

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions
listed below are made in accordance with OCD Rule 19.15.7.11
and are in addition to the actions approved by BLM on the
following 3160-4 or 3160-5 form.

Operator Signature Date: June 19th, 2013

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf. Owner	UL	Sec	Twp	N/S	Rng
30-043-21137-00-00	LYBROOK A01 2206	001H	ENCANA OIL & GAS (USA) INC.	O	N	Sandoval	F	A	1	22	N	6

Note change of pool from Wildcat to Lybrook Gallup (42289)

Conditions of Approval:

Hold C104 for As drilled plat, directional survey

Notify the NMOCD 24hrs prior to beginning operations.

JUL 16 2013

NMOCD Approved by Signature

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIDENTIAL

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

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.

SUBMIT IN TRIPLICATE - Other instructions on page 2		5. Lease Serial No. NMNM 109385
1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Encana Oil & Gas (USA) Inc.		7. If Unit of CA/Agreement, Name and/or No. N/A
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202		8. Well Name and No. Lybrook A01-2206 01H
3b. Phone No. (include area code) 720-876-3567		9. API Well No. 30-043-21137
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL: 1126' FNL and 546' FEL Sec 1, T22N, R6W BHL: 660' FNL and 330' FWL Sec 1, T22N, R6W		10. Field and Pool or Exploratory Area Wildcat (Gallup)
		11. Country or Parish, State Sandoval, 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 Updated C-102 and directional
	☐ 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) submitted an APD for the Lybrook A01-2206 01H on 12/28/12.

Encana is providing a skewed C-102 and directionals per the December 2012 OCD request to provide skewed documents in permit packages.

RCVD JUN 27 '13
OIL CONS. DIV.

DIST. 3
ACCEPTED FOR RECORD

JUN 20 2013

FARMINGTON FIELD OFFICE
BY Killian Tambekov

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Catherine Anadu		Title Regulatory Analyst
Signature <u>Catherine Anadu</u>		Date 6/19/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
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	

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.

NMOCDA

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

~~RECEIVED~~ EXAMENDED REPORT
RECEIVED

JUN 20 2013

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21137	*Pool Code 42289	*Pool Name Lybrook	*Well Name Parrington Field Office WILLOCAT (GALUP) Land Management
*Property Code 39971	*Property Name LYBROOK A01-2206		*Well Number 01H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6880'

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	1	22N	6W		1126	NORTH	546	EAST	SANDOVAL

