

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 3160-3 APD form.

Operator Signature Date: 5-1-14

Well information;

Operator Encana, Well Name and Number Lybrook G01-2206 #2H

API# 30-043-21224, Section 1, Township 22 NS, Range 6 EW

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☐ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

Charles Heron
NMOCD Approved by Signature

6-11-2014
Date

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JUN 06 2014

Form 3160-3
(March 2012)

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAY 02 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER
Bureau of Land Management5. Lease Serial No.
~~NM-109385~~ NMNM109385

If Indian, Allottee or Tribe Name

1a. Type of work: ☒ DRILL ☐ REENTER7. If Unit or CA Agreement, Name and No.
Pending1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone8. Lease Name and Well No.
Lybrook G01-2206 02H

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

9. API Well No.
30-043-212243a. Address 370 17th Street, Suite 1700, Denver, CO
802023b. Phone No. (include area code)
720-876-344810. Field and Pool, or Exploratory
Lybrook Gallup

4. Location of Well (Report location clearly and in accordance with any State requirements.)*

At surface 2407' FNL and 1284' FEL in Section 1, T22N, R6W SENE SHL

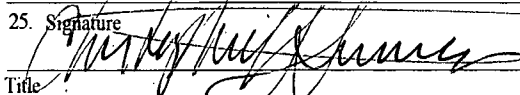
At proposed prod. zone 330' FSL and 400' FEL in Section 12, T22N, R6W SESE BHL Sec 12, T22N, R6W

11. Sec., T. R. M. or Blk. and Survey or Area
Section 1, T22N, R6W NMPM14. Distance in miles and direction from nearest town or post office*
+/- 60.6 miles from the intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM12. County or Parish
Sandoval13. State
NM15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drg. unit line, if any)
BHL is 330' FSL in Section 1216. No. of acres in lease
NM 109385 - 1761.40 acres17. Spacing Unit dedicated to this well
80 acres E2SE of Section 1
160 acres E2E2 of Section 1218. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.
Lybrook G01-2206 02H
is +/- 30' W of SHL19. Proposed Depth
5323' TVD, 13587' MD20. BLM/BIA Bond No. on file
COB 00023521. Elevations (Show whether DF, KDB, RT, GL, etc.)
GL 6939', KB 6955'22. Approximate date work will start*
10/15/201423. Estimated duration
20 days

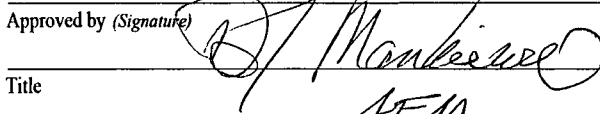
24. Attachments

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

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

25. Signature  Name (Printed/Typed) Christopher Simmons Date 05.01.14

Title Regulatory Analyst

Approved by (Signature)  Name (Printed/Typed) AFM Date 6/3/14

Title Office FFO

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.

DRILLING OPERATIONS ACTION DOES NOT RELIEVE APPLICANT FROM OBTAINING ANY OTHER
 (Continued on page 2) SUBJECT TO OPERATOR FROM OBTAINING ANY OTHER
 COMPLIANCE WITH ATTACHED AUTHORIZATION REQUIRED FOR OPERATIONS
 "GENERAL REQUIREMENTS" ON FEDERAL AND INDIAN LANDS

*(Instructions on page 2)
 This action is subject to technical
 and procedural review pursuant to
 43 CFR 3165.3 and appeal
 pursuant to 43 CFR 3165.4

NMOCDA

DISTRICT I

1626 H. French Dr., Hobbs, N.M. 88240
Phone: (878) 393-6161 Fax: (878) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (878) 748-1263 Fax: (878) 748-0720

DISTRICT III

1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87808
Phone: (505) 476-3460 Fax: (505) 476-3468

State of New Mexico
Energy, Minerals & Natural Resources Department

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Form C-102

Revised August 1, 2011

MAY 02 2014
submit 2014 copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87806

Farmington Field Office
Bureau of Land Management

AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

¹ API Number 30-043-21224	² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 313352	⁵ Property Name LYBROOK G01-2206	⁶ Well Number 02H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6938.8'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	WEST/East line	County
H	1	22N	6W		2407'	NORTH	1284'	EAST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

