

District I
1625 N French Dr, Hobbs, NM 88240
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

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised August 1, 2011

Oil Conservation Division

Permit

1220 South St. Francis Dr.

CONFIDENTIAL Santa Fe, NM 87505

RCVD MAY 29 '12
OIL CONS. DIV.

DIST. 3

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 30-043-2127
⁴ Property Code 39269	⁵ Property Name LYBROOK A32-2306	⁶ Well No 01H

⁷ Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
SHL: A	32	23N	6W		556	NORTH	222	EAST	SANDOVAL
BHL: D	32	23N	6W		556	NORTH	330	WEST	SANDOVAL

⁸ Pool Information

LYBROOK GALLUP

Additional Well Information

⁹ Work Type N	¹⁰ Well Type O	¹¹ Cable/Rotary R	¹² Lease Type S	¹³ Ground Level Elevation 7203'
¹⁴ Multiple N/A	¹⁵ Proposed Depth 5585' TVD/10058' MD	¹⁶ Formation GALLUP	¹⁷ Contractor AZTEC	¹⁸ Spud Date ~12/01/12
Depth to Ground water UNKNOWN		Distance from nearest fresh water well ² UNKNOWN WELL TYPES WITHIN 5280'		Distance to nearest surface water ~1650' (dry)

¹⁹ 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'	80	SURFACE
SURFACE	17 1/2"	13 3/8"	48#	500'	291	SURFACE
INTERMEDIATE	12 1/4"	9 5/8"	40#	4800'	993 (30% OH EXCESS)	SURFACE
PROD. LINER	8 1/2"	5 1/2"	17#	4600'-10058' 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 KOP TO TD OF HORIZONTAL LATERAL.

Proposed Blowout Prevention Program

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

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 the drilling pit will be constructed according to NMOCD guidelines ☐ , a general permit ☐ , or an (attached) alternative OCD-approved plan ☐ .		OIL CONSERVATION DIVISION	
Printed name: BRENDA R. LINSTER		Approved By: <i>Charles R. Linster</i> 6-13-2012	
Title: REGULATORY ADVISOR		Title: SUPERVISOR DISTRICT #3	
E-mail Address: BRENDA.LINSTER@ENCANA.COM		Approved Date: JUN 14 2012 Expiration Date: JUN 14 2014	
Date: 05.21.12	Phone: 720-876-3989	Conditions of Approval Attached: <u>Hold C104</u> for Directional Survey and "As Drilled" plan	

ea JUN 14 2012

AV

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

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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 30-043-21127	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 392109	*Property Name LYBROOK A32-2306	*Well Number 01H
*OGRIID No 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 7203'

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
A	32	23N	6W		556	NORTH	222	EAST	SANDOVAL

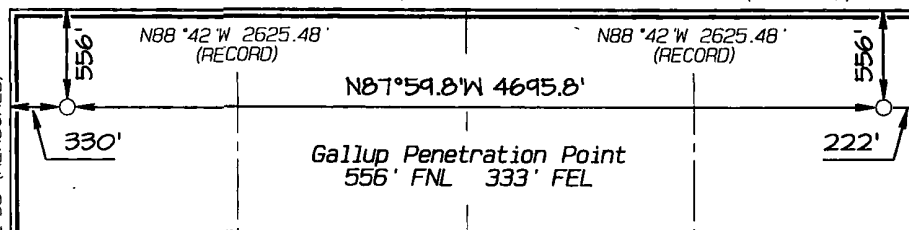
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	32	23N	6W		556	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

¹⁶ N88°00'39"W 2624.47' (MEASURED) N87°59'18"W 2624.75' (MEASURED)



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: 05-23-12
Printed Name: Brenda R. Linster, Regulatory Advisor
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.

Survey Date: DECEMBER 31, 2011

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 A32-2306 01H
556' FNL & 222' FEL, Section 32, T23N, R6W, N.M.P.M., Sandoval County, NM

Latitude: 36.18780°N Longitude: 107.48297°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 50.4 miles to Mile Marker 100.9;

Go right (Southerly) for 200' to fork in road;

Go right which is straight (South-westerly) for 2.0 miles to "T" intersection;

Go right (South-easterly) for 0.8 miles to fork in road;

Go left (South-easterly) for 0.3 miles to fork in road;