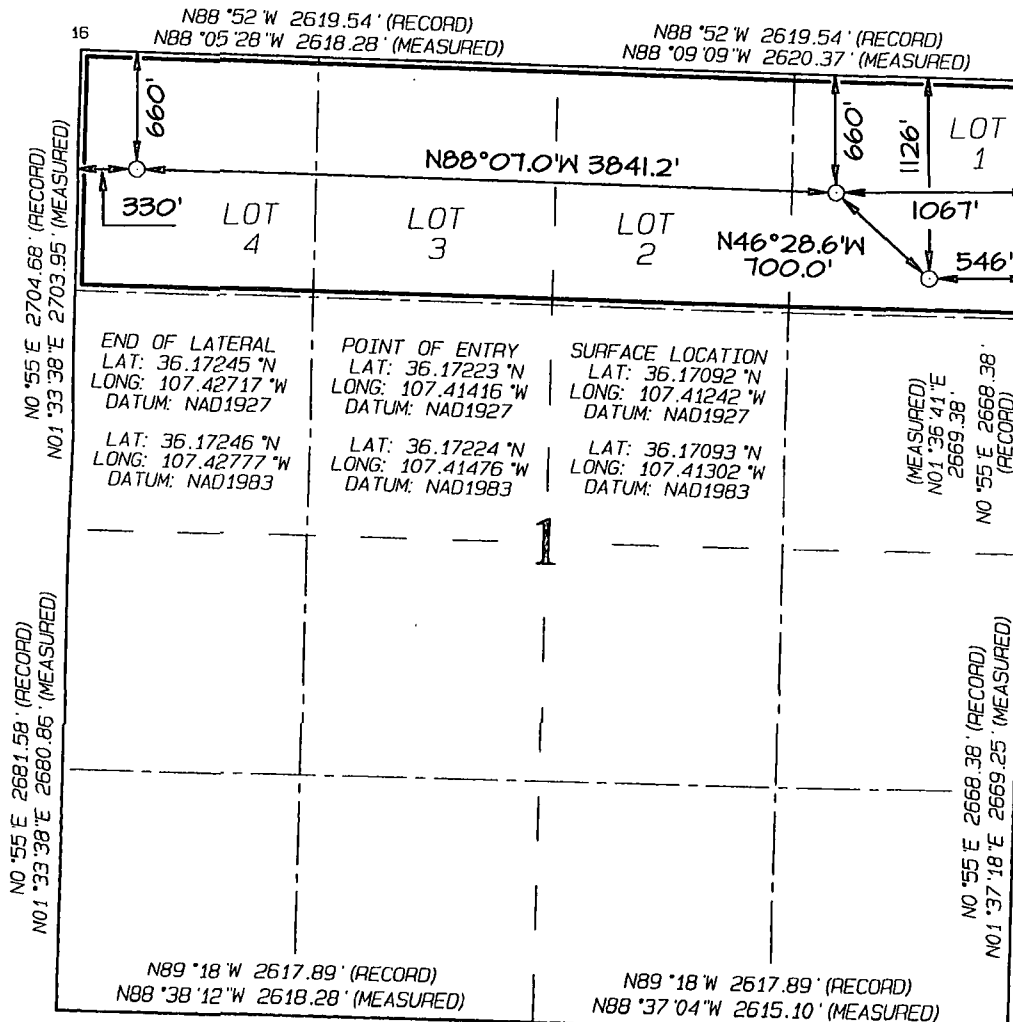
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	1	22N	6W		660	NORTH	330	WEST	SANDOVAL

¹² Dedicated Acres 161.40 Acres - (N/2 N/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD JUN 27 '13 OIL CONS. DIV.
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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

DIST. 3



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.

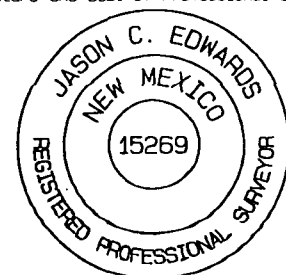
Signature: *Brenda R. Linster* Date: 06/11/13
Printed Name: Brenda R. Linster
E-mail Address: brenda.linster@encana.com

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: AUGUST 24, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

