

CONFIDENTIAL

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, 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 Drive
Santa Fe, NM 87505

☒ AMENDED REPORT

OIL CONS. DIV DIST. 3

AUG 28 2013

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21145	² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 39785	⁵ Property Name LYBROOK M31-2305	⁶ Well Number 03H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 7173'

¹⁰ Surface Location

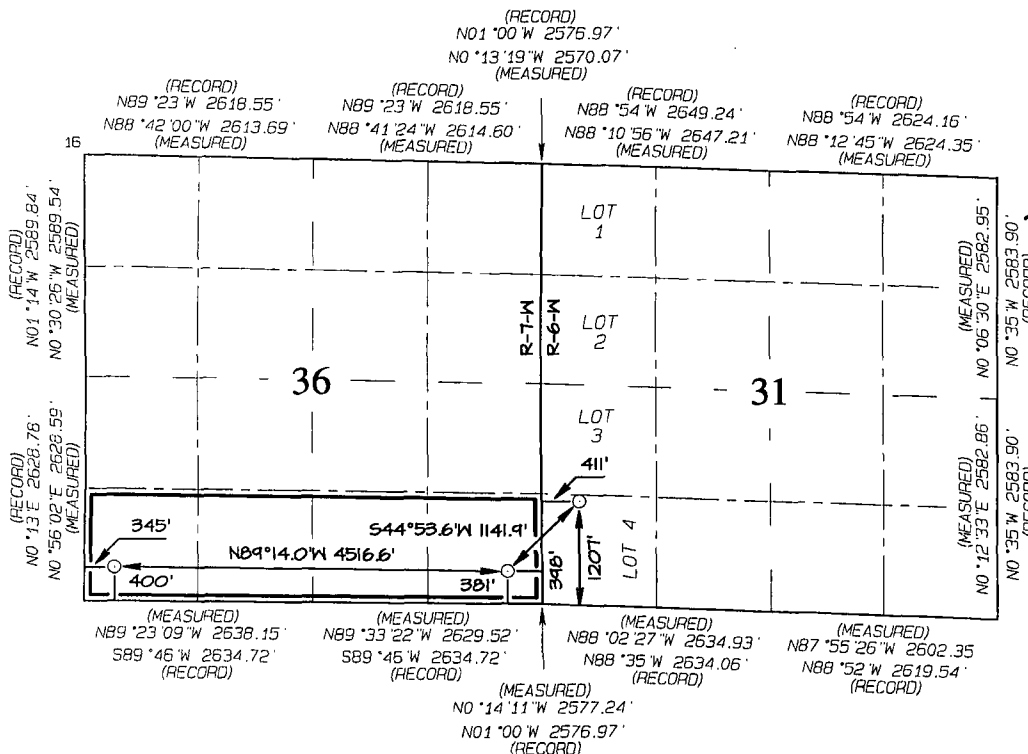
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	31	23N	6W	4	1207	SOUTH	411	WEST	SANDOVAL

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
M	36	23N	7W		400	SOUTH	345	WEST	SANDOVAL

¹² Dedicated Acres 160.0 Acres S/2 S/2 - Section 36	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--	-------------------------------	----------------------------------	-------------------------

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



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 a owner, a surface mineral or working interest, or to a unitization, pooling agreement or a compulsory pooling order. Therefore entered by the Division.

Signature: *[Signature]* Date: 08/28/13
Printed Name: Brenda R. Linster, Regulatory Lead
E-mail Address: brenda.linster@encana.com

¹⁸ 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.

Date Revised: AUGUST 27, 2013
Date of Survey: MARCH 23, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

END-OF-LATERAL
400' FSL 345' FWL
SECTION 36, T23N, R7W
LAT: 36.17680°N
LONG: 107.53364°W
DATUM: NAD1927

LAT: 36.17681°N
LONG: 107.53425°W
DATUM: NAD1983

POINT-OF-ENTRY
381' FSL 398' FEL
SECTION 36, T23N, R7W
LAT: 36.17679°N
LONG: 107.51834°W
DATUM: NAD1927

LAT: 36.17681°N
LONG: 107.51895°W
DATUM: NAD1983

SURFACE LOCATION
1207' FSL 411' FWL
SECTION 31, T23N, R6W
LAT: 36.17905°N
LONG: 107.51565°W
DATUM: NAD1927

LAT: 36.17906°N
LONG: 107.51625°W
DATUM: NAD1983

Ar

CONFIDENTIAL

DEVIATION SURVEYS

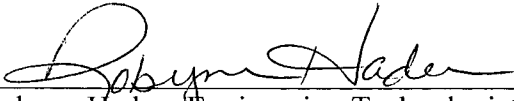
OIL CONS. DIV DIST. 3

AUG 28 2013

MD (Feet)	Inclination (Degree)
557	.30
801	.50
1106	.70
1411	.70
1721	1.10
2035	.83
2351	.09
2666	.44
2980	1.00
3295	1.10
3610	.60
3925	.80
4239	.40
4521	.70

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

8/28/13
8/28/13

ACKNOWLEDGMENT

State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 28th day of August, 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: 

My Commission Expires: 2-17-15

Av



CONFIDENTIAL

OIL CONS. DIV-DIST. 3

AUG 28 2013

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

Lybrook

Lybrook M31-2306 03H

HZ

Design: FINAL

Survey Report - Geographic

27 August, 2013

CONFIDENTIAL

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook M31-2306 03H
Project:	Sandoval County, NM	TVD Reference:	15' KB @ 7188.0ft (Aztec 730)
Site:	Lybrook	MD Reference:	15' KB @ 7188.0ft (Aztec 730)
Well:	Lybrook M31-2306 03H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site	Lybrook				
Site Position:		Northing:	1,882,676.45 ft	Latitude:	36.168210
From:	Lat/Long	Easting:	1,287,068.90 ft	Longitude:	-107.447150
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.71 °

Well	Lybrook M31-2306 03H					
Well Position	+N/-S	0.0 ft	Northing:	1,886,885.09 ft	Latitude:	36.179060
	+E/-W	0.0 ft	Easting:	1,266,723.87 ft	Longitude:	-107.516250
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,173.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/8/2013	9.47	62.98	50,236

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	269.78	

Survey Program	Date	7/31/2013			
From	To	Survey (Wellbore)	Tool Name	Description	
557.0	10,835.0	Survey #1 (HZ)	Geolink MWD	Geolink MWD	

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting	Latitude	Longitude
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
0.0	0.00	0.00	0.0	0.0	0.0	1,886,885.09	1,266,723.87	36.179060	-107.516250
557.0	0.30	279.50	557.0	0.2	-1.4	1,886,885.35	1,266,722.44	36.179061	-107.516255
618.0	0.20	279.50	618.0	0.3	-1.7	1,886,885.40	1,266,722.18	36.179061	-107.516256
679.0	0.40	263.00	679.0	0.3	-2.0	1,886,885.40	1,266,721.86	36.179061	-107.516257
740.0	0.50	254.20	740.0	0.2	-2.5	1,886,885.30	1,266,721.39	36.179061	-107.516259
801.0	0.50	265.10	801.0	0.1	-3.0	1,886,885.22	1,266,720.87	36.179060	-107.516260
861.0	0.70	272.40	861.0	0.1	-3.6	1,886,885.22	1,266,720.24	36.179060	-107.516263
922.0	0.70	258.70	922.0	0.0	-4.4	1,886,885.17	1,266,719.50	36.179060	-107.516265
984.0	0.50	278.00	984.0	0.0	-5.0	1,886,885.14	1,266,718.86	36.179060	-107.516267
1,045.0	0.50	257.90	1,045.0	0.0	-5.5	1,886,885.13	1,266,718.34	36.179060	-107.516269
1,106.0	0.70	286.90	1,106.0	0.0	-6.2	1,886,885.19	1,266,717.72	36.179060	-107.516271
1,167.0	0.40	81.90	1,167.0	0.2	-6.3	1,886,885.33	1,266,717.58	36.179061	-107.516272