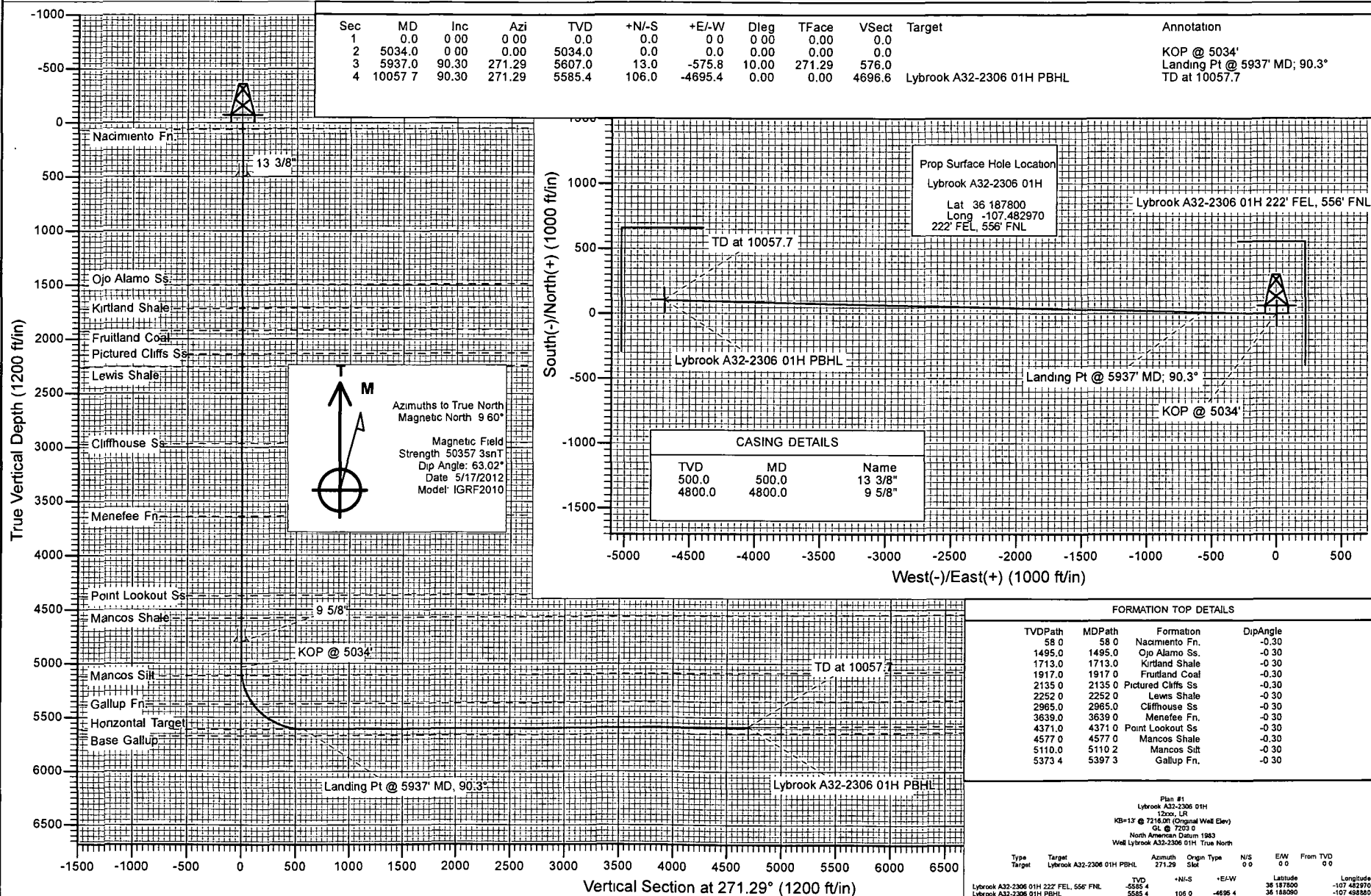
Go right (Southerly) for 0.3 miles to fork in road;

Go left (Easterly) for 0.3 miles to an existing wellpad from which new access continues for 2005' to Encana Lybrook A32-2306 01H location.

encana™

natural gas

Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook A32-2306 01H
Wellbore: Hz
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook A32-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook A32-2306 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	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 A32-2306 01H					
Well Position	+N-S	0 0 ft	Northing:	1,889,940.32 ft	Latitude:	36.187800
	+E-W	0 0 ft	Easting:	1,276,586.38 ft	Longitude:	-107 482970
Position Uncertainty		0 0 ft	Wellhead Elevation:	ft	Ground Level:	7,203 0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/17/2012	9 60	63.02	50,357

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	271.29	

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	
5,034 0	0 00	0.00	5,034 0	0 0	0 0	0 00	0.00	0 00	0.00	
5,937.0	90 30	271 29	5,607.0	13 0	-575 8	10 00	10.00	0 00	271.29	
10,057 7	90 30	271.29	5,585 4	106 0	-4,695.4	0 00	0 00	0 00	0 00	Lybrook A32-2306 01H

