

Submit 1 Copy To Appropriate District
Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised August 1, 2011

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO.
30-043-21125

5. Indicate Type of Lease

STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name
Lybrook 132-2306

8. Well Number
02H

9. OGRID Number
282327

10. Pool name or Wildcat
Lybrook Gallup

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH
PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other

CONFIDENTIAL

2. Name of Operator
Encana Oil & Gas (USA) Inc.

3. Address of Operator
370 17th Street, Suite 1700 Denver, CO 80202

4. Well Location

SHL: Unit Letter I: 1298 feet from the SOUTH line and 358 feet from the EAST line

BHL: Unit Letter M: 660 feet from the SOUTH line and 330 feet from the WEST line

Section 32 Township 23N Range 6W NMPM Sandoval County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Encana Oil & Gas (USA) Inc. (Encana) would like to revise the horizontal target from 5067' TVD to 5465' TVD, intermediate casing setting depth from 5250'MD to 5759'MD, kick off point from 4400'TVD to 4700'TVD and the cement program from the Lybrook 132-2306 02H well. Please see attached revised APD form, wellbore diagram, C-102 and directional plan.

RCVD JAN 11 '13
OIL CONS. DIV.
DIST. 3

Spud Date:

Rig Release Date:

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

SIGNATURE

Amanda Cavoto

TITLE Engineering Technologist

DATE 1/9/13

Type or print name Amanda Cavoto

E-mail address: amanda.cavoto@encana.com

PHONE: 720-876-3437

For State Use Only

APPROVED BY:

Charles Hill

TITLE SUPERVISOR DISTRICT # 3

DATE JAN 22 2013

Conditions of Approval (if any):

TV

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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811 S. First St., Artesia, NM 88210
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District IV
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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised August 1, 2011

Permit

RCVD JAN 11 '13
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
CONFIDENTIAL		³ API Number 30-043-21125
⁴ Property Code 39270	⁵ Property Name LYBROOK 132-2306	⁶ Well No. 02H

⁷ Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
SHL: I	32	23N	6W		1298	SOUTH	358	EAST	SANDOVAL
BHL: M	32	23N	6W		660	SOUTH	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 7103'
¹⁴ Multiple N/A	¹⁵ Proposed Depth 5444' TVD/10005' MD	¹⁶ Formation GALLUP	¹⁷ Contractor AZTEC	¹⁸ Spud Date ~04/07/13
Depth to Ground water UNKNOWN		Distance from nearest fresh water well 5280'		Distance to nearest surface water ~660' (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'	100	SURFACE
SURFACE	12 1/4"	9 5/8"	36#	500'	178	SURFACE
INTERMEDIATE	8 1/2"	7"	26#	5759'MD/5416'TVD	499 (30% OH EXCESS)	SURFACE
PROD. LINER	6 1/8"	4 1/2"	11.6#	5559'-10005' 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.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
ROTATING HEAD	3000	1500	TBD
SINGLE RAM	3000	3000	TBD
ANNULAR	3000	1500	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 ☐.

Printed name: Amanda Cavoto

Title: Engineering Technologist

E-mail Address: amanda.cavoto@encana.com

Date:

Phone: 720-876-3437

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

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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

1 API Number 30.043-21125		2 Pool Code 42289	3 Pool Name LYBROOK GALLUP
4 Property Code 39270	5 Property Name LYBROOK I32-2306		6 Well Number 02H
7 GRID No. 282327	8 Operator Name ENCANA OIL & GAS (USA) INC.		9 Elevation 7103'

