-0.2	60.6	-60.6	0.36	0.32	
4,258.0	3.60	92.20	4,255.1	-0.5	64.6	-64.6	0.58	-0.16	
4,322.0	3.70	89.90	4,318.9	-0.6	68.7	-68.7	0.28	0.16	
4,385.0	2.90	93.40	4,381.8	-0.7	72.3	-72.3	1.31	-1.27	
4,448.0	3.00	86.10	4,444.7	-0.7	75.6	-75.6	0.62	0.16	
4,511.0	2.60	85.30	4,507.7	-0.5	78.6	-78.6	0.64	-0.63	
4,574.0	2.10	98.30	4,570.6	-0.5	81.2	-81.2	1.16	-0.79	

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Survey

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4,638.0	1.90	87.20	4,634.6	-0.6	83.4	-83.4	0.68	-0.31	
4,669.0	2.10	95.40	4,665.6	-0.7	84.5	-84.5	1.12	0.65	
4,701.0	0.80	97.20	4,697.5	-0.7	85.3	-85.3	4.06	-4.06	
4,733.0	2.30	269.30	4,729.5	-0.8	84.9	-84.9	9.67	4.69	
4,764.0	5.10	277.50	4,760.5	-0.6	82.9	-82.9	9.17	9.03	
4,796.0	7.50	282.90	4,792.3	0.0	79.4	-79.4	7.72	7.50	
4,827.0	10.30	288.00	4,822.9	1.4	74.8	-74.8	9.38	9.03	
4,859.0	13.20	289.40	4,854.2	3.5	68.7	-68.7	9.11	9.06	
4,891.0	15.30	286.30	4,885.2	5.9	61.2	-61.2	6.98	6.56	
4,922.0	16.70	280.60	4,915.0	7.8	52.9	-52.9	6.78	4.52	
4,954.0	19.00	275.40	4,945.5	9.2	43.2	-43.2	8.74	7.19	
4,985.0	20.60	269.00	4,974.7	9.5	32.7	-32.7	8.68	5.16	
5,017.0	22.70	267.60	5,004.4	9.2	20.9	-20.9	6.76	6.56	
5,049.0	24.90	268.30	5,033.7	8.7	8.0	-8.0	6.93	6.87	
5,080.0	26.20	269.20	5,061.7	8.4	-5.4	5.4	4.38	4.19	
5,112.0	28.20	272.00	5,090.1	8.6	-20.0	20.0	7.42	6.25	
5,143.0	30.20	272.90	5,117.2	9.2	-35.1	35.1	6.61	6.45	
5,175.0	32.30	275.70	5,144.5	10.5	-51.7	51.6	7.98	6.56	
5,206.0	33.90	276.90	5,170.5	12.4	-68.5	68.5	5.58	5.16	
5,238.0	36.10	278.10	5,196.7	14.8	-86.7	86.6	7.20	6.87	
5,270.0	37.80	278.80	5,222.3	17.6	-105.7	105.7	5.47	5.31	
5,301.0	41.10	279.20	5,246.2	20.7	-125.2	125.1	10.68	10.65	
5,333.0	42.90	278.70	5,270.0	24.0	-146.3	146.2	5.72	5.62	
5,365.0	45.40	278.10	5,293.0	27.3	-168.4	168.3	7.92	7.81	
5,397.0	48.90	278.40	5,314.7	30.6	-191.6	191.5	10.96	10.94	
5,428.0	54.20	280.30	5,334.0	34.6	-215.5	215.4	17.76	17.10	
5,460.0	59.10	280.50	5,351.6	39.4	-241.8	241.7	15.32	15.31	
5,492.0	64.80	280.30	5,366.6	44.5	-269.6	269.4	17.82	17.81	
5,523.0	69.70	280.90	5,378.6	49.8	-297.7	297.5	15.91	15.81	
5,555.0	75.40	282.10	5,388.2	55.9	-327.6	327.4	18.17	17.81	
5,591.0	80.60	284.50	5,395.7	64.0	-361.8	361.6	15.85	14.44	
5,622.0	82.20	283.00	5,400.3	71.2	-391.6	391.4	7.04	5.16	
5,653.0	84.80	282.30	5,403.8	78.0	-421.6	421.4	8.68	8.39	
5,683.0	85.70	280.70	5,406.3	83.9	-450.9	450.7	6.10	3.00	
5,714.0	87.50	278.20	5,408.1	89.0	-481.5	481.2	9.93	5.81	
5,745.0	89.60	276.90	5,408.9	93.1	-512.2	511.9	7.97	6.77	
5,776.0	91.40	275.40	5,408.7	96.4	-543.0	542.7	7.56	5.81	
5,806.0	91.60	273.40	5,407.9	98.7	-572.9	572.6	6.70	0.67	
5,837.0	92.50	271.30	5,406.8	100.0	-603.8	603.5	7.37	2.90	
5,867.0	92.20	269.10	5,405.5	100.1	-633.8	633.5	7.40	-1.00	
5,898.0	90.70	266.00	5,404.7	98.8	-664.8	664.5	11.11	-4.84	
5,928.0	90.00	264.00	5,404.6	96.2	-694.7	694.4	7.06	-2.33	
5,989.0	90.00	262.60	5,404.6	89.0	-755.2	755.0	2.30	0.00	
6,051.0	91.70	264.10	5,403.6	81.9	-816.8	816.6	3.66	2.74	
6,112.0	91.10	263.20	5,402.2	75.1	-877.4	877.2	1.77	-0.98	
6,170.0	90.70	262.50	5,401.2	67.9	-935.0	934.8	1.39	-0.69	
6,232.0	91.10	261.90	5,400.3	59.5	-996.4	996.2	1.16	0.65	
6,293.0	90.50	262.70	5,399.4	51.3	-1,056.8	1,056.7	1.64	-0.98	
6,354.0	90.00	262.90	5,399.2	43.7	-1,117.3	1,117.2	0.88	-0.82	
6,416.0	90.70	263.10	5,398.8	36.1	-1,178.9	1,178.8	1.17	1.13	
6,477.0	91.50	263.20	5,397.6	28.8	-1,239.4	1,239.3	1.32	1.31	
6,539.0	90.80	262.60	5,396.4	21.2	-1,300.9	1,300.9	1.49	-1.13	
6,600.0	90.80	263.10	5,395.5	13.6	-1,361.5	1,361.4	0.82	0.00	