encana™

natural gas

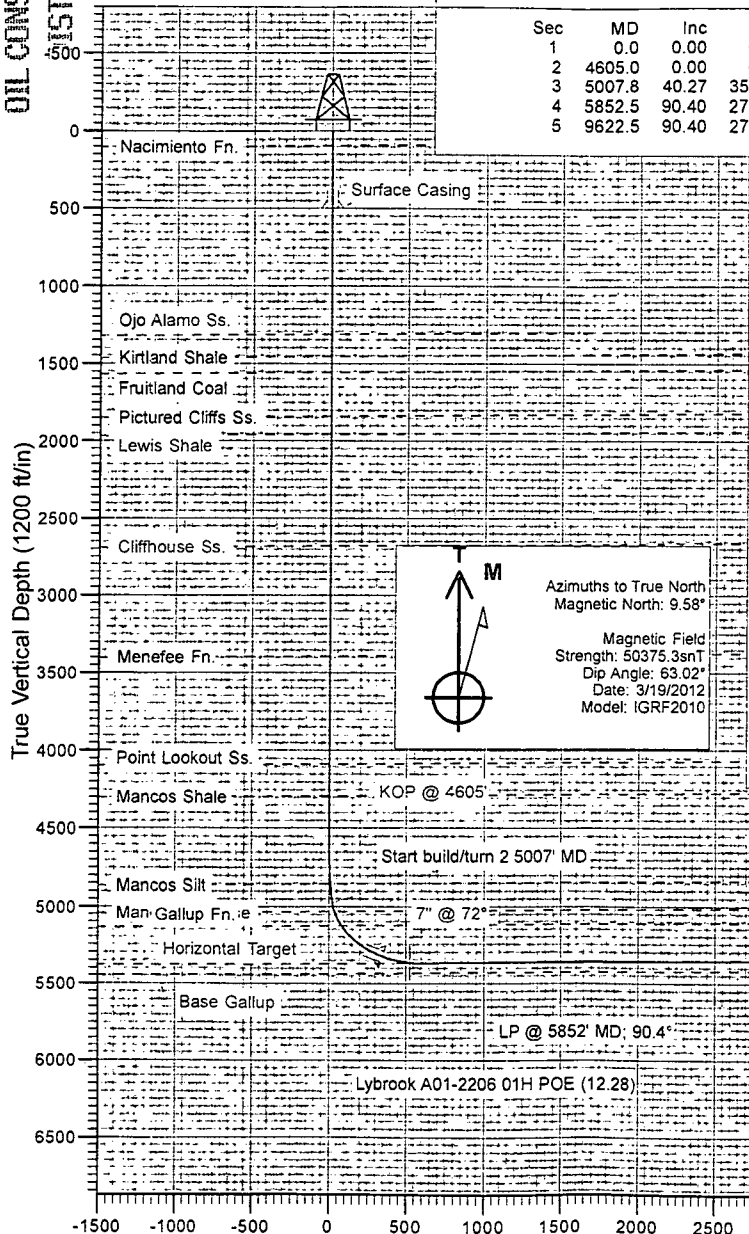
Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook A01-2206 01H
 Wellbore: HZ
 Design: Plan #5



RCVD JUN 27 '13

OIL CONS. DIV.

