

Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

Revised October 25, 2012

Energy Minerals and Natural Resources

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address ENCANA OIL & GAS (USA) INC. 370 17 TH STREET, SUITE 1700 DENVER, CO 80202		² OGRID Number 282327
		³ API Number 30-043-21183
⁴ Property Code 40218	⁵ Property Name Lybrook H36A-2307	⁶ Well No. 01H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
SHL: H	36	23N	7W		1598	NORTH	436	EAST	SANDOVAL

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
BHL: D	36	23N	7W		400	NORTH	330	WEST	SANDOVAL

⁹ Pool Information

LYBROOK GALLUP (42289)	RCVD OCT 31 '13 OIL CONS. DIV.
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Additional Well Information

DIST. 3

¹¹ Work Type N	¹² Well Type O	¹³ Cable/Rotary R	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 7263'
¹⁶ Multiple N/A	¹⁷ Proposed Depth 5628' TVD/10361' MD	¹⁸ Formation GALLUP	¹⁹ Contractor AZTEC	²⁰ Spud Date June 25, 2015
Depth to Ground water UNKNOWN		Distance from nearest fresh water well GREATER THAN 5280'		Distance to nearest surface water ~6000'

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
CONDUCTOR	30"	20"	94#	60'	100	SURFACE
SURFACE	12 1/4"	9 5/8"	36#	500'	178	SURFACE
INTERMEDIATE	8 3/4"	7"	26#	5579' TVD / 5967' MD	604 (30% EXCESS)	SURFACE
PROD. LINER	6 1/8"	4 1/2"	11.6#	5767' MD - 10361' MD	N/A	N/A

Casing/Cement Program: Additional Comments

HORIZONTAL LATERAL IN THE GALLUP FORMATION. NO CEMENT IN THE PRODUCTION LINER, WILL RUN EXTERNAL SWELL CASING PACKER SYSTEM. WILL USE OIL-BASED MUD SYSTEM FROM INTERMEDIATE CASING POINT TO TD OF HORIZONTAL LATERAL

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
ANNULAR	3000	1500	TBD
DOUBLE RAM	3000	3000	TBD
ROTATING HEAD	3000	1500	TBD

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. NO DRILLING PIT WILL BE USED I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐ if applicable.		OIL CONSERVATION DIVISION	
Signature: <i>Brenda R. Linster</i>		Approved By: <i>Charles R. ... 11-7-2013</i>	
Printed name: Brenda R. Linster		Title: SUPERVISOR DISTRICT # 3	
Title: Regulatory Lead		Approved Date: NOV 07 2013 Expiration Date: NOV 07 2015	
E-mail Address: brenda.linster@encana.com			
Date: 10/28/13	Phone: 720-876-3989	Conditions of Approval Attached	

Hold C104

for Directional Survey
and "As Drilled" plat

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

NOV 07 2013 ca

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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

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21183	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 40218	*Property Name LYBROOK H35A-2307	*Well Number 01H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 7263'