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6,661.0	90.70	264.70	5,394.7	7.1	-1,422.1	1,422.1	2.63	-0.16	
6,723.0	92.40	267.60	5,393.0	2.9	-1,483.9	1,483.9	5.42	2.74	
6,783.0	91.80	268.40	5,390.8	0.8	-1,543.9	1,543.8	1.67	-1.00	
6,844.0	90.70	268.40	5,389.5	-0.9	-1,604.8	1,604.8	1.80	-1.80	
6,907.0	90.70	267.70	5,388.7	-3.0	-1,667.8	1,667.8	1.11	0.00	
6,970.0	91.50	268.70	5,387.5	-5.0	-1,730.7	1,730.7	2.03	1.27	
7,034.0	91.30	267.90	5,386.0	-6.9	-1,794.7	1,794.7	1.29	-0.31	
7,097.0	89.10	266.30	5,385.7	-10.1	-1,857.6	1,857.6	4.32	-3.49	
7,160.0	90.00	266.90	5,386.2	-13.8	-1,920.5	1,920.5	1.72	1.43	
7,223.0	90.30	267.70	5,386.1	-16.8	-1,983.4	1,983.5	1.36	0.48	
7,286.0	91.10	269.20	5,385.3	-18.5	-2,046.4	2,046.4	2.70	1.27	
7,349.0	91.90	268.40	5,383.6	-19.8	-2,109.3	2,109.4	1.80	1.27	
7,416.0	91.50	269.80	5,381.7	-20.8	-2,176.3	2,176.4	2.17	-0.60	
7,479.0	91.50	270.00	5,380.0	-21.0	-2,239.3	2,239.3	0.32	0.00	
7,543.0	91.00	270.30	5,378.6	-20.8	-2,303.3	2,303.3	0.91	-0.78	
7,606.0	90.80	269.60	5,377.6	-20.8	-2,366.3	2,366.3	1.16	-0.32	
7,669.0	88.90	268.90	5,377.8	-21.7	-2,429.3	2,429.3	3.21	-3.02	
7,733.0	89.10	269.50	5,378.9	-22.6	-2,493.2	2,493.3	0.99	0.31	
7,796.0	90.60	270.70	5,379.1	-22.4	-2,556.2	2,556.3	3.05	2.38	
7,859.0	91.30	269.80	5,378.0	-22.2	-2,619.2	2,619.3	1.81	1.11	
7,922.0	91.20	271.00	5,376.7	-21.7	-2,682.2	2,682.3	1.91	-0.16	
7,985.0	90.70	269.90	5,375.6	-21.2	-2,745.2	2,745.2	1.92	-0.79	
8,049.0	89.70	269.80	5,375.4	-21.4	-2,809.2	2,809.2	1.57	-1.56	
8,112.0	89.40	269.10	5,375.9	-22.0	-2,872.2	2,872.2	1.21	-0.48	
8,175.0	90.70	269.20	5,375.8	-22.9	-2,935.2	2,935.2	2.07	2.06	
8,238.0	90.80	268.80	5,375.0	-24.0	-2,998.2	2,998.2	0.65	0.16	
8,301.0	88.60	268.60	5,375.3	-25.5	-3,061.1	3,061.2	3.51	-3.49	
8,365.0	89.70	270.50	5,376.3	-26.0	-3,125.1	3,125.2	3.43	1.72	
8,428.0	91.00	272.00	5,375.9	-24.6	-3,188.1	3,188.2	3.15	2.06	
8,491.0	91.30	271.40	5,374.6	-22.7	-3,251.1	3,251.1	1.06	0.48	
8,554.0	92.10	271.90	5,372.8	-20.9	-3,314.0	3,314.0	1.50	1.27	
8,618.0	92.10	271.30	5,370.4	-19.1	-3,377.9	3,378.0	0.94	0.00	
8,681.0	90.90	270.90	5,368.8	-17.9	-3,440.9	3,440.9	2.01	-1.90	
8,744.0	89.50	270.80	5,368.5	-17.0	-3,503.9	3,503.9	2.23	-2.22	
8,807.0	89.60	269.50	5,369.0	-16.8	-3,566.9	3,566.9	2.07	0.16	
8,870.0	90.40	269.20	5,369.0	-17.5	-3,629.9	3,629.9	1.36	1.27	
8,934.0	90.10	269.60	5,368.8	-18.2	-3,693.9	3,693.9	0.78	-0.47	
8,997.0	89.60	271.10	5,368.9	-17.8	-3,756.9	3,756.9	2.51	-0.79	
9,060.0	89.80	270.50	5,369.3	-16.9	-3,819.9	3,819.9	1.00	0.32	
9,123.0	90.50	270.30	5,369.1	-16.5	-3,882.9	3,882.9	1.16	1.11	
9,187.0	90.80	270.00	5,368.4	-16.3	-3,946.9	3,946.9	0.66	0.47	
9,250.0	90.20	271.20	5,367.8	-15.7	-4,009.8	4,009.9	2.13	-0.95	
9,313.0	89.00	270.40	5,368.3	-14.8	-4,072.8	4,072.9	2.29	-1.90	
9,376.0	89.90	270.90	5,368.9	-14.1	-4,135.8	4,135.9	1.63	1.43	
9,440.0	90.90	270.30	5,368.4	-13.4	-4,199.8	4,199.8	1.82	1.56	
9,503.0	90.80	271.20	5,367.5	-12.6	-4,262.8	4,262.8	1.44	-0.16	
9,566.0	89.50	270.50	5,367.3	-11.7	-4,325.8	4,325.8	2.34	-2.06	
9,629.0	89.90	271.00	5,367.6	-10.8	-4,388.8	4,388.8	1.02	0.63	
9,693.0	89.70	271.30	5,367.9	-9.5	-4,452.8	4,452.8	0.56	-0.31	
9,756.0	90.10	270.50	5,368.0	-8.6	-4,515.8	4,515.8	1.42	0.63	
9,819.0	91.30	271.00	5,367.2	-7.7	-4,578.8	4,578.8	2.06	1.90	
9,882.0	90.60	270.90	5,366.2	-6.7	-4,641.7	4,641.7	1.12	-1.11	
9,945.0	90.60	269.90	5,365.5	-6.2	-4,704.7	4,704.7	1.59	0.00	