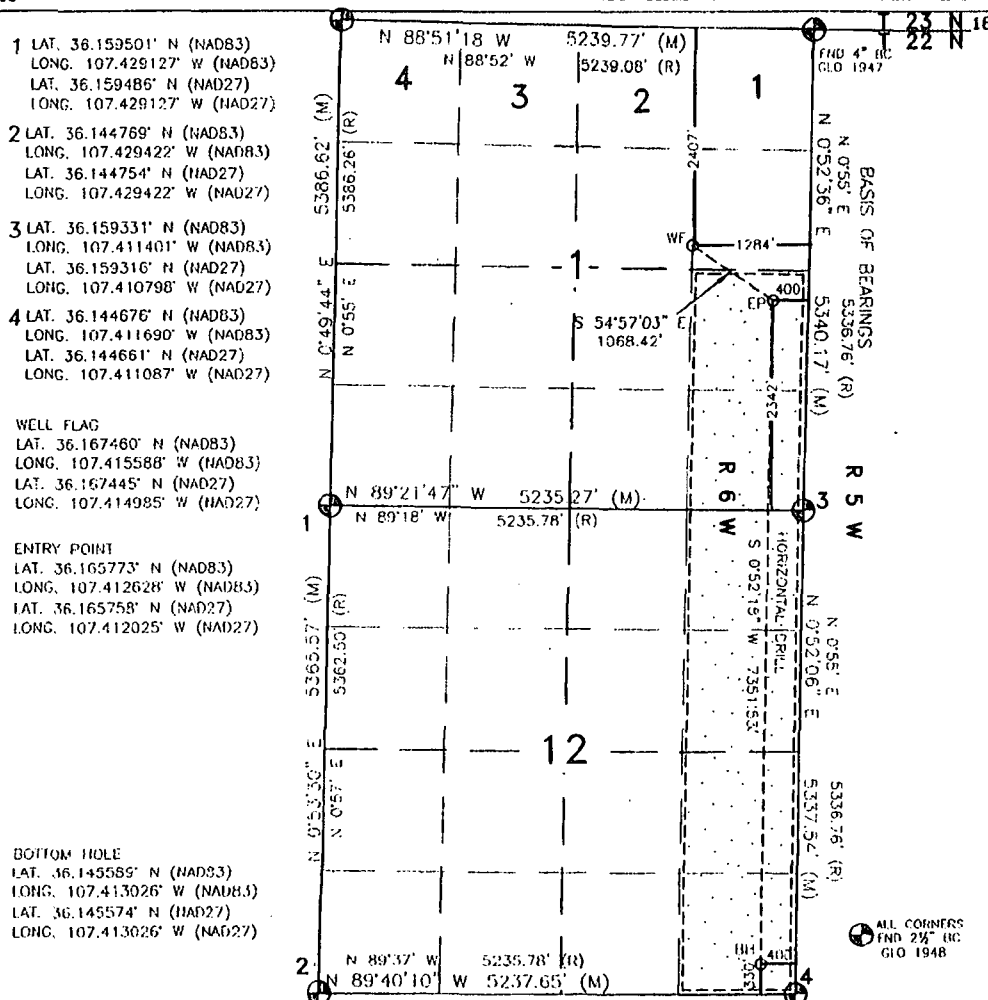
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	WEST/East line	County
P	12	22N	6W		330'	SOUTH	400'	EAST	SANDOVAL

¹² Dedicated Acres **PROJECT AREA**
80.00 ACRES E/2 SE/4 OF SEC. 1
160.00 ACRES E/2 E/2 OF SEC. 12

¹³ Joint or Infill¹⁴ Consolidation Code¹⁵ Order No.