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook M31-2306 03H
Project:	Sandoval County, NM	TVD Reference:	15' KB @ 7188.0ft (Aztec 730)
Site:	Lybrook	MD Reference:	15' KB @ 7188.0ft (Aztec 730)
Well:	Lybrook M31-2306 03H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
1,228.0	0.50	69.70	1,228.0	0.3	-5.8	1,886,885.45	1,266,718.04	36.179061	-107.516270
1,289.0	0.40	99.80	1,289.0	0.3	-5.4	1,886,885.50	1,266,718.50	36.179061	-107.516268
1,350.0	0.50	72.80	1,350.0	0.4	-4.9	1,886,885.53	1,266,718.97	36.179061	-107.516267
1,411.0	0.70	82.60	1,411.0	0.5	-4.3	1,886,885.65	1,266,719.59	36.179061	-107.516265
1,471.0	0.80	69.20	1,471.0	0.7	-3.5	1,886,885.84	1,266,720.35	36.179062	-107.516262
1,532.0	1.00	62.00	1,532.0	1.1	-2.7	1,886,886.23	1,266,721.22	36.179063	-107.516259
1,595.0	1.10	70.60	1,594.9	1.6	-1.6	1,886,886.67	1,266,722.28	36.179064	-107.516256
1,658.0	1.10	57.80	1,657.9	2.1	-0.5	1,886,887.18	1,266,723.37	36.179066	-107.516252
1,721.0	1.10	61.50	1,720.9	2.7	0.5	1,886,887.78	1,266,724.42	36.179067	-107.516249
1,783.0	1.41	62.73	1,782.9	3.3	1.7	1,886,888.40	1,266,725.63	36.179069	-107.516244
1,846.0	1.05	57.63	1,845.9	4.0	2.9	1,886,889.05	1,266,726.82	36.179071	-107.516240
1,909.0	0.62	106.15	1,908.9	4.2	3.7	1,886,889.25	1,266,727.64	36.179072	-107.516238
1,972.0	0.60	192.40	1,971.9	3.8	4.0	1,886,888.83	1,266,727.89	36.179070	-107.516237
2,035.0	0.83	211.62	2,034.9	3.1	3.7	1,886,888.12	1,266,727.57	36.179069	-107.516238
2,099.0	0.79	209.95	2,098.9	2.3	3.2	1,886,887.35	1,266,727.09	36.179066	-107.516239
2,162.0	0.75	203.01	2,161.9	1.5	2.8	1,886,886.60	1,266,726.71	36.179064	-107.516241
2,225.0	0.53	195.71	2,224.9	0.9	2.6	1,886,885.94	1,266,726.46	36.179063	-107.516242
2,288.0	0.48	195.97	2,287.9	0.3	2.4	1,886,885.41	1,266,726.30	36.179061	-107.516242
2,351.0	0.09	303.64	2,350.9	0.1	2.3	1,886,885.19	1,266,726.18	36.179060	-107.516242
2,414.0	0.22	325.52	2,413.9	0.2	2.2	1,886,885.31	1,266,726.07	36.179061	-107.516243
2,477.0	0.22	289.23	2,476.9	0.4	2.0	1,886,885.46	1,266,725.89	36.179061	-107.516243
2,540.0	0.31	254.60	2,539.9	0.4	1.7	1,886,885.45	1,266,725.62	36.179061	-107.516244
2,603.0	0.40	245.90	2,602.9	0.2	1.4	1,886,885.32	1,266,725.25	36.179061	-107.516246
2,666.0	0.44	227.26	2,665.9	0.0	1.0	1,886,885.08	1,266,724.87	36.179060	-107.516247
2,728.0	0.35	220.41	2,727.9	-0.3	0.7	1,886,884.77	1,266,724.57	36.179059	-107.516248
2,791.0	0.40	271.00	2,790.8	-0.5	0.4	1,886,884.64	1,266,724.22	36.179059	-107.516249
2,854.0	0.70	301.20	2,853.8	-0.3	-0.2	1,886,884.85	1,266,723.67	36.179059	-107.516251
2,917.0	0.70	303.70	2,916.8	0.2	-0.8	1,886,885.27	1,266,723.03	36.179061	-107.516253
2,980.0	1.00	302.20	2,979.8	0.7	-1.6	1,886,885.78	1,266,722.25	36.179062	-107.516256
3,043.0	1.40	307.40	3,042.8	1.4	-2.7	1,886,886.56	1,266,721.18	36.179064	-107.516259
3,106.0	1.70	326.10	3,105.8	2.7	-3.8	1,886,887.82	1,266,720.07	36.179067	-107.516263
3,169.0	1.70	334.30	3,168.8	4.3	-4.8	1,886,889.45	1,266,719.16	36.179072	-107.516266
3,232.0	1.30	333.30	3,231.7	5.8	-5.5	1,886,890.94	1,266,718.45	36.179076	-107.516269
3,295.0	1.10	315.10	3,294.7	6.8	-6.2	1,886,892.01	1,266,717.72	36.179079	-107.516271
3,358.0	1.30	310.10	3,357.7	7.7	-7.2	1,886,892.91	1,266,716.76	36.179081	-107.516275
3,421.0	0.30	313.60	3,420.7	8.3	-7.9	1,886,893.50	1,266,716.10	36.179083	-107.516277
3,484.0	0.50	83.20	3,483.7	8.4	-7.7	1,886,893.64	1,266,716.26	36.179083	-107.516276
3,547.0	0.80	124.30	3,546.7	8.2	-7.1	1,886,893.42	1,266,716.89	36.179083	-107.516274
3,610.0	0.60	128.70	3,609.7	7.8	-6.5	1,886,892.95	1,266,717.50	36.179081	-107.516272
3,673.0	0.90	119.10	3,672.7	7.3	-5.8	1,886,892.50	1,266,718.19	36.179080	-107.516270
3,736.0	1.10	131.00	3,735.7	6.7	-4.9	1,886,891.85	1,266,719.07	36.179078	-107.516267
3,799.0	0.80	136.20	3,798.7	6.0	-4.1	1,886,891.13	1,266,719.82	36.179077	-107.516264
3,862.0	0.90	148.30	3,861.7	5.2	-3.6	1,886,890.38	1,266,720.37	36.179074	-107.516262
3,925.0	0.80	148.30	3,924.7	4.4	-3.1	1,886,889.58	1,266,720.86	36.179072	-107.516261
3,988.0	1.00	154.30	3,987.7	3.6	-2.6	1,886,888.70	1,266,721.31	36.179070	-107.516259
4,051.0	0.70	145.00	4,050.7	2.8	-2.1	1,886,887.89	1,266,721.76	36.179068	-107.516258
4,114.0	0.20	164.00	4,113.7	2.3	-1.9	1,886,887.46	1,266,722.01	36.179067	-107.516257
4,176.0	0.18	220.93	4,175.7	2.2	-1.9	1,886,887.29	1,266,721.97	36.179066	-107.516257
4,239.0	0.40	261.10	4,238.6	2.1	-2.2	1,886,887.18	1,266,721.69	36.179066	-107.516258
4,302.0	0.70	271.56	4,301.6	2.0	-2.8	1,886,887.16	1,266,721.09	36.179066	-107.516260
4,365.0	0.40	279.50	4,364.6	2.1	-3.4	1,886,887.22	1,266,720.48	36.179066	-107.516262
4,428.0	0.40	223.66	4,427.6	2.0	-3.8	1,886,887.10	1,266,720.11	36.179065	-107.516263
4,491.0	0.60	221.20	4,490.6	1.6	-4.2	1,886,886.70	1,266,719.74	36.179064	-107.516264
4,521.0	0.70	216.80	4,520.6	1.3	-4.4	1,886,886.44	1,266,719.52	36.179064	-107.516265
4,540.0	0.70	216.30	4,539.6	1.1	-4.5	1,886,886.25	1,266,719.38	36.179063	-107.516266