10 Surface Location

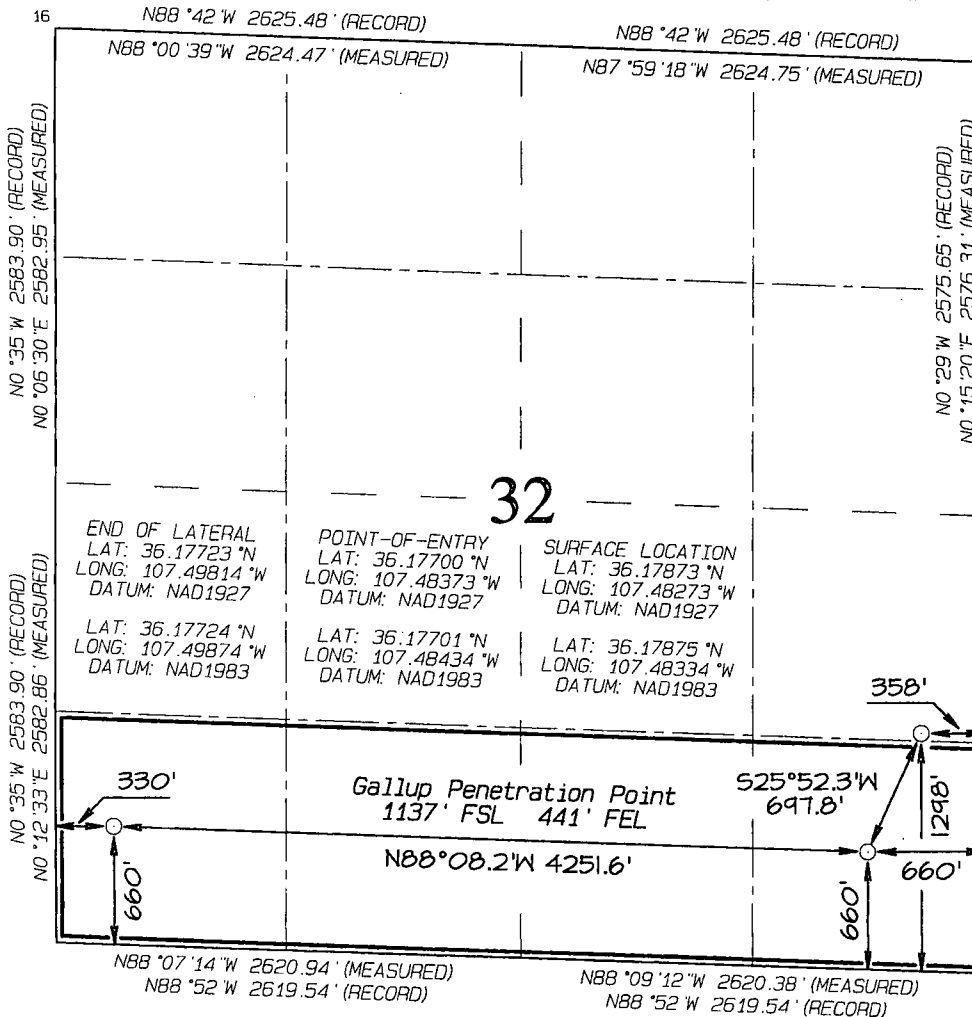
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	32	23N	6W		1298	SOUTH	358	EAST	SANDOVAL

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
M	32	23N	6W		660	SOUTH	330	WEST	SANDOVAL

12 Dedicated Acres 160.0 Acres - (S/2 S/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.

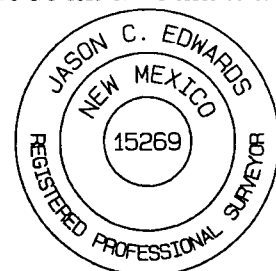
Signature: *Brenda R. Linster* Date: 01.09.13
Printed Name: Brenda R. Linster, Regulatory Lead
E-mail Address: brenda.linster@encana.com

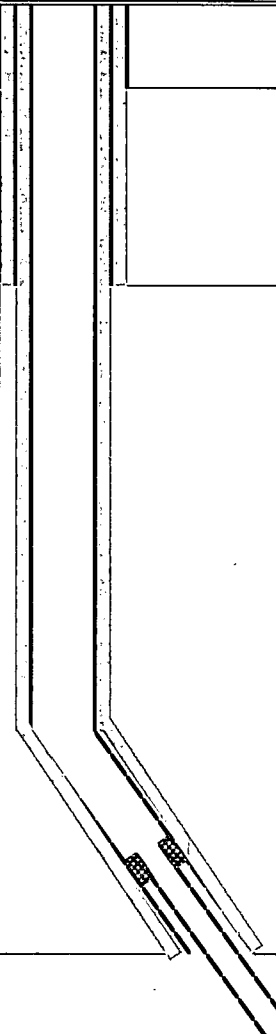
18 SURVEYOR CERTIFICATION

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 of Survey: MARCH 30, 2012
Signature and Seal of Professional Surveyor