**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**

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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 unless 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 <i>Katie Wegner</i>	Date 5/11/14
Printed Name Katie Wegner	
E-mail Address Katie.Wegner@encana.com	
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 test of my belief.	
Date of Survey SEPTEMBER 19, 2013	
Signature and Seal of Professional Surveyor <i>David R. Russell</i>	
Certificate Number 10201	

Lybrook G01-2206 02H
SHL: SENE Sec 1 T22N R6W
2407' FNL, 1284' FEL
BHL: SESE Sec 12 T22N R6W
330' FSL, 400' FEL
Sandavol, New Mexico

Encana Oil & Gas (USA) Inc. **Drilling Plan**

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

Formation	Depth (TVD) units = feet
Ojo Alamo Ss.	1,308
Kirtland Shale	1,484
Fruitland Coal	1,645
Pictured Cliffs Ss.	1,861
Lewis Shale	1,961
Cliffhouse Ss.	2,666
Menefee Fn.	3,388
Point Lookout Ss.	4,120
Mancos Shale	4,293
Mancos Silt	4,880
Gallup Fn.	5,154

The referenced surface elevation is 6939', KB 6955'

2. ESTIMATED DEPTH OF POTENTIAL WATER, OIL, GAS, & OTHER MINERAL BEARING FORMATIONS

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,645
Oil/Gas	Pictured Cliffs Ss.	1,861
Oil/Gas	Cliffhouse Ss.	2,666
Gas	Menefee Fn.	3,388
Oil/Gas	Point Lookout Ss.	4,120
Oil/Gas	Mancos Shale	4,293
Oil/Gas	Mancos Silt	4,880
Oil/Gas	Gallup Fn.	5,154

All shows of fresh water and minerals will be reported and protected.

3. PRESSURE CONTROL

- a) Pressure control equipment and configuration will be designed to meet 2M standards.
- b) Working pressure on rams and BOPE will be 3,000 psi.
- c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.
- d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
- e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
- f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.

Lybrook G01-2206 02H

SHL: SENE Sec 1 T22N R6W

2407' FNL, 1284' FEL

BHL: SESE Sec 12 T22N R6W

330' FSL, 400' FEL

Sandavol, New Mexico

- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

The proposed casing and cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Conductor	0'-60'	30"	20"	94#	H40, STC New
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5562'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5362'-13587'	6 1/8"	4 1/2"	11.6#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (ppf)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lbs)	Collapse	Burst	Tension
9 5/8"	36	J55	STC	2020	3520	394	1.125	1.1	1.5
7"	26	J55	LTC	4320	4980	367	1.125	1.1	1.5
4.5"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1,500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

Lybrook G01-2206 02H

SHL: SENE Sec 1 T22N R6W

2407' FNL, 1284' FEL

BHL: SESE Sec 12 T22N R6W

330' FSL, 400' FEL

Sandavol, New Mexico

b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	201 sks	Type III Cement + 1% CaCl + 0.25lb/sk Cello Flake + 0.2% FL, 16ppg, 1.38cuft/sk	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5562'	30% open hole excess Stage 1 Lead: 251 sks Stage 1 Tail: 307 sks Stage 2 Lead: 184 sks	Lead (Stages 1 and 2): PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5362'-13587'	None - External Casing Packers	N/A	N/A	N/A

*Production liner clarification: Utilizing external swell casing packer system for zonal isolation will not use cement in the production liner

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed horizontal well will have a kick off point of 4671'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5323'/13587'	Gallup

6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60'/60'	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0'-500'/500'	Fresh Water	8.3-10	60-70	NC
8 3/4"	500'/500'-5272'/5562'	Fresh Water LSND	8.3-10	40-50	8-10

Lybrook G01-2206 02H

SHL: SENE Sec 1 T22N R6W

2407' FNL, 1284' FEL

BHL: SESE Sec 12 T22N R6W

330' FSL, 400' FEL

Sandavol, New Mexico

b) Intermediate Casing Point to TD:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	5272'/5562'- 5323'/13587'	Fresh Water LSND	8.3-10	15-25	<15

c) There will be sufficient mud on location to control a blowout should one occur. Mud flow and volume will be monitored both visually and with electronic pit volume totalizers. Mud tests shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

✓d) A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystems, Inc. The location will be lined in accordance with the Surface Use Plan of Operations.