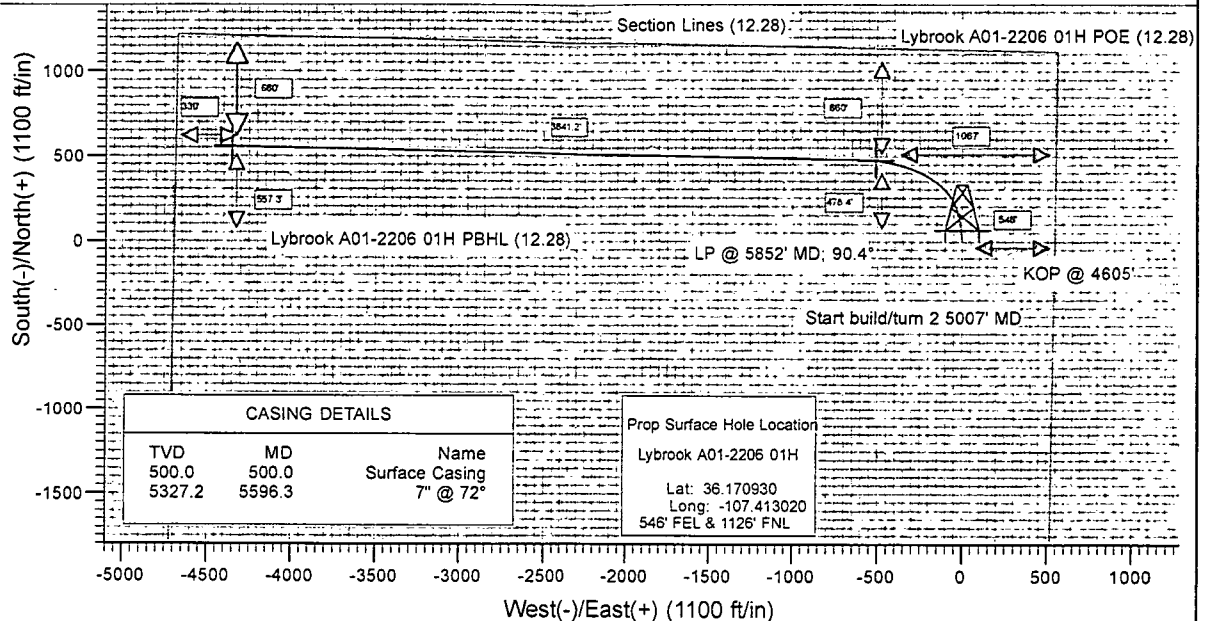
151.3



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4605.0	0.00	0.00	4605.0	0.0	0.0	0.00	0.00	0.0	
3	5007.8	40.27	352.10	4975.5	134.5	-18.7	10.00	352.10	21.5	
4	5852.5	90.40	271.20	5368.7	478.4	-584.8	10.00	-82.78	594.7	
5	9622.5	90.40	271.20	5342.4	557.3	-4353.9	0.00	0.00	4364.6	Lybrook A01-2206 01H PBHL (12.28)

Annotation

KOP @ 4605'
 Start build/turn 2 5007' MD
 LP @ 5852' MD; 90.4°
 TD at 9622.5



CASING DETAILS		
TVD	MD	Name
500.0	500.0	Surface Casing
5327.2	5596.3	7" @ 72°

Prop Surface Hole Location	
Lat: 36.170930	Long: -107.413020
546' FEL & 1126' FNL	

Plan #5
 Lybrook A01-2206 01H
 12000; LR
 13' KB @ 6893.0ft
 North American Datum 1983
 Well Lybrook A01-2206 01H, True North

Name	Type	Target	No Target (Freehand)	Azimuth	Origin	Type	N/S	E/W	From	TVD
Lybrook A01-2206 01H PBHL (12.28)				271.20			0.0	0.0	0.0	
Lybrook A01-2206 01H POE (12.28)				5342.4			0.0	0.0	0.0	
				5368.1			0.0	0.0	0.0	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
93.0	93.0	Nacimiento Fn.
1318.0	1318.0	Ojo Alamo Ss.
1457.0	1457.0	Kirtland Shale
1558.0	1558.0	Fruitland Coal
1840.0	1840.0	Pictured Cliffs Ss.
1958.0	1958.0	Lewis Shale
2680.0	2680.0	Cliffhouse Ss.
3391.0	3391.0	Menefee Fn.
4086.0	4086.0	Point Lookout Ss.
4293.0	4293.0	Mancos Shale
4854.9	4863.6	Mancos Silt
5032.8	5083.7	Mancos Silt Base
5127.4	5215.5	Gallup Fn.

Vertical Section at 271.20° (1200 ft/in)

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook A01-2206 01H
 Wellbore: Hz
 Design: Plan #5

Local Co-ordinate Reference: Well Lybrook A01-2206 01H
 TVD Reference: 13' KB @ 6893.0ft
 MD Reference: 13' KB @ 6893.0ft
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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

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 A01-2206 01H
 Well Position: +N/-S 0.0 ft Northing: 1,883,544.16 ft Latitude: 36.170930
 +E/-W 0.0 ft Easting: 1,297,155.01 ft Longitude: -107.413020
 Position Uncertainty: 0.0 ft Wellhead Elevation: ft Ground Level: 6,880.0 ft

Wellbore: Hz
 Magnetics: Model Name Sample Date Declination Dip Angle Field Strength
 (°) (°) (nT)
 IGRF2010 3/19/2012 9.58 63.02 50,375

Design: Plan #5
 Audit Notes:
 Version: Phase: PLAN Tie On Depth: 0.0
 Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
 (ft) (ft) (ft) (°)
 0.0 0.0 0.0 271.20

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	
4,605.0	0.00	0.00	4,605.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,007.8	40.27	352.10	4,975.5	134.5	-18.7	10.00	10.00	0.00	352.10	
5,852.5	90.40	271.20	5,368.7	478.4	-584.8	10.00	5.93	-9.58	-82.78	
9,622.5	90.40	271.20	5,342.4	557.3	-4,353.9	0.00	0.00	0.00	0.00	Lybrook A01-2206 01H