Signature: *Jason C. Edwards*
Certificate Number: 15269



LOC: Sec 32, T23N, R6W County: Sandoval WELL: Lybrook 132-2306 02H			Encana Natural Gas WELL SUMMARY			encana natural gas		ENG: J. Fox/ A. RIG: GLE: 7103 RKBE: 7116		1/9/13
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 48.8ppg 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 Mud logger onsite	Ojo Alamo Kirtland Shale Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss Mancos Sh KICK OFF PT Mancos Silt Gallup Top	1352 1547 1744 1993 2080 2802 3487 4224 4415 4700 4940 5218 5416	5759		8 1/2	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 499 sks Total Stage 1 Lead: 201 sks Stage 1 Tail: 139 sks Stage 2 Lead: 159 sks	Fresh Wtr 8.5-8.8	Vertical <1° KOP 4700 10 deg/100'	
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target Base Gallup	5465 5524	6074		6 1/8	200' overlap at liner top 3873' Lateral	8.6-9.0 OBM OBM 8.6-9.0	.5deg updip s TD = 10005' MD 5444' TVD	
							4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string			

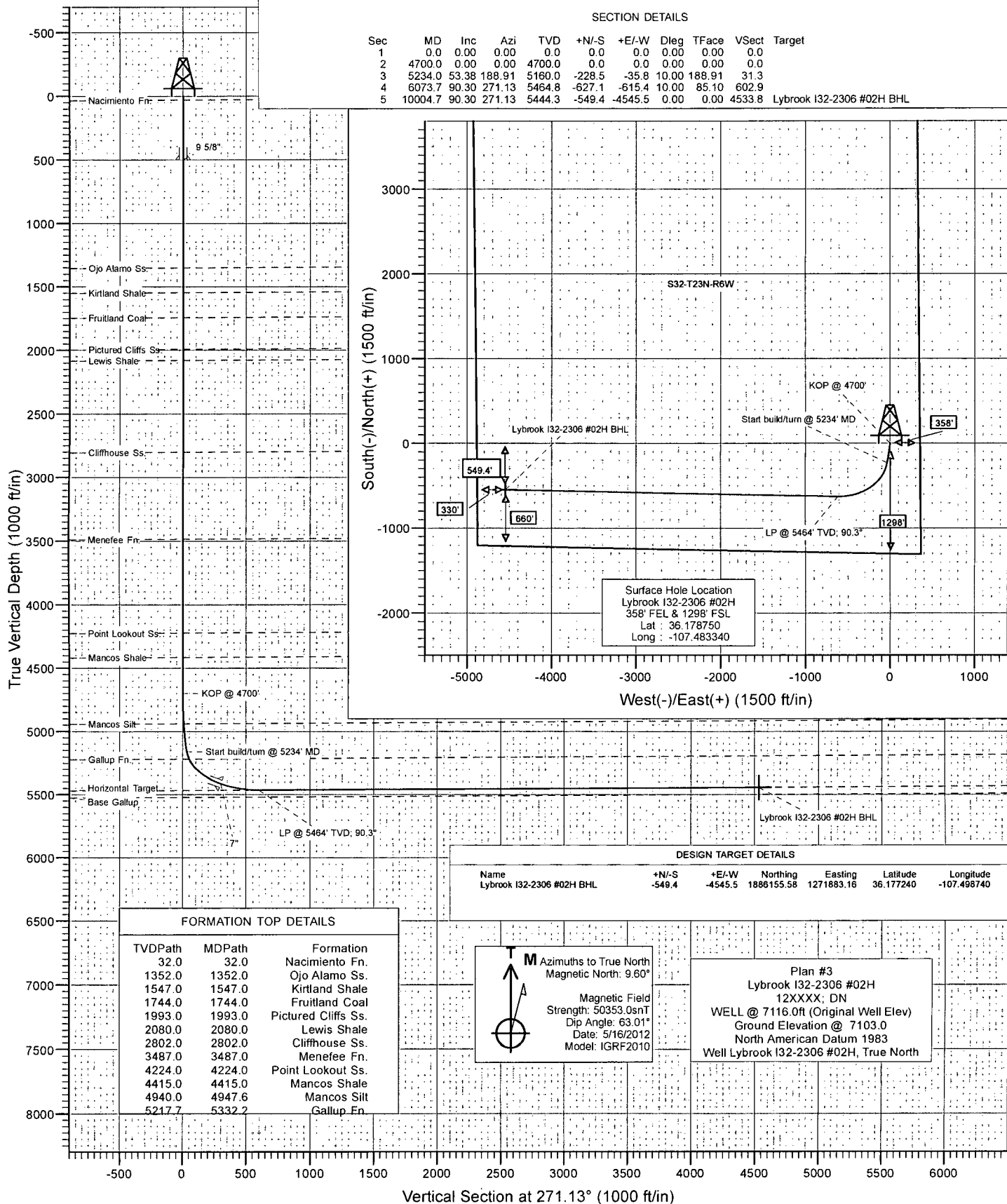


Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook I32-2306 #02H
Wellbore: HZ
Design: Plan #3



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4700.0	0.00	0.00	4700.0	0.0	0.0	0.00	0.00	0.0	
3	5234.0	53.38	188.91	5160.0	-228.5	-35.8	10.00	188.91	31.3	
4	6073.7	90.30	271.13	5464.8	-627.1	-615.4	10.00	85.10	602.9	
5	10004.7	90.30	271.13	5444.3	-549.4	-4545.5	0.00	0.00	4533.8	Lybrook I32-2306 #02H BHL

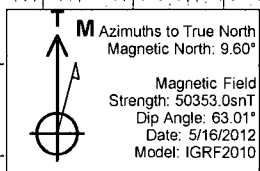


FORMATION TOP DETAILS

TVDPath	MDPath	Formation
32.0	32.0	Nacimiento Fn.
1352.0	1352.0	Ojo Alamo Ss.
1547.0	1547.0	Kirtland Shale
1744.0	1744.0	Fruitland Coal
1993.0	1993.0	Pictured Cliffs Ss.
2080.0	2080.0	Lewis Shale
2802.0	2802.0	Cliffhouse Ss.
3487.0	3487.0	Menefee Fn.
4224.0	4224.0	Point Lookout Ss.
4415.0	4415.0	Mancos Shale
4940.0	4947.6	Mancos Silt
5217.7	5332.2	Gallup Fn.

DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook I32-2306 #02H BHL	-549.4	-4545.5	1886155.58	1271883.16	36.177240	-107.488740



Plan #3
Lybrook I32-2306 #02H
12XXXX; DN
WELL @ 7116.0ft (Original Well Elev)
Ground Elevation @ 7103.0
North American Datum 1983
Well Lybrook I32-2306 #02H, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook I32-2306 #02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7116.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7116.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook I32-2306 #02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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 I32-2306 #02H					
Well Position	+N/-S	0.0 ft	Northing:	1,886,647.15 ft	Latitude:	36.178750
	+E/-W	0.0 ft	Easting:	1,276,435.31 ft	Longitude:	-107.483340
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,103.0 ft	

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2012	9.60	63.01	50,353

Design	Plan #3			
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	271.13

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	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,234.0	53.38	188.91	5,160.0	-228.5	-35.8	10.00	10.00	0.00	188.91	
6,073.7	90.30	271.13	5,464.8	-627.1	-615.4	10.00	4.40	9.79	85.10	
10,004.7	90.30	271.13	5,444.3	-549.4	-4,545.5	0.00	0.00	0.00	0.00	Lybrook I32-2306 #02

