

RECEIVED

Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAY 21 2014

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NM 76842, NMNM48989A
6. If Indian, Allottee or Tribe Name
N/A

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

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

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

3b. Phone No. (include area code)

7. If Unit of CA/Agreement, Name and/or No.
N/A

8. Well Name and No.
Lybrook O35-2308 02H

9. API Well No.
30-045-35624

10. Field and Pool or Exploratory Area
Alamito-Gallup

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 255' FSL and 1367' FEL Section 35, T23N, R8W BHL: 330' FSL and 400' FEL Section 2, T22N, R8W

11. County or Parish, State
San Juan County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other _____
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) submits a revised Form 3160-3 and Directional Drilling Plan for the Lybrook O35-2308 02H well. The original Form 3160-3 was submitted without Total Vertical Depth (TVD) information. The planned TVD for the Lybrook O35-2308 02H well will be 4,814' with a Measured Depth (MD) of 10,510'. Encana is also submitting an updated Directional Drilling Plan, because the original plan submitted was for the Lybrook O35-2308 01H well, not the 02H well. Please replace the Form 3160-3 and Directional Drilling Plan for the Lybrook O35-2308 02H with the attached documents.

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

OIL CONS. DIV DIST. 3

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Shannon Turk

Title Regulatory Analyst

MAY 28 2014

Signature

Shannon Turk

Date 05/20/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekou

Petroleum Engineer

Date

5/23/2014

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office FFO

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

NMOCD

RECEIVED

Form 3160-3
(March 2012)

MAY 21 2014

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Alamogordo Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM 76842, NMNM48989A
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6a. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Encana Oil & Gas (USA) Inc.		7. If Unit or CA Agreement, Name and No. Pending
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202		8. Lease Name and Well No. Lybrook O35-2308 02H
3b. Phone No. (include area code) (720) 876-3448		9. API Well No.
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 255' FSL and 1367" FEL in Section 35, T23N, R8W At proposed prod. zone 330' FSL and 400' FEL in Section 2, T22N, R8W		10. Field and Pool, or Exploratory Alamito-Gallup
14. Distance in miles and direction from nearest town or post office* +/- 45.5 miles south of intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM		11. Sec., T. R. M. or Blk. and Survey or Area Section 35, T23N, R8W NMPM
15. Distance from proposed* location to nearest property or lease line, ft. line (Also to nearest drig. unit line, if any) SHL is 225' From south lease line	16. No. of acres in lease NM 76842- 640 acres NMNM 48989A- 643.2 acre	17. Spacing Unit dedicated to this well 161.10 acres E2E2 of Section 2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Lybrook O35-2308 01H is +/- 20' NW	19. Proposed Depth 4814' TVD, 10510' MD	20. BLM/BIA Bond No. on file COB-000235
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6860', KB 6876'	22. Approximate date work will start* 09/11/2014	23. Estimated duration 20 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed) Shannon Turk	Date
Title Regulatory Analyst		
Approved by (Signature)	Name (Printed/Typed)	Date
Title Office		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

