

Form C-102
Revised August 1, 2011

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

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☒ AMENDED REPORT

☒ As-Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21152	*Pool Code 13379	*Pool Name COUNSELORS GALLUP-DAKOTA
*Property Code 40083	*Property Name LYBROOK E27-2305	*Well Number 01H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 7054'

¹⁰ Surface Location

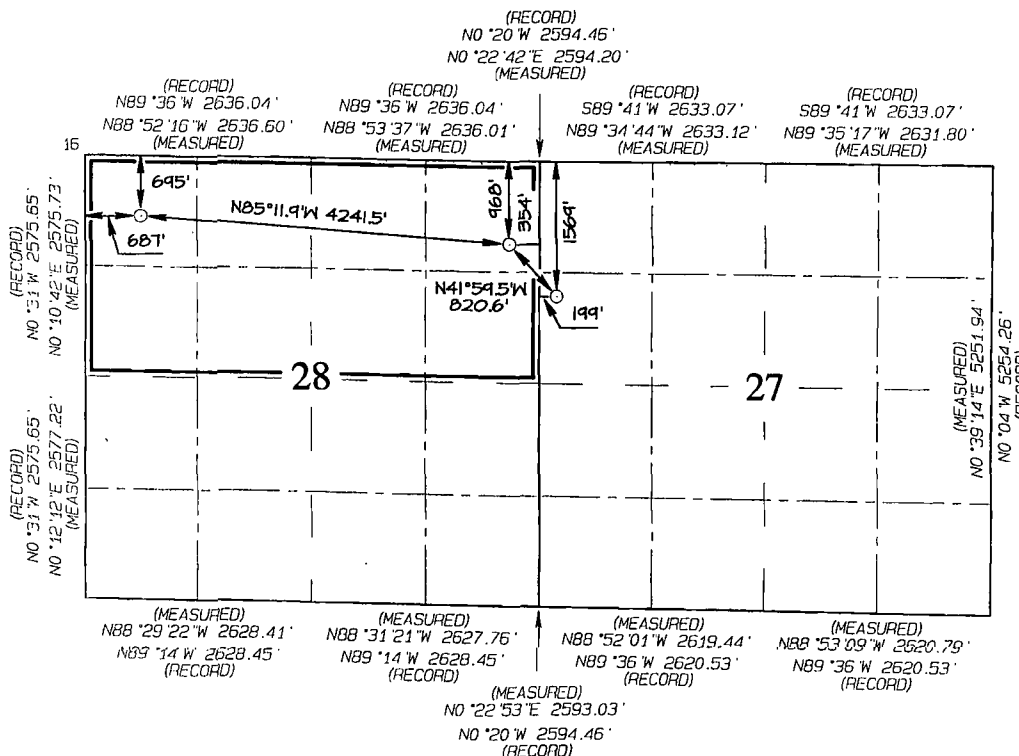
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	27	23N	6W		1569	NORTH	199	WEST	SANDOVAL

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
D	28	23N	6W		695	NORTH	687	WEST	SANDOVAL

¹² Dedicated Acres 320.00 Acres N/2 - Section 28	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD MAR 24 '14 Oil Cons Bill
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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

[illegible]

END-OF-LATERAL
695' FNL 687' FWL
SECTION 28, T23N, R6W
LAT: 36.20154°N
LONG: 107.47944°W
DATUM: NAD1927

LAT: 36.20155 °N
LONG: 107.48005 °W
DATUM: NAD1983

POINT-OF-ENTRY
968' FNL 354' FEL
SECTION 28, T23N, R6W
LAT: 36.20071°N
LONG: 107.16510°W
DATUM: NAD1927

LAT: 36.20072 °N
LONG: 107.46571 °W
DATUM: NAD1983

SURFACE LOCATION
1569' FNL 199' FWL
SECTION 27, T23N, R6W
LAT: 36.19905°N
LONG: 107.46322°W
DATUM: NAD1927

LAT: 36.19906°N
LONG: 107.46382°W
DATUM: NAD1983

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 contract with an owner of such a mineral working interest, or has entered a pooling agreement or a compulsory pooling order heretofore entered by the division.

	03/19/2014
Signature	Date

Vy Nguyen

Printed Name
vy.nguyen@encana.com

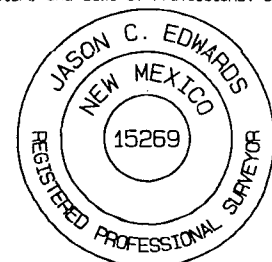
E-mail Address _____

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: FEBRUARY 4, 2014
Survey Date: OCTOBER 22, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

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
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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

OIL CONS. DIV DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

MAR 18 2014

*API Number	*Pool Code	*Pool Name
	13379	COUNSELORS GALLUP-DAKOTA
*Property Code	*Property Name	*Well Number
	LYBROOK E27-2306	01H
*GRID No.	*Operator Name	*Elevation
282327	ENCANA OIL & GAS (USA) INC.	7054'

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	27	23N	6W		1569	NORTH	199	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
D	28	23N	6W		695	NORTH	687	WEST	SANDOVAL

12 Dedicated Acres
320.00 Acres
N/2 - Section 28

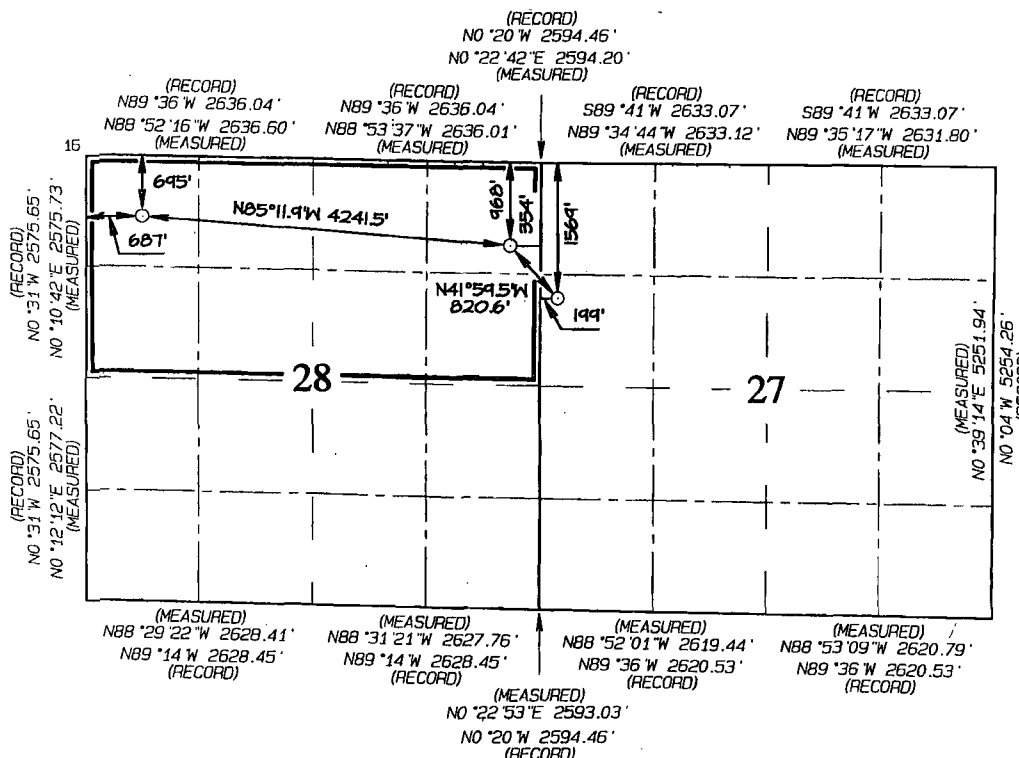
CONFIDENTIAL

DENIED

NO ALLOWABLE WILL BE
BEEN CONSOLIDATED OR

Correct & Resubmit

ALL INTERESTS HAVE
BEEN 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 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: *Amie Weis* Date: 03/14/14

Printed Name: Amie Weis

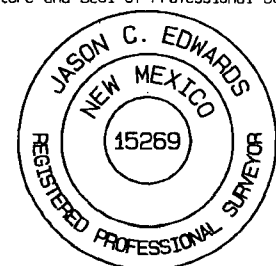
E-mail Address: amie.weis@encana.com

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: FEBRUARY 4, 2014
Survey Date: OCTOBER 22, 2012

Signature and Seal of Professional Surveyor



Jason C. Edwards
Certificate Number 15269

END-OF-LATERAL
695' FNL 687' FNL
SECTION 28, T23N, R6W
LAT: 36.20154°N
LONG: 107.47944°W
DATUM: NAD1927
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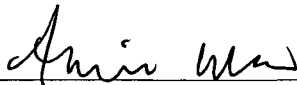
DEVIATION SURVEYS

MD (Feet)	Inclination (Degree)
228	1
438	.8
805	.6
1111	1.3
1417	1.9
1731	.5
2045	.7
2360	.5
2675	1.4
2991	.9
3306	.4
3621	.9
3936	.3
4251	.5
4566	.1
4882	.4
5084	10.2

OIL CONS. DIV DIST. 3
MAR 18 2014

OPERATOR CERTIFICATION

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



Amie Weis, Completions Engineer

03/14/2014

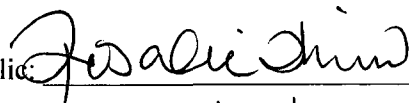
ACKNOWLEDGMENT

State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 19th day of February, 2014 by Vy Nguyen 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.