PBHL } $Y \rightarrow (1126 - 557.3)_{ft} = 568.7 \approx 569_{ft} | N$
 $X \rightarrow [(2618.28 + 2620.37) - (546 + 4353.9)]_{ft} = 338.75 \approx 339_{ft} | W$

William Tambekou
 6/20/2013

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook A01-2206 01H
 Wellbore: Hz
 Design: Plan #5

Local Co-ordinate Reference: Well Lybrook A01-2206 01H
 TVD Reference: 13' KB @ 6893.0ft
 MD Reference: 13' KB @ 6893.0ft
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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	
93.0	0.00	0.00	93.0	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	Surface Casing
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	
1,318.0	0.00	0.00	1,318.0	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	
1,457.0	0.00	0.00	1,457.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,558.0	0.00	0.00	1,558.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
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	
1,840.0	0.00	0.00	1,840.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
1,958.0	0.00	0.00	1,958.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
2,680.0	0.00	0.00	2,680.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
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	
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	
3,391.0	0.00	0.00	3,391.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
3,700.0	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	
4,086.0	0.00	0.00	4,086.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
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	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook A01-2206 01H
 Wellbore: Hz
 Design: Plan #5

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 TVD Reference: 13' KB @ 6893.0ft
 MD Reference: 13' KB @ 6893.0ft
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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
4,293.0	0.00	0.00	4,293.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
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	
4,500.0	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	
4,605.0	0.00	0.00	4,605.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4605'
4,700.0	9.50	352.10	4,699.6	7.8	-1.1	1.2	10.00	10.00	
4,800.0	19.49	352.10	4,796.3	32.5	-4.5	5.2	10.00	10.00	
4,863.6	25.85	352.10	4,854.9	56.8	-7.9	9.1	10.00	10.00	Mancos Silt
4,900.0	29.49	352.10	4,887.1	73.6	-10.2	11.7	10.00	10.00	
5,000.0	39.49	352.10	4,969.5	129.6	-18.0	20.7	10.00	10.00	
5,007.8	40.27	352.10	4,975.5	134.5	-18.7	21.5	10.00	10.00	Start build/turn 2 5007' MD
5,083.7	41.79	340.77	5,032.8	182.7	-30.4	34.2	10.00	2.00	Mancos Silt Base
5,100.0	42.25	338.44	5,044.9	193.0	-34.2	38.2	10.00	2.87	
5,200.0	46.07	325.15	5,116.8	254.0	-67.2	72.5	10.00	3.81	
5,215.5	46.79	323.26	5,127.4	263.1	-73.8	79.2	10.00	4.65	Gallup Fn.
5,300.0	51.22	313.71	5,183.0	310.6	-116.1	122.5	10.00	5.24	
5,400.0	57.32	303.94	5,241.4	361.2	-179.3	186.8	10.00	6.11	
5,500.0	64.09	295.49	5,290.4	404.1	-255.0	263.4	10.00	6.76	
5,596.3	71.01	288.25	5,327.2	437.1	-337.5	346.6	10.00	7.19	7" @ 72°
5,600.0	71.28	287.98	5,328.4	438.2	-340.9	350.0	10.00	7.35	