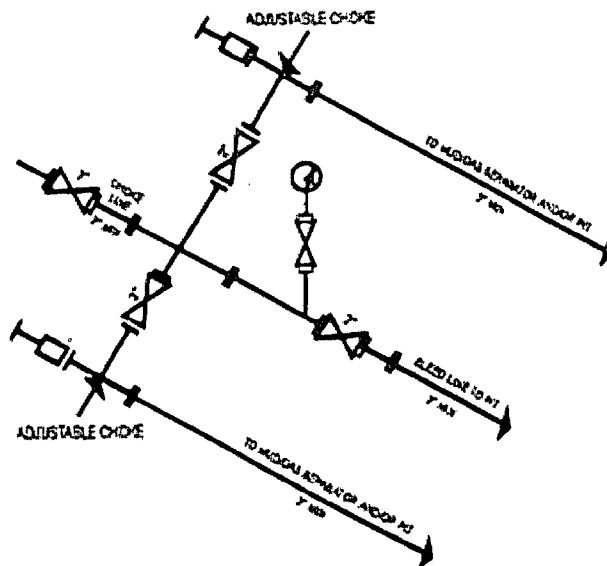
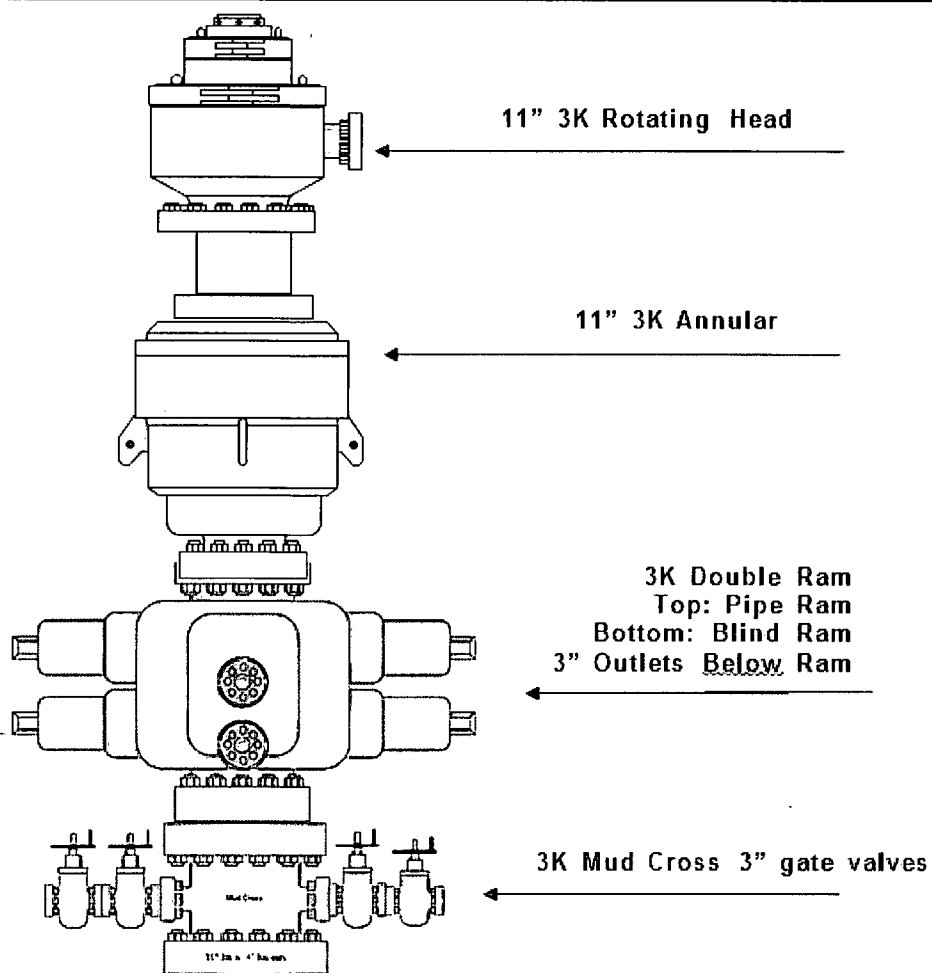
(Continued on page 2)

*(Instructions on page 2)

WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
Lybrook O35-2308 02H



Anticollision Report

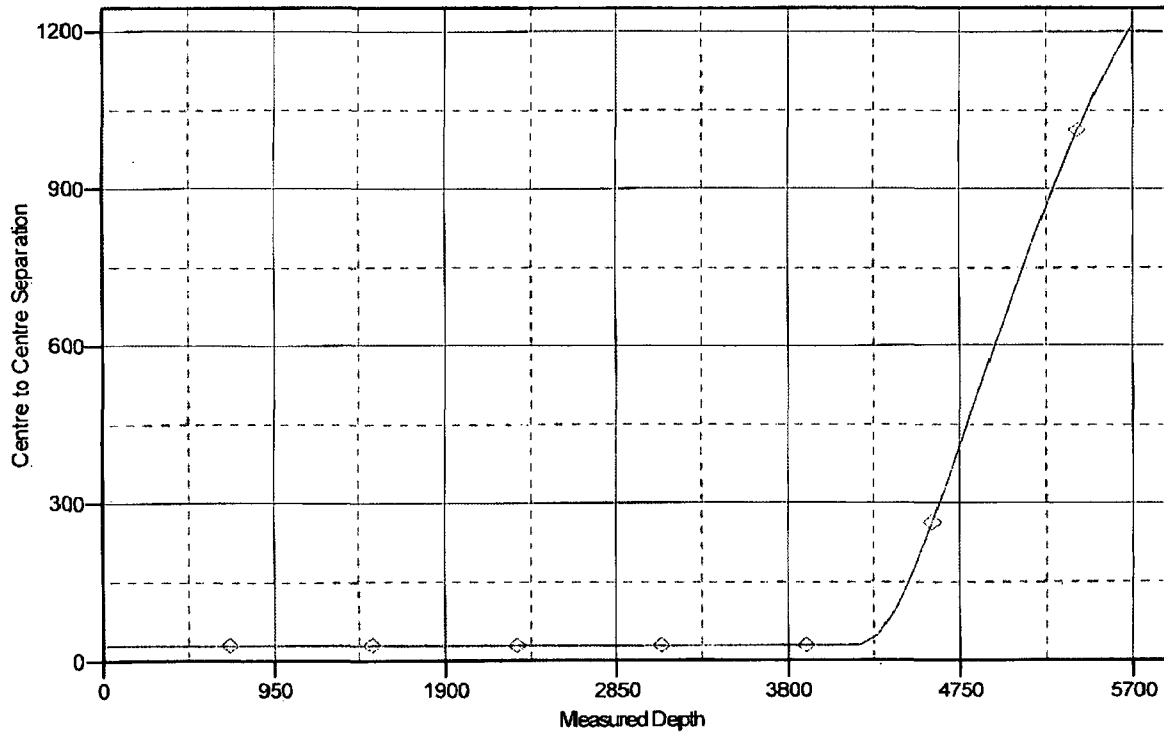
Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S35-T23N-R8W
 Site Error: 0.0ft
 Reference Well: Lybrook O35-2308 02H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Lybrook O35-2308 02H
 TVD Reference: WELL @ 6876.0ft (Aztec)
 MD Reference: WELL @ 6876.0ft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: USA EDM 5000 Multi Users DB
 Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 6876.0ft (Aztec)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333°