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S32-T24N-R8W (Escrito)
Well: Escrito L32-2408 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Escrito L32-2408 01H
TVD Reference: 18' KB @ 6955.0usft (Aztec 1099)
MD Reference: 18' KB @ 6955.0usft (Aztec 1099)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
10,009.0	89.80	270.10	5,365.3	-6.2	-4,768.7	4,768.7	1.29	-1.25	
10,072.0	90.10	270.30	5,365.3	-6.0	-4,831.7	4,831.7	0.57	0.48	
10,135.0	90.40	270.20	5,365.1	-5.8	-4,894.7	4,894.7	0.50	0.48	
10,198.0	89.50	270.00	5,365.1	-5.6	-4,957.7	4,957.7	1.46	-1.43	
10,262.0	91.00	270.90	5,364.8	-5.1	-5,021.7	5,021.7	2.73	2.34	
10,325.0	90.80	271.60	5,363.8	-3.8	-5,084.7	5,084.7	1.16	-0.32	
10,370.0	90.90	271.50	5,363.2	-2.5	-5,129.7	5,129.7	0.31	0.22	Last CES Survey @ 10,370' MD
10,425.0	90.90	271.50	5,362.3	-1.1	-5,184.7	5,184.6	0.00	0.00	PTB @ 10,425'

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L32-2408 01H
Project:	San Juan County, NM	TVD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Site:	S32-T24N-R8W (Escrito)	MD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Well:	Escrito L32-2408 01H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Escrito L32-2408 01H PI - actual wellpath misses target center by 96.8usft at 5781.1usft MD (5408.5 TVD, 96.9 N, -548.1 E) - Point	0.00	0.00	5,393.9	1.5	-555.1	1,917,172.09	2,757,887.63	36.268824	-107.715293
Escrito L32-2408 01H LF - actual wellpath misses target center by 102.6usft at 5795.2usft MD (5408.2 TVD, 98.0 N, -562.2 E) - Point	0.00	0.00	5,404.1	200.2	-554.2	1,917,370.85	2,757,888.28	36.269370	-107.715290
Escrito L32-2408 01H PI - actual wellpath misses target center by 188.5usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E) - Point	0.00	0.00	5,379.8	186.1	-5,196.9	1,917,351.01	2,753,245.53	36.269330	-107.731040
Escrito L32-2408 01H PI - actual wellpath misses target center by 98.5usft at 5781.4usft MD (5408.5 TVD, 96.9 N, -548.3 E) - Point	0.00	0.00	5,385.1	1.5	-555.1	1,917,172.09	2,757,887.63	36.268824	-107.715293
Escrito L32-2408 01H PI - actual wellpath misses target center by 19.5usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E) - Point	0.00	0.00	5,364.7	-15.5	-5,197.6	1,917,149.34	2,753,245.16	36.268776	-107.731042
Escrito L32-2408 01H PI - actual wellpath misses target center by 20.8usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E) - Point	0.00	0.00	5,369.8	-15.5	-5,197.6	1,917,149.34	2,753,245.16	36.268776	-107.731042
Escrito L32-2408 01H PI - actual wellpath misses target center by 25.7usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E) - Point	0.00	0.00	5,379.8	-14.8	-5,197.6	1,917,150.07	2,753,245.15	36.268778	-107.731042
Escrito L32-2408 01H PI - actual wellpath misses target center by 21.6usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E) - Point	0.00	0.00	5,352.7	-15.5	-5,197.6	1,917,149.34	2,753,245.16	36.268776	-107.731042
Escrito L32-2408 01H PI - actual wellpath misses target center by 26.1usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E) - Point	0.00	0.00	5,379.8	-15.5	-5,197.6	1,917,149.34	2,753,245.16	36.268776	-107.731042
Escrito L32-2408 01H PI - actual wellpath misses target center by 95.8usft at 5780.9usft MD (5408.5 TVD, 96.9 N, -547.9 E) - Point	0.00	0.00	5,403.8	1.5	-555.1	1,917,172.09	2,757,887.63	36.268824	-107.715293

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,370.0	5,363.2	-2.5	-5,129.7	Last CES Survey @ 10,370' MD
10,425.0	5,362.3	-1.1	-5,184.7	PTB @ 10,425'

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S32-T24N-R8W (Escrito)