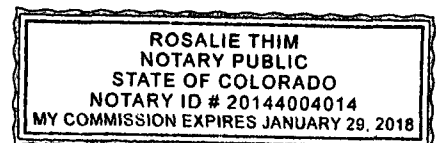
Notary Public:



My Commission Expires:

1/29/18

AV

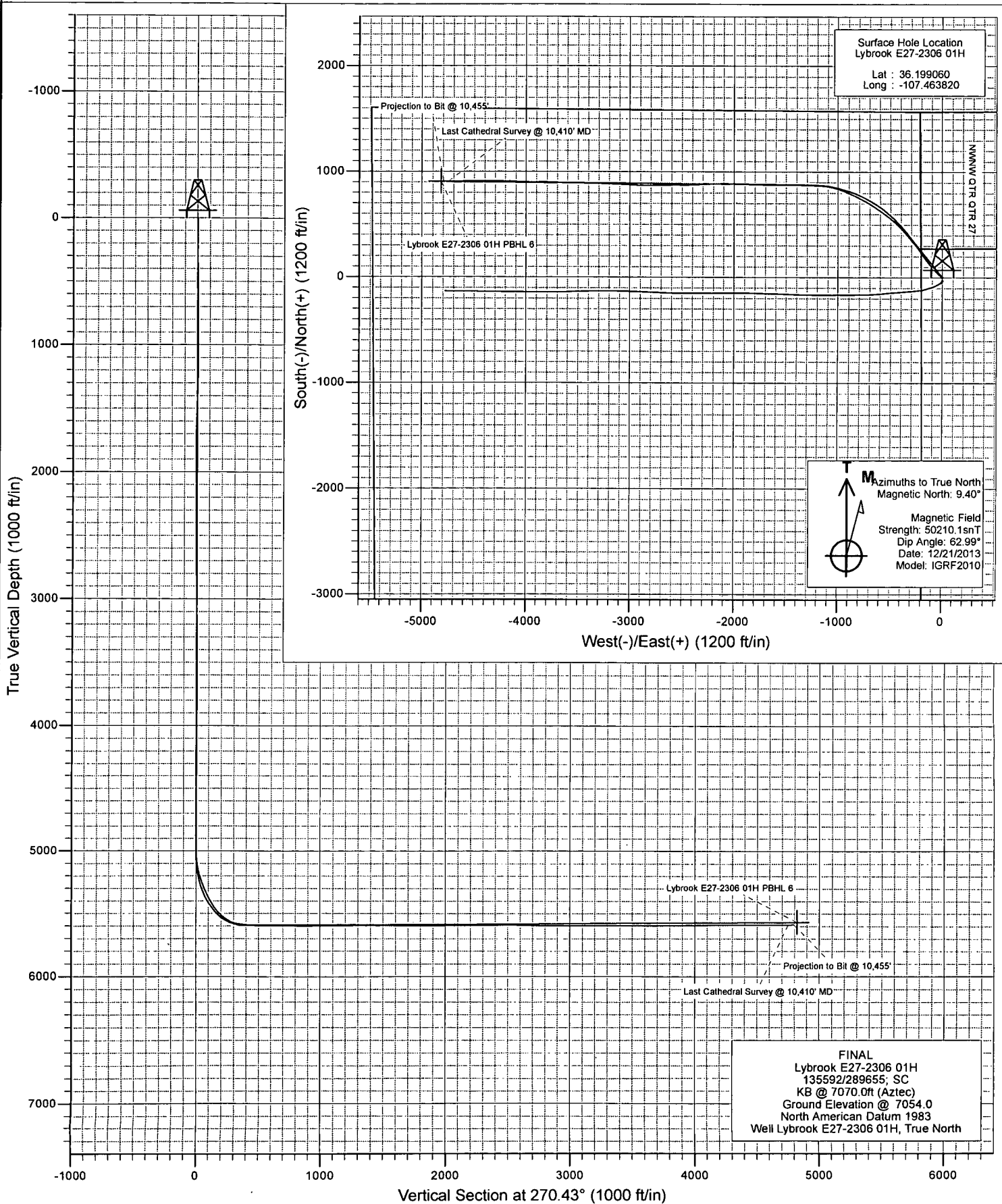


MAR 18 2014

encana™

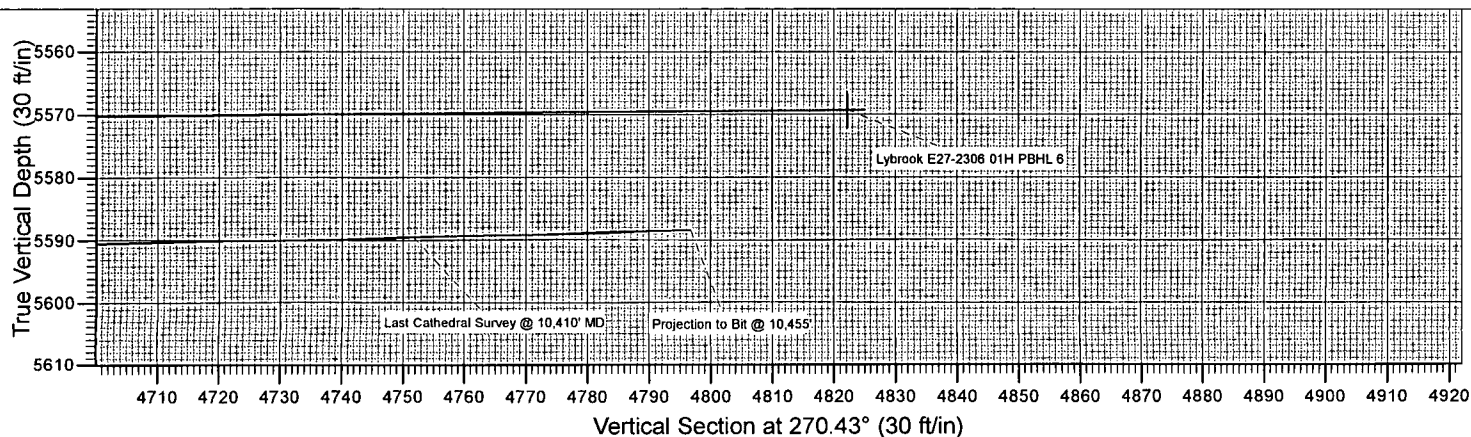
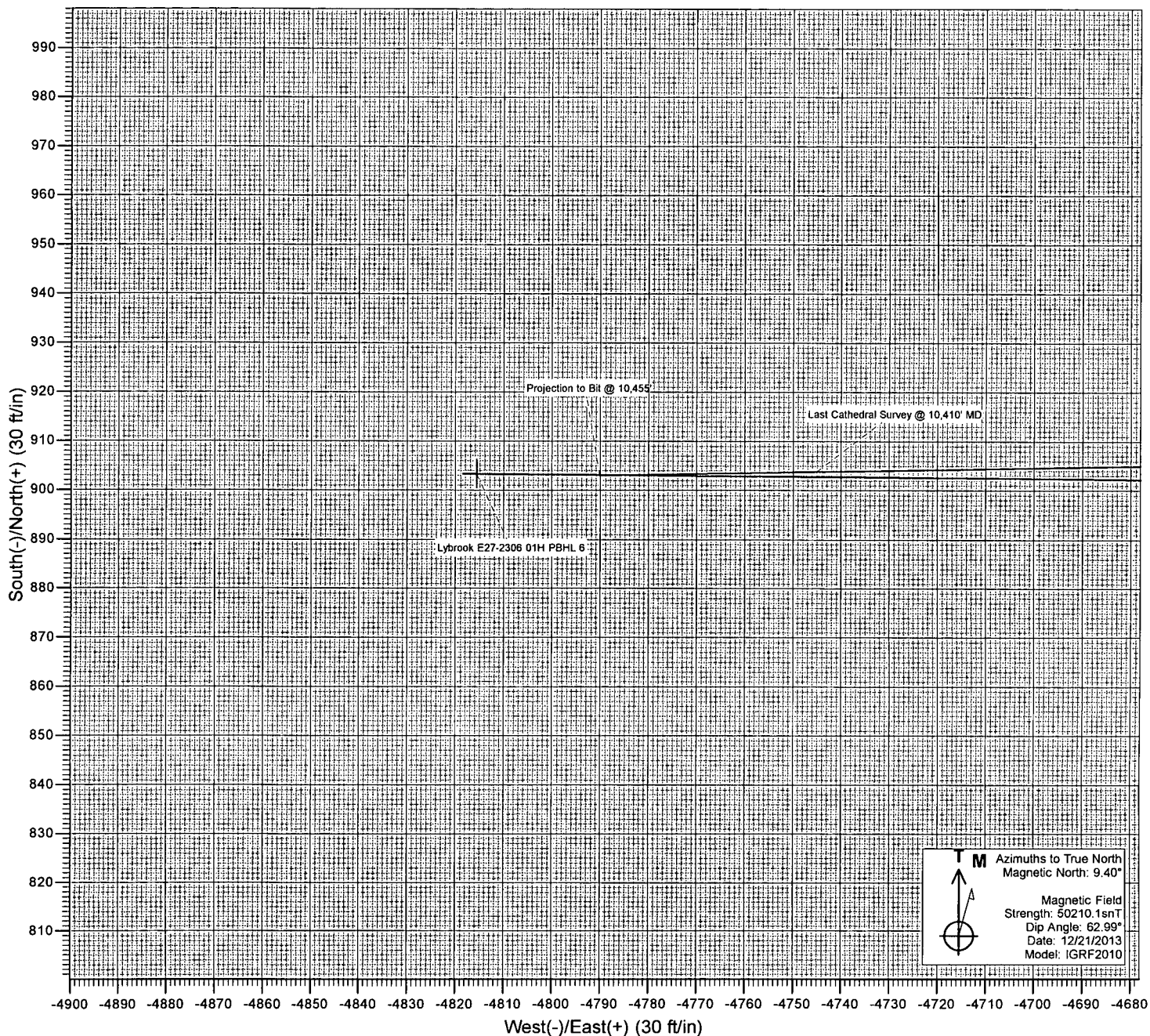
natural gas

Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook E27-2306 01H
Wellbore: Hz
Design: FINAL





Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook E27-2306 01H
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Sandoval 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		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 E27-2306 01H					
Well Position	+N/-S	0.0 ft	Northing:	1,893,968.14 ft	Latitude:	36.199060
	+E/-W	0.0 ft	Easting:	1,282,288.84 ft	Longitude:	-107.463820
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,054.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/21/2013	9.40	62.99	50,210

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	270.43	

Survey Program	Date	1/9/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
139.0	10,455.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
139.0	0.80	328.60	139.0	0.8	-0.5	0.5	0.58	0.58	
169.0	1.00	330.90	169.0	1.2	-0.7	0.8	0.68	0.67	
197.0	1.10	326.30	197.0	1.7	-1.0	1.0	0.47	0.36	
228.0	1.00	329.40	228.0	2.2	-1.3	1.3	0.37	-0.32	
258.0	0.70	320.80	258.0	2.5	-1.6	1.6	1.08	-1.00	
288.0	0.70	295.70	288.0	2.7	-1.8	1.9	1.01	0.00	
345.0	0.60	319.20	345.0	3.1	-2.4	2.4	0.50	-0.18	
375.0	0.70	299.10	375.0	3.3	-2.6	2.6	0.82	0.33	
438.0	0.80	282.60	438.0	3.6	-3.4	3.4	0.38	0.16	
470.0	0.70	297.20	470.0	3.7	-3.8	3.8	0.67	-0.31	
622.0	0.80	252.10	622.0	3.8	-5.6	5.6	0.38	0.07	
683.0	0.40	255.10	682.9	3.7	-6.2	6.2	0.66	-0.66	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	North Reference:	True
Wellbore:	H2	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
744.0	0.60	240.60	743.9	3.4	-6.7	6.7	0.39	0.33	
805.0	0.60	245.80	804.9	3.2	-7.3	7.3	0.09	0.00	
866.0	0.80	264.00	865.9	3.0	-8.0	8.0	0.49	0.33	
927.0	0.80	248.70	926.9	2.8	-8.8	8.8	0.35	0.00	
988.0	0.50	201.30	987.9	2.4	-9.3	9.3	0.97	-0.49	
1,050.0	0.80	133.20	1,049.9	1.8	-9.1	9.1	1.24	0.48	
1,111.0	1.30	140.40	1,110.9	1.0	-8.3	8.3	0.85	0.82	
1,172.0	1.20	139.70	1,171.9	0.0	-7.5	7.5	0.17	-0.16	
1,233.0	1.40	133.20	1,232.9	-1.0	-6.5	6.5	0.41	0.33	
1,294.0	1.50	137.80	1,293.9	-2.1	-5.4	5.4	0.25	0.16	
1,355.0	1.80	134.10	1,354.8	-3.4	-4.2	4.2	0.52	0.49	
1,417.0	1.90	96.40	1,416.8	-4.2	-2.5	2.5	1.93	0.16	
1,478.0	1.90	85.80	1,477.8	-4.2	-0.5	0.5	0.58	0.00	
1,541.0	2.00	86.80	1,540.7	-4.1	1.7	-1.7	0.17	0.16	
1,604.0	2.30	88.50	1,603.7	-4.0	4.0	-4.0	0.49	0.48	
1,667.0	0.40	58.80	1,666.7	-3.8	5.5	-5.5	3.12	-3.02	
1,731.0	0.50	28.10	1,730.7	-3.5	5.8	-5.8	0.40	0.16	
1,793.0	0.50	39.30	1,792.7	-3.0	6.1	-6.1	0.16	0.00	
1,856.0	0.70	343.70	1,855.7	-2.4	6.2	-6.2	0.93	0.32	
1,919.0	0.50	327.50	1,918.7	-1.8	5.9	-5.9	0.41	-0.32	
1,982.0	0.60	329.20	1,981.7	-1.3	5.6	-5.6	0.16	0.16	
2,045.0	0.70	333.40	2,044.7	-0.7	5.2	-5.2	0.18	0.16	
2,108.0	0.60	324.70	2,107.7	-0.1	4.9	-4.9	0.22	-0.16	
2,171.0	0.50	329.40	2,170.7	0.4	4.5	-4.5	0.17	-0.16	
2,234.0	0.40	288.90	2,233.7	0.7	4.2	-4.2	0.52	-0.16	
2,297.0	0.30	248.00	2,296.7	0.8	3.8	-3.8	0.42	-0.16	
2,360.0	0.50	155.40	2,359.7	0.4	3.8	-3.8	0.94	0.32	
2,423.0	0.50	167.50	2,422.6	-0.1	4.0	-4.0	0.17	0.00	
2,486.0	0.90	197.40	2,485.6	-0.8	3.9	-3.9	0.84	0.63	
2,550.0	1.00	195.60	2,549.6	-1.8	3.6	-3.6	0.16	0.16	
2,612.0	1.10	194.30	2,611.6	-2.9	3.3	-3.3	0.17	0.16	
2,675.0	1.40	208.70	2,674.6	-4.2	2.8	-2.8	0.69	0.48	
2,738.0	1.10	219.20	2,737.6	-5.3	2.0	-2.1	0.60	-0.48	
2,801.0	1.10	265.00	2,800.6	-5.9	1.0	-1.1	1.36	0.00	
2,865.0	1.20	251.20	2,864.6	-6.1	-0.2	0.2	0.46	0.16	
2,928.0	0.70	311.70	2,927.6	-6.1	-1.1	1.1	1.67	-0.79	
2,991.0	0.90	329.20	2,990.6	-5.4	-1.7	1.6	0.50	0.32	
3,054.0	1.00	313.50	3,053.6	-4.6	-2.3	2.3	0.44	0.16	
3,117.0	0.70	297.90	3,116.5	-4.0	-3.1	3.0	0.60	-0.48	
3,180.0	0.80	261.50	3,179.5	-3.9	-3.8	3.8	0.76	0.16	
3,244.0	0.40	318.30	3,243.5	-3.8	-4.4	4.4	1.05	-0.62	
3,306.0	0.40	269.80	3,305.5	-3.7	-4.8	4.7	0.53	0.00	
3,369.0	0.70	241.90	3,368.5	-3.8	-5.3	5.3	0.63	0.48	
3,432.0	0.70	229.30	3,431.5	-4.3	-6.0	5.9	0.24	0.00	
3,495.0	0.20	333.50	3,494.5	-4.4	-6.3	6.3	1.23	-0.79	
3,558.0	0.50	22.80	3,557.5	-4.1	-6.3	6.2	0.63	0.48	
3,621.0	0.90	36.30	3,620.5	-3.4	-5.9	5.8	0.68	0.63	
3,684.0	0.70	29.50	3,683.5	-2.7	-5.4	5.3	0.35	-0.32	
3,747.0	0.70	356.60	3,746.5	-2.0	-5.2	5.2	0.63	0.00	
3,810.0	0.40	353.40	3,809.5	-1.4	-5.2	5.2	0.48	-0.48	
3,873.0	0.20	358.30	3,872.5	-1.0	-5.3	5.3	0.32	-0.32	
3,936.0	0.30	59.50	3,935.5	-0.8	-5.1	5.1	0.43	0.16	
3,999.0	0.70	72.10	3,998.5	-0.6	-4.6	4.6	0.65	0.63	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	North Reference:	True
Wellbore:	H2	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,062.0	0.60	70.30	4,061.5	-0.4	-4.0	4.0	0.16	-0.16	
4,125.0	0.60	51.40	4,124.5	-0.1	-3.4	3.4	0.31	0.00	
4,188.0	0.50	38.80	4,187.5	0.3	-3.0	3.0	0.25	-0.16	
4,251.0	0.50	30.20	4,250.5	0.8	-2.6	2.7	0.12	0.00	
4,314.0	0.70	52.90	4,313.5	1.2	-2.2	2.2	0.49	0.32	
4,377.0	0.80	50.40	4,376.5	1.8	-1.6	1.6	0.17	0.16	
4,440.0	0.90	40.00	4,439.5	2.4	-0.9	0.9	0.29	0.16	
4,503.0	0.90	25.30	4,502.5	3.2	-0.4	0.4	0.37	0.00	
4,566.0	0.10	130.60	4,565.5	3.7	-0.1	0.1	1.48	-1.27	
4,629.0	0.10	312.60	4,628.5	3.7	-0.1	0.1	0.32	0.00	
4,692.0	0.30	19.80	4,691.5	3.8	-0.1	0.1	0.44	0.32	
4,755.0	0.30	69.90	4,754.5	4.1	0.1	-0.1	0.40	0.00	
4,818.0	0.70	156.10	4,817.5	3.8	0.4	-0.4	1.18	0.63	
4,882.0	0.40	169.90	4,881.5	3.2	0.6	-0.6	0.51	-0.47	
4,945.0	0.90	186.20	4,944.5	2.5	0.6	-0.6	0.84	0.79	
4,989.0	1.10	183.20	4,988.5	1.7	0.5	-0.5	0.47	0.45	
5,021.0	3.10	267.70	5,020.4	1.4	-0.3	0.3	9.96	6.25	
5,052.0	7.60	292.50	5,051.3	2.1	-3.1	3.1	15.99	14.52	
5,084.0	10.20	312.00	5,082.9	4.8	-7.1	7.2	12.34	8.12	
5,115.0	11.20	315.90	5,113.4	8.8	-11.3	11.3	3.98	3.23	
5,147.0	13.70	313.80	5,144.6	13.7	-16.2	16.3	7.94	7.81	
5,178.0	17.80	309.30	5,174.4	19.2	-22.5	22.6	13.79	13.23	
5,210.0	21.50	308.80	5,204.6	26.0	-30.8	31.0	11.57	11.56	
5,241.0	24.10	310.80	5,233.2	33.7	-40.1	40.3	8.75	8.39	
5,273.0	26.90	313.50	5,262.0	43.0	-50.3	50.6	9.47	8.75	
5,304.0	29.50	315.70	5,289.4	53.2	-60.7	61.1	9.03	8.39	
5,336.0	32.20	318.10	5,316.8	65.2	-71.9	72.4	9.27	8.44	
5,367.0	35.20	318.30	5,342.6	78.1	-83.3	83.9	9.68	9.68	
5,399.0	38.40	317.00	5,368.2	92.2	-96.3	96.9	10.29	10.00	
5,430.0	40.70	319.30	5,392.1	106.9	-109.4	110.2	8.79	7.42	
5,462.0	42.90	322.30	5,416.0	123.4	-122.9	123.8	9.29	6.87	
5,493.0	45.70	323.60	5,438.2	140.7	-135.9	137.0	9.49	9.03	
5,525.0	50.10	323.70	5,459.6	159.8	-150.0	151.2	13.75	13.75	
5,556.0	54.20	323.50	5,478.6	179.5	-164.5	165.9	13.24	13.23	
5,588.0	57.50	323.40	5,496.6	200.8	-180.3	181.8	10.32	10.31	
5,619.0	60.10	322.60	5,512.7	222.0	-196.2	197.9	8.67	8.39	
5,651.0	63.10	322.00	5,527.9	244.3	-213.5	215.3	9.52	9.37	