Coordinates are relative to: Lybrook O35-2308 02H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.11°

Ladder Plot



LEGEND

Lybrook O35-2308 01H, Hz, Plan #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook 035-2308 02H
Project:	San Juan County, NM	TVD Reference:	WELL @ 6876.0ft (Aztec)
Reference Site:	S35-T23N-R8W	MD Reference:	WELL @ 6876.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook 035-2308 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design : S35-T23N-R8W - Lybrook 035-2308 01H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,779.5	4,450.0	4,439.1	16.1	7.9	49.38	-7.3	-85.1	751.3	731.6	19.73	38.079		
5,200.0	4,804.0	4,450.0	4,439.1	16.0	7.9	58.39	-7.3	-85.1	843.5	821.0	22.51	37.487		
5,300.0	4,828.1	4,450.0	4,439.1	19.8	7.9	62.39	-7.3	-85.1	931.0	907.0	23.97	38.833		
5,400.0	4,845.0	4,450.0	4,439.1	21.3	7.9	64.21	-7.3	-85.1	1,012.8	988.0	24.61	41.150		
5,500.0	4,860.3	4,450.0	4,439.1	22.7	7.9	65.10	-7.3	-85.1	1,087.6	1,063.0	24.59	44.225		
5,600.0	4,871.5	4,450.0	4,439.1	23.8	7.9	65.63	-7.3	-85.1	1,155.0	1,131.0	24.02	48.083		
5,700.0	4,878.1	4,450.0	4,439.1	24.9	7.9	66.12	-7.3	-85.1	1,214.3	1,191.3	23.00	52.792		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook 035-2308 02H
Project:	San Juan County, NM	TVD Reference:	WELL @ 6876.0ft (Aztec)
Reference Site:	S35-T23N-R8W	MD Reference:	WELL @ 6876.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook 035-2308 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	H2	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S35-T23N-R8W - Lybrook 035-2308 01H - H2 - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Total		Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-52.37	18.2	-23.6	29.8					
100.0	100.0	100.0	100.0	0.1	0.1	-52.37	18.2	-23.6	29.8	29.5	0.29	101.670		
200.0	200.0	200.0	200.0	0.3	0.3	-52.37	18.2	-23.6	29.8	29.2	0.84	46.415		
300.0	300.0	300.0	300.0	0.5	0.5	-52.37	18.2	-23.6	29.8	28.8	0.99	30.072		
400.0	400.0	400.0	400.0	0.7	0.7	-52.37	18.2	-23.6	29.8	28.5	1.34	22.240		
500.0	500.0	500.0	500.0	0.8	0.8	-52.37	18.2	-23.6	29.8	28.1	1.69	17.645		
600.0	600.0	600.0	600.0	1.0	1.0	-52.37	18.2	-23.6	29.8	27.6	2.04	14.624		
700.0	700.0	700.0	700.0	1.2	1.2	-52.37	18.2	-23.6	29.8	27.4	2.39	12.486		
800.0	800.0	800.0	800.0	1.4	1.4	-52.37	18.2	-23.6	29.8	27.1	2.74	10.693		
900.0	900.0	900.0	900.0	1.5	1.5	-52.37	18.2	-23.6	29.8	26.7	3.09	9.661		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-52.37	18.2	-23.6	29.8	26.4	3.43	8.679		
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-52.37	18.2	-23.6	29.8	26.0	3.78	7.879		
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-52.37	18.2	-23.6	29.8	25.7	4.13	7.213		
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-52.37	18.2	-23.6	29.8	25.3	4.46	6.651		
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-52.37	18.2	-23.6	29.8	25.0	4.83	6.171		
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-52.37	18.2	-23.6	29.8	24.6	5.18	5.755		
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-52.37	18.2	-23.6	29.8	24.3	5.53	5.392		
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-52.37	18.2	-23.6	29.8	23.9	5.88	5.071		
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-52.37	18.2	-23.6	29.8	23.6	6.23	4.787		
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-52.37	18.2	-23.6	29.8	23.2	6.58	4.533		
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-52.37	18.2	-23.6	29.8	22.9	6.93	4.305		
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-52.37	18.2	-23.6	29.8	22.5	7.27	4.088		