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook I32-2306 #02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7116.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7116.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook I32-2306 #02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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	
32.0	0.00	0.00	32.0	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	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	
1,352.0	0.00	0.00	1,352.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
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	
1,547.0	0.00	0.00	1,547.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,744.0	0.00	0.00	1,744.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
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	
1,993.0	0.00	0.00	1,993.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,080.0	0.00	0.00	2,080.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
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	
2,802.0	0.00	0.00	2,802.0	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	
3,487.0	0.00	0.00	3,487.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
3,700.0	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	
4,224.0	0.00	0.00	4,224.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook I32-2306 #02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7116.0ft (Original Well Elev)
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Well:	Lybrook I32-2306 #02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,415.0	0.00	0.00	4,415.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
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	KOP @ 4700'
4,800.0	10.00	188.91	4,799.5	-8.6	-1.3	1.2	10.00	10.00	
4,900.0	19.99	188.91	4,896.0	-34.1	-5.3	4.7	10.00	10.00	
4,947.6	24.75	188.91	4,940.0	-52.0	-8.2	7.1	10.00	10.00	Mancos Silt
5,000.0	29.99	188.91	4,986.5	-75.8	-11.9	10.4	10.00	10.00	
5,100.0	39.99	188.91	5,068.3	-132.4	-20.8	18.1	10.00	10.00	
5,200.0	49.98	188.91	5,138.9	-202.1	-31.7	27.7	10.00	10.00	
5,234.0	53.38	188.91	5,160.0	-228.5	-35.8	31.3	10.00	10.00	Start build/turn @ 5234' MD
5,300.0	54.22	197.02	5,199.0	-280.3	-47.8	42.2	10.00	1.27	
5,332.2	54.83	200.90	5,217.7	-305.1	-56.3	50.3	10.00	1.88	Gallup Fn.
5,400.0	56.49	208.86	5,256.0	-355.8	-79.8	72.8	10.00	2.46	
5,500.0	59.82	219.97	5,308.9	-425.6	-127.9	119.4	10.00	3.33	
5,600.0	64.02	230.26	5,356.0	-487.7	-190.3	180.7	10.00	4.20	
5,700.0	68.89	239.79	5,396.1	-540.0	-265.4	254.7	10.00	4.87	
5,758.7	71.99	245.07	5,415.7	-565.6	-314.4	303.2	10.00	5.28	7"
5,800.0	74.26	248.68	5,427.7	-581.1	-350.7	339.2	10.00	5.49	
5,900.0	79.97	257.10	5,450.0	-609.6	-443.8	431.7	10.00	5.71	
6,000.0	85.88	265.23	5,462.4	-624.8	-541.7	529.3	10.00	5.91	
6,073.7	90.30	271.13	5,464.8	-627.1	-615.4	602.9	10.00	5.99	LP @ 5464' TVD; 90.3°
6,100.0	90.30	271.13	5,464.7	-626.6	-641.6	629.1	0.00	0.00	
6,200.0	90.30	271.13	5,464.2	-624.6	-741.6	729.1	0.00	0.00	
6,300.0	90.30	271.13	5,463.7	-622.7	-841.6	829.1	0.00	0.00	
6,400.0	90.30	271.13	5,463.1	-620.7	-941.6	929.1	0.00	0.00	