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook M31-2306 03H
Project:	Sandoval County, NM	TVD Reference:	15' KB @ 7188.0ft (Aztec 730)
Site:	Lybrook	MD Reference:	15' KB @ 7188.0ft (Aztec 730)
Well:	Lybrook M31-2306 03H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
4,571.0	0.90	197.80	4,570.6	0.7	-4.7	1,886,885.87	1,266,719.19	36.179062	-107.516266
4,603.0	3.60	197.00	4,602.6	-0.5	-5.1	1,886,884.67	1,266,718.80	36.179059	-107.516267
4,634.0	6.50	196.70	4,633.5	-3.1	-5.9	1,886,882.07	1,266,717.98	36.179052	-107.516270
4,666.0	8.20	197.20	4,665.2	-7.0	-7.0	1,886,878.17	1,266,716.74	36.179041	-107.516274
4,697.0	9.50	199.50	4,695.8	-11.5	-8.6	1,886,873.67	1,266,715.17	36.179028	-107.516279
4,729.0	10.90	201.40	4,727.3	-16.8	-10.5	1,886,868.39	1,266,713.11	36.179014	-107.516286
4,760.0	12.20	202.60	4,757.7	-22.6	-12.9	1,886,862.67	1,266,710.71	36.178998	-107.516294
4,792.0	13.60	204.90	4,788.9	-29.1	-15.8	1,886,856.17	1,266,707.74	36.178980	-107.516304
4,823.0	15.20	205.30	4,818.9	-36.1	-19.0	1,886,849.23	1,266,704.38	36.178961	-107.516315
4,855.0	16.70	201.90	4,849.7	-44.2	-22.5	1,886,841.22	1,266,700.77	36.178939	-107.516327
4,887.0	18.10	199.20	4,880.2	-53.1	-25.9	1,886,832.31	1,266,697.30	36.178914	-107.516338
4,918.0	20.00	198.30	4,909.5	-62.7	-29.1	1,886,822.77	1,266,693.93	36.178888	-107.516349
4,949.0	22.50	198.00	4,938.4	-73.4	-32.6	1,886,812.14	1,266,690.29	36.178859	-107.516361
4,981.0	24.80	199.50	4,967.7	-85.5	-36.8	1,886,800.04	1,266,686.00	36.178825	-107.516375
5,012.0	26.50	201.00	4,995.7	-98.1	-41.4	1,886,787.52	1,266,681.19	36.178791	-107.516391
5,044.0	28.70	202.00	5,024.0	-111.9	-46.8	1,886,773.80	1,266,675.57	36.178753	-107.516409
5,076.0	31.60	203.10	5,051.7	-126.8	-53.0	1,886,759.04	1,266,669.21	36.178712	-107.516430
5,107.0	34.60	202.00	5,077.7	-142.4	-59.5	1,886,743.49	1,266,662.52	36.178669	-107.516452
5,139.0	37.40	201.90	5,103.6	-159.8	-66.5	1,886,726.14	1,266,655.26	36.178621	-107.516476
5,170.0	39.90	201.00	5,127.8	-177.9	-73.6	1,886,708.21	1,266,647.95	36.178572	-107.516500
5,202.0	42.40	199.80	5,151.9	-197.6	-80.9	1,886,688.58	1,266,640.36	36.178517	-107.516524
5,233.0	45.40	198.30	5,174.2	-217.9	-87.9	1,886,668.35	1,266,633.09	36.178462	-107.516548
5,265.0	48.50	198.40	5,196.0	-240.1	-95.3	1,886,646.26	1,266,625.44	36.178401	-107.516573
5,296.0	50.30	199.10	5,216.2	-262.4	-102.9	1,886,624.07	1,266,617.58	36.178339	-107.516599
5,328.0	52.90	199.10	5,236.1	-286.1	-111.1	1,886,600.48	1,266,609.07	36.178274	-107.516627
5,359.0	56.40	200.30	5,254.0	-309.9	-119.6	1,886,576.80	1,266,600.23	36.178209	-107.516656
5,391.0	59.40	200.80	5,271.0	-335.3	-129.1	1,886,551.55	1,266,590.38	36.178139	-107.516688
5,422.0	59.60	200.80	5,286.8	-360.2	-138.6	1,886,526.70	1,266,580.57	36.178071	-107.516720
5,453.0	61.20	200.90	5,302.1	-385.4	-148.2	1,886,501.64	1,266,570.65	36.178001	-107.516752
5,485.0	62.60	201.70	5,317.1	-411.7	-158.5	1,886,475.48	1,266,560.06	36.177929	-107.516787
5,516.0	64.20	203.40	5,331.0	-437.3	-169.1	1,886,450.02	1,266,549.09	36.177859	-107.516823
5,548.0	66.10	205.90	5,344.5	-463.7	-181.2	1,886,423.80	1,266,536.63	36.177786	-107.516864
5,579.0	68.00	208.90	5,356.6	-489.0	-194.3	1,886,398.64	1,266,523.17	36.177717	-107.516909
5,611.0	70.30	211.40	5,367.9	-514.9	-209.4	1,886,372.98	1,266,507.81	36.177646	-107.516960
5,642.0	71.70	215.00	5,378.0	-539.4	-225.4	1,886,348.68	1,266,491.44	36.177578	-107.517014
5,673.0	73.00	217.80	5,387.4	-563.2	-242.9	1,886,325.13	1,266,473.60	36.177513	-107.517073
5,705.0	74.00	219.40	5,396.5	-587.2	-262.1	1,886,301.41	1,266,454.15	36.177447	-107.517138
5,736.0	75.20	222.20	5,404.8	-609.8	-281.6	1,886,279.05	1,266,434.33	36.177385	-107.517204
5,768.0	77.10	225.20	5,412.4	-632.2	-303.1	1,886,256.87	1,266,412.57	36.177324	-107.517277
5,799.0	78.50	227.80	5,419.0	-653.1	-325.1	1,886,236.31	1,266,390.32	36.177266	-107.517352
5,831.0	80.60	231.60	5,424.8	-673.4	-349.1	1,886,216.28	1,266,366.06	36.177210	-107.517433
5,862.0	81.60	234.60	5,429.6	-691.8	-373.5	1,886,198.21	1,266,341.34	36.177160	-107.517516
5,894.0	82.60	237.20	5,434.0	-709.6	-399.8	1,886,180.79	1,266,314.86	36.177111	-107.517605
5,925.0	83.50	239.50	5,437.7	-725.7	-426.0	1,886,164.99	1,266,288.46	36.177067	-107.517693
5,957.0	84.50	242.10	5,441.1	-741.3	-453.8	1,886,149.82	1,266,260.48	36.177024	-107.517788
5,992.0	85.40	243.50	5,444.2	-757.2	-484.8	1,886,134.30	1,266,229.27	36.176980	-107.517893
6,021.0	84.60	246.60	5,446.7	-769.4	-511.0	1,886,122.45	1,266,202.92	36.176947	-107.517981
6,053.0	85.00	249.50	5,449.6	-781.3	-540.5	1,886,110.93	1,266,173.22	36.176914	-107.518081
6,084.0	86.30	253.90	5,451.9	-791.0	-569.8	1,886,101.61	1,266,143.75	36.176887	-107.518181
6,116.0	87.20	257.40	5,453.8	-798.9	-600.8	1,886,094.10	1,266,112.70	36.176866	-107.518286
6,147.0	86.50	259.80	5,455.5	-805.0	-631.1	1,886,088.38	1,266,082.29	36.176849	-107.518388
6,179.0	86.60	261.30	5,457.4	-810.3	-662.6	1,886,083.54	1,266,050.71	36.176835	-107.518495
6,210.0	87.10	262.90	5,459.1	-814.5	-693.3	1,886,079.69	1,266,020.00	36.176823	-107.518599
6,242.0	87.70	264.50	5,460.5	-818.0	-725.1	1,886,076.60	1,265,988.19	36.176813	-107.518707
6,273.0	87.90	266.00	5,461.7	-820.6	-755.9	1,886,074.44	1,265,957.29	36.176806	-107.518811