5,700.0	78.75	281.10	5,354.2	462.3	-434.3	443.9	10.00	7.47	
5,734.4	81.36	278.83	5,360.2	468.2	-467.6	477.3	10.00	7.59	Lybrook A01-2206 01H POE
5,781.7	84.97	275.75	5,365.8	474.1	-514.2	524.0	10.00	7.63	Lybrook A01-2206 01H POE (12.28)
5,800.0	86.37	274.57	5,367.2	475.8	-532.4	542.2	10.00	7.66	
5,852.5	90.40	271.20	5,368.7	478.4	-584.8	594.7	10.00	7.67	LP @ 5852' MD; 90.4°
5,900.0	90.40	271.20	5,368.3	479.4	-632.3	642.2	0.00	0.00	
6,000.0	90.40	271.20	5,367.6	481.5	-732.2	742.2	0.00	0.00	
6,100.0	90.40	271.20	5,366.9	483.6	-832.2	842.2	0.00	0.00	
6,200.0	90.40	271.20	5,366.2	485.7	-932.2	942.2	0.00	0.00	
6,300.0	90.40	271.20	5,365.5	487.8	-1,032.2	1,042.2	0.00	0.00	
6,400.0	90.40	271.20	5,364.8	489.9	-1,132.1	1,142.2	0.00	0.00	
6,500.0	90.40	271.20	5,364.1	492.0	-1,232.1	1,242.2	0.00	0.00	
6,600.0	90.40	271.20	5,363.5	494.0	-1,332.1	1,342.2	0.00	0.00	
6,700.0	90.40	271.20	5,362.8	496.1	-1,432.1	1,442.2	0.00	0.00	
6,800.0	90.40	271.20	5,362.1	498.2	-1,532.1	1,542.2	0.00	0.00	
6,900.0	90.40	271.20	5,361.4	500.3	-1,632.0	1,642.1	0.00	0.00	
7,000.0	90.40	271.20	5,360.7	502.4	-1,732.0	1,742.1	0.00	0.00	
7,100.0	90.40	271.20	5,360.0	504.5	-1,832.0	1,842.1	0.00	0.00	
7,200.0	90.40	271.20	5,359.3	506.6	-1,932.0	1,942.1	0.00	0.00	
7,300.0	90.40	271.20	5,358.6	508.7	-2,031.9	2,042.1	0.00	0.00	
7,400.0	90.40	271.20	5,357.9	510.8	-2,131.9	2,142.1	0.00	0.00	
7,500.0	90.40	271.20	5,357.2	512.9	-2,231.9	2,242.1	0.00	0.00	
7,600.0	90.40	271.20	5,356.5	515.0	-2,331.9	2,342.1	0.00	0.00	
7,700.0	90.40	271.20	5,355.8	517.1	-2,431.8	2,442.1	0.00	0.00	
7,800.0	90.40	271.20	5,355.1	519.2	-2,531.8	2,542.1	0.00	0.00	
7,900.0	90.40	271.20	5,354.4	521.3	-2,631.8	2,642.1	0.00	0.00	
8,000.0	90.40	271.20	5,353.7	523.4	-2,731.8	2,742.1	0.00	0.00	
8,100.0	90.40	271.20	5,353.0	525.5	-2,831.7	2,842.1	0.00	0.00	
8,200.0	90.40	271.20	5,352.3	527.6	-2,931.7	2,942.1	0.00	0.00	
8,300.0	90.40	271.20	5,351.6	529.6	-3,031.7	3,042.1	0.00	0.00	
8,400.0	90.40	271.20	5,350.9	531.7	-3,131.7	3,142.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook A01-2206 01H
 Wellbore: Hz
 Design: Plan #5

Local Co-ordinate Reference: Well Lybrook A01-2206 01H
 TVD Reference: 13' KB @ 6893.0ft
 MD Reference: 13' KB @ 6893.0ft
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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
8,500.0	90.40	271.20	5,350.2	533.8	-3,231.6	3,242.1	0.00	0.00	
8,600.0	90.40	271.20	5,349.5	535.9	-3,331.6	3,342.1	0.00	0.00	
8,700.0	90.40	271.20	5,348.8	538.0	-3,431.6	3,442.1	0.00	0.00	
8,800.0	90.40	271.20	5,348.1	540.1	-3,531.6	3,542.1	0.00	0.00	
8,900.0	90.40	271.20	5,347.4	542.2	-3,631.5	3,642.1	0.00	0.00	
9,000.0	90.40	271.20	5,346.7	544.3	-3,731.5	3,742.1	0.00	0.00	
9,100.0	90.40	271.20	5,346.0	546.4	-3,831.5	3,842.1	0.00	0.00	
9,200.0	90.40	271.20	5,345.3	548.5	-3,931.5	3,942.1	0.00	0.00	
9,300.0	90.40	271.20	5,344.6	550.6	-4,031.4	4,042.1	0.00	0.00	
9,400.0	90.40	271.20	5,343.9	552.7	-4,131.4	4,142.1	0.00	0.00	
9,500.0	90.40	271.20	5,343.2	554.8	-4,231.4	4,242.1	0.00	0.00	
9,600.0	90.40	271.20	5,342.5	556.9	-4,331.4	4,342.1	0.00	0.00	
9,622.5	90.40	271.20	5,342.4	557.3	-4,353.9	4,364.6	0.00	0.00	TD at 9622.5 - Lybrook A01-2206 01H PBHL - L