6,500.0	90.30	271.13	5,462.6	-618.7	-1,041.5	1,029.1	0.00	0.00	
6,600.0	90.30	271.13	5,462.1	-616.7	-1,141.5	1,129.1	0.00	0.00	
6,700.0	90.30	271.13	5,461.6	-614.8	-1,241.5	1,229.1	0.00	0.00	
6,800.0	90.30	271.13	5,461.0	-612.8	-1,341.5	1,329.1	0.00	0.00	
6,900.0	90.30	271.13	5,460.5	-610.8	-1,441.4	1,429.1	0.00	0.00	
7,000.0	90.30	271.13	5,460.0	-608.8	-1,541.4	1,529.1	0.00	0.00	
7,100.0	90.30	271.13	5,459.5	-606.8	-1,641.4	1,629.1	0.00	0.00	
7,200.0	90.30	271.13	5,458.9	-604.9	-1,741.4	1,729.1	0.00	0.00	
7,300.0	90.30	271.13	5,458.4	-602.9	-1,841.4	1,829.1	0.00	0.00	
7,400.0	90.30	271.13	5,457.9	-600.9	-1,941.3	1,929.1	0.00	0.00	
7,500.0	90.30	271.13	5,457.4	-598.9	-2,041.3	2,029.1	0.00	0.00	
7,600.0	90.30	271.13	5,456.9	-597.0	-2,141.3	2,129.1	0.00	0.00	
7,700.0	90.30	271.13	5,456.3	-595.0	-2,241.3	2,229.1	0.00	0.00	
7,800.0	90.30	271.13	5,455.8	-593.0	-2,341.3	2,329.1	0.00	0.00	
7,900.0	90.30	271.13	5,455.3	-591.0	-2,441.2	2,429.1	0.00	0.00	
8,000.0	90.30	271.13	5,454.8	-589.0	-2,541.2	2,529.1	0.00	0.00	
8,100.0	90.30	271.13	5,454.2	-587.1	-2,641.2	2,629.1	0.00	0.00	
8,200.0	90.30	271.13	5,453.7	-585.1	-2,741.2	2,729.1	0.00	0.00	
8,300.0	90.30	271.13	5,453.2	-583.1	-2,841.2	2,829.1	0.00	0.00	
8,400.0	90.30	271.13	5,452.7	-581.1	-2,941.1	2,929.1	0.00	0.00	
8,500.0	90.30	271.13	5,452.1	-579.2	-3,041.1	3,029.1	0.00	0.00	
8,600.0	90.30	271.13	5,451.6	-577.2	-3,141.1	3,129.1	0.00	0.00	
8,700.0	90.30	271.13	5,451.1	-575.2	-3,241.1	3,229.1	0.00	0.00	
8,800.0	90.30	271.13	5,450.6	-573.2	-3,341.0	3,329.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook I32-2306 #02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7116.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7116.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook I32-2306 #02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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
8,900.0	90.30	271.13	5,450.0	-571.2	-3,441.0	3,429.1	0.00	0.00	
9,000.0	90.30	271.13	5,449.5	-569.3	-3,541.0	3,529.1	0.00	0.00	
9,100.0	90.30	271.13	5,449.0	-567.3	-3,641.0	3,629.1	0.00	0.00	
9,200.0	90.30	271.13	5,448.5	-565.3	-3,741.0	3,729.1	0.00	0.00	
9,300.0	90.30	271.13	5,448.0	-563.3	-3,840.9	3,829.1	0.00	0.00	
9,400.0	90.30	271.13	5,447.4	-561.4	-3,940.9	3,929.1	0.00	0.00	
9,500.0	90.30	271.13	5,446.9	-559.4	-4,040.9	4,029.1	0.00	0.00	
9,600.0	90.30	271.13	5,446.4	-557.4	-4,140.9	4,129.1	0.00	0.00	
9,700.0	90.30	271.13	5,445.9	-555.4	-4,240.9	4,229.1	0.00	0.00	
9,800.0	90.30	271.13	5,445.3	-553.4	-4,340.8	4,329.1	0.00	0.00	
9,900.0	90.30	271.13	5,444.8	-551.5	-4,440.8	4,429.1	0.00	0.00	
10,000.0	90.30	271.13	5,444.3	-549.5	-4,540.8	4,529.1	0.00	0.00	
10,004.7	90.30	271.13	5,444.3	-549.4	-4,545.5	4,533.8	0.00	0.00	TD at 10004.7 - Lybrook I32-2306 #02H BHL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook I32-2306 #02H	0.00	0.00	5,444.3	-549.4	-4,545.5	1,886,155.58	1,271,883.16	36.177240	-107.498740
- hit/miss target									
- Shape									
- 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"	9.625	12.250
5,758.7	5,415.7	7"	7.000	7.500