5,682.0	66.40	322.60	5,541.1	266.4	-230.6	232.6	10.79	10.65	
5,714.0	69.60	323.30	5,553.1	290.1	-248.5	250.6	10.20	10.00	
5,745.0	72.80	322.00	5,563.1	313.4	-266.3	268.6	11.06	10.32	
5,777.0	76.20	320.20	5,571.6	337.4	-285.6	288.2	11.93	10.62	
5,808.0	79.70	319.30	5,578.1	360.6	-305.2	307.9	11.64	11.29	
5,840.0	82.40	318.80	5,583.1	384.4	-325.9	328.8	8.58	8.44	
5,870.0	84.80	318.70	5,586.4	406.9	-345.6	348.6	8.01	8.00	
5,895.0	85.70	317.40	5,588.5	425.4	-362.2	365.4	6.31	3.60	
5,926.0	86.10	317.50	5,590.7	448.2	-383.2	386.5	1.33	1.29	
5,958.0	86.90	316.10	5,592.7	471.4	-405.0	408.5	5.03	2.50	
5,989.0	86.40	314.20	5,594.5	493.4	-426.8	430.5	6.33	-1.61	
6,021.0	85.90	312.00	5,596.6	515.2	-450.2	454.0	7.04	-1.56	
6,052.0	85.80	309.40	5,598.9	535.3	-473.6	477.6	8.37	-0.32	
6,084.0	87.40	307.80	5,600.8	555.3	-498.6	502.7	7.06	5.00	
6,115.0	89.70	307.40	5,601.5	574.2	-523.1	527.4	7.53	7.42	
6,147.0	90.10	306.00	5,601.6	593.3	-548.8	553.2	4.55	1.25	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,178.0	89.90	304.60	5,601.6	611.2	-574.1	578.6	4.56	-0.65	
6,241.0	89.30	302.30	5,602.0	645.9	-626.6	631.5	3.77	-0.95	
6,304.0	90.50	303.10	5,602.2	680.0	-679.6	684.7	2.29	1.90	
6,367.0	90.10	300.90	5,601.8	713.4	-733.1	738.4	3.55	-0.63	
6,430.0	89.70	297.90	5,601.9	744.3	-787.9	793.5	4.80	-0.63	
6,493.0	89.00	294.80	5,602.6	772.2	-844.4	850.2	5.04	-1.11	
6,557.0	90.80	292.90	5,602.8	798.1	-902.9	908.9	4.09	2.81	
6,619.0	91.10	288.80	5,601.7	820.2	-960.8	967.0	6.63	0.48	
6,682.0	91.50	284.90	5,600.3	838.4	-1,021.1	1,027.4	6.22	0.63	
6,745.0	90.40	281.30	5,599.3	852.7	-1,082.4	1,088.8	5.97	-1.75	
6,808.0	90.30	275.80	5,598.9	862.1	-1,144.7	1,151.2	8.73	-0.16	
6,871.0	90.10	271.20	5,598.7	865.9	-1,207.6	1,214.1	7.31	-0.32	
6,934.0	89.20	271.70	5,599.0	867.5	-1,270.6	1,277.0	1.63	-1.43	
6,997.0	90.90	272.10	5,599.0	869.6	-1,333.5	1,340.0	2.77	2.70	
7,059.0	90.50	271.40	5,598.2	871.5	-1,395.5	1,402.0	1.30	-0.65	
7,123.0	90.10	270.60	5,597.9	872.6	-1,459.5	1,466.0	1.40	-0.62	
7,185.0	89.70	270.50	5,598.0	873.2	-1,521.5	1,528.0	0.67	-0.65	
7,248.0	89.90	269.70	5,598.2	873.3	-1,584.5	1,591.0	1.31	0.32	
7,311.0	88.80	270.40	5,598.9	873.4	-1,647.5	1,654.0	2.07	-1.75	
7,374.0	90.20	271.50	5,599.5	874.4	-1,710.5	1,717.0	2.83	2.22	
7,438.0	90.60	271.10	5,599.0	875.9	-1,774.4	1,781.0	0.88	0.62	
7,501.0	90.60	271.30	5,598.4	877.2	-1,837.4	1,844.0	0.32	0.00	
7,564.0	89.90	272.00	5,598.1	879.0	-1,900.4	1,906.9	1.57	-1.11	
7,627.0	90.10	271.70	5,598.1	881.0	-1,963.4	1,969.9	0.57	0.32	
7,690.0	90.50	271.80	5,597.8	883.0	-2,026.3	2,032.9	0.65	0.63	
7,753.0	90.80	270.00	5,597.1	883.9	-2,089.3	2,095.9	2.90	0.48	
7,816.0	90.90	268.50	5,596.1	883.1	-2,152.3	2,158.9	2.39	0.16	
7,879.0	90.30	268.50	5,595.5	881.5	-2,215.3	2,221.8	0.95	-0.95	
7,943.0	90.00	266.70	5,595.3	878.8	-2,279.2	2,285.8	2.85	-0.47	
8,005.0	90.60	266.60	5,595.0	875.2	-2,341.1	2,347.6	0.98	0.97	
8,068.0	90.80	268.00	5,594.2	872.2	-2,404.0	2,410.5	2.24	0.32	
8,131.0	91.00	269.60	5,593.2	870.9	-2,467.0	2,473.5	2.56	0.32	
8,194.0	88.90	270.30	5,593.3	870.8	-2,530.0	2,536.5	3.51	-3.33	
8,257.0	88.90	270.00	5,594.5	871.0	-2,593.0	2,599.5	0.48	0.00	
8,320.0	89.40	269.50	5,595.4	870.7	-2,656.0	2,662.5	1.12	0.79	
8,383.0	89.60	268.40	5,596.0	869.6	-2,719.0	2,725.4	1.77	0.32	
8,446.0	90.20	270.10	5,596.1	868.7	-2,782.0	2,788.4	2.86	0.95	
8,509.0	89.30	271.50	5,596.3	869.6	-2,845.0	2,851.4	2.64	-1.43	
8,571.0	89.80	271.20	5,596.8	871.1	-2,906.9	2,913.4	0.94	0.81	
8,634.0	90.70	271.90	5,596.6	872.8	-2,969.9	2,976.4	1.81	1.43	
8,697.0	90.70	272.00	5,595.8	874.9	-3,032.9	3,039.4	0.16	0.00	
8,760.0	91.10	272.40	5,594.8	877.3	-3,095.8	3,102.3	0.90	0.63	
8,823.0	89.70	272.70	5,594.4	880.1	-3,158.8	3,165.3	2.27	-2.22	
8,886.0	89.30	272.90	5,594.9	883.2	-3,221.7	3,228.2	0.71	-0.63	
8,949.0	89.50	271.80	5,595.6	885.8	-3,284.6	3,291.2	1.77	0.32	
9,012.0	89.00	271.10	5,596.4	887.4	-3,347.6	3,354.2	1.37	-0.79	
9,074.0	89.80	271.20	5,597.0	888.6	-3,409.6	3,416.1	1.30	1.29	
9,137.0	90.00	270.80	5,597.2	889.7	-3,472.6	3,479.1	0.71	0.32	
9,200.0	90.40	270.00	5,596.9	890.2	-3,535.6	3,542.1	1.42	0.63	
9,263.0	91.10	271.70	5,596.1	891.1	-3,598.5	3,605.1	2.92	1.11	
9,327.0	90.50	272.40	5,595.2	893.4	-3,662.5	3,669.1	1.44	-0.94	
9,390.0	90.00	272.70	5,594.9	896.2	-3,725.4	3,732.1	0.93	-0.79	
9,452.0	90.40	271.80	5,594.7	898.6	-3,787.4	3,794.0	1.59	0.65	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	North Reference:	True
Wellbore:	H2	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,515.0	89.00	270.10	5,595.1	899.7	-3,850.4	3,857.0	3.50	-2.22	
9,578.0	90.00	270.50	5,595.6	900.0	-3,913.4	3,920.0	1.71	1.59	
9,642.0	90.60	271.00	5,595.3	900.9	-3,977.4	3,984.0	1.22	0.94	
9,705.0	90.40	271.80	5,594.7	902.4	-4,040.3	4,047.0	1.31	-0.32	
9,768.0	90.30	271.80	5,594.3	904.4	-4,103.3	4,110.0	0.16	-0.16	
9,831.0	90.80	271.80	5,593.7	906.3	-4,166.3	4,173.0	0.79	0.79	
9,894.0	91.50	270.80	5,592.5	907.8	-4,229.2	4,235.9	1.94	1.11	
9,957.0	89.80	270.40	5,591.7	908.4	-4,292.2	4,298.9	2.77	-2.70	
10,020.0	89.70	270.20	5,592.0	908.8	-4,355.2	4,361.9	0.35	-0.16	
10,083.0	90.60	270.20	5,591.9	909.0	-4,418.2	4,424.9	1.43	1.43	
10,146.0	90.80	269.20	5,591.1	908.7	-4,481.2	4,487.9	1.62	0.32	
10,209.0	90.10	268.70	5,590.6	907.5	-4,544.2	4,550.9	1.37	-1.11	
10,272.0	89.60	269.00	5,590.8	906.2	-4,607.2	4,613.9	0.93	-0.79	
10,335.0	90.40	268.90	5,590.8	905.1	-4,670.2	4,676.8	1.28	1.27	
10,398.0	91.20	269.00	5,589.9	903.9	-4,733.2	4,739.8	1.28	1.27	
10,410.0	91.50	269.00	5,589.6	903.7	-4,745.2	4,751.8	2.50	2.50	Last Cathedral Survey @ 10,410' MD
10,455.0	91.50	269.00	5,588.4	902.9	-4,790.1	4,796.8	0.00	0.00	Projection to Bit @ 10,455'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook E27-2306 01H f - hit/miss target - Shape	0.00	0.00	5,569.7	903.3	-4,815.6	1,894,931.63	1,277,484.94	36.201540	-107.480140
- actual wellpath misses target center by 31.6ft at 10455.0ft MD (5588.4 TVD, 902.9 N, -4790.1 E)									
- Point									
Lybrook E27-2306 01H f - actual wellpath misses target center by 31.8ft at 10455.0ft MD (5588.4 TVD, 902.9 N, -4790.1 E)	0.00	0.00	5,569.3	903.3	-4,815.6	1,894,931.63	1,277,484.94	36.201540	-107.480140
- Point									
Lybrook E27-2306 01H f - actual wellpath misses target center by 28.5ft at 10455.0ft MD (5588.4 TVD, 902.9 N, -4790.1 E)	0.00	0.00	5,575.7	903.3	-4,815.6	1,894,931.63	1,277,484.94	36.201540	-107.480140
- Point									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,410.0	5,589.6	903.7	-4,745.2	Last Cathedral Survey @ 10,410' MD
10,455.0	5,588.4	902.9	-4,790.1	Projection to Bit @ 10,455'