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-52.37	18.2	-23.6	29.8	22.2	7.62	3.910		
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-52.37	18.2	-23.6	29.8	21.8	7.97	3.739		
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-52.37	18.2	-23.6	29.8	21.5	8.32	3.582		
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	-52.37	18.2	-23.6	29.8	21.1	8.67	3.438		
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	-52.37	18.2	-23.6	29.8	20.8	9.02	3.305		
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	-52.37	18.2	-23.6	29.8	20.4	9.37	3.182		
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	-52.37	18.2	-23.6	29.8	20.1	9.72	3.068		
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	-52.37	18.2	-23.6	29.8	19.7	10.07	2.961		
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	-52.37	18.2	-23.6	29.8	19.4	10.42	2.862		
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	-52.37	18.2	-23.6	29.8	19.0	10.77	2.769		
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	-52.37	18.2	-23.6	29.8	18.7	11.11	2.682		
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	-52.37	18.2	-23.6	29.8	18.3	11.40	2.601		
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	-52.37	18.2	-23.6	29.8	18.0	11.81	2.524		
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	-52.37	18.2	-23.6	29.8	17.6	12.16	2.451		
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	-52.37	18.2	-23.6	29.8	17.3	12.51	2.383		
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	-52.37	18.2	-23.6	29.8	17.0	12.86	2.318		
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	-52.37	18.2	-23.6	29.8	16.6	13.21	2.257		
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	-52.37	18.2	-23.6	29.8	16.3	13.56	2.199		
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	-52.37	18.2	-23.6	29.8	15.9	13.91	2.144		
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	-52.37	18.2	-23.6	29.8	15.6	14.26	2.091 CC, ES		
4,150.9	4,150.9	4,150.9	4,150.9	7.2	7.2	-143.99	18.2	-23.6	30.2	15.7	14.43	2.090		
4,200.0	4,200.0	4,199.2	4,199.2	7.3	7.3	-144.06	17.9	-24.3	30.4	15.8	14.60	2.084 SF		
4,300.0	4,296.1	4,291.7	4,291.7	7.5	7.5	-164.36	13.3	-35.3	50.2	35.5	14.74	3.406		
4,400.0	4,394.7	4,387.7	4,383.9	7.7	7.6	-176.82	5.4	-54.5	100.9	88.3	14.53	6.940		
4,500.0	4,483.6	4,422.2	4,414.3	8.0	7.8	177.68	2.6	-73.7	174.6	180.6	14.03	12.449		
4,600.0	4,563.7	4,450.0	4,439.1	8.6	7.9	174.24	-7.3	-85.1	263.0	249.7	13.29	19.779		
4,700.0	4,631.9	4,474.0	4,460.1	9.5	8.0	167.01	-11.8	-95.9	359.1	348.4	12.66	26.374		
4,800.0	4,686.5	4,478.8	4,464.2	10.7	8.0	64.32	-12.7	-98.2	456.6	441.0	17.80	26.058		
4,900.0	4,725.7	4,474.0	4,460.0	12.4	8.0	7.79	-11.8	-95.9	558.0	547.0	10.95	50.936		
5,000.0	4,753.3	4,464.5	4,451.9	14.2	7.9	32.62	-10.0	-91.6	655.5	640.3	15.20	43.138		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O35-2308 02H
Project:	San Juan County, NM	TVD Reference:	WELL @ 6876.0ft (Aztec)
Reference Site:	S35-T23N-R8W	MD Reference:	WELL @ 6876.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O35-2308 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,251.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	3/4/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,509.8	Plan #1 (Hz)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S35-T23N-R8W						
Lybrook O35-2308 01H - Hz - Plan #1	4,100.0	4,100.0	29.8	15.6	2.091	CC, ES
Lybrook O35-2308 01H - Hz - Plan #1	4,200.0	4,199.2	30.4	15.8	2.084	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S35-T23N-R8W