Escrito L32-2408 01H

HZ

Design: FINAL

Survey Report - Geographic

04 October, 2014

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L32-2408 01H
Project:	San Juan County, NM	TVD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Site:	S32-T24N-R8W (Escrito)	MD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Well:	Escrito L32-2408 01H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	San Juan County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	S32-T24N-R8W (Escrito)				
Site Position:		Northing:	1,917,171.32 usft	Latitude:	36.268820
From:	Lat/Long	Easting:	2,758,442.71 usft	Longitude:	-107.713410
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07 °

Well	Escrito L32-2408 01H					
Well Position	+N/-S	0.0 usft	Northing:	1,917,171.32 usft	Latitude:	36.268820
	+E/-W	0.0 usft	Easting:	2,758,442.71 usft	Longitude:	-107.713410
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	6,937.0 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	9/26/2014	9.42	62.99	50,143

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	269.83	

Survey Program	Date 10/4/2014			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
569.0	10,425.0	Survey #1 (HZ)	Geolink MWD	Geolink MWD

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map			
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude	
(usft)			(usft)			(usft)	(usft)			
0.0	0.00	0.00	0.0	0.0	0.0	1,917,171.32	2,758,442.71	36.268820	-107.713410	
569.0	0.80	45.70	569.0	2.8	2.8	1,917,174.10	2,758,445.55	36.268828	-107.713401	
632.0	0.60	74.60	632.0	3.2	3.5	1,917,174.50	2,758,446.18	36.268829	-107.713398	
695.0	0.60	69.80	695.0	3.4	4.1	1,917,174.70	2,758,446.81	36.268829	-107.713396	
758.0	0.40	65.40	758.0	3.6	4.6	1,917,174.90	2,758,447.32	36.268830	-107.713395	
822.0	0.40	50.00	822.0	3.8	5.0	1,917,175.14	2,758,447.69	36.268831	-107.713393	
885.0	0.80	54.50	885.0	4.2	5.5	1,917,175.54	2,758,448.22	36.268832	-107.713392	
948.0	0.80	38.20	948.0	4.8	6.1	1,917,176.14	2,758,448.85	36.268833	-107.713389	
1,011.0	0.80	37.70	1,011.0	5.5	6.7	1,917,176.84	2,758,449.39	36.268835	-107.713388	
1,074.0	0.90	59.00	1,073.9	6.1	7.4	1,917,177.44	2,758,450.08	36.268837	-107.713385	
1,137.0	0.30	37.30	1,136.9	6.5	7.9	1,917,177.83	2,758,450.60	36.268838	-107.713383	
1,201.0	0.50	312.90	1,200.9	6.8	7.8	1,917,178.15	2,758,450.50	36.268839	-107.713384	