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

Lybrook

Lybrook E27-2306 01H

Hz

Design: FINAL

Survey Report - Geographic

09 January, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Sandoval 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		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 E27-2306 01H					
Well Position	+N/-S	0.0 ft	Northing:	1,893,968.15 ft	Latitude:	36.199060
	+E/-W	0.0 ft	Easting:	1,282,288.84 ft	Longitude:	-107.463820
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,054.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/21/2013	9.40	62.99	50,210

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	270.43	

Survey Program	Date	1/9/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
139.0	10,455.0	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	1,893,968.15	1,282,288.84	36.199060	-107.463820
139.0	0.80	328.60	139.0	0.8	-0.5	1,893,968.98	1,282,288.35	36.199062	-107.463822
169.0	1.00	330.90	169.0	1.2	-0.7	1,893,969.39	1,282,288.12	36.199063	-107.463823
197.0	1.10	326.30	197.0	1.7	-1.0	1,893,969.83	1,282,287.85	36.199065	-107.463824
228.0	1.00	329.40	228.0	2.2	-1.3	1,893,970.32	1,282,287.56	36.199066	-107.463825
258.0	0.70	320.80	258.0	2.5	-1.6	1,893,970.69	1,282,287.31	36.199067	-107.463826
288.0	0.70	295.70	288.0	2.7	-1.8	1,893,970.91	1,282,287.03	36.199068	-107.463827
345.0	0.60	319.20	345.0	3.1	-2.4	1,893,971.29	1,282,286.53	36.199069	-107.463828
375.0	0.70	299.10	375.0	3.3	-2.6	1,893,971.51	1,282,286.27	36.199069	-107.463829
438.0	0.80	282.60	438.0	3.6	-3.4	1,893,971.80	1,282,285.51	36.199070	-107.463832
470.0	0.70	297.20	470.0	3.7	-3.8	1,893,971.94	1,282,285.12	36.199070	-107.463833
622.0	0.80	252.10	622.0	3.8	-5.6	1,893,972.06	1,282,283.28	36.199071	-107.463839