Lybrook O35-2308 02H

Hz

Plan #1

Anticollision Report

04 March, 2014

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O35-2308 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6876.0ft (Aztec)
Project:	San Juan County, NM	MD Reference:	WELL @ 6876.0ft (Aztec)
Site:	S35-T23N-R8W	North Reference:	True
Well:	Lybrook O35-2308 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
597.0	597.0	Ojo Alamo		-0.80	180.68
806.0	806.0	Kirtland Shale		-0.80	180.68
1,116.0	1,116.0	Fruitland Coal		-0.80	180.68
1,278.0	1,278.0	Pictured Cliffs Ss.		-0.80	180.68
1,374.0	1,374.0	Lewis Shale		-0.80	180.68
1,993.0	1,993.0	Cliffhouse Ss.		-0.80	180.68
2,723.0	2,723.0	Menefee Fn.		-0.80	180.68
3,656.0	3,656.0	Point Lookout Ss.		-0.80	180.68
3,803.0	3,803.0	Mancos Shale		-0.80	180.68
4,316.2	4,315.0	Manooe Silt		-0.80	180.68
4,627.9	4,584.0	Gallup Fn.		-0.80	180.68

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,181.0	4,181.0	0.0	0.0	KOP @ 4181'
4,923.3	4,732.5	-8.3	417.1	Start build/tum @ 4923' MD
5,820.8	4,879.9	-589.7	959.2	LP @ 4879' TVD; 90.8"
10,510.2	4,814.4	-5,278.3	903.3	TD at 10510.2

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O35-2308 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6876.0ft (Aztec)
Project:	San Juan County, NM	MD Reference:	WELL @ 6876.0ft (Aztec)
Site:	S35-T23N-R8W	North Reference:	True
Well:	Lybrook O35-2308 02H	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
8,900.0	90.80	180.68	4,836.9	-3,668.3	922.5	3,657.1	0.00	0.00	
9,000.0	90.80	180.68	4,835.5	-3,768.3	921.3	3,757.1	0.00	0.00	
9,100.0	90.80	180.68	4,834.1	-3,868.3	920.1	3,857.1	0.00	0.00	
9,200.0	90.80	180.68	4,832.7	-3,968.3	918.9	3,957.1	0.00	0.00	
9,300.0	90.80	180.68	4,831.3	-4,068.3	917.7	4,057.1	0.00	0.00	
9,400.0	90.80	180.68	4,829.9	-4,168.2	916.5	4,157.1	0.00	0.00	
9,500.0	90.80	180.68	4,828.5	-4,268.2	915.3	4,257.1	0.00	0.00	
9,600.0	90.80	180.68	4,827.2	-4,368.2	914.1	4,357.1	0.00	0.00	
9,700.0	90.80	180.68	4,825.8	-4,468.2	912.9	4,457.0	0.00	0.00	
9,800.0	90.80	180.68	4,824.4	-4,568.2	911.7	4,557.0	0.00	0.00	
9,900.0	90.80	180.68	4,823.0	-4,668.2	910.5	4,657.0	0.00	0.00	
10,000.0	90.80	180.68	4,821.6	-4,768.1	909.3	4,757.0	0.00	0.00	
10,100.0	90.80	180.68	4,820.2	-4,868.1	908.1	4,857.0	0.00	0.00	
10,200.0	90.80	180.68	4,818.8	-4,968.1	907.0	4,957.0	0.00	0.00	
10,300.0	90.80	180.68	4,817.4	-5,068.1	905.8	5,057.0	0.00	0.00	
10,400.0	90.80	180.68	4,816.0	-5,168.1	904.6	5,157.0	0.00	0.00	
10,500.0	90.80	180.68	4,814.6	-5,268.1	903.4	5,257.0	0.00	0.00	
10,510.2	90.80	180.68	4,814.4	-5,278.3	903.3	5,267.2	0.00	0.00	TD at 10510.2

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook O35-2308 02H I - hit/miss target - Shape - Point	0.00	0.00	4,814.4	-5,278.3	903.3	1,878,446.92	2,779,073.22	36.162340	-107.643700
Lybrook O35-2308 02H I - plan hits target center - Point	0.00	0.00	4,879.9	-589.7	959.2	1,883,135.60	2,779,120.13	36.175220	-107.643510