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook M31-2306 03H
Project:	Sandoval County, NM	TVD Reference:	15' KB @ 7188.0ft (Aztec 730)
Site:	Lybrook	MD Reference:	15' KB @ 7188.0ft (Aztec 730)
Well:	Lybrook M31-2306 03H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
6,305.0	87.90	266.70	5,462.9	-822.6	-787.9	1,886,072.82	1,265,925.35	36.176801	-107.518919
6,336.0	87.70	267.50	5,464.1	-824.2	-818.8	1,886,071.65	1,265,894.39	36.176796	-107.519024
6,368.0	87.90	268.90	5,465.3	-825.2	-850.8	1,886,071.07	1,265,862.42	36.176793	-107.519133
6,399.0	88.90	270.70	5,466.2	-825.3	-881.7	1,886,071.36	1,265,831.44	36.176793	-107.519238
6,431.0	89.70	271.60	5,466.6	-824.7	-913.7	1,886,072.42	1,265,799.46	36.176795	-107.519346
6,494.0	90.40	271.90	5,466.5	-822.7	-976.7	1,886,075.17	1,265,736.52	36.176800	-107.519559
6,557.0	90.10	272.00	5,466.2	-820.6	-1,039.7	1,886,078.13	1,265,673.59	36.176806	-107.519773
6,620.0	90.70	271.80	5,465.8	-818.5	-1,102.6	1,886,081.04	1,265,610.66	36.176812	-107.519986
6,683.0	91.30	271.70	5,464.7	-816.6	-1,165.6	1,886,083.79	1,265,547.73	36.176817	-107.520199
6,746.0	90.70	272.30	5,463.6	-814.4	-1,228.5	1,886,086.81	1,265,484.81	36.176823	-107.520412
6,809.0	89.90	272.40	5,463.3	-811.8	-1,291.5	1,886,090.21	1,265,421.90	36.176830	-107.520626
6,872.0	90.80	271.80	5,462.9	-809.5	-1,354.4	1,886,093.34	1,265,358.98	36.176837	-107.520839
6,935.0	90.90	270.90	5,462.0	-808.0	-1,417.4	1,886,095.65	1,265,296.03	36.176841	-107.521052
6,998.0	91.50	270.20	5,460.6	-807.4	-1,480.4	1,886,097.07	1,265,233.06	36.176842	-107.521266
7,061.0	90.80	270.20	5,459.4	-807.2	-1,543.4	1,886,098.11	1,265,170.09	36.176843	-107.521479
7,123.0	90.80	271.60	5,458.5	-806.2	-1,605.4	1,886,099.90	1,265,108.12	36.176846	-107.521689
7,186.0	89.70	271.70	5,458.2	-804.4	-1,668.3	1,886,102.53	1,265,045.18	36.176851	-107.521902
7,249.0	89.00	270.30	5,459.0	-803.3	-1,731.3	1,886,104.45	1,264,982.21	36.176854	-107.522116
7,312.0	89.80	270.90	5,459.6	-802.6	-1,794.3	1,886,105.93	1,264,919.23	36.176855	-107.522329
7,375.0	90.30	270.60	5,459.6	-801.8	-1,857.3	1,886,107.58	1,264,856.26	36.176858	-107.522543
7,438.0	91.20	270.10	5,458.7	-801.4	-1,920.3	1,886,108.79	1,264,793.27	36.176859	-107.522756
7,501.0	90.80	269.40	5,457.6	-801.7	-1,983.3	1,886,109.34	1,264,730.29	36.176858	-107.522969
7,564.0	91.20	268.80	5,456.5	-802.7	-2,046.3	1,886,109.17	1,264,667.30	36.176855	-107.523183
7,627.0	90.80	269.50	5,455.4	-803.6	-2,109.3	1,886,109.06	1,264,604.31	36.176853	-107.523396
7,690.0	91.50	270.20	5,454.2	-803.8	-2,172.2	1,886,109.71	1,264,541.32	36.176852	-107.523610
7,753.0	90.60	270.30	5,453.0	-803.5	-2,235.2	1,886,110.81	1,264,478.34	36.176853	-107.523823
7,816.0	91.40	270.60	5,451.9	-803.0	-2,298.2	1,886,112.13	1,264,415.37	36.176854	-107.524036
7,879.0	90.90	270.40	5,450.7	-802.5	-2,361.2	1,886,113.50	1,264,352.40	36.176856	-107.524250
7,942.0	89.10	269.60	5,450.7	-802.5	-2,424.2	1,886,114.32	1,264,289.40	36.176856	-107.524463
8,005.0	89.00	269.10	5,451.7	-803.2	-2,487.2	1,886,114.43	1,264,226.41	36.176854	-107.524677
8,068.0	89.90	269.10	5,452.3	-804.2	-2,550.2	1,886,114.26	1,264,163.42	36.176851	-107.524890
8,130.0	90.80	268.60	5,451.9	-805.4	-2,612.2	1,886,113.82	1,264,101.42	36.176848	-107.525100
8,193.0	91.00	269.50	5,450.9	-806.5	-2,675.1	1,886,113.60	1,264,038.43	36.176845	-107.525313
8,256.0	90.40	271.50	5,450.2	-805.9	-2,738.1	1,886,114.97	1,263,975.45	36.176846	-107.525527
8,320.0	89.10	269.90	5,450.4	-805.1	-2,802.1	1,886,116.59	1,263,911.48	36.176848	-107.525744
8,383.0	90.20	270.00	5,450.8	-805.2	-2,865.1	1,886,117.36	1,263,848.48	36.176848	-107.525957
8,445.0	88.90	269.00	5,451.3	-805.7	-2,927.1	1,886,117.62	1,263,786.49	36.176847	-107.526167
8,508.0	89.50	268.50	5,452.2	-807.1	-2,990.1	1,886,117.07	1,263,723.50	36.176843	-107.526380
8,571.0	89.70	268.00	5,452.6	-809.0	-3,053.1	1,886,115.97	1,263,660.51	36.176837	-107.526594
8,634.0	90.40	268.10	5,452.6	-811.2	-3,116.0	1,886,114.65	1,263,597.52	36.176832	-107.526807
8,697.0	88.40	268.50	5,453.2	-813.0	-3,179.0	1,886,113.60	1,263,534.54	36.176826	-107.527020
8,760.0	90.10	269.70	5,454.1	-814.0	-3,242.0	1,886,113.43	1,263,471.55	36.176824	-107.527234
8,823.0	90.80	270.20	5,453.6	-814.1	-3,305.0	1,886,114.20	1,263,408.55	36.176824	-107.527447
8,886.0	89.70	269.40	5,453.3	-814.3	-3,368.0	1,886,114.80	1,263,345.56	36.176823	-107.527661
8,949.0	89.70	268.00	5,453.6	-815.7	-3,431.0	1,886,114.19	1,263,282.56	36.176819	-107.527874
9,012.0	90.00	268.70	5,453.8	-817.5	-3,493.9	1,886,113.20	1,263,219.57	36.176814	-107.528087
9,075.0	89.60	267.30	5,454.0	-819.7	-3,556.9	1,886,111.83	1,263,156.59	36.176808	-107.528301
9,138.0	90.00	267.30	5,454.2	-822.7	-3,619.8	1,886,109.68	1,263,093.63	36.176800	-107.528514
9,201.0	92.20	268.00	5,453.0	-825.3	-3,682.8	1,886,107.92	1,263,030.67	36.176793	-107.528727
9,264.0	92.20	270.80	5,450.6	-826.0	-3,745.7	1,886,108.08	1,262,967.72	36.176791	-107.528940
9,327.0	91.00	271.60	5,448.8	-824.6	-3,808.7	1,886,110.22	1,262,904.78	36.176794	-107.529154
9,390.0	88.90	272.50	5,448.9	-822.4	-3,871.6	1,886,113.30	1,262,841.86	36.176801	-107.529367
9,453.0	88.90	271.90	5,450.1	-820.0	-3,934.6	1,886,116.53	1,262,778.96	36.176807	-107.529580
9,516.0	89.70	271.65	5,450.9	-818.0	-3,997.5	1,886,119.31	1,262,716.02	36.176812	-107.529793
9,579.0	90.30	272.30	5,450.9	-815.8	-4,060.5	1,886,122.30	1,262,653.10	36.176818	-107.530007