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	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
683.0	0.40	255.10	682.9	3.7	-6.2	1,893,971.88	1,282,282.67	36.199070	-107.463841
744.0	0.60	240.60	743.9	3.4	-6.7	1,893,971.68	1,282,282.18	36.199070	-107.463843
805.0	0.60	245.80	804.9	3.2	-7.3	1,893,971.40	1,282,281.61	36.199069	-107.463845
866.0	0.80	264.00	865.9	3.0	-8.0	1,893,971.23	1,282,280.89	36.199068	-107.463847
927.0	0.80	248.70	926.9	2.8	-8.8	1,893,971.04	1,282,280.07	36.199068	-107.463850
988.0	0.50	201.30	987.9	2.4	-9.3	1,893,970.65	1,282,279.57	36.199067	-107.463852
1,050.0	0.80	133.20	1,049.9	1.8	-9.1	1,893,970.10	1,282,279.78	36.199065	-107.463851
1,111.0	1.30	140.40	1,110.9	1.0	-8.3	1,893,969.26	1,282,280.52	36.199063	-107.463849
1,172.0	1.20	139.70	1,171.9	0.0	-7.5	1,893,968.23	1,282,281.36	36.199060	-107.463846
1,233.0	1.40	133.20	1,232.9	-1.0	-6.5	1,893,967.22	1,282,282.31	36.199057	-107.463842
1,294.0	1.50	137.80	1,293.9	-2.1	-5.4	1,893,966.11	1,282,283.37	36.199054	-107.463839
1,355.0	1.80	134.10	1,354.8	-3.4	-4.2	1,893,964.83	1,282,284.58	36.199051	-107.463835
1,417.0	1.90	96.40	1,416.8	-4.2	-2.5	1,893,964.02	1,282,286.29	36.199049	-107.463829
1,478.0	1.90	85.80	1,477.8	-4.2	-0.5	1,893,963.96	1,282,288.31	36.199049	-107.463822
1,541.0	2.00	86.80	1,540.7	-4.1	1.7	1,893,964.07	1,282,290.45	36.199049	-107.463815
1,604.0	2.30	88.50	1,603.7	-4.0	4.0	1,893,964.13	1,282,292.81	36.199049	-107.463807
1,667.0	0.40	58.80	1,666.7	-3.8	5.5	1,893,964.26	1,282,294.26	36.199050	-107.463802
1,731.0	0.50	28.10	1,730.7	-3.5	5.8	1,893,964.62	1,282,294.59	36.199051	-107.463801
1,793.0	0.50	39.30	1,792.7	-3.0	6.1	1,893,965.06	1,282,294.89	36.199052	-107.463800
1,856.0	0.70	343.70	1,855.7	-2.4	6.2	1,893,965.64	1,282,294.97	36.199053	-107.463799
1,919.0	0.50	327.50	1,918.7	-1.8	5.9	1,893,966.25	1,282,294.72	36.199055	-107.463800
1,982.0	0.60	329.20	1,981.7	-1.3	5.6	1,893,966.77	1,282,294.41	36.199056	-107.463801
2,045.0	0.70	333.40	2,044.7	-0.7	5.2	1,893,967.40	1,282,294.08	36.199058	-107.463803
2,108.0	0.60	324.70	2,107.7	-0.1	4.9	1,893,968.02	1,282,293.72	36.199060	-107.463804
2,171.0	0.50	329.40	2,170.7	0.4	4.5	1,893,968.53	1,282,293.40	36.199061	-107.463805
2,234.0	0.40	288.90	2,233.7	0.7	4.2	1,893,968.84	1,282,293.05	36.199062	-107.463806
2,297.0	0.30	248.00	2,296.7	0.8	3.8	1,893,968.85	1,282,292.69	36.199062	-107.463807
2,360.0	0.50	155.40	2,359.7	0.4	3.8	1,893,968.54	1,282,292.65	36.199061	-107.463807
2,423.0	0.50	167.50	2,422.6	-0.1	4.0	1,893,968.02	1,282,292.82	36.199060	-107.463807
2,486.0	0.90	197.40	2,485.6	-0.8	3.9	1,893,967.28	1,282,292.72	36.199058	-107.463807
2,550.0	1.00	195.60	2,549.6	-1.8	3.6	1,893,966.27	1,282,292.41	36.199055	-107.463808
2,612.0	1.10	194.30	2,611.6	-2.9	3.3	1,893,965.17	1,282,292.10	36.199052	-107.463809
2,675.0	1.40	208.70	2,674.6	-4.2	2.8	1,893,963.92	1,282,291.56	36.199049	-107.463811
2,738.0	1.10	219.20	2,737.6	-5.3	2.0	1,893,962.79	1,282,290.80	36.199045	-107.463813
2,801.0	1.10	265.00	2,800.6	-5.9	1.0	1,893,962.28	1,282,289.81	36.199044	-107.463817
2,865.0	1.20	251.20	2,864.6	-6.1	-0.2	1,893,962.02	1,282,288.56	36.199043	-107.463821
2,928.0	0.70	311.70	2,927.6	-6.1	-1.1	1,893,962.08	1,282,287.65	36.199043	-107.463824
2,991.0	0.90	329.20	2,990.6	-5.4	-1.7	1,893,962.76	1,282,287.11	36.199045	-107.463826
3,054.0	1.00	313.50	3,053.6	-4.6	-2.3	1,893,963.58	1,282,286.47	36.199047	-107.463828
3,117.0	0.70	297.90	3,116.5	-4.0	-3.1	1,893,964.14	1,282,285.74	36.199049	-107.463831
3,180.0	0.80	261.50	3,179.5	-3.9	-3.8	1,893,964.27	1,282,284.97	36.199049	-107.463833
3,244.0	0.40	318.30	3,243.5	-3.8	-4.4	1,893,964.38	1,282,284.38	36.199050	-107.463835
3,306.0	0.40	269.80	3,305.5	-3.7	-4.8	1,893,964.54	1,282,284.02	36.199050	-107.463836
3,369.0	0.70	241.90	3,368.5	-3.8	-5.3	1,893,964.37	1,282,283.46	36.199050	-107.463838
3,432.0	0.70	229.30	3,431.5	-4.3	-6.0	1,893,963.94	1,282,282.82	36.199048	-107.463840
3,495.0	0.20	333.50	3,494.5	-4.4	-6.3	1,893,963.79	1,282,282.48	36.199048	-107.463842
3,558.0	0.50	22.80	3,557.5	-4.1	-6.3	1,893,964.15	1,282,282.54	36.199049	-107.463841
3,621.0	0.90	36.30	3,620.5	-3.4	-5.9	1,893,964.79	1,282,282.95	36.199051	-107.463840
3,684.0	0.70	29.50	3,683.5	-2.7	-5.4	1,893,965.52	1,282,283.44	36.199053	-107.463838
3,747.0	0.70	356.60	3,746.5	-2.0	-5.2	1,893,966.24	1,282,283.62	36.199055	-107.463838
3,810.0	0.40	353.40	3,809.5	-1.4	-5.2	1,893,966.84	1,282,283.57	36.199056	-107.463838
3,873.0	0.20	358.30	3,872.5	-1.0	-5.3	1,893,967.17	1,282,283.55	36.199057	-107.463838
3,936.0	0.30	59.50	3,935.5	-0.8	-5.1	1,893,967.36	1,282,283.69	36.199058	-107.463838
3,999.0	0.70	72.10	3,998.5	-0.6	-4.6	1,893,967.56	1,282,284.20	36.199058	-107.463836
4,062.0	0.60	70.30	4,061.5	-0.4	-4.0	1,893,967.78	1,282,284.88	36.199059	-107.463834