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,728.0	4,879.1	7" ICP	0.000	0.000	
500.0	500.0	9 5/8"	0.000	0.000	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O35-2308 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6876.0ft (Aztec)
Project:	San Juan County, NM	MD Reference:	WELL @ 6876.0ft (Aztec)
Site:	S35-T23N-R8W	North Reference:	True
Well:	Lybrook O35-2308 02H	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
4,200.0	1.90	91.14	4,200.0	0.0	0.3	0.0	10.00	10.00	
4,300.0	11.90	91.14	4,299.1	-0.2	12.3	0.1	10.00	10.00	
4,316.2	13.52	91.14	4,315.0	-0.3	15.9	0.1	10.00	10.00	Mancos Silt
4,400.0	21.89	91.14	4,394.7	-0.8	41.3	0.3	10.00	10.00	
4,500.0	31.89	91.14	4,483.8	-1.7	86.5	0.7	10.00	10.00	
4,600.0	41.88	91.14	4,563.7	-2.9	146.4	1.2	10.00	10.00	
4,627.9	44.67	91.14	4,584.0	-3.3	165.5	1.3	10.00	10.00	Gallup Fn.
4,700.0	51.88	91.14	4,631.9	-4.4	219.3	1.8	10.00	10.00	
4,800.0	61.88	91.14	4,686.5	-6.0	302.9	2.4	10.00	10.00	
4,900.0	71.87	91.14	4,725.7	-7.8	394.8	3.2	10.00	10.00	
4,923.3	74.20	91.14	4,732.5	-8.3	417.1	3.3	10.00	10.00	Start build/turn @ 4923' MD
5,000.0	74.47	99.10	4,753.3	-14.9	490.5	9.1	10.00	0.34	
5,100.0	75.24	109.43	4,779.5	-38.6	583.9	31.7	10.00	0.77	
5,200.0	76.46	119.67	4,804.0	-78.9	672.0	70.9	10.00	1.22	
5,300.0	78.10	129.79	4,826.1	-134.4	752.0	125.5	10.00	1.63	
5,400.0	80.09	139.78	4,845.0	-203.5	821.6	193.7	10.00	1.99	
5,500.0	82.37	149.63	4,860.3	-284.1	878.6	273.6	10.00	2.28	
5,600.0	84.87	159.38	4,871.5	-373.7	921.3	362.7	10.00	2.50	
5,700.0	87.51	169.05	4,878.1	-469.6	948.4	458.3	10.00	2.65	
5,728.0	88.27	171.75	4,879.1	-497.2	953.1	485.8	10.00	2.70	7" ICP
5,800.0	90.23	178.68	4,880.1	-568.9	959.1	557.4	10.00	2.72	
5,820.8	90.80	180.68	4,879.9	-589.7	959.2	578.3	10.00	2.73	LP @ 4879' TVD; 90.8"
5,900.0	90.80	180.68	4,878.8	-668.8	958.2	657.4	0.00	0.00	
6,000.0	90.80	180.68	4,877.4	-768.8	957.0	757.4	0.00	0.00	
6,100.0	90.80	180.68	4,876.0	-868.8	955.9	857.4	0.00	0.00	
6,200.0	90.80	180.68	4,874.6	-968.8	954.7	957.4	0.00	0.00	
6,300.0	90.80	180.68	4,873.2	-1,068.8	953.5	1,057.4	0.00	0.00	
6,400.0	90.80	180.68	4,871.8	-1,168.8	952.3	1,157.4	0.00	0.00	
6,500.0	90.80	180.68	4,870.4	-1,268.7	951.1	1,257.4	0.00	0.00	
6,600.0	90.80	180.68	4,869.0	-1,368.7	949.9	1,357.4	0.00	0.00	
6,700.0	90.80	180.68	4,867.6	-1,468.7	948.7	1,457.3	0.00	0.00	
6,800.0	90.80	180.68	4,866.2	-1,568.7	947.5	1,557.3	0.00	0.00	
6,900.0	90.80	180.68	4,864.8	-1,668.7	946.3	1,657.3	0.00	0.00	
7,000.0	90.00	180.68	4,863.4	-1,768.7	945.1	1,757.3	0.00	0.00	
7,100.0	90.80	180.68	4,862.0	-1,868.6	943.9	1,857.3	0.00	0.00	
7,200.0	90.80	180.68	4,860.7	-1,968.6	942.7	1,957.3	0.00	0.00	
7,300.0	90.80	180.68	4,859.3	-2,068.6	941.5	2,057.3	0.00	0.00	
7,400.0	90.80	180.68	4,857.9	-2,168.6	940.3	2,157.3	0.00	0.00	
7,500.0	90.80	180.68	4,856.5	-2,268.6	939.2	2,257.3	0.00	0.00	
7,600.0	90.80	180.68	4,855.1	-2,368.6	938.0	2,357.3	0.00	0.00	
7,700.0	90.80	180.68	4,853.7	-2,468.5	936.8	2,457.2	0.00	0.00	
7,800.0	90.80	180.68	4,852.3	-2,568.5	935.6	2,557.2	0.00	0.00	
7,900.0	90.80	180.68	4,850.9	-2,668.5	934.4	2,657.2	0.00	0.00	
8,000.0	90.80	180.68	4,849.5	-2,768.5	933.2	2,757.2	0.00	0.00	
8,100.0	90.80	180.68	4,848.1	-2,868.5	932.0	2,857.2	0.00	0.00	
8,200.0	90.80	180.68	4,846.7	-2,968.5	930.8	2,957.2	0.00	0.00	
8,300.0	90.80	180.68	4,845.3	-3,068.4	929.6	3,057.2	0.00	0.00	
8,400.0	90.80	180.68	4,843.9	-3,168.4	928.4	3,157.2	0.00	0.00	
8,500.0	90.80	180.68	4,842.5	-3,268.4	927.2	3,257.2	0.00	0.00	
8,600.0	90.80	180.68	4,841.1	-3,368.4	926.0	3,357.2	0.00	0.00	
8,700.0	90.80	180.68	4,839.7	-3,468.4	924.8	3,457.1	0.00	0.00	
8,800.0	90.80	180.68	4,838.3	-3,568.3	923.7	3,557.1	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O35-2308 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6876.0ft (Aztec)
Project:	San Juan County, NM	MD Reference:	WELL @ 6876.0ft (Aztec)
Site:	S35-T23N-R8W	North Reference:	True
Well:	Lybrook O35-2308 02H	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"
597.0	0.00	0.00	597.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo
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	
806.0	0.00	0.00	806.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,116.0	0.00	0.00	1,116.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,278.0	0.00	0.00	1,278.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,374.0	0.00	0.00	1,374.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
1,600.0	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	
1,800.0	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	Cliffhouse Ss.
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	
2,200.0	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	
2,723.0	0.00	0.00	2,723.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
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	
3,656.0	0.00	0.00	3,656.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
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	
3,803.0	0.00	0.00	3,803.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
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	
4,181.0	0.00	0.00	4,181.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4181'