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L32-2408 01H
Project:	San Juan County, NM	TVD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Site:	S32-T24N-R8W (Escrito)	MD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Well:	Escrito L32-2408 01H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,264.0	0.80	283.00	1,263.9	7.1	7.2	1,917,178.43	2,758,449.87	36.268840	-107.713386
1,327.0	0.60	305.00	1,326.9	7.4	6.5	1,917,178.72	2,758,449.17	36.268840	-107.713388
1,390.0	0.70	301.30	1,389.9	7.8	5.9	1,917,179.11	2,758,448.57	36.268841	-107.713390
1,454.0	1.00	272.00	1,453.9	8.0	5.0	1,917,179.33	2,758,447.68	36.268842	-107.713393
1,516.0	1.30	277.30	1,515.9	8.1	3.7	1,917,179.44	2,758,446.44	36.268842	-107.713398
1,580.0	0.90	271.40	1,579.9	8.2	2.5	1,917,179.54	2,758,445.22	36.268843	-107.713402
1,643.0	1.30	279.40	1,642.9	8.3	1.3	1,917,179.67	2,758,444.02	36.268843	-107.713406
1,706.0	0.80	276.50	1,705.9	8.5	0.2	1,917,179.83	2,758,442.87	36.268843	-107.713410
1,769.0	1.10	283.30	1,768.9	8.7	-0.8	1,917,180.02	2,758,441.85	36.268844	-107.713413
1,832.0	1.20	280.60	1,831.9	9.0	-2.1	1,917,180.28	2,758,440.61	36.268845	-107.713417
1,898.0	0.80	270.80	1,897.8	9.1	-3.2	1,917,180.41	2,758,439.47	36.268845	-107.713421
1,959.0	1.20	272.80	1,958.8	9.1	-4.3	1,917,180.45	2,758,438.41	36.268845	-107.713425
2,022.0	0.80	274.50	2,021.8	9.2	-5.4	1,917,180.51	2,758,437.31	36.268845	-107.713429
2,085.0	1.00	251.30	2,084.8	9.1	-6.3	1,917,180.37	2,758,436.35	36.268845	-107.713432
2,148.0	0.70	245.70	2,147.8	8.7	-7.2	1,917,180.03	2,758,435.48	36.268844	-107.713435
2,212.0	0.80	243.20	2,211.8	8.4	-8.0	1,917,179.67	2,758,434.73	36.268843	-107.713437
2,275.0	0.60	255.00	2,274.8	8.1	-8.7	1,917,179.39	2,758,434.01	36.268842	-107.713440
2,338.0	1.10	240.30	2,337.8	7.7	-9.5	1,917,179.00	2,758,433.17	36.268841	-107.713443
2,401.0	1.10	242.10	2,400.8	7.1	-10.6	1,917,178.42	2,758,432.11	36.268840	-107.713446
2,464.0	0.70	243.30	2,463.8	6.7	-11.5	1,917,177.96	2,758,431.23	36.268838	-107.713449
2,525.0	0.60	204.00	2,524.8	6.2	-11.9	1,917,177.50	2,758,430.77	36.268837	-107.713451
2,587.0	0.60	86.30	2,586.8	5.9	-11.7	1,917,177.22	2,758,430.96	36.268836	-107.713450
2,648.0	0.80	112.30	2,647.8	5.8	-11.0	1,917,177.08	2,758,431.68	36.268836	-107.713448
2,709.0	1.00	84.70	2,708.8	5.7	-10.1	1,917,176.97	2,758,432.60	36.268836	-107.713445
2,770.0	0.70	79.40	2,769.7	5.8	-9.2	1,917,177.09	2,758,433.50	36.268836	-107.713441
2,831.0	0.70	75.60	2,830.7	5.9	-8.5	1,917,177.25	2,758,434.22	36.268836	-107.713439
2,893.0	0.80	73.60	2,892.7	6.2	-7.7	1,917,177.47	2,758,435.01	36.268837	-107.713436
2,955.0	0.50	94.90	2,954.7	6.3	-7.0	1,917,177.57	2,758,435.69	36.268837	-107.713434
3,016.0	0.70	125.70	3,015.7	6.0	-6.4	1,917,177.33	2,758,436.26	36.268837	-107.713432
3,077.0	0.30	164.10	3,076.7	5.6	-6.1	1,917,176.96	2,758,436.61	36.268836	-107.713431
3,139.0	0.80	156.30	3,138.7	5.1	-5.9	1,917,176.41	2,758,436.83	36.268834	-107.713430
3,200.0	0.70	124.40	3,199.7	4.5	-5.4	1,917,175.81	2,758,437.30	36.268832	-107.713429
3,261.0	1.00	156.40	3,260.7	3.8	-4.9	1,917,175.11	2,758,437.83	36.268831	-107.713427
3,323.0	1.50	120.90	3,322.7	2.9	-4.0	1,917,174.20	2,758,438.74	36.268828	-107.713424
3,384.0	3.20	101.60	3,383.6	2.1	-1.6	1,917,173.45	2,758,441.09	36.268826	-107.713416
3,445.0	3.90	102.60	3,444.5	1.3	2.1	1,917,172.66	2,758,444.79	36.268824	-107.713403
3,507.0	4.70	96.70	3,506.4	0.6	6.7	1,917,171.91	2,758,449.37	36.268822	-107.713388
3,568.0	3.80	95.80	3,567.2	0.1	11.2	1,917,171.42	2,758,453.86	36.268820	-107.713372
3,629.0	4.20	90.70	3,628.0	-0.1	15.4	1,917,171.19	2,758,458.11	36.268820	-107.713358
3,689.0	5.40	82.70	3,687.8	0.2	20.4	1,917,171.53	2,758,463.10	36.268821	-107.713341
3,753.0	5.50	88.80	3,751.5	0.6	26.4	1,917,171.99	2,758,469.16	36.268822	-107.713321
3,816.0	4.90	89.50	3,814.3	0.7	32.2	1,917,172.08	2,758,474.87	36.268822	-107.713301
3,879.0	5.30	89.60	3,877.0	0.8	37.8	1,917,172.13	2,758,480.47	36.268822	-107.713282
3,942.0	4.70	93.50	3,939.8	0.6	43.2	1,917,172.00	2,758,485.95	36.268822	-107.713264
4,006.0	4.40	89.90	4,003.6	0.5	48.3	1,917,171.85	2,758,491.03	36.268821	-107.713246
4,069.0	3.70	89.90	4,066.4	0.5	52.8	1,917,171.86	2,758,495.47	36.268821	-107.713231
4,132.0	3.50	96.00	4,129.3	0.3	56.7	1,917,171.67	2,758,499.42	36.268821	-107.713218
4,195.0	3.70	97.70	4,192.2	-0.2	60.6	1,917,171.20	2,758,503.35	36.268820	-107.713205
4,258.0	3.60	92.20	4,255.1	-0.5	64.6	1,917,170.86	2,758,507.34	36.268819	-107.713191
4,322.0	3.70	89.90	4,318.9	-0.6	68.7	1,917,170.79	2,758,511.41	36.268818	-107.713177
4,385.0	2.90	93.40	4,381.8	-0.7	72.3	1,917,170.70	2,758,515.04	36.268818	-107.713165
4,448.0	3.00	86.10	4,444.7	-0.7	75.6	1,917,170.73	2,758,518.27	36.268818	-107.713154
4,511.0	2.60	85.30	4,507.7	-0.5	78.6	1,917,170.96	2,758,521.34	36.268819	-107.713144
4,574.0	2.10	98.30	4,570.6	-0.5	81.2	1,917,170.91	2,758,523.91	36.268819	-107.713135
4,638.0	1.90	87.20	4,634.6	-0.6	83.4	1,917,170.80	2,758,526.13	36.268818	-107.713127