7. TESTING, CORING, & LOGGING

- a) Drill Stem Testing - None anticipated.
- b) Coring - None anticipated.
- c) Mudd Logging - Mud loggers will be on location from kick off point to TD.
- d) Logging - See below

Cased Hole:

CBL/CCL/GR/VDL will be run as needed for perforating control

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

The anticipated bottom hole pressure is +/- 2523 psi based on a 9.0 ppg at 5392' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H₂S is encountered, the guidelines in Onshore Order No. 6 will be followed.

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on January 1, 2015. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

It is anticipated that the drilling of this well will take approximately 20 days.

LOC: Sec 12-T23N-R6W County: Rio Arriba WELL: Lybrook A12-2306 01H			Encana Natural Gas WELL SUMMARY			ENG: S Kuykendall RIG: Aztec 950 GLE: 6791.8 RKBE: 6807.8			5/1/14
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60	60'		30	20" 94# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2	
Multi-Well pad take survey every stand and run anti-collision report prior to spud	None					12 1/4	9 5/8" 36ppf J55 STC TOC Surface - 201 sks of Type III Cement	Fresh wtr 8.3-10	Vertical <1°
		Nacimiento 9 5/8" Csg	0 500	500.00					
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Ss. Kirtland Shale Fruitland Coal Pictured Cliffs Ss. Lewis Shale Cliffhouse Ss. Menefee Fn. Point Lookout Ss. Mancos Shale	1,308 1,484 1,645 1,861 1,961 2,066 3,388 4,120 4,293		Stage tool @ ~ 1,975	8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 558 sks Total. Stage 1 Lead: 251 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk. Stage 1 Tail: 307 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk. 184 Stage 2: 184 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1° Build Rate
Surveys every 30' through the curve	Mud logger onsite	KOP Mancos Silt Gallup Fn. 7" Csg	4,671 4,680 5,154 5,272	4,671.0					
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD Base Gallup	5,392 5,323 5,452	13,586.5		6 1/8	200' overlap at liner top 8025' Drilled Lateral		Horz Inc/TVD 90.5°/5452
MWD Gamma Directional							4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string Plan on setting top packer within 100' of intermediate casing shoe	WBM 8.3-10	TD = 13,586.5 MD

NOTES:

- 1) Drill with 30" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" csg
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 4671', 8 3/4" holesize
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 5562' MD
- 7) R&C 7" csg, circ cmt to surface, switch to WBM
- 8) Land at 90deg, drill lateral to 13587', run 4 1/2 inch liner with external swellable csg packers



Boomerang Tube LLC

CASING (OR) TUBING DESCRIPTION AND PERFORMANCE PROPERTIES

Pipe Outside Diameter (ins)	_____	4.500
Pipe Wall Thickness (ins)	_____	0.250
Nominal Weight Per Foot (lbs)	_____	11.60
Thread Name	_____	Long Thread CSG
Grade Name	_____	SB-80
Pipe Minimum Yield (psi)	_____	80,000
Pipe Minimum Ultimate (psi)	_____	90,000
Coupling Minimum Yield (psi)	_____	80,000
Coupling Minimum Ultimate (psi)	_____	100,000
Coupling or Joint Outside Diameter (ins)	_____	5.000
Drift Diameter (ins)	_____	3.875
Plain End Weight per Foot (lbs)	_____	11.36
Joint Strength (lbs)	_____	201,000
Internal Yield (psi)	_____	7,780
Collapse Rating (psi)	_____	6,350

MAXIMUM DEPTH/LENGTH BASED ON MUD WTS & SAFETY FACTORS

Drilling Mud Weight (ppg)	_____	9.625
Tension Safety Factor	_____	1.80
Maximum Tension Length (ft)	_____	9,630
Internal Yield Safety Factor	_____	1.10
Maximum Depth for Internal Yield (ft)	_____	14,150
Collapse Safety Factor	_____	1.125
Maximum Collapse Depth (ft)	_____	11,290