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook Q35-2308 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6876.0ft (Aztec)
Project:	San Juan County, NM	MD Reference:	WELL @ 6876.0ft (Aztec)
Site:	S35-T23N-R8W	North Reference:	True
Well:	Lybrook Q35-2308 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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

Site		S35-T23N-R8W			
Site Position:		Northing:	1,883,784.09 ft	Latitude:	36.177020
From:	Lat/Long	Easting:	2,775,559.63 ft	Longitude:	-107.655570
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.10 °

Well	Lybrook Q35-2308 02H					
Well Position	+N/-S	0.0 ft	Northing:	1,883,723.45 ft	Latitude:	36.176840
	+E/-W	0.0 ft	Easting:	2,778,159.82 ft	Longitude:	-107.646760
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,860.0 ft	

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/4/2014	9.45	62.93	50,155

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	180.68

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	
4,181.0	0.00	0.00	4,181.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,923.3	74.20	91.14	4,732.5	-8.3	417.1	10.00	10.00	0.00	91.14	
5,820.8	90.80	180.68	4,879.9	-589.7	959.2	10.00	1.85	9.98	89.11	Lybrook Q35-2308 02
10,510.2	90.80	180.68	4,814.4	-5,278.3	903.3	0.00	0.00	0.00	0.00	Lybrook Q35-2308 02