¹⁰ Surface Location

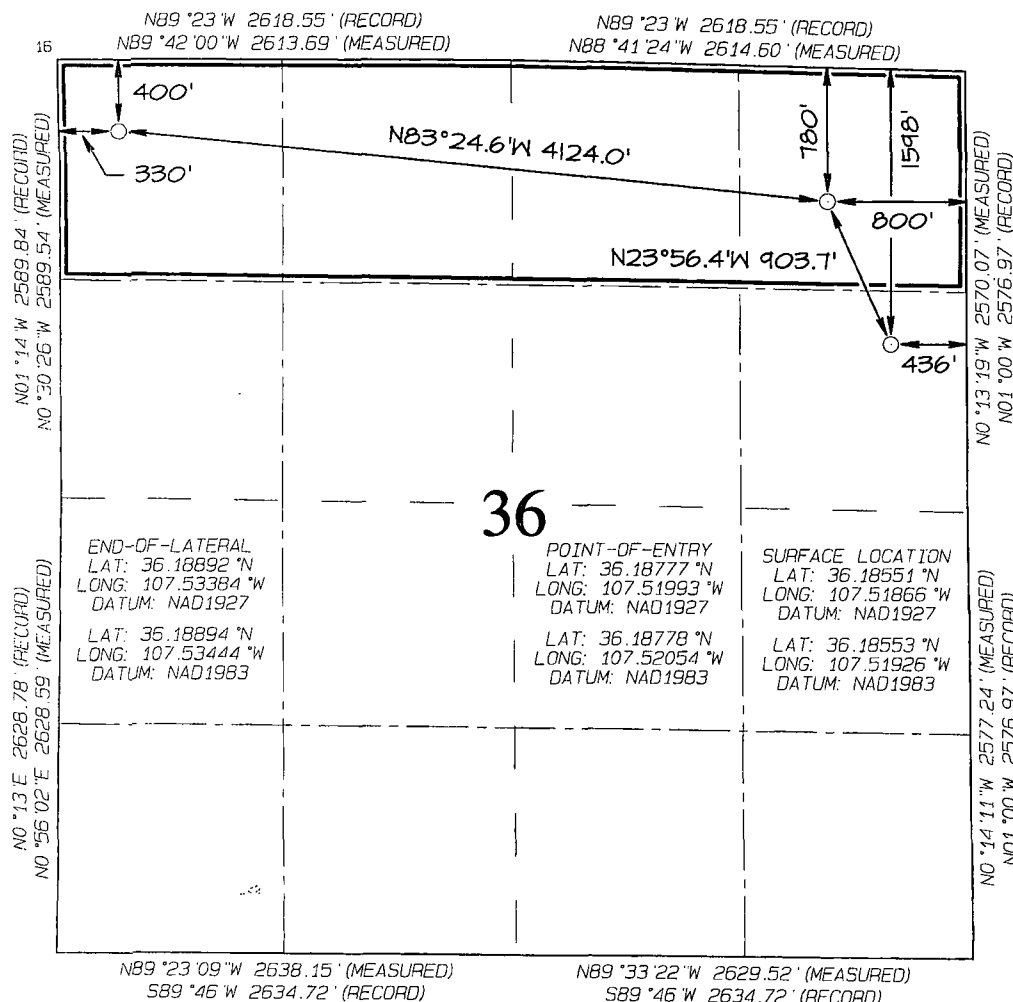
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	36	23N	7W		1598	NORTH	436	EAST	SANDOVAL

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	36	23N	7W		400	NORTH	330	WEST	SANDOVAL

¹² Dedicated Acres 160.0 Acres - (N/2 N/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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



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: *Brenda R. Linster* Date: 10-26-13
Brenda R. Linster

Printed Name
brenda.linster@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.

Survey Date: OCTOBER 4, 2013
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Encana Oil & Gas (USA) Inc. Lybrook H36A-2307 01H

1598' FNL & 436' FEL, Section 36, T23N, R7W, N.M.P.M., Sandoval County, NM

Latitude: 36.18553°N Longitude: 107.51926°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.6 miles to Mile Marker 97.7;

Go right (South-easterly) on Indian Service Route #474 for 4.3 miles to fork in road;

Go left (South-westerly) remaining on Indian Service Route for 0.2 miles to 4-way intersection;

Go right (North-westerly) for 0.6 miles to 4-way intersection;

Go straight (Westerly) for 0.2 miles to 4-way intersection;

Go straight (Westerly) for 0.6 miles to fork in road;