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Project:	Sandoval County, NM	MD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook A32-2306 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	Lybrook A32-2306 01H 222' FEL, 556' FNL
58.0	0.00	0.00	58.0	0.0	0.0	0.0	0.00	0.00	Nacimiento Fn
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	13 3/8"
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	
1,495.0	0.00	0.00	1,495.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
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	
1,917.0	0.00	0.00	1,917.0	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	
2,135.0	0.00	0.00	2,135.0	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	
2,252.0	0.00	0.00	2,252.0	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	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
2,965.0	0.00	0.00	2,965.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss
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	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,639.0	0.00	0.00	3,639.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn
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	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook A32-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook A32-2306 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
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
4,371.0	0.00	0.00	4,371.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
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	
4,577.0	0.00	0.00	4,577.0	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	9 5/8"
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	
5,034.0	0.00	0.00	5,034.0	0.0	0.0	0.0	0.00	0.00	KOP @ 5034'
5,100.0	6.60	271.29	5,099.9	0.1	-3.8	3.8	10.00	10.00	
5,110.2	7.62	271.29	5,110.0	0.1	-5.1	5.1	10.00	10.00	Mancos Silt
5,200.0	16.60	271.29	5,197.7	0.5	-23.9	23.9	10.00	10.00	
5,300.0	26.60	271.29	5,290.5	1.4	-60.6	60.6	10.00	10.00	
5,397.3	36.32	271.29	5,373.4	2.5	-111.3	111.3	10.00	10.00	Gallup Fn
5,400.0	36.60	271.29	5,375.6	2.5	-112.9	113.0	10.00	10.00	
5,500.0	46.60	271.29	5,450.3	4.0	-179.2	179.3	10.00	10.00	
5,600.0	56.60	271.29	5,512.3	5.8	-257.5	257.5	10.00	10.00	
5,700.0	66.60	271.29	5,559.9	7.8	-345.3	345.4	10.00	10.00	
5,800.0	76.60	271.29	5,591.4	9.9	-440.0	440.2	10.00	10.00	
5,900.0	86.60	271.29	5,606.0	12.2	-538.8	539.0	10.00	10.00	
5,937.0	90.30	271.29	5,607.0	13.0	-575.8	576.0	10.00	10.00	Landing Pt @ 5937' MD, 90.3°
6,000.0	90.30	271.29	5,606.6	14.4	-638.8	638.9	0.00	0.00	
6,100.0	90.30	271.29	5,606.1	16.7	-738.7	738.9	0.00	0.00	
6,200.0	90.30	271.29	5,605.6	18.9	-838.7	838.9	0.00	0.00	
6,300.0	90.30	271.29	5,605.1	21.2	-938.7	938.9	0.00	0.00	
6,400.0	90.30	271.29	5,604.6	23.4	-1,038.7	1,038.9	0.00	0.00	
6,500.0	90.30	271.29	5,604.0	25.7	-1,138.6	1,138.9	0.00	0.00	
6,600.0	90.30	271.29	5,603.5	28.0	-1,238.6	1,238.9	0.00	0.00	
6,700.0	90.30	271.29	5,603.0	30.2	-1,338.6	1,338.9	0.00	0.00	
6,800.0	90.30	271.29	5,602.5	32.5	-1,438.6	1,438.9	0.00	0.00	
6,900.0	90.30	271.29	5,601.9	34.7	-1,538.5	1,538.9	0.00	0.00	
7,000.0	90.30	271.29	5,601.4	37.0	-1,638.5	1,638.9	0.00	0.00	
7,100.0	90.30	271.29	5,600.9	39.2	-1,738.5	1,738.9	0.00	0.00	
7,200.0	90.30	271.29	5,600.4	41.5	-1,838.4	1,838.9	0.00	0.00	
7,300.0	90.30	271.29	5,599.8	43.7	-1,938.4	1,938.9	0.00	0.00	
7,400.0	90.30	271.29	5,599.3	46.0	-2,038.4	2,038.9	0.00	0.00	
7,500.0	90.30	271.29	5,598.8	48.3	-2,138.4	2,138.9	0.00	0.00	
7,600.0	90.30	271.29	5,598.3	50.5	-2,238.3	2,238.9	0.00	0.00	
7,700.0	90.30	271.29	5,597.7	52.8	-2,338.3	2,338.9	0.00	0.00	
7,800.0	90.30	271.29	5,597.2	55.0	-2,438.3	2,438.9	0.00	0.00	
7,900.0	90.30	271.29	5,596.7	57.3	-2,538.3	2,538.9	0.00	0.00	
8,000.0	90.30	271.29	5,596.2	59.5	-2,638.2	2,638.9	0.00	0.00	
8,100.0	90.30	271.29	5,595.7	61.8	-2,738.2	2,738.9	0.00	0.00	
8,200.0	90.30	271.29	5,595.1	64.0	-2,838.2	2,838.9	0.00	0.00	
8,300.0	90.30	271.29	5,594.6	66.3	-2,938.2	2,938.9	0.00	0.00	
8,400.0	90.30	271.29	5,594.1	68.6	-3,038.1	3,038.9	0.00	0.00	
8,500.0	90.30	271.29	5,593.6	70.8	-3,138.1	3,138.9	0.00	0.00	
8,600.0	90.30	271.29	5,593.0	73.1	-3,238.1	3,238.9	0.00	0.00	
8,700.0	90.30	271.29	5,592.5	75.3	-3,338.0	3,338.9	0.00	0.00	
8,800.0	90.30	271.29	5,592.0	77.6	-3,438.0	3,438.9	0.00	0.00	
8,900.0	90.30	271.29	5,591.5	79.8	-3,538.0	3,538.9	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook A32-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	KB=13' @ 7216.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook A32-2306 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
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
9,000.0	90.30	271.29	5,590.9	82.1	-3,638.0	3,638.9	0.00	0.00	
9,100.0	90.30	271.29	5,590.4	84.4	-3,737.9	3,738.9	0.00	0.00	
9,200.0	90.30	271.29	5,589.9	86.6	-3,837.9	3,838.9	0.00	0.00	
9,300.0	90.30	271.29	5,589.4	88.9	-3,937.9	3,938.9	0.00	0.00	
9,400.0	90.30	271.29	5,588.8	91.1	-4,037.9	4,038.9	0.00	0.00	
9,500.0	90.30	271.29	5,588.3	93.4	-4,137.8	4,138.9	0.00	0.00	
9,600.0	90.30	271.29	5,587.8	95.6	-4,237.8	4,238.9	0.00	0.00	
9,700.0	90.30	271.29	5,587.3	97.9	-4,337.8	4,338.9	0.00	0.00	
9,800.0	90.30	271.29	5,586.7	100.1	-4,437.7	4,438.9	0.00	0.00	
9,900.0	90.30	271.29	5,586.2	102.4	-4,537.7	4,538.9	0.00	0.00	
10,000.0	90.30	271.29	5,585.7	104.7	-4,637.7	4,638.9	0.00	0.00	
10,057.7	90.30	271.29	5,585.4	106.0	-4,695.4	4,696.6	0.00	0.00	TD at 10057.7 - Lybrook A32-2306 01H PBHL