Survey Report - Geographic

CONFIDENTIAL

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook M31-2306 03H
Project:	Sandoval County, NM	TVD Reference:	15' KB @ 7188.0ft (Aztec 730)
Site:	Lybrook	MD Reference:	15' KB @ 7188.0ft (Aztec 730)
Well:	Lybrook M31-2306 03H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
9,642.0	89.90	270.90	5,450.8	-814.1	-4,123.5	1,886,124.88	1,262,590.15	36.176823	-107.530220
9,705.0	90.60	271.00	5,450.5	-813.0	-4,186.4	1,886,126.75	1,262,527.18	36.176826	-107.530433
9,768.0	89.30	268.30	5,450.5	-813.4	-4,249.4	1,886,127.18	1,262,464.19	36.176825	-107.530647
9,831.0	89.70	267.80	5,451.1	-815.6	-4,312.4	1,886,125.86	1,262,401.20	36.176819	-107.530860
9,894.0	90.50	272.30	5,451.0	-815.5	-4,375.4	1,886,126.74	1,262,338.23	36.176819	-107.531074
9,957.0	90.70	266.60	5,450.3	-816.1	-4,438.3	1,886,126.96	1,262,275.26	36.176818	-107.531287
10,019.0	90.70	266.50	5,449.6	-819.9	-4,500.2	1,886,124.03	1,262,213.33	36.176807	-107.531497
10,083.0	90.40	266.00	5,449.0	-824.0	-4,564.1	1,886,120.68	1,262,149.42	36.176796	-107.531713
10,145.0	89.30	266.60	5,449.1	-828.0	-4,626.0	1,886,117.49	1,262,087.51	36.176785	-107.531922
10,208.0	89.50	267.50	5,449.8	-831.3	-4,688.9	1,886,115.07	1,262,024.56	36.176776	-107.532136
10,271.0	90.40	269.40	5,449.8	-833.0	-4,751.8	1,886,114.18	1,261,961.57	36.176771	-107.532349
10,334.0	89.50	268.50	5,449.9	-834.1	-4,814.8	1,886,113.85	1,261,898.57	36.176768	-107.532562
10,397.0	90.50	270.20	5,449.9	-834.9	-4,877.8	1,886,113.96	1,261,835.57	36.176766	-107.532776
10,460.0	90.80	269.80	5,449.2	-834.9	-4,940.8	1,886,114.78	1,261,772.58	36.176766	-107.532989
10,523.0	90.80	269.60	5,448.3	-835.2	-5,003.8	1,886,115.27	1,261,709.59	36.176765	-107.533203
10,586.0	90.80	271.70	5,447.4	-834.5	-5,066.8	1,886,116.81	1,261,646.62	36.176767	-107.533416
10,649.0	91.10	272.40	5,446.4	-832.2	-5,129.7	1,886,119.88	1,261,583.70	36.176773	-107.533629
10,712.0	90.90	273.90	5,445.3	-828.8	-5,192.6	1,886,124.17	1,261,520.86	36.176782	-107.533842
10,790.0	90.40	273.00	5,444.4	-824.1	-5,270.5	1,886,129.87	1,261,443.07	36.176795	-107.534106
Last Cathedral Survey @ 10,790' MD									
10,835.0	90.40	273.00	5,444.1	-821.7	-5,315.4	1,886,132.82	1,261,398.17	36.176802	-107.534258
Projection to Bit @ 10,835'									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Lybrook M31-2306 #03H	0.00	0.00	5,446.1	-818.7	-5,327.8	1,886,136.01	1,261,385.84	36.176810	-107.534300
- actual wellpath misses target center by 12.9ft at 10835.0ft MD (5444.1 TVD, -821.7 N, -5315.4 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,790.0	5,444.4	-824.1	-5,270.5	Last Cathedral Survey @ 10,790' MD
10,835.0	5,444.1	-821.7	-5,315.4	Projection to Bit @ 10,835'

Checked By: _____ Approved By: _____ Date: _____

CONFIDENTIAL

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, 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 Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

☒ As Drilled

RCVD AUG 26 '13

OIL CONS. DIV.

WELL LOCATION AND ACREAGE DEDICATION PLAT

DIST. 3

¹ API Number 30-043-21145	² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 39785	⁵ Property Name LYBROOK M31-2306	⁶ Well Number 03H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 7173'

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
M	31	23N	6W	4	1207	SOUTH	411	WEST	SANDOVAL

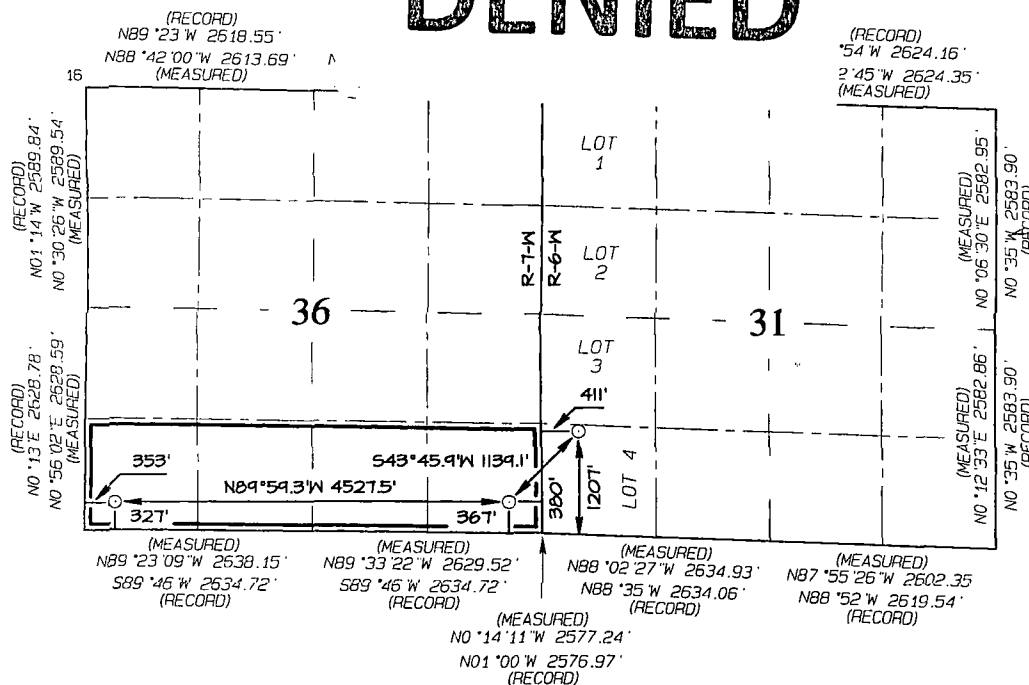
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	36	23N	7W		327	SOUTH	353	WEST	SANDOVAL

¹² Dedicated Acres 160.0 Acres S/2 S/2 - Section 36	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--	-------------------------------	----------------------------------	-------------------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE
BEEN CONSIDERED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

DENIED



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.

Signature: Robynn Haden Date: 8/22/13

Printed Name
robynn.haden@encana.com

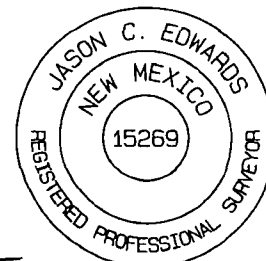
E-mail Address

¹⁸ 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.

Date Revised: AUGUST 16, 2013
Date of Survey: MARCH 23, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

END-OF-LATERAL
327' FSL 353' FWL
SECTION 36, T23N, R7W
LAT: 36.17660°N
LONG: 107.53362°W
DATUM: NAD1927

LAT: 36.17661°N
LONG: 107.53422°W
DATUM: NAD1983

POINT-OF-ENTRY
367' FSL 380' FWL
SECTION 36, T23N, R7W
LAT: 36.17676°N
LONG: 107.51828°W
DATUM: NAD1927

LAT: 36.17677°N
LONG: 107.51889°W
DATUM: NAD1983

SURFACE LOCATION
1207' FSL 411' FWL
SECTION 31, T23N, R6W
LAT: 36.17905°N
LONG: 107.51565°W
DATUM: NAD1927

LAT: 36.17906°N
LONG: 107.51625°W
DATUM: NAD1983

DEVIATION SURVEYS

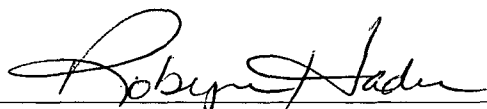
CONFIDENTIAL

MD (Feet)	Inclination (Degree)
557	.30
801	.50
1106	.70
1411	.70
1721	1.10
2035	.83
2351	.09
2666	.44
2980	1.00
3295	1.10
3610	.60
3925	.80
4239	.40
4521	.70

RCVD AUG 26 '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

8/22/13

8/22/13

ACKNOWLEDGMENT

State of Colorado
City and County of Denver

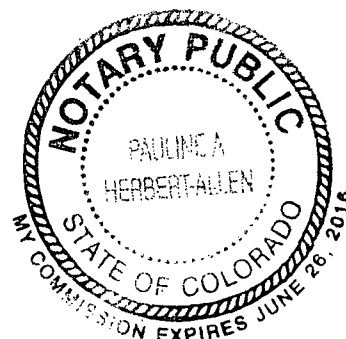
This instrument was acknowledged before me on this 22nd day of August, 2013 by Robynn Haden as Attorney in Fact of Encana Oil & Gas (USA) Inc., on behalf of said corporation.