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L32-2408 01H
Project:	San Juan County, NM	TVD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Site:	S32-T24N-R8W (Escrito)	MD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Well:	Escrito L32-2408 01H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,669.0	2.10	95.40	4,665.6	-0.7	84.5	1,917,170.77	2,758,527.21	36.268818	-107.713124	
4,701.0	0.80	97.20	4,697.5	-0.7	85.3	1,917,170.69	2,758,528.01	36.268818	-107.713121	
4,733.0	2.30	269.30	4,729.5	-0.8	84.9	1,917,170.65	2,758,527.59	36.268818	-107.713122	
4,764.0	5.10	277.50	4,760.5	-0.6	82.9	1,917,170.82	2,758,525.60	36.268818	-107.713129	
4,796.0	7.50	282.90	4,792.3	0.0	79.4	1,917,171.47	2,758,522.15	36.268820	-107.713141	
4,827.0	10.30	288.00	4,822.9	1.4	74.8	1,917,172.77	2,758,517.54	36.268824	-107.713156	
4,859.0	13.20	289.40	4,854.2	3.5	68.7	1,917,174.86	2,758,511.37	36.268830	-107.713177	
4,891.0	15.30	286.30	4,885.2	5.9	61.2	1,917,177.25	2,758,503.87	36.268836	-107.713203	
4,922.0	16.70	280.60	4,915.0	7.8	52.9	1,917,179.21	2,758,495.56	36.268842	-107.713231	
4,954.0	19.00	275.40	4,945.5	9.2	43.2	1,917,180.53	2,758,485.85	36.268845	-107.713264	
4,985.0	20.60	269.00	4,974.7	9.5	32.7	1,917,180.90	2,758,475.38	36.268846	-107.713299	
5,017.0	22.70	267.60	5,004.4	9.2	20.9	1,917,180.53	2,758,463.58	36.268845	-107.713339	
5,049.0	24.90	268.30	5,033.7	8.7	8.0	1,917,180.05	2,758,450.67	36.268844	-107.713383	
5,080.0	26.20	269.20	5,061.7	8.4	-5.4	1,917,179.75	2,758,437.31	36.268843	-107.713429	
5,112.0	28.20	272.00	5,090.1	8.6	-20.0	1,917,179.90	2,758,422.69	36.268844	-107.713478	
5,143.0	30.20	272.90	5,117.2	9.2	-35.1	1,917,180.53	2,758,407.58	36.268845	-107.713529	
5,175.0	32.30	275.70	5,144.5	10.5	-51.7	1,917,181.76	2,758,391.03	36.268849	-107.713586	
5,206.0	33.90	276.90	5,170.5	12.4	-68.5	1,917,183.60	2,758,374.20	36.268854	-107.713643	
5,238.0	36.10	278.10	5,196.7	14.8	-86.7	1,917,185.98	2,758,356.00	36.268861	-107.713704	
5,270.0	37.80	278.80	5,222.3	17.6	-105.7	1,917,188.79	2,758,336.97	36.268868	-107.713769	
5,301.0	41.10	279.20	5,246.2	20.7	-125.2	1,917,191.85	2,758,317.52	36.268877	-107.713835	
5,333.0	42.90	278.70	5,270.0	24.0	-146.3	1,917,195.15	2,758,296.36	36.268886	-107.713907	
5,365.0	45.40	278.10	5,293.0	27.3	-168.4	1,917,198.38	2,758,274.31	36.268895	-107.713981	
5,397.0	48.90	278.40	5,314.7	30.6	-191.6	1,917,201.71	2,758,251.09	36.268904	-107.714060	
5,428.0	54.20	280.30	5,334.0	34.6	-215.5	1,917,205.64	2,758,227.14	36.268915	-107.714141	
5,460.0	59.10	280.50	5,351.6	39.4	-241.8	1,917,210.43	2,758,200.85	36.268928	-107.714231	
5,492.0	64.80	280.30	5,366.6	44.5	-269.6	1,917,215.50	2,758,173.08	36.268942	-107.714325	
5,523.0	69.70	280.90	5,378.6	49.8	-297.7	1,917,220.72	2,758,144.98	36.268957	-107.714420	
5,555.0	75.40	282.10	5,388.2	55.9	-327.6	1,917,226.77	2,758,115.08	36.268974	-107.714521	
5,591.0	80.60	284.50	5,395.7	64.0	-361.8	1,917,234.83	2,758,080.81	36.268996	-107.714638	
5,622.0	82.20	283.00	5,400.3	71.2	-391.6	1,917,242.08	2,758,051.03	36.269016	-107.714739	
5,653.0	84.80	282.30	5,403.8	78.0	-421.6	1,917,248.79	2,758,020.98	36.269034	-107.714841	
5,683.0	85.70	280.70	5,406.3	83.9	-450.9	1,917,254.71	2,757,991.67	36.269051	-107.714940	
5,714.0	87.50	278.20	5,408.1	89.0	-481.5	1,917,259.75	2,757,961.14	36.269065	-107.715044	
5,745.0	89.60	276.90	5,408.9	93.1	-512.2	1,917,263.79	2,757,930.42	36.269076	-107.715148	
5,776.0	91.40	275.40	5,408.7	96.4	-543.0	1,917,267.07	2,757,899.60	36.269085	-107.715252	
5,806.0	91.60	273.40	5,407.9	98.7	-572.9	1,917,269.33	2,757,869.69	36.269091	-107.715354	
5,837.0	92.50	271.30	5,406.8	100.0	-603.8	1,917,270.56	2,757,838.74	36.269095	-107.715459	
5,867.0	92.20	269.10	5,405.5	100.1	-633.8	1,917,270.63	2,757,808.77	36.269095	-107.715560	
5,898.0	90.70	266.00	5,404.7	98.8	-664.8	1,917,269.27	2,757,777.81	36.269091	-107.715665	
5,928.0	90.00	264.00	5,404.6	96.2	-694.7	1,917,266.62	2,757,747.93	36.269084	-107.715767	
5,989.0	90.00	262.60	5,404.6	89.0	-755.2	1,917,259.43	2,757,687.36	36.269065	-107.715972	
6,051.0	91.70	264.10	5,403.6	81.9	-816.8	1,917,252.17	2,757,625.80	36.269045	-107.716181	
6,112.0	91.10	263.20	5,402.2	75.1	-877.4	1,917,245.35	2,757,565.20	36.269026	-107.716387	
6,170.0	90.70	262.50	5,401.2	67.9	-935.0	1,917,238.06	2,757,507.67	36.269007	-107.716582	
6,232.0	91.10	261.90	5,400.3	59.5	-996.4	1,917,229.57	2,757,446.26	36.268983	-107.716790	
6,293.0	90.50	262.70	5,399.4	51.3	-1,056.8	1,917,221.33	2,757,385.82	36.268961	-107.716995	
6,354.0	90.00	262.90	5,399.2	43.7	-1,117.3	1,917,213.61	2,757,325.32	36.268940	-107.717201	
6,416.0	90.70	263.10	5,398.8	36.1	-1,178.9	1,917,205.97	2,757,263.79	36.268919	-107.717409	
6,477.0	91.50	263.20	5,397.6	28.8	-1,239.4	1,917,198.62	2,757,203.25	36.268899	-107.717615	
6,539.0	90.80	262.60	5,396.4	21.2	-1,300.9	1,917,190.89	2,757,141.74	36.268878	-107.717824	
6,600.0	90.80	263.10	5,395.5	13.6	-1,361.5	1,917,183.22	2,757,081.23	36.268857	-107.718029	
6,661.0	90.70	264.70	5,394.7	7.1	-1,422.1	1,917,176.66	2,757,020.59	36.268840	-107.718235	
6,723.0	92.40	267.60	5,393.0	2.9	-1,483.9	1,917,172.43	2,756,958.77	36.268828	-107.718444	
6,783.0	91.80	268.40	5,390.8	0.8	-1,543.9	1,917,170.26	2,756,898.85	36.268822	-107.718648	