API RELATED VALUES and INTERMEDIATE CALCULATION RESULTS

Coupling Thread Fracture Strength	_____	464,000
Pipe Thread Fracture Strength (lbs)	_____	201,000
Pipe Body Plain End Yield (lbs)	_____	267,000
Round Thread Pull-Out (lbs)	_____	219,000
Minimum Make-up Torque (ft-lbs)	_____	1,640
Nominal Make-up Torque (ft-lbs)	_____	2,190
Maximum Make-up Torque (ft-lbs)	_____	2,740
Coupling Internal Yield (psi)	_____	10,660
Pipe Body Internal Yield (psi)	_____	7,780
Leak @ E1 or E7 plane (psi)	_____	17,920
Pipe Hydrostatic Test Pressure @ 80 % SMYS	_____	7,100

encana

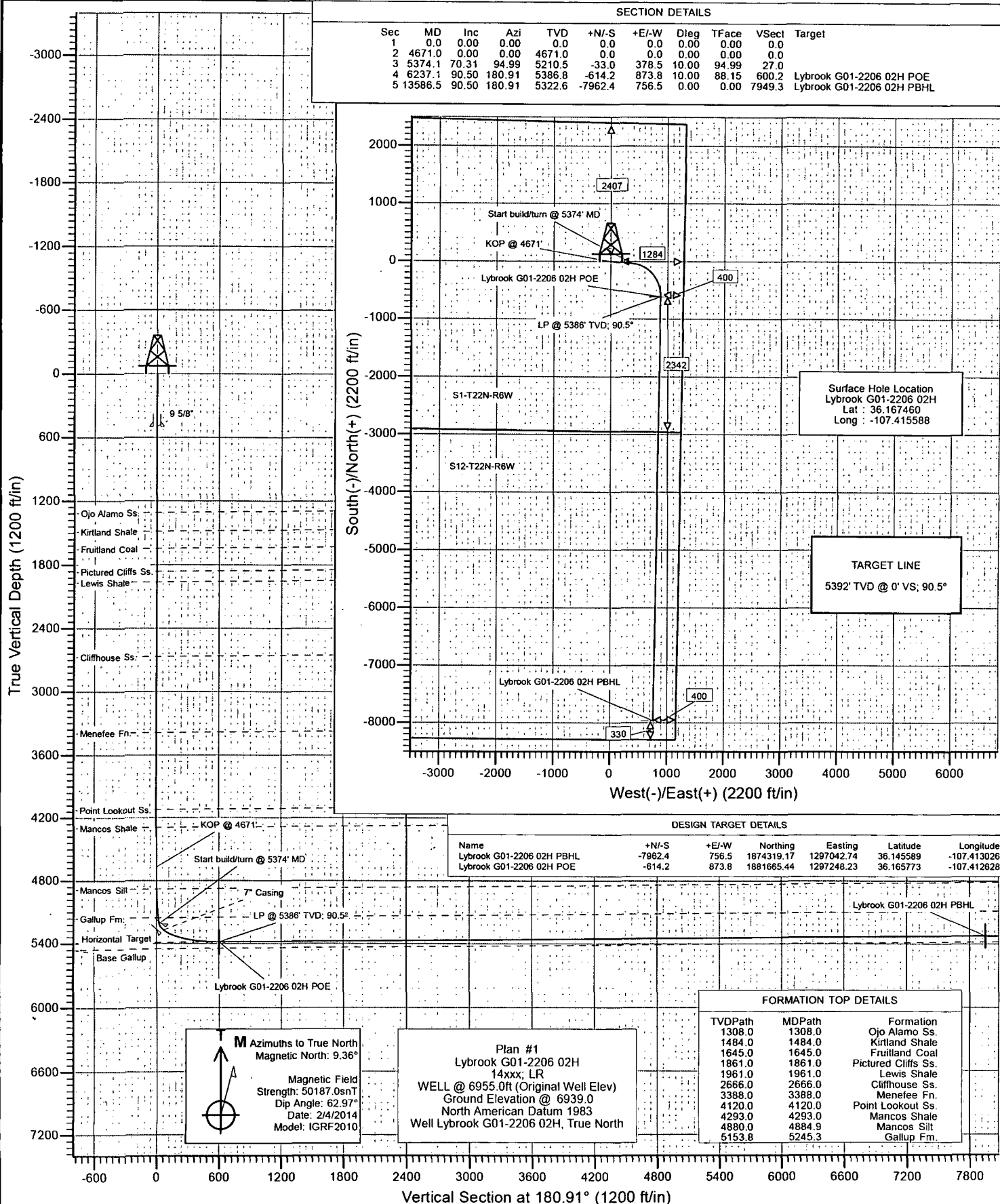
natural gas

Project: Sandoval County, NM
Site: S1-T22N-R6W
Well: Lybrook G01-2206 02H
Wellbore: Hz
Design: Plan #1