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

Notary Public:


PAULINE A. HERBERT ALLEN

My Commission Expires: JUNE 26, 2016



Cathedral Energy Services

Survey Report

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M31-2306 03H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook M31-2306 03H
TVD Reference: 15' KB @ 7188.0ft (Aztec 730)
MD Reference: 15' KB @ 7188.0ft (Aztec 730)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	Sandoval County, NM	RCVD AUG 26 '13
Map System:	US State Plane 1983	System Datum: Mean Sea Level
Geo Datum:	North American Datum 1983	OIL CONS. DIV.
Map Zone:	New Mexico Central Zone	DIST. 3

Site	Lybrook				
Site Position:		Northing:	1,882,676.45 ft	Latitude:	36.168210
From:	Lat/Long	Easting:	1,287,068.90 ft	Longitude:	-107.447150
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.71 °

Well	Lybrook M31-2306 03H					
Well Position	+N/-S	0.0 ft	Northing:	1,886,885.09 ft	Latitude:	36.179060
	+E/-W	0.0 ft	Easting:	1,266,723.88 ft	Longitude:	-107.516250
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,173.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	7/8/2013	(°)	(°)	(nT)
			9.47	62.98	50,236

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	269.78	

Survey Program	Date	7/31/2013			
From	To	Survey (Wellbore)	Tool Name	Description	
(ft)	(ft)				
557.0	10,835.0	Survey #1 (HZ)	Geolink MWD	Geolink MWD	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
557.0	0.30	279.50	557.0	0.2	-1.4	1.4	0.05	0.05	
618.0	0.20	279.50	618.0	0.3	-1.7	1.7	0.16	-0.16	
679.0	0.40	263.00	679.0	0.3	-2.0	2.0	0.35	0.33	
740.0	0.50	254.20	740.0	0.2	-2.5	2.5	0.20	0.16	
801.0	0.50	265.10	801.0	0.1	-3.0	3.0	0.16	0.00	
861.0	0.70	272.40	861.0	0.1	-3.6	3.6	0.36	0.33	
922.0	0.70	258.70	922.0	0.0	-4.4	4.4	0.27	0.00	
984.0	0.50	278.00	984.0	0.0	-5.0	5.0	0.45	-0.32	
1,045.0	0.50	257.90	1,045.0	0.0	-5.5	5.5	0.29	0.00	
1,106.0	0.70	286.90	1,106.0	0.0	-6.2	6.2	0.59	0.33	
1,167.0	0.40	81.90	1,167.0	0.2	-6.3	6.3	1.76	-0.49	
1,228.0	0.50	69.70	1,228.0	0.3	-5.8	5.8	0.23	0.16	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M31-2306 03H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook M31-2306 03H
TVD Reference: 15' KB @ 7188.0ft (Aztec 730)
MD Reference: 15' KB @ 7188.0ft (Aztec 730)
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
1,289.0	0.40	99.80	1,289.0	0.3	-5.4	5.4	0.41	-0.16	
1,350.0	0.50	72.80	1,350.0	0.4	-4.9	4.9	0.38	0.16	
1,411.0	0.70	82.60	1,411.0	0.5	-4.3	4.3	0.37	0.33	
1,471.0	0.80	69.20	1,471.0	0.7	-3.5	3.5	0.34	0.17	
1,532.0	1.00	62.00	1,532.0	1.1	-2.7	2.7	0.38	0.33	
1,595.0	1.10	70.60	1,594.9	1.6	-1.6	1.6	0.30	0.16	
1,658.0	1.10	57.80	1,657.9	2.1	-0.5	0.5	0.39	0.00	
1,721.0	1.10	61.50	1,720.9	2.7	0.5	-0.5	0.11	0.00	
1,783.0	1.41	62.73	1,782.9	3.3	1.7	-1.7	0.50	0.50	
1,846.0	1.05	57.63	1,845.9	4.0	2.9	-2.9	0.60	-0.57	
1,909.0	0.62	106.15	1,908.9	4.2	3.7	-3.7	1.25	-0.68	
1,972.0	0.60	192.40	1,971.9	3.8	4.0	-4.0	1.32	-0.03	
2,035.0	0.83	211.62	2,034.9	3.1	3.7	-3.7	0.52	0.37	
2,099.0	0.79	209.95	2,098.9	2.3	3.2	-3.2	0.07	-0.06	
2,162.0	0.75	203.01	2,161.9	1.5	2.8	-2.8	0.16	-0.06	
2,225.0	0.53	195.71	2,224.9	0.9	2.6	-2.6	0.37	-0.35	
2,288.0	0.48	195.97	2,287.9	0.3	2.4	-2.4	0.08	-0.08	
2,351.0	0.09	303.64	2,350.9	0.1	2.3	-2.3	0.82	-0.62	
2,414.0	0.22	325.52	2,413.9	0.2	2.2	-2.2	0.22	0.21	
2,477.0	0.22	289.23	2,476.9	0.4	2.0	-2.0	0.22	0.00	
2,540.0	0.31	254.60	2,539.9	0.4	1.7	-1.7	0.29	0.14	
2,603.0	0.40	245.90	2,602.9	0.2	1.4	-1.4	0.17	0.14	
2,666.0	0.44	227.26	2,665.9	0.0	1.0	-1.0	0.22	0.06	
2,728.0	0.35	220.41	2,727.9	-0.3	0.7	-0.7	0.16	-0.15	
2,791.0	0.40	271.00	2,790.8	-0.5	0.4	-0.3	0.51	0.08	
2,854.0	0.70	301.20	2,853.8	-0.3	-0.2	0.2	0.65	0.48	
2,917.0	0.70	303.70	2,916.8	0.2	-0.8	0.8	0.05	0.00	
2,980.0	1.00	302.20	2,979.8	0.7	-1.6	1.6	0.48	0.48	
3,043.0	1.40	307.40	3,042.8	1.4	-2.7	2.7	0.66	0.63	
3,106.0	1.70	326.10	3,105.8	2.7	-3.8	3.8	0.93	0.48	
3,169.0	1.70	334.30	3,168.8	4.3	-4.8	4.8	0.39	0.00	
3,232.0	1.30	333.30	3,231.7	5.8	-5.5	5.5	0.64	-0.63	
3,295.0	1.10	315.10	3,294.7	6.8	-6.2	6.2	0.68	-0.32	
3,358.0	1.30	310.10	3,357.7	7.7	-7.2	7.2	0.36	0.32	
3,421.0	0.30	313.60	3,420.7	8.3	-7.9	7.8	1.59	-1.59	
3,484.0	0.50	83.20	3,483.7	8.4	-7.7	7.7	1.16	0.32	
3,547.0	0.80	124.30	3,546.7	8.2	-7.1	7.1	0.85	0.48	
3,610.0	0.60	128.70	3,609.7	7.8	-6.5	6.4	0.33	-0.32	
3,673.0	0.90	119.10	3,672.7	7.3	-5.8	5.8	0.51	0.48	
3,736.0	1.10	131.00	3,735.7	6.7	-4.9	4.9	0.46	0.32	
3,799.0	0.80	136.20	3,798.7	6.0	-4.1	4.1	0.49	-0.48	
3,862.0	0.90	148.30	3,861.7	5.2	-3.6	3.5	0.33	0.16	
3,925.0	0.80	148.30	3,924.7	4.4	-3.1	3.1	0.16	-0.16	
3,988.0	1.00	154.30	3,987.7	3.6	-2.6	2.6	0.35	0.32	
4,051.0	0.70	145.00	4,050.7	2.8	-2.1	2.1	0.52	-0.48	
4,114.0	0.20	164.00	4,113.7	2.3	-1.9	1.9	0.82	-0.79	
4,176.0	0.18	220.93	4,175.7	2.2	-1.9	1.9	0.29	-0.03	
4,239.0	0.40	261.10	4,238.6	2.1	-2.2	2.2	0.46	0.35	
4,302.0	0.70	271.56	4,301.6	2.0	-2.8	2.8	0.50	0.48	
4,365.0	0.40	279.50	4,364.6	2.1	-3.4	3.4	0.49	-0.48	
4,428.0	0.40	223.66	4,427.6	2.0	-3.8	3.8	0.59	0.00	
4,491.0	0.60	221.20	4,490.6	1.6	-4.2	4.1	0.32	0.32	
4,521.0	0.70	216.80	4,520.6	1.3	-4.4	4.4	0.37	0.33	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M31-2306 03H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook M31-2306 03H
TVD Reference: 15' KB @ 7188.0ft (Aztec 730)
MD Reference: 15' KB @ 7188.0ft (Aztec 730)
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
4,540.0	0.70	216.30	4,539.6	1.1	-4.5	4.5	0.03	0.00	
4,571.0	0.90	197.80	4,570.6	0.7	-4.7	4.7	1.05	0.65	
4,603.0	3.60	197.00	4,602.6	-0.5	-5.1	5.1	8.44	8.44	
4,634.0	6.50	196.70	4,633.5	-3.1	-5.9	5.9	9.36	9.35	
4,666.0	8.20	197.20	4,665.2	-7.0	-7.0	7.1	5.32	5.31	
4,697.0	9.50	199.50	4,695.8	-11.5	-8.6	8.6	4.35	4.19	
4,729.0	10.90	201.40	4,727.3	-16.8	-10.5	10.6	4.50	4.37	
4,760.0	12.20	202.60	4,757.7	-22.6	-12.9	13.0	4.26	4.19	
4,792.0	13.60	204.90	4,788.9	-29.1	-15.8	15.9	4.66	4.37	
4,823.0	15.20	205.30	4,818.9	-36.1	-19.0	19.2	5.17	5.16	
4,855.0	16.70	201.90	4,849.7	-44.2	-22.5	22.7	5.52	4.69	
4,887.0	18.10	199.20	4,880.2	-53.1	-25.9	26.1	5.05	4.37	
4,918.0	20.00	198.30	4,909.5	-62.7	-29.1	29.4	6.20	6.13	
4,949.0	22.50	198.00	4,938.4	-73.4	-32.6	32.9	8.07	8.06	
4,981.0	24.80	199.50	4,967.7	-85.5	-36.8	37.1	7.43	7.19	
5,012.0	26.50	201.00	4,995.7	-98.1	-41.4	41.8	5.87	5.48	
5,044.0	28.70	202.00	5,024.0	-111.9	-46.8	47.3	7.03	6.87	
5,076.0	31.60	203.10	5,051.7	-126.8	-53.0	53.5	9.23	9.06	
5,107.0	34.60	202.00	5,077.7	-142.4	-59.5	60.0	9.87	9.68	
5,139.0	37.40	201.90	5,103.6	-159.8	-66.5	67.1	8.75	8.75	
5,170.0	39.90	201.00	5,127.8	-177.9	-73.6	74.3	8.27	8.06	
5,202.0	42.40	199.80	5,151.9	-197.6	-80.9	81.7	8.19	7.81	
5,233.0	45.40	198.30	5,174.2	-217.9	-87.9	88.8	10.24	9.68	
5,265.0	48.50	198.40	5,196.0	-240.1	-95.3	96.2	9.69	9.69	
5,296.0	50.30	199.10	5,216.2	-262.4	-102.9	103.9	6.05	5.81	
5,328.0	52.90	199.10	5,236.1	-286.1	-111.1	112.2	8.12	8.12	
5,359.0	56.40	200.30	5,254.0	-309.9	-119.6	120.8	11.72	11.29	
5,391.0	59.40	200.80	5,271.0	-335.3	-129.1	130.4	9.47	9.37	
5,422.0	59.60	200.80	5,286.8	-360.2	-138.6	140.0	0.65	0.65	