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L32-2408 01H
Project:	San Juan County, NM	TVD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Site:	S32-T24N-R8W (Escrito)	MD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Well:	Escrito L32-2408 01H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,844.0	90.70	268.40	5,389.5	-0.9	-1,604.8	1,917,168.48	2,756,837.89	36.268818	-107.718854
6,907.0	90.70	267.70	5,388.7	-3.0	-1,667.8	1,917,166.26	2,756,774.94	36.268812	-107.719068
6,970.0	91.50	268.70	5,387.5	-5.0	-1,730.7	1,917,164.20	2,756,711.98	36.268806	-107.719282
7,034.0	91.30	267.90	5,386.0	-6.9	-1,794.7	1,917,162.23	2,756,648.03	36.268801	-107.719498
7,097.0	89.10	266.30	5,385.7	-10.1	-1,857.6	1,917,158.96	2,756,585.12	36.268792	-107.719712
7,160.0	90.00	266.90	5,386.2	-13.8	-1,920.5	1,917,155.15	2,756,522.24	36.268782	-107.719925
7,223.0	90.30	267.70	5,386.1	-16.8	-1,983.4	1,917,152.10	2,756,459.32	36.268774	-107.720139
7,286.0	91.10	269.20	5,385.3	-18.5	-2,046.4	1,917,150.32	2,756,396.35	36.268769	-107.720352
7,349.0	91.90	268.40	5,383.6	-19.8	-2,109.3	1,917,148.92	2,756,333.39	36.268766	-107.720566
7,416.0	91.50	269.80	5,381.7	-20.8	-2,176.3	1,917,147.79	2,756,266.43	36.268763	-107.720793
7,479.0	91.50	270.00	5,380.0	-21.0	-2,239.3	1,917,147.60	2,756,203.45	36.268762	-107.721007
7,543.0	91.00	270.30	5,378.6	-20.8	-2,303.3	1,917,147.69	2,756,139.47	36.268763	-107.721224
7,606.0	90.80	269.60	5,377.6	-20.8	-2,366.3	1,917,147.55	2,756,076.47	36.268763	-107.721437
7,669.0	88.90	268.90	5,377.8	-21.7	-2,429.3	1,917,146.65	2,756,013.48	36.268760	-107.721651
7,733.0	89.10	269.50	5,378.9	-22.6	-2,493.2	1,917,145.68	2,755,949.50	36.268758	-107.721868
7,796.0	90.60	270.70	5,379.1	-22.4	-2,556.2	1,917,145.71	2,755,886.50	36.268758	-107.722082
7,859.0	91.30	269.80	5,378.0	-22.2	-2,619.2	1,917,145.91	2,755,823.51	36.268759	-107.722296
7,922.0	91.20	271.00	5,376.7	-21.7	-2,682.2	1,917,146.27	2,755,760.53	36.268760	-107.722509
7,985.0	90.70	269.90	5,375.6	-21.2	-2,745.2	1,917,146.69	2,755,697.54	36.268761	-107.722723
8,049.0	89.70	269.80	5,375.4	-21.4	-2,809.2	1,917,146.44	2,755,633.54	36.268761	-107.722940
8,112.0	89.40	269.10	5,375.9	-22.0	-2,872.2	1,917,145.76	2,755,570.55	36.268759	-107.723154
8,175.0	90.70	269.20	5,375.8	-22.9	-2,935.2	1,917,144.74	2,755,507.56	36.268757	-107.723367
8,238.0	90.80	268.80	5,375.0	-24.0	-2,998.2	1,917,143.57	2,755,444.58	36.268754	-107.723581
8,301.0	88.60	268.60	5,375.3	-25.5	-3,061.1	1,917,142.06	2,755,381.62	36.268750	-107.723795
8,365.0	89.70	270.50	5,376.3	-26.0	-3,125.1	1,917,141.48	2,755,317.63	36.268748	-107.724012
8,428.0	91.00	272.00	5,375.9	-24.6	-3,188.1	1,917,142.77	2,755,254.65	36.268752	-107.724225
8,491.0	91.30	271.40	5,374.6	-22.7	-3,251.1	1,917,144.57	2,755,191.69	36.268757	-107.724439
8,554.0	92.10	271.90	5,372.8	-20.9	-3,314.0	1,917,146.30	2,755,128.74	36.268762	-107.724653
8,618.0	92.10	271.30	5,370.4	-19.1	-3,377.9	1,917,148.01	2,755,064.81	36.268767	-107.724869
8,681.0	90.90	270.90	5,368.8	-17.9	-3,440.9	1,917,149.14	2,755,001.84	36.268770	-107.725083
8,744.0	89.50	270.80	5,368.5	-17.0	-3,503.9	1,917,149.99	2,754,938.85	36.268773	-107.725297
8,807.0	89.60	269.50	5,369.0	-16.8	-3,566.9	1,917,150.08	2,754,875.85	36.268773	-107.725510
8,870.0	90.40	269.20	5,369.0	-17.5	-3,629.9	1,917,149.29	2,754,812.86	36.268771	-107.725724
8,934.0	90.10	269.60	5,368.8	-18.2	-3,693.9	1,917,148.54	2,754,748.86	36.268769	-107.725941
8,997.0	89.60	271.10	5,368.9	-17.8	-3,756.9	1,917,148.85	2,754,685.86	36.268770	-107.726155
9,060.0	89.80	270.50	5,369.3	-16.9	-3,819.9	1,917,149.65	2,754,622.87	36.268773	-107.726369
9,123.0	90.50	270.30	5,369.1	-16.5	-3,882.9	1,917,150.01	2,754,559.87	36.268774	-107.726582
9,187.0	90.80	270.00	5,368.4	-16.3	-3,946.9	1,917,150.10	2,754,495.88	36.268774	-107.726799
9,250.0	90.20	271.20	5,367.8	-15.7	-4,009.8	1,917,150.68	2,754,432.88	36.268776	-107.727013
9,313.0	89.00	270.40	5,368.3	-14.8	-4,072.8	1,917,151.48	2,754,369.89	36.268779	-107.727227
9,376.0	89.90	270.90	5,368.9	-14.1	-4,135.8	1,917,152.12	2,754,306.90	36.268781	-107.727440
9,440.0	90.90	270.30	5,368.4	-13.4	-4,199.8	1,917,152.71	2,754,242.90	36.268782	-107.727658
9,503.0	90.80	271.20	5,367.5	-12.6	-4,262.8	1,917,153.46	2,754,179.92	36.268785	-107.727871
9,566.0	89.50	270.50	5,367.3	-11.7	-4,325.8	1,917,154.31	2,754,116.92	36.268787	-107.728085
9,629.0	89.90	271.00	5,367.6	-10.8	-4,388.8	1,917,155.06	2,754,053.93	36.268789	-107.728299
9,693.0	89.70	271.30	5,367.9	-9.5	-4,452.8	1,917,156.26	2,753,989.94	36.268793	-107.728516
9,756.0	90.10	270.50	5,368.0	-8.6	-4,515.8	1,917,157.18	2,753,926.95	36.268796	-107.728729
9,819.0	91.30	271.00	5,367.2	-7.7	-4,578.8	1,917,157.92	2,753,863.96	36.268798	-107.728943
9,882.0	90.60	270.90	5,366.2	-6.7	-4,641.7	1,917,158.89	2,753,800.98	36.268801	-107.729157
9,945.0	90.60	269.90	5,365.5	-6.2	-4,704.7	1,917,159.25	2,753,737.98	36.268802	-107.729370
10,009.0	89.80	270.10	5,365.3	-6.2	-4,768.7	1,917,159.17	2,753,673.98	36.268802	-107.729588
10,072.0	90.10	270.30	5,365.3	-6.0	-4,831.7	1,917,159.31	2,753,610.98	36.268802	-107.729801
10,135.0	90.40	270.20	5,365.1	-5.8	-4,894.7	1,917,159.51	2,753,547.98	36.268803	-107.730015
10,198.0	89.50	270.00	5,365.1	-5.6	-4,957.7	1,917,159.54	2,753,484.99	36.268803	-107.730229
10,262.0	91.00	270.90	5,364.8	-5.1	-5,021.7	1,917,159.96	2,753,420.99	36.268805	-107.730446