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook A01-2206 01H f	0.00	359.30	4,960.5	554.6	-4,356.2	1,884,150.89	1,292,805.77	36.172452	-107.427778
- hit/miss target									
- plan misses target center by 381.8ft at 9622.5ft MD (5342.4 TVD, 557.3 N, -4353.9 E)									
- Polygon									
Point 1			4,960.5	-300.0	-330.0	1,883,850.84	1,292,475.82		
Point 2			4,960.5	660.0	-330.0	1,884,810.84	1,292,475.67		
Point 3			4,960.5	660.0	500.0	1,884,810.96	1,293,305.67		
Point 4			4,960.5	660.0	-330.0	1,884,810.84	1,292,475.67		
Lybrook A01-2206 01H f	0.00	359.30	5,342.4	557.3	-4,353.9	1,884,153.63	1,292,808.13	36.172460	-107.427770
- plan hits target center									
- Point									
Lybrook A01-2206 01H f	0.00	359.30	4,987.3	474.3	-516.0	1,884,024.60	1,296,644.76	36.172233	-107.414768
- plan misses target center by 375.8ft at 5717.9ft MD (5357.5 TVD, 465.5 N, -451.6 E)									
- Point									
Lybrook A01-2206 01H f	0.00	359.30	5,368.1	476.9	-513.6	1,884,027.20	1,296,647.16	36.172240	-107.414760
- plan misses target center by 3.7ft at 5781.7ft MD (5365.8 TVD, 474.1 N, -514.2 E)									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
5,596.3	5,327.2	7" @ 72"	7.000	7.500
500.0	500.0	Surface Casing	0.000	0.000

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook A01-2206 01H
 Wellbore: Hz
 Design: Plan #5

Local Co-ordinate Reference: Well Lybrook A01-2206 01H
 TVD Reference: 13' KB @ 6893.0ft
 MD Reference: 13' KB @ 6893.0ft
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
93.0	93.0	Nacimiento Fn.		-0.40	271.20
1,318.0	1,318.0	Ojo Alamo Ss.		-0.40	271.20
1,457.0	1,457.0	Kirtland Shale		-0.40	271.20
1,558.0	1,558.0	Fruitland Coal		-0.40	271.20
1,840.0	1,840.0	Pictured Cliffs Ss.		-0.40	271.20
1,958.0	1,958.0	Lewis Shale		-0.40	271.20
2,680.0	2,680.0	Cliffhouse Ss.		-0.40	271.20
3,391.0	3,391.0	Menefee Fn.		-0.40	271.20
4,086.0	4,086.0	Point Lookout Ss.		-0.40	271.20
4,293.0	4,293.0	Mancos Shale		-0.40	271.20
4,863.6	4,855.0	Mancos Silt		-0.40	271.20
5,083.7	5,033.0	Mancos Silt Base		-0.40	271.20
5,215.5	5,128.0	Gallup Fn.		-0.40	271.20

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,605.0	4,605.0	0.0	0.0	KOP @ 4605'
5,007.8	4,975.5	134.5	-18.7	Start build/turn 2 5007' MD
5,852.5	5,368.7	478.4	-584.8	LP @ 5852' MD; 90.4°
9,622.5	5,342.4	557.3	-4,353.9	TD at 9622.5