5,453.0	61.20	200.90	5,302.1	-385.4	-148.2	149.7	5.17	5.16	
5,485.0	62.60	201.70	5,317.1	-411.7	-158.5	160.0	4.90	4.37	
5,516.0	64.20	203.40	5,331.0	-437.3	-169.1	170.8	7.12	5.16	
5,548.0	66.10	205.90	5,344.5	-463.7	-181.2	183.0	9.25	5.94	
5,579.0	68.00	208.90	5,356.6	-489.0	-194.3	196.2	10.82	6.13	
5,611.0	70.30	211.40	5,367.9	-514.9	-209.4	211.3	10.24	7.19	
5,642.0	71.70	215.00	5,378.0	-539.4	-225.4	227.5	11.87	4.52	
5,673.0	73.00	217.80	5,387.4	-563.2	-242.9	245.1	9.57	4.19	
5,705.0	74.00	219.40	5,396.5	-587.2	-262.1	264.3	5.72	3.12	
5,736.0	75.20	222.20	5,404.8	-609.8	-281.6	284.0	9.53	3.87	
5,768.0	77.10	225.20	5,412.4	-632.2	-303.1	305.5	10.87	5.94	
5,799.0	78.50	227.80	5,419.0	-653.1	-325.1	327.6	9.36	4.52	
5,831.0	80.60	231.60	5,424.8	-673.4	-349.1	351.6	13.39	6.56	
5,862.0	81.60	234.60	5,429.6	-691.8	-373.5	376.2	10.09	3.23	
5,894.0	82.60	237.20	5,434.0	-709.6	-399.8	402.5	8.63	3.12	
5,925.0	83.50	239.50	5,437.7	-725.7	-426.0	428.8	7.92	2.90	
5,957.0	84.50	242.10	5,441.1	-741.3	-453.8	456.6	8.66	3.12	
5,992.0	85.40	243.50	5,444.2	-757.2	-484.8	487.7	4.74	2.57	
6,021.0	84.60	246.60	5,446.7	-769.4	-511.0	513.9	11.00	-2.76	
6,053.0	85.00	249.50	5,449.6	-781.3	-540.5	543.5	9.11	1.25	
6,084.0	86.30	253.90	5,451.9	-791.0	-569.8	572.9	14.76	4.19	
6,116.0	87.20	257.40	5,453.8	-798.9	-600.8	603.9	11.28	2.81	
6,147.0	86.50	259.80	5,455.5	-805.0	-631.1	634.2	8.05	-2.26	
6,179.0	86.60	261.30	5,457.4	-810.3	-662.6	665.8	4.69	0.31	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M31-2306 03H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook M31-2306 03H
TVD Reference: 15' KB @ 7188.0ft (Aztec 730)
MD Reference: 15' KB @ 7188.0ft (Aztec 730)
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
6,210.0	87.10	262.90	5,459.1	-814.5	-693.3	696.4	5.40	1.61	
6,242.0	87.70	264.50	5,460.5	-818.0	-725.1	728.2	5.34	1.87	
6,273.0	87.90	266.00	5,461.7	-820.6	-755.9	759.1	4.88	0.65	
6,305.0	87.90	266.70	5,462.9	-822.6	-787.9	791.0	2.19	0.00	
6,336.0	87.70	267.50	5,464.1	-824.2	-818.8	822.0	2.66	-0.65	
6,368.0	87.90	268.90	5,465.3	-825.2	-850.8	853.9	4.42	0.62	
6,399.0	88.90	270.70	5,466.2	-825.3	-881.7	884.9	6.64	3.23	
6,431.0	89.70	271.60	5,466.6	-824.7	-913.7	916.9	3.76	2.50	
6,494.0	90.40	271.90	5,466.5	-822.7	-976.7	979.9	1.21	1.11	
6,557.0	90.10	272.00	5,466.2	-820.6	-1,039.7	1,042.8	0.50	-0.48	
6,620.0	90.70	271.80	5,465.8	-818.5	-1,102.6	1,105.8	1.00	0.95	
6,683.0	91.30	271.70	5,464.7	-816.6	-1,165.6	1,168.7	0.97	0.95	
6,746.0	90.70	272.30	5,463.6	-814.4	-1,228.5	1,231.7	1.35	-0.95	
6,809.0	89.90	272.40	5,463.3	-811.8	-1,291.5	1,294.6	1.28	-1.27	
6,872.0	90.80	271.80	5,462.9	-809.5	-1,354.4	1,357.5	1.72	1.43	
6,935.0	90.90	270.90	5,462.0	-808.0	-1,417.4	1,420.5	1.44	0.16	
6,998.0	91.50	270.20	5,460.6	-807.4	-1,480.4	1,483.5	1.46	0.95	
7,061.0	90.80	270.20	5,459.4	-807.2	-1,543.4	1,546.5	1.11	-1.11	
7,123.0	90.80	271.60	5,458.5	-806.2	-1,605.4	1,608.5	2.26	0.00	
7,186.0	89.70	271.70	5,458.2	-804.4	-1,668.3	1,671.4	1.75	-1.75	
7,249.0	89.00	270.30	5,459.0	-803.3	-1,731.3	1,734.4	2.48	-1.11	
7,312.0	89.80	270.90	5,459.6	-802.6	-1,794.3	1,797.4	1.59	1.27	
7,375.0	90.30	270.60	5,459.6	-801.8	-1,857.3	1,860.4	0.93	0.79	
7,438.0	91.20	270.10	5,458.7	-801.4	-1,920.3	1,923.4	1.63	1.43	
7,501.0	90.80	269.40	5,457.6	-801.7	-1,983.3	1,986.4	1.28	-0.63	
7,564.0	91.20	268.80	5,456.5	-802.7	-2,046.3	2,049.3	1.14	0.63	
7,627.0	90.80	269.50	5,455.4	-803.6	-2,109.3	2,112.3	1.28	-0.63	
7,690.0	91.50	270.20	5,454.2	-803.8	-2,172.2	2,175.3	1.57	1.11	
7,753.0	90.60	270.30	5,453.0	-803.5	-2,235.2	2,238.3	1.44	-1.43	
7,816.0	91.40	270.60	5,451.9	-803.0	-2,298.2	2,301.3	1.36	1.27	
7,879.0	90.90	270.40	5,450.7	-802.5	-2,361.2	2,364.3	0.85	-0.79	
7,942.0	89.10	269.60	5,450.7	-802.5	-2,424.2	2,427.3	3.13	-2.86	
8,005.0	89.00	269.10	5,451.7	-803.2	-2,487.2	2,490.3	0.81	-0.16	
8,068.0	89.90	269.10	5,452.3	-804.2	-2,550.2	2,553.2	1.43	1.43	
8,130.0	90.80	268.60	5,451.9	-805.4	-2,612.2	2,615.2	1.66	1.45	
8,193.0	91.00	269.50	5,450.9	-806.5	-2,675.1	2,678.2	1.46	0.32	
8,256.0	90.40	271.50	5,450.2	-805.9	-2,738.1	2,741.2	3.31	-0.95	
8,320.0	89.10	269.90	5,450.4	-805.1	-2,802.1	2,805.2	3.22	-2.03	
8,383.0	90.20	270.00	5,450.8	-805.2	-2,865.1	2,868.2	1.75	1.75	
8,445.0	88.90	269.00	5,451.3	-805.7	-2,927.1	2,930.2	2.65	-2.10	
8,508.0	89.50	268.50	5,452.2	-807.1	-2,990.1	2,993.2	1.24	0.95	
8,571.0	89.70	268.00	5,452.6	-809.0	-3,053.1	3,056.2	0.85	0.32	
8,634.0	90.40	268.10	5,452.6	-811.2	-3,116.0	3,119.1	1.12	1.11	
8,697.0	88.40	268.50	5,453.2	-813.0	-3,179.0	3,182.1	3.24	-3.17	
8,760.0	90.10	269.70	5,454.1	-814.0	-3,242.0	3,245.1	3.30	2.70	
8,823.0	90.80	270.20	5,453.6	-814.1	-3,305.0	3,308.1	1.37	1.11	
8,886.0	89.70	269.40	5,453.3	-814.3	-3,368.0	3,371.1	2.16	-1.75	
8,949.0	89.70	268.00	5,453.6	-815.7	-3,431.0	3,434.1	2.22	0.00	
9,012.0	90.00	268.70	5,453.8	-817.5	-3,493.9	3,497.0	1.21	0.48	
9,075.0	89.60	267.30	5,454.0	-819.7	-3,556.9	3,560.0	2.31	-0.63	
9,138.0	90.00	267.30	5,454.2	-822.7	-3,619.8	3,623.0	0.63	0.63	
9,201.0	92.20	268.00	5,453.0	-825.3	-3,682.8	3,685.9	3.66	3.49	
9,264.0	92.20	270.80	5,450.6	-826.0	-3,745.7	3,748.8	4.44	0.00	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M31-2306 03H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook M31-2306 03H
TVD Reference: 15' KB @ 7188.0ft (Aztec 730)
MD Reference: 15' KB @ 7188.0ft (Aztec 730)
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
9,327.0	91.00	271.60	5,448.8	-824.6	-3,808.7	3,811.8	2.29	-1.90	
9,390.0	88.90	272.50	5,448.9	-822.4	-3,871.6	3,874.7	3.63	-3.33	
9,453.0	88.90	271.90	5,450.1	-820.0	-3,934.6	3,937.7	0.95	0.00	
9,516.0	89.70	271.65	5,450.9	-818.0	-3,997.5	4,000.6	1.33	1.27	
9,579.0	90.30	272.30	5,450.9	-815.8	-4,060.5	4,063.6	1.40	0.95	
9,642.0	89.90	270.90	5,450.8	-814.1	-4,123.5	4,126.5	2.31	-0.63	
9,705.0	90.60	271.00	5,450.5	-813.0	-4,186.4	4,189.5	1.12	1.11	
9,768.0	89.30	268.30	5,450.5	-813.4	-4,249.4	4,252.5	4.76	-2.06	
9,831.0	89.70	267.80	5,451.1	-815.6	-4,312.4	4,315.5	1.02	0.63	
9,894.0	90.50	272.30	5,451.0	-815.5	-4,375.4	4,378.5	7.25	1.27	
9,957.0	90.70	266.60	5,450.3	-816.1	-4,438.3	4,441.4	9.05	0.32	
10,019.0	90.70	266.50	5,449.6	-819.9	-4,500.2	4,503.3	0.16	0.00	
10,083.0	90.40	266.00	5,449.0	-824.0	-4,564.1	4,567.2	0.91	-0.47	
10,145.0	89.30	266.60	5,449.1	-828.0	-4,626.0	4,629.1	2.02	-1.77	
10,208.0	89.50	267.50	5,449.8	-831.3	-4,688.9	4,692.0	1.46	0.32	
10,271.0	90.40	269.40	5,449.8	-833.0	-4,751.8	4,755.0	3.34	1.43	
10,334.0	89.50	268.50	5,449.9	-834.1	-4,814.8	4,818.0	2.02	-1.43	
10,397.0	90.50	270.20	5,449.9	-834.9	-4,877.8	4,881.0	3.13	1.59	
10,460.0	90.80	269.80	5,449.2	-834.9	-4,940.8	4,944.0	0.79	0.48	
10,523.0	90.80	269.60	5,448.3	-835.2	-5,003.8	5,007.0	0.32	0.00	
10,586.0	90.80	271.70	5,447.4	-834.5	-5,066.8	5,070.0	3.33	0.00	
10,649.0	91.10	272.40	5,446.4	-832.2	-5,129.7	5,132.9	1.21	0.48	
10,712.0	90.90	273.90	5,445.3	-828.8	-5,192.6	5,195.8	2.40	-0.32	
10,790.0	90.40	273.00	5,444.4	-824.1	-5,270.5	5,273.6	1.32	-0.64	Last Cathedral Survey @ 10,790' MD
10,835.0	90.40	273.00	5,444.1	-821.7	-5,315.4	5,318.5	0.00	0.00	Projection to Bit @ 10,835'