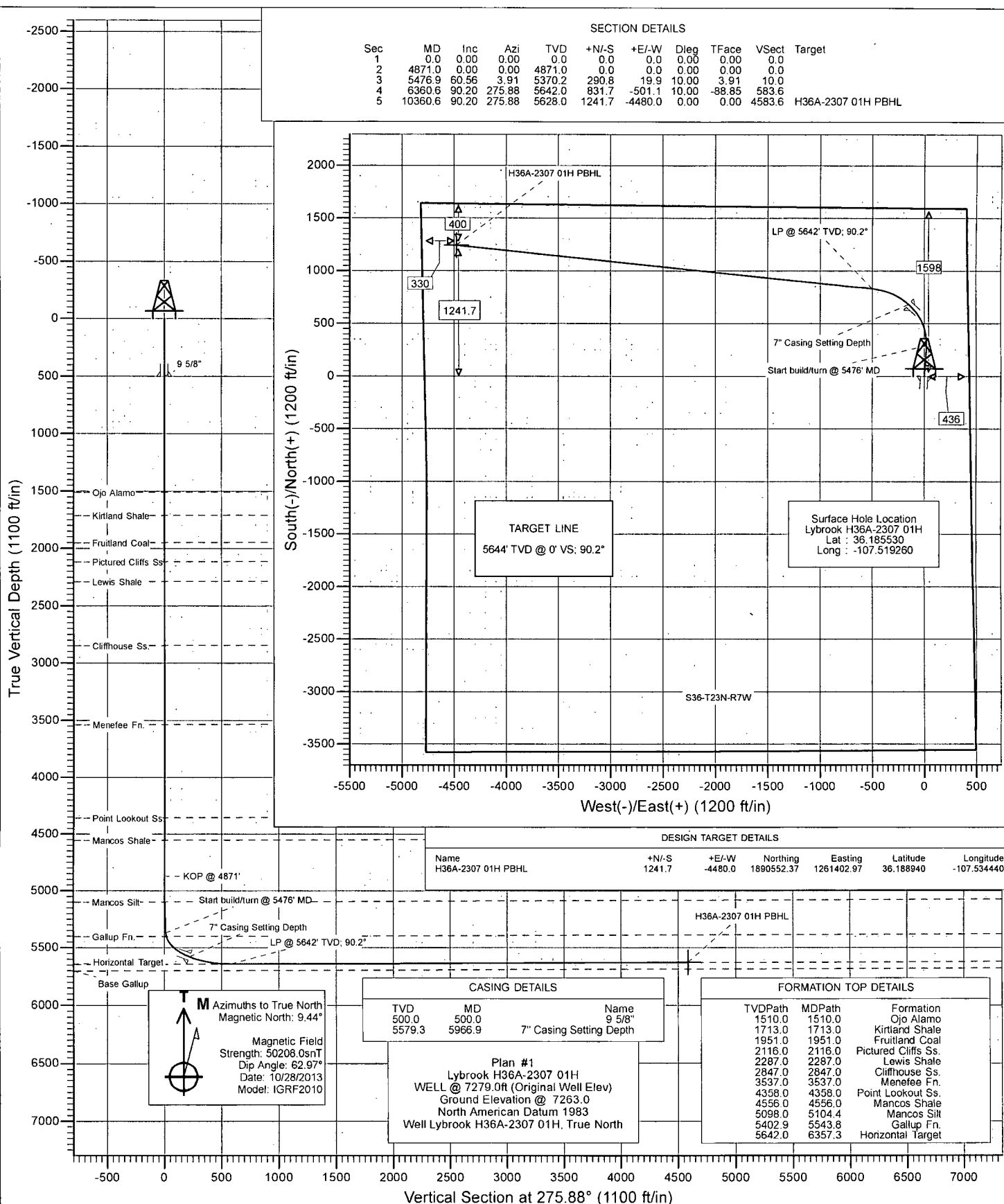
Go right (North-westerly) for 1.4 miles to fork in road;

Go right (North-westerly) for 1.7 miles to fork in road;

Go right (North-easterly) for 0.1 miles to fork in road;

Go right (North-easterly) for 1.3 miles to fork in road;

Go right (North-easterly) for 0.3 miles to Encana Lybrook H36A-2307 01H staked location which partially overlaps the Encana Lybrook H36-2307 01H existing wellpad.