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
32.0	32.0	Nacimiento Fn.		-0.30	271.13
1,352.0	1,352.0	Ojo Alamo Ss.		-0.30	271.13
1,547.0	1,547.0	Kirtland Shale		-0.30	271.13
1,744.0	1,744.0	Fruitland Coal		-0.30	271.13
1,993.0	1,993.0	Pictured Cliffs Ss.		-0.30	271.13
2,080.0	2,080.0	Lewis Shale		-0.30	271.13
2,802.0	2,802.0	Cliffhouse Ss.		-0.30	271.13
3,487.0	3,487.0	Menefee Fn.		-0.30	271.13
4,224.0	4,224.0	Point Lookout Ss.		-0.30	271.13
4,415.0	4,415.0	Mancos Shale		-0.30	271.13
4,947.6	4,940.0	Mancos Silt		-0.30	271.13
5,332.2	5,218.0	Gallup Fn.		-0.30	271.13

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook I32-2306 #02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7116.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7116.0ft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook I32-2306 #02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,700.0	4,700.0	0.0	0.0	KOP @ 4700'
5,234.0	5,160.0	-228.5	-35.8	Start build/turn @ 5234' MD
6,073.7	5,464.8	-627.1	-615.4	LP @ 5464' TVD; 90.3°
10,004.7	5,444.3	-549.4	-4,545.5	TD at 10004.7