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M31-2306 03H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook M31-2306 03H
TVD Reference: 15' KB @ 7188.0ft (Aztec 730)
MD Reference: 15' KB @ 7188.0ft (Aztec 730)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

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
Lybrook M31-2306 #03H - actual wellpath misses target center by 306.3ft at 10835.0ft MD (5444.1 TVD, -821.7 N, -5315.4 E) - Point	0.00	0.00	5,466.8	-516.5	-5,327.7	1,886,438.16	1,261,389.84	36.177640	-107.534300
Lybrook M31-2306 #03H - actual wellpath misses target center by 19.8ft at 6244.9ft MD (5460.7 TVD, -818.3 N, -728.0 E) - Point	0.00	0.00	5,470.2	-800.9	-729.1	1,886,093.72	1,265,984.42	36.176860	-107.518720
Lybrook M31-2306 #03H - actual wellpath misses target center by 26.2ft at 6245.3ft MD (5460.7 TVD, -818.3 N, -728.4 E) - Point	0.00	0.00	5,480.2	-800.9	-729.1	1,886,093.72	1,265,984.42	36.176860	-107.518720
Lybrook M31-2306 #03H - actual wellpath misses target center by 12.9ft at 10835.0ft MD (5444.1 TVD, -821.7 N, -5315.4 E) - Point	0.00	0.00	5,446.1	-818.7	-5,327.8	1,886,136.01	1,261,385.84	36.176810	-107.534300
Lybrook M31-2306 #03H - actual wellpath misses target center by 17.5ft at 10835.0ft MD (5444.1 TVD, -821.7 N, -5315.4 E) - Point	0.00	0.00	5,456.1	-818.7	-5,327.8	1,886,136.01	1,261,385.84	36.176810	-107.534300
Lybrook M31-2306 #03H - actual wellpath misses target center by 320.9ft at 6218.6ft MD (5459.5 TVD, -815.5 N, -701.8 E) - Point	0.00	0.00	5,498.8	-498.8	-735.0	1,886,395.96	1,265,982.47	36.177690	-107.518740

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
10,790.0	5,444.4	-824.1	-5,270.5	Last Cathedral Survey @ 10,790' MD
10,835.0	5,444.1	-821.7	-5,315.4	Projection to Bit @ 10,835'

Checked By: _____ Approved By: _____ Date: _____