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H36A-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7279.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7279.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H36A-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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

Well	Lybrook H36A-2307 01H		
Well Position	+N/-S	0.0 ft	Northing: 1,889,252.17 ft
	+E/-W	0.0 ft	Easting: 1,265,866.33 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36.185530
		Longitude:	-107.519260
		Ground Level:	7,263.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/28/2013	9.44	62.97	50,208

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	275.88	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,871.0	0.00	0.00	4,871.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,476.9	60.56	3.91	5,370.2	290.8	19.9	10.00	10.00	0.00	3.91	
6,360.6	90.20	275.88	5,642.0	831.7	-501.1	10.00	3.35	-9.96	-88.85	
10,360.6	90.20	275.88	5,628.0	1,241.7	-4,480.0	0.00	0.00	0.00	0.00	H36A-2307 01H PBH

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H36A-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7279.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7279.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H36A-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,510.0	0.00	0.00	1,510.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,713.0	0.00	0.00	1,713.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
1,951.0	0.00	0.00	1,951.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,116.0	0.00	0.00	2,116.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,287.0	0.00	0.00	2,287.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,847.0	0.00	0.00	2,847.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,537.0	0.00	0.00	3,537.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,358.0	0.00	0.00	4,358.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.

Planning Report

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Site:	Lybrook	North Reference:	True
Well:	Lybrook H36A-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,556.0	0.00	0.00	4,556.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	
4,871.0	0.00	0.00	4,871.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4871'
4,900.0	2.90	3.91	4,900.0	0.7	0.0	0.0	10.00	10.00	
5,000.0	12.89	3.91	4,998.9	14.4	1.0	0.5	10.00	10.00	
5,100.0	22.89	3.91	5,094.0	45.0	3.1	1.6	10.00	10.00	
5,104.4	23.33	3.91	5,098.0	46.8	3.2	1.6	10.00	10.00	Mancos Silt
5,200.0	32.89	3.91	5,182.2	91.6	6.3	3.2	10.00	10.00	
5,300.0	42.88	3.91	5,261.1	152.8	10.4	5.3	10.00	10.00	
5,400.0	52.88	3.91	5,328.0	226.7	15.5	7.8	10.00	10.00	
5,476.9	60.56	3.91	5,370.2	290.8	19.9	10.0	10.00	10.00	Start build/turn @ 5476' MD
5,500.0	60.63	1.25	5,381.5	310.9	20.8	11.2	10.00	0.31	
5,543.8	60.91	356.24	5,402.9	349.1	19.9	15.9	10.00	0.64	Gallup Fn.
5,600.0	61.54	349.87	5,430.0	398.0	14.0	26.9	10.00	1.12	
5,700.0	63.38	338.78	5,476.4	483.1	-10.0	59.4	10.00	1.84	
5,800.0	66.04	328.11	5,519.2	563.8	-50.4	107.9	10.00	2.66	
5,900.0	69.41	317.93	5,557.2	637.5	-106.1	170.8	10.00	3.37	
5,966.9	71.99	311.39	5,579.3	681.9	-151.0	220.0	10.00	3.85	7" Casing Setting Depth
6,000.0	73.34	308.22	5,589.2	702.1	-175.2	246.2	10.00	4.10	