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	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
4,125.0	0.60	51.40	4,124.5	-0.1	-3.4	1,893,968.09	1,282,285.45	36.199060	-107.463832
4,188.0	0.50	38.80	4,187.5	0.3	-3.0	1,893,968.50	1,282,285.89	36.199061	-107.463830
4,251.0	0.50	30.20	4,250.5	0.8	-2.6	1,893,968.95	1,282,286.21	36.199062	-107.463829
4,314.0	0.70	52.90	4,313.5	1.2	-2.2	1,893,969.41	1,282,286.66	36.199063	-107.463828
4,377.0	0.80	50.40	4,376.5	1.8	-1.6	1,893,969.92	1,282,287.31	36.199065	-107.463826
4,440.0	0.90	40.00	4,439.5	2.4	-0.9	1,893,970.57	1,282,287.97	36.199067	-107.463823
4,503.0	0.90	25.30	4,502.5	3.2	-0.4	1,893,971.39	1,282,288.51	36.199069	-107.463822
4,566.0	0.10	130.60	4,565.5	3.7	-0.1	1,893,971.80	1,282,288.77	36.199070	-107.463821
4,629.0	0.10	312.60	4,628.5	3.7	-0.1	1,893,971.80	1,282,288.77	36.199070	-107.463821
4,692.0	0.30	19.80	4,691.5	3.8	-0.1	1,893,971.99	1,282,288.79	36.199071	-107.463821
4,755.0	0.30	69.90	4,754.5	4.1	0.1	1,893,972.20	1,282,289.00	36.199071	-107.463820
4,818.0	0.70	156.10	4,817.5	3.8	0.4	1,893,971.90	1,282,289.31	36.199070	-107.463819
4,882.0	0.40	169.90	4,881.5	3.2	0.6	1,893,971.32	1,282,289.50	36.199069	-107.463818
4,945.0	0.90	186.20	4,944.5	2.5	0.6	1,893,970.61	1,282,289.48	36.199067	-107.463818
4,989.0	1.10	183.20	4,988.5	1.7	0.5	1,893,969.85	1,282,289.41	36.199065	-107.463818
5,021.0	3.10	267.70	5,020.4	1.4	-0.3	1,893,969.52	1,282,288.52	36.199064	-107.463821
5,052.0	7.60	292.50	5,051.3	2.1	-3.1	1,893,970.30	1,282,285.80	36.199066	-107.463831
5,084.0	10.20	312.00	5,082.9	4.8	-7.1	1,893,973.06	1,282,281.77	36.199073	-107.463844
5,115.0	11.20	315.90	5,113.4	8.8	-11.3	1,893,977.11	1,282,277.69	36.199084	-107.463858
5,147.0	13.70	313.80	5,144.6	13.7	-16.2	1,893,982.03	1,282,272.85	36.199098	-107.463875
5,178.0	17.80	309.30	5,174.4	19.2	-22.5	1,893,987.65	1,282,266.60	36.199113	-107.463896
5,210.0	21.50	308.80	5,204.6	26.0	-30.8	1,893,994.53	1,282,258.33	36.199132	-107.463925
5,241.0	24.10	310.80	5,233.2	33.7	-40.1	1,894,002.34	1,282,249.20	36.199153	-107.463956
5,273.0	26.90	313.50	5,262.0	43.0	-50.3	1,894,011.72	1,282,239.12	36.199178	-107.463991
5,304.0	29.50	315.70	5,289.4	53.2	-60.7	1,894,022.14	1,282,228.83	36.199206	-107.464026
5,336.0	32.20	318.10	5,316.8	65.2	-71.9	1,894,034.27	1,282,217.78	36.199239	-107.464064
5,367.0	35.20	318.30	5,342.6	78.1	-83.3	1,894,047.23	1,282,206.48	36.199274	-107.464103
5,399.0	38.40	317.00	5,368.2	92.2	-96.3	1,894,061.55	1,282,193.74	36.199313	-107.464146
5,430.0	40.70	319.30	5,392.1	106.9	-109.4	1,894,076.42	1,282,180.77	36.199354	-107.464191
5,462.0	42.90	322.30	5,416.0	123.4	-122.9	1,894,093.12	1,282,167.51	36.199399	-107.464237
5,493.0	45.70	323.60	5,438.2	140.7	-135.9	1,894,110.57	1,282,154.69	36.199447	-107.464281
5,525.0	50.10	323.70	5,459.6	159.8	-150.0	1,894,129.86	1,282,140.86	36.199499	-107.464329
5,556.0	54.20	323.50	5,478.6	179.5	-164.5	1,894,149.74	1,282,126.58	36.199553	-107.464378
5,588.0	57.50	323.40	5,496.6	200.8	-180.3	1,894,171.20	1,282,111.08	36.199612	-107.464431
5,619.0	60.10	322.60	5,512.7	222.0	-196.2	1,894,192.58	1,282,095.39	36.199670	-107.464485
5,651.0	63.10	322.00	5,527.9	244.3	-213.5	1,894,215.06	1,282,078.46	36.199731	-107.464544
5,682.0	66.40	322.60	5,541.1	266.4	-230.6	1,894,237.45	1,282,061.59	36.199792	-107.464602
5,714.0	69.60	323.30	5,553.1	290.1	-248.5	1,894,261.35	1,282,044.02	36.199857	-107.464662
5,745.0	72.80	322.00	5,563.1	313.4	-266.3	1,894,284.90	1,282,026.51	36.199921	-107.464723
5,777.0	76.20	320.20	5,571.6	337.4	-285.6	1,894,309.13	1,282,007.45	36.199987	-107.464788
5,808.0	79.70	319.30	5,578.1	360.6	-305.2	1,894,332.50	1,281,988.15	36.200050	-107.464855
5,840.0	82.40	318.80	5,583.1	384.4	-325.9	1,894,356.63	1,281,967.74	36.200116	-107.464925
5,870.0	84.80	318.70	5,586.4	406.9	-345.6	1,894,379.29	1,281,948.36	36.200178	-107.464991
5,895.0	85.70	317.40	5,588.5	425.4	-362.2	1,894,398.02	1,281,931.95	36.200228	-107.465048
5,926.0	86.10	317.50	5,590.7	448.2	-383.2	1,894,421.06	1,281,911.33	36.200291	-107.465119
5,958.0	86.90	316.10	5,592.7	471.4	-405.0	1,894,444.61	1,281,889.75	36.200355	-107.465193
5,989.0	86.40	314.20	5,594.5	493.4	-426.8	1,894,466.82	1,281,868.21	36.200415	-107.465267
6,021.0	85.90	312.00	5,596.6	515.2	-450.2	1,894,488.93	1,281,845.17	36.200475	-107.465346
6,052.0	85.80	309.40	5,598.9	535.3	-473.6	1,894,509.38	1,281,821.99	36.200531	-107.465425
6,084.0	87.40	307.80	5,600.8	555.3	-498.6	1,894,529.62	1,281,797.27	36.200585	-107.465510
6,115.0	89.70	307.40	5,601.5	574.2	-523.1	1,894,548.83	1,281,772.96	36.200637	-107.465593
6,147.0	90.10	306.00	5,601.6	593.3	-548.8	1,894,568.27	1,281,747.55	36.200690	-107.465680
6,178.0	89.90	304.60	5,601.6	611.2	-574.1	1,894,586.50	1,281,722.47	36.200739	-107.465766
6,241.0	89.30	302.30	5,602.0	645.9	-626.6	1,894,621.88	1,281,670.35	36.200834	-107.465944
6,304.0	90.50	303.10	5,602.2	680.0	-679.6	1,894,656.57	1,281,617.77	36.200928	-107.466124