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 A32-2306 01H f	0.00	0.00	5,585.4	106.0	-4,695.4	1,890,105.94	1,271,892.67	36.188090	-107.498880
- plan hits target center									
- Polygon									
Point 1			5,585.4	-400.0	-330.0	1,889,710.17	1,271,557.62		
Point 2			5,585.4	556.0	-330.0	1,890,666.09	1,271,569.77		
Point 3			5,585.4	556.0	300.0	1,890,658.08	1,272,199.71		
Point 4			5,585.4	556.0	-330.0	1,890,666.09	1,271,569.77		
Lybrook A32-2306 01H 2	0.00	0.00	-5,585.4	0.0	0.0	1,889,940.32	1,276,586.38	36.187800	-107.482970
- plan misses target center by 5585.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-5,585.4	-400.0	222.0	1,889,537.53	1,276,803.28		
Point 2			-5,585.4	556.0	222.0	1,890,493.45	1,276,815.42		
Point 3			-5,585.4	556.0	-300.0	1,890,500.09	1,276,293.47		
Point 4			-5,585.4	556.0	222.0	1,890,493.45	1,276,815.42		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
500.0	500.0	13 3/8"	13.375	13.375	
4,800.0	4,800.0	9 5/8"	9.625	9.625	

Planning Report

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Project:	Sandoval County, NM	MD Reference:	KB=13' @ 7216 0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook A32-2306 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
Design:	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
58.0	58.0	Nacimiento Fn.		-0.30	271.29
1,495.0	1,495.0	Ojo Alamo Ss.		-0.30	271.29
1,713.0	1,713.0	Kirtland Shale		-0.30	271.29
1,917.0	1,917.0	Fruitland Coal		-0.30	271.29
2,135.0	2,135.0	Pictured Cliffs Ss		-0.30	271.29
2,252.0	2,252.0	Lewis Shale		-0.30	271.29
2,965.0	2,965.0	Cliffhouse Ss.		-0.30	271.29
3,639.0	3,639.0	Menefee Fn		-0.30	271.29
4,371.0	4,371.0	Point Lookout Ss.		-0.30	271.29
4,577.0	4,577.0	Mancos Shale		-0.30	271.29
5,110.2	5,110.0	Mancos Silt		-0.30	271.29
5,397.3	5,374.0	Gallup Fn.		-0.30	271.29

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,034.0	5,034.0	0.0	0.0	KOP @ 5034'
5,937.0	5,607.0	13.0	-575.8	Landing Pt @ 5937' MD; 90.3°
10,057.7	5,585.4	106.0	-4,695.4	TD at 10057.7