6,100.0	77.71	298.93	5,614.2	755.5	-255.8	331.9	10.00	4.37	
6,200.0	82.38	289.95	5,631.5	796.1	-345.4	425.1	10.00	4.67	
6,300.0	87.22	281.16	5,640.6	822.8	-441.2	523.2	10.00	4.85	
6,357.3	90.04	276.16	5,642.0	831.4	-497.9	580.4	10.00	4.91	Horizontal Target
6,360.6	90.20	275.88	5,642.0	831.7	-501.1	583.6	10.00	4.92	LP @ 5642' TVD; 90.2°
6,400.0	90.20	275.88	5,641.8	835.8	-540.3	623.1	0.00	0.00	
6,500.0	90.20	275.88	5,641.5	846.0	-639.8	723.1	0.00	0.00	
6,600.0	90.20	275.88	5,641.1	856.3	-739.3	823.1	0.00	0.00	
6,700.0	90.20	275.88	5,640.8	866.5	-838.7	923.1	0.00	0.00	
6,800.0	90.20	275.88	5,640.4	876.8	-938.2	1,023.1	0.00	0.00	
6,900.0	90.20	275.88	5,640.1	887.0	-1,037.7	1,123.1	0.00	0.00	
7,000.0	90.20	275.88	5,639.7	897.3	-1,137.1	1,223.1	0.00	0.00	
7,100.0	90.20	275.88	5,639.4	907.5	-1,236.6	1,323.1	0.00	0.00	
7,200.0	90.20	275.88	5,639.0	917.8	-1,336.1	1,423.1	0.00	0.00	
7,300.0	90.20	275.88	5,638.7	928.0	-1,435.6	1,523.1	0.00	0.00	
7,400.0	90.20	275.88	5,638.3	938.3	-1,535.0	1,623.1	0.00	0.00	
7,500.0	90.20	275.88	5,638.0	948.5	-1,634.5	1,723.1	0.00	0.00	
7,600.0	90.20	275.88	5,637.6	958.8	-1,734.0	1,823.1	0.00	0.00	
7,700.0	90.20	275.88	5,637.3	969.0	-1,833.5	1,923.1	0.00	0.00	
7,800.0	90.20	275.88	5,636.9	979.3	-1,932.9	2,023.1	0.00	0.00	
7,900.0	90.20	275.88	5,636.6	989.5	-2,032.4	2,123.1	0.00	0.00	
8,000.0	90.20	275.88	5,636.2	999.8	-2,131.9	2,223.1	0.00	0.00	
8,100.0	90.20	275.88	5,635.9	1,010.0	-2,231.3	2,323.1	0.00	0.00	
8,200.0	90.20	275.88	5,635.5	1,020.3	-2,330.8	2,423.1	0.00	0.00	
8,300.0	90.20	275.88	5,635.2	1,030.5	-2,430.3	2,523.1	0.00	0.00	
8,400.0	90.20	275.88	5,634.8	1,040.8	-2,529.8	2,623.1	0.00	0.00	
8,500.0	90.20	275.88	5,634.5	1,051.0	-2,629.2	2,723.1	0.00	0.00	
8,600.0	90.20	275.88	5,634.1	1,061.3	-2,728.7	2,823.1	0.00	0.00	
8,700.0	90.20	275.88	5,633.8	1,071.5	-2,828.2	2,923.1	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H36A-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7279.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7279.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H36A-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,800.0	90.20	275.88	5,633.4	1,081.8	-2,927.7	3,023.1	0.00	0.00	
8,900.0	90.20	275.88	5,633.1	1,092.0	-3,027.1	3,123.1	0.00	0.00	
9,000.0	90.20	275.88	5,632.8	1,102.3	-3,126.6	3,223.1	0.00	0.00	
9,100.0	90.20	275.88	5,632.4	1,112.5	-3,226.1	3,323.1	0.00	0.00	
9,200.0	90.20	275.88	5,632.1	1,122.8	-3,325.5	3,423.1	0.00	0.00	
9,300.0	90.20	275.88	5,631.7	1,133.0	-3,425.0	3,523.1	0.00	0.00	
9,400.0	90.20	275.88	5,631.4	1,143.3	-3,524.5	3,623.1	0.00	0.00	
9,500.0	90.20	275.88	5,631.0	1,153.5	-3,624.0	3,723.1	0.00	0.00	
9,600.0	90.20	275.88	5,630.7	1,163.8	-3,723.4	3,823.1	0.00	0.00	
9,700.0	90.20	275.88	5,630.3	1,174.0	-3,822.9	3,923.1	0.00	0.00	
9,800.0	90.20	275.88	5,630.0	1,184.3	-3,922.4	4,023.1	0.00	0.00	
9,900.0	90.20	275.88	5,629.6	1,194.5	-4,021.9	4,123.1	0.00	0.00	
10,000.0	90.20	275.88	5,629.3	1,204.8	-4,121.3	4,223.1	0.00	0.00	
10,100.0	90.20	275.88	5,628.9	1,215.0	-4,220.8	4,323.1	0.00	0.00	
10,200.0	90.20	275.88	5,628.6	1,225.3	-4,320.3	4,423.1	0.00	0.00	
10,300.0	90.20	275.88	5,628.2	1,235.5	-4,419.7	4,523.1	0.00	0.00	
10,360.6	90.20	275.88	5,628.0	1,241.7	-4,480.0	4,583.6	0.00	0.00	TD at 10360.6 - H36A-2307 01H PBHL