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L32-2408 01H
Project:	San Juan County, NM	TVD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Site:	S32-T24N-R8W (Escrito)	MD Reference:	18' KB @ 6955.0usft (Aztec 1099)
Well:	Escrito L32-2408 01H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,325.0	90.80	271.60	5,363.8	-3.8	-5,084.7	1,917,161.26	2,753,358.01	36.268809	-107.730659
10,370.0	90.90	271.50	5,363.2	-2.5	-5,129.7	1,917,162.42	2,753,313.01	36.268812	-107.730812
Last CES Survey @ 10,370' MD									
10,425.0	90.90	271.50	5,362.3	-1.1	-5,184.7	1,917,163.79	2,753,258.06	36.268816	-107.730998
PTB @ 10,425'									

Design Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
Escrito L32-2408 01H PI	0.00	0.00	5,364.7	-15.5	-5,197.6	1,917,149.34	2,753,245.16	36.268776	-107.731042
- actual wellpath misses target center by 19.5usft at 10425.0usft MD (5362.3 TVD, -1.1 N, -5184.7 E)									
- Point									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,370.0	5,363.2	-2.5	-5,129.7	Last CES Survey @ 10,370' MD	
10,425.0	5,362.3	-1.1	-5,184.7	PTB @ 10,425'	

Checked By: _____	Approved By: _____	Date: _____
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