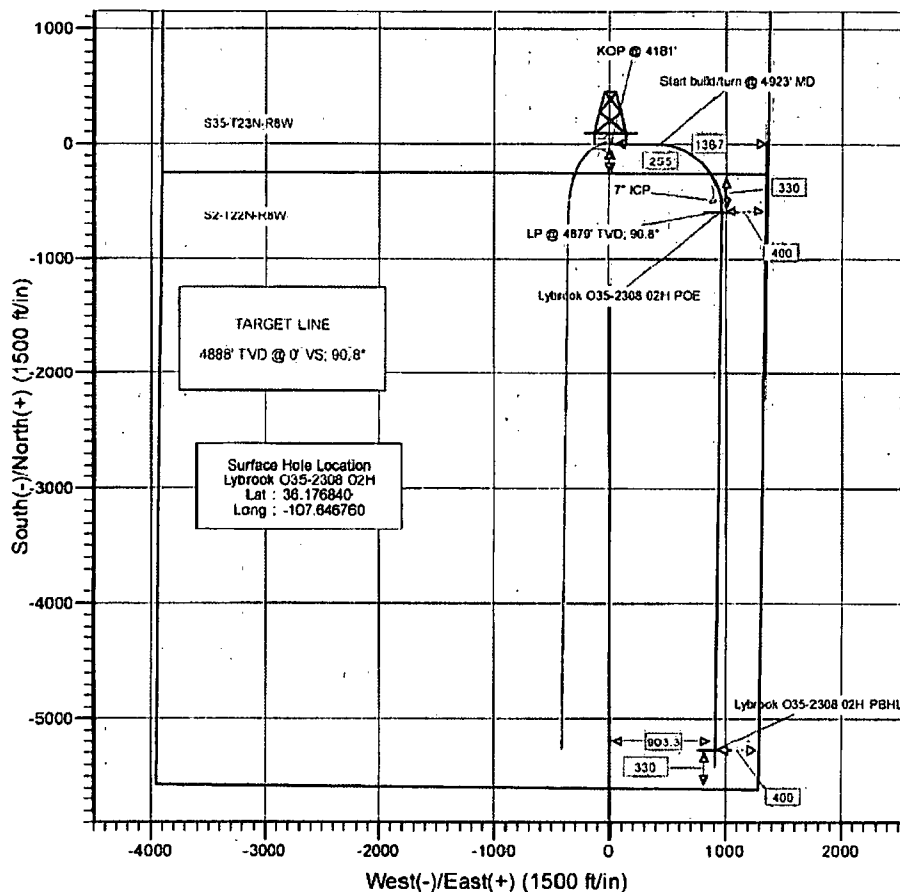
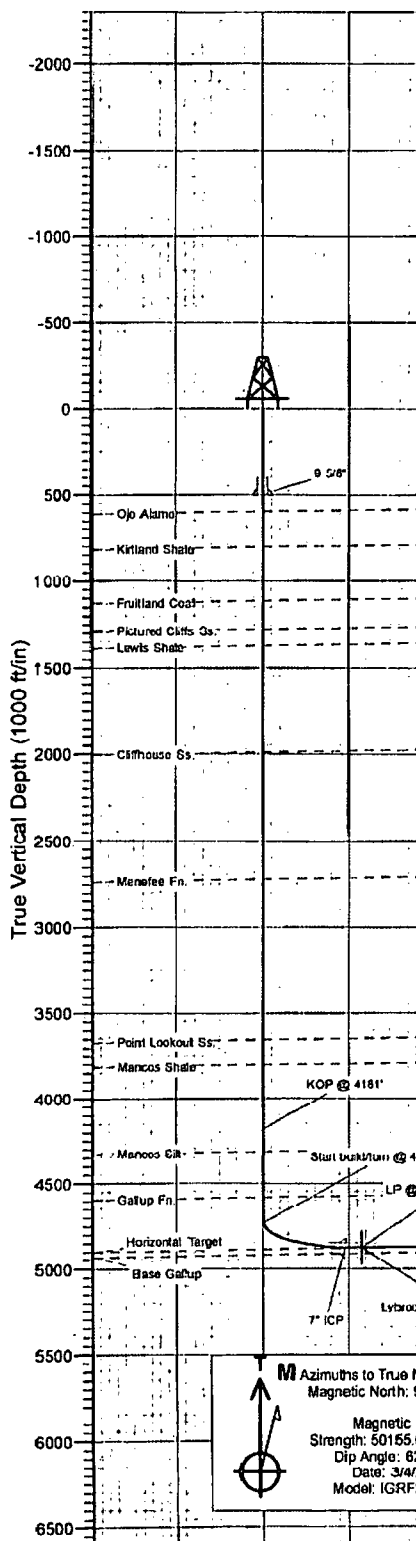


Project: San Juan County, NM
 Site: S35-T23N-R8W
 Well: Lybrook O35-2308 02H
 Wellbore: Hz
 Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	VSecl	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4181.0	0.00	0.00	4181.0	0.0	0.0	0.00	0.00	0.0	
3	4923.3	74.20	91.14	4732.5	-8.3	417.1	10.00	91.14	3.3	
4	5820.8	90.80	180.68	4879.9	-589.7	959.2	10.00	89.11	578.3	Lybrook O35-2308 02H POE
5	10510.2	90.80	180.68	4814.4	-5278.3	903.3	0.00	0.00	5267.2	Lybrook O35-2308 02H PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook O35-2308 02H PBHL	-5278.3	903.3	1878448.92	2779073.22	36.162340	-107.643700
Lybrook O35-2308 02H POE	-589.7	059.2	1883135.60	2779120.13	36.175220	-107.643510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
597.0	597.0	Ojo Alamo
806.0	806.0	Kirtland Shale
1118.0	1118.0	Fruitland Coal
1278.0	1278.0	Pictured Cliffs Ss.
1374.0	1374.0	Lewis Shale
1993.0	1993.0	Cliffhouse Ss.
2723.0	2723.0	Menefee Fm.
3656.0	3656.0	Point Lookout Ss.
3803.0	3803.0	Mancos Shale
4315.0	4315.2	Mancos Silt
4584.0	4527.9	Gallup Fm.

M Azimuths to True North
 Magnetic North: 9.45°
 Magnetic Field
 Strength: 50155.0nT
 Dip Angle: 62.93°
 Date: 3/4/2014
 Model: IGRF2010

Plan #1
 Lybrook O35-2308 02H
 14xxx LR
 WELL @ 6876.0ft (Aztec)
 Ground Elevation @ 6860.0
 North American Datum 1983
 Well Lybrook O35-2308 02H, True North

Vertical Section at 180.68° (1000 ft/in)