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
H36A-2307 01H PBHL	0.00	0.00	5,628.0	1,241.7	-4,480.0	1,890,552.37	1,261,402.97	36.188940	-107.534440
- plan hits target center									
- Point									

Casing Points

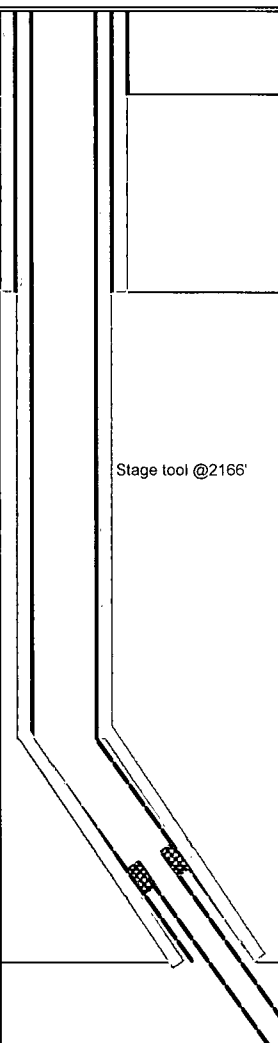
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
500.0	500.0	9 5/8"	0.000	0.000
5,966.9	5,579.3	7" Casing Setting Depth	0.000	0.000

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H36A-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7279.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7279.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H36A-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,510.0	1,510.0	Ojo Alamo		-0.20	275.88
1,713.0	1,713.0	Kirtland Shale		-0.20	275.88
1,951.0	1,951.0	Fruitland Coal		-0.20	275.88
2,116.0	2,116.0	Pictured Cliffs Ss.		-0.20	275.88
2,287.0	2,287.0	Lewis Shale		-0.20	275.88
2,847.0	2,847.0	Cliffhouse Ss.		-0.20	275.88
3,537.0	3,537.0	Menefee Fn.		-0.20	275.88
4,358.0	4,358.0	Point Lookout Ss.		-0.20	275.88
4,556.0	4,556.0	Mancos Shale		-0.20	275.88
5,104.4	5,098.0	Mancos Silt		-0.20	275.88
5,543.8	5,403.0	Gallup Fn.		-0.20	275.88
6,357.3	5,644.0	Horizontal Target		-0.20	275.88

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,871.0	4,871.0	0.0	0.0	KOP @ 4871'
5,476.9	5,370.2	290.8	19.9	Start build/turn @ 5476' MD
6,360.6	5,642.0	831.7	-501.1	LP @ 5642' TVD; 90.2°
10,360.6	5,628.0	1,241.7	-4,480.0	TD at 10360.6

LOC: Sec 36-T23N-R7W County: Sandoval WELL: Lybrook H36A-2307 01H			Encana Natural Gas WELL SUMMARY					ENG: 10/28/13 RIG: GLE: 7263 RKBE: 7279	
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60	60'		30	20" 94# 100sx Type I Neat 16 ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run	None		500	500		12 1/4	9 5/8" 36ppf J55 STC TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°
Surveys every 500'	No OH logs	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn	1510 1713 1951 2116 2287 2847 3537			8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 604 sksTotal. Stage 1 Lead: 244sks Stage 1 Tail: 168sks. Stage 2 Lead: 192sks	Fresh Wtr 8.5-8.8	Vertical <1°
	Mud logger onsite	Point Lookout Ss Mancos Sh KICK OFF PT Mancos Silt Gallup Top 7" csg	4358 4556 4871 5098 5403 5579	5967					KOP 4871 10 deg/100'
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target Base Gallup	5642 5701	6361		6 1/8	200' overlap at liner top 4000' Lateral	8.6-9.0 OBM	.25deg updip 5628'TVD TD = 10361' MD
							4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string Plan on setting top packer within 100' of intermediate casing shoe	Switch to OBM 8.6-9.0	

NOTES:

- 1) Drill with 30" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 4871', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 5967' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 4000' lateral to 10361', run 4 1/2" liner with external swellable csg packers