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	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
6,367.0	90.10	300.90	5,601.8	713.4	-733.1	1,894,690.62	1,281,564.77	36.201019	-107.466305
6,430.0	89.70	297.90	5,601.9	744.3	-787.9	1,894,722.23	1,281,510.28	36.201104	-107.466491
6,493.0	89.00	294.80	5,602.6	772.2	-844.4	1,894,750.89	1,281,454.19	36.201181	-107.466682
6,557.0	90.80	292.90	5,602.8	798.1	-902.9	1,894,777.50	1,281,395.99	36.201252	-107.466880
6,619.0	91.10	288.80	5,601.7	820.2	-960.8	1,894,800.28	1,281,338.35	36.201313	-107.467077
6,682.0	91.50	284.90	5,600.3	838.4	-1,021.1	1,894,819.29	1,281,278.31	36.201363	-107.467281
6,745.0	90.40	281.30	5,599.3	852.7	-1,082.4	1,894,834.33	1,281,217.16	36.201402	-107.467489
6,808.0	90.30	275.80	5,598.9	862.1	-1,144.7	1,894,844.47	1,281,154.99	36.201428	-107.467700
6,871.0	90.10	271.20	5,598.7	865.9	-1,207.6	1,894,849.10	1,281,092.18	36.201438	-107.467913
6,934.0	89.20	271.70	5,599.0	867.5	-1,270.6	1,894,851.48	1,281,029.22	36.201443	-107.468126
6,997.0	90.90	272.10	5,599.0	869.6	-1,333.5	1,894,854.36	1,280,966.29	36.201449	-107.468340
7,059.0	90.50	271.40	5,598.2	871.5	-1,395.5	1,894,857.03	1,280,904.36	36.201454	-107.468550
7,123.0	90.10	270.60	5,597.9	872.6	-1,459.5	1,894,858.94	1,280,840.39	36.201457	-107.468766
7,185.0	89.70	270.50	5,598.0	873.2	-1,521.5	1,894,860.32	1,280,778.40	36.201458	-107.468977
7,248.0	89.90	269.70	5,598.2	873.3	-1,584.5	1,894,861.21	1,280,715.41	36.201459	-107.469190
7,311.0	88.80	270.40	5,598.9	873.4	-1,647.5	1,894,862.06	1,280,652.42	36.201459	-107.469404
7,374.0	90.20	271.50	5,599.5	874.4	-1,710.5	1,894,863.89	1,280,589.45	36.201462	-107.469617
7,438.0	90.60	271.10	5,599.0	875.9	-1,774.4	1,894,866.14	1,280,525.49	36.201466	-107.469834
7,501.0	90.60	271.30	5,598.4	877.2	-1,837.4	1,894,868.25	1,280,462.53	36.201469	-107.470047
7,564.0	89.90	272.00	5,598.1	879.0	-1,900.4	1,894,870.85	1,280,399.59	36.201474	-107.470261
7,627.0	90.10	271.70	5,598.1	881.0	-1,963.4	1,894,873.67	1,280,336.65	36.201480	-107.470474
7,690.0	90.50	271.80	5,597.8	883.0	-2,026.3	1,894,876.39	1,280,273.71	36.201485	-107.470688
7,753.0	90.80	270.00	5,597.1	883.9	-2,089.3	1,894,878.16	1,280,210.74	36.201488	-107.470901
7,816.0	90.90	268.50	5,596.1	883.1	-2,152.3	1,894,878.13	1,280,147.75	36.201486	-107.471114
7,879.0	90.30	268.50	5,595.5	881.5	-2,215.3	1,894,877.27	1,280,084.76	36.201481	-107.471328
7,943.0	90.00	266.70	5,595.3	878.8	-2,279.2	1,894,875.39	1,280,020.79	36.201474	-107.471545
8,005.0	90.60	266.60	5,595.0	875.2	-2,341.1	1,894,872.54	1,279,958.85	36.201464	-107.471754
8,068.0	90.80	268.00	5,594.2	872.2	-2,404.0	1,894,870.36	1,279,895.90	36.201456	-107.471968
8,131.0	91.00	269.60	5,593.2	870.9	-2,467.0	1,894,869.83	1,279,832.91	36.201452	-107.472181
8,194.0	88.90	270.30	5,593.3	870.8	-2,530.0	1,894,870.56	1,279,769.92	36.201452	-107.472394
8,257.0	88.90	270.00	5,594.5	871.0	-2,593.0	1,894,871.51	1,279,706.94	36.201452	-107.472608
8,320.0	89.40	269.50	5,595.4	870.7	-2,656.0	1,894,872.03	1,279,643.95	36.201451	-107.472821
8,383.0	89.60	268.40	5,596.0	869.6	-2,719.0	1,894,871.66	1,279,580.95	36.201448	-107.473035
8,446.0	90.20	270.10	5,596.1	868.7	-2,782.0	1,894,871.62	1,279,517.95	36.201446	-107.473248
8,509.0	89.30	271.50	5,596.3	869.6	-2,845.0	1,894,873.29	1,279,454.98	36.201448	-107.473462
8,571.0	89.80	271.20	5,596.8	871.1	-2,906.9	1,894,875.53	1,279,393.02	36.201452	-107.473672
8,634.0	90.70	271.90	5,596.6	872.8	-2,969.9	1,894,878.02	1,279,330.07	36.201457	-107.473885
8,697.0	90.70	272.00	5,595.8	874.9	-3,032.9	1,894,880.95	1,279,267.14	36.201463	-107.474099
8,760.0	91.10	272.40	5,594.8	877.3	-3,095.8	1,894,884.16	1,279,204.23	36.201469	-107.474312
8,823.0	89.70	272.70	5,594.4	880.1	-3,158.8	1,894,887.75	1,279,141.34	36.201477	-107.474525
8,886.0	89.30	272.90	5,594.9	883.2	-3,221.7	1,894,891.61	1,279,078.46	36.201486	-107.474739
8,949.0	89.50	271.80	5,595.6	885.8	-3,284.6	1,894,894.98	1,279,015.55	36.201493	-107.474952
9,012.0	89.00	271.10	5,596.4	887.4	-3,347.6	1,894,897.36	1,278,952.62	36.201497	-107.475165
9,074.0	89.80	271.20	5,597.0	888.6	-3,409.6	1,894,899.38	1,278,890.66	36.201500	-107.475375
9,137.0	90.00	270.80	5,597.2	889.7	-3,472.6	1,894,901.27	1,278,827.69	36.201503	-107.475589
9,200.0	90.40	270.00	5,596.9	890.2	-3,535.6	1,894,902.50	1,278,764.70	36.201505	-107.475802
9,263.0	91.10	271.70	5,596.1	891.1	-3,598.5	1,894,904.22	1,278,701.73	36.201507	-107.476016
9,327.0	90.50	272.40	5,595.2	893.4	-3,662.5	1,894,907.31	1,278,637.82	36.201513	-107.476232
9,390.0	90.00	272.70	5,594.9	896.2	-3,725.4	1,894,910.90	1,278,574.92	36.201521	-107.476446
9,452.0	90.40	271.80	5,594.7	898.6	-3,787.4	1,894,914.11	1,278,513.00	36.201528	-107.476656
9,515.0	89.00	270.10	5,595.1	899.7	-3,850.4	1,894,915.94	1,278,450.03	36.201531	-107.476869
9,578.0	90.00	270.50	5,595.6	900.0	-3,913.4	1,894,917.06	1,278,387.05	36.201531	-107.477083
9,642.0	90.60	271.00	5,595.3	900.9	-3,977.4	1,894,918.70	1,278,323.07	36.201534	-107.477300
9,705.0	90.40	271.80	5,594.7	902.4	-4,040.3	1,894,921.03	1,278,260.12	36.201538	-107.477513
9,768.0	90.30	271.80	5,594.3	904.4	-4,103.3	1,894,923.79	1,278,197.18	36.201543	-107.477726

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E27-2306 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 7070.0ft (Aztec)
Site:	Lybrook	MD Reference:	KB @ 7070.0ft (Aztec)
Well:	Lybrook E27-2306 01H	North Reference:	True
Wellbore:	H2	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
9,831.0	90.80	271.80	5,593.7	906.3	-4,166.3	1,894,926.56	1,278,134.24	36.201549	-107.477940
9,894.0	91.50	270.80	5,592.5	907.8	-4,229.2	1,894,928.78	1,278,071.29	36.201553	-107.478153
9,957.0	89.80	270.40	5,591.7	908.4	-4,292.2	1,894,930.22	1,278,008.32	36.201554	-107.478367
10,020.0	89.70	270.20	5,592.0	908.8	-4,355.2	1,894,931.34	1,277,945.33	36.201555	-107.478580
10,083.0	90.60	270.20	5,591.9	909.0	-4,418.2	1,894,932.35	1,277,882.34	36.201556	-107.478794
10,146.0	90.80	269.20	5,591.1	908.7	-4,481.2	1,894,932.81	1,277,819.34	36.201555	-107.479007
10,209.0	90.10	268.70	5,590.6	907.5	-4,544.2	1,894,932.44	1,277,756.35	36.201552	-107.479221
10,272.0	89.60	269.00	5,590.8	906.2	-4,607.2	1,894,931.97	1,277,693.35	36.201548	-107.479434
10,335.0	90.40	268.90	5,590.8	905.1	-4,670.2	1,894,931.60	1,277,630.35	36.201545	-107.479648
10,398.0	91.20	269.00	5,589.9	903.9	-4,733.2	1,894,931.23	1,277,567.36	36.201542	-107.479861
10,410.0	91.50	269.00	5,589.6	903.7	-4,745.2	1,894,931.18	1,277,555.36	36.201541	-107.479902
Last Cathedral Survey @ 10,410' MD									
10,455.0	91.50	269.00	5,588.4	902.9	-4,790.1	1,894,930.95	1,277,510.38	36.201539	-107.480054
Projection to Bit @ 10,455'									

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 E27-2306 01H f	0.00	0.00	5,569.3	903.3	-4,815.6	1,894,931.63	1,277,484.94	36.201540	-107.480140
- actual wellpath misses target center by 31.8ft at 10455.0ft MD (5588.4 TVD, 902.9 N, -4790.1 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,410.0	5,589.6	903.7	-4,745.2	Last Cathedral Survey @ 10,410' MD
10,455.0	5,588.4	902.9	-4,790.1	Projection to Bit @ 10,455'

Checked By: _____ Approved By: _____ Date: _____