SECTION DETAILS

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	4671.0	0.00	0.00	4671.0	0.0	0.0	0.00	0.00	0.0	
3	5374.1	70.31	94.99	5210.5	-33.0	378.5	10.00	94.99	27.0	
4	6237.1	90.50	180.91	5386.8	-614.2	873.8	10.00	88.15	600.2	Lybrook G01-2206 02H POE
5	13586.5	90.50	180.91	5322.6	-7962.4	756.5	0.00	0.00	7949.3	Lybrook G01-2206 02H PBHL



Surface Hole Location
Lybrook G01-2206 02H
Lat : 36.167460
Long : -107.415588

TARGET LINE
5392' TVD @ 0° VS, 90.5°

DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook G01-2206 02H PBHL	-7962.4	756.5	1874319.17	1297042.74	36.145589	-107.413026
Lybrook G01-2206 02H POE	-614.2	873.8	1881665.44	1297248.23	36.165773	-107.412628

FORMATION TOP DETAILS

TVDPATH	MDPATH	Formation
1308.0	1308.0	Ojo Alamo Ss.
1484.0	1484.0	Kirtland Shale
1645.0	1645.0	Fruitland Coal
1861.0	1861.0	Pictured Cliffs Ss.
1961.0	1961.0	Lewis Shale
2666.0	2666.0	Cliffhouse Ss.
3388.0	3388.0	Menefee Fn.
4120.0	4120.0	Point Lookout Ss.
4293.0	4293.0	Mancos Shale
4880.0	4884.9	Mancos Silt
5153.8	5245.3	Gallup Fm.

M Azimuths to True North
Magnetic North: 9.36°
Magnetic Field
Strength: 50187.0snT
Dip Angle: 62.97°
Date: 2/4/2014
Model: IGRF2010

Plan #1
Lybrook G01-2206 02H
14xxx; LR
WELL @ 6955.0ft (Original Well Elev)
Ground Elevation @ 6939.0
North American Datum 1983
Well Lybrook G01-2206 02H, True North

Vertical Section at 180.91° (1200 ft/in)

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site:	S1-T22N-R6W	North Reference:	True
Well:	Lybrook G01-2206 02H	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	S1-T22N-R6W				
Site Position:		Northing:	1,882,291.13 ft	Latitude:	36.167462
From:	Lat/Long	Easting:	1,296,351.77 ft	Longitude:	-107.415690
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.69 °

Well	Lybrook G01-2206 02H					
Well Position	+N/-S	0.0 ft	Northing:	1,882,290.04 ft	Latitude:	36.167460
	+E/-W	0.0 ft	Easting:	1,296,381.87 ft	Longitude:	-107.415588
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,939.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/4/2014	9.36	62.97	50,187

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	180.91

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	
4,671.0	0.00	0.00	4,671.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,374.1	70.31	94.99	5,210.5	-33.0	378.5	10.00	10.00	0.00	94.99	
6,237.1	90.50	180.91	5,386.8	-614.2	873.8	10.00	2.34	9.96	88.15	Lybrook G01-2206 02
13,586.5	90.50	180.91	5,322.6	-7,962.4	756.5	0.00	0.00	0.00	0.00	Lybrook G01-2206 02

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site:	S1-T22N-R6W	North Reference:	True
Well:	Lybrook G01-2206 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"
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	
1,308.0	0.00	0.00	1,308.0	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	
1,484.0	0.00	0.00	1,484.0	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	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,645.0	0.00	0.00	1,645.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
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	
1,861.0	0.00	0.00	1,861.0	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	
1,961.0	0.00	0.00	1,961.0	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	
2,666.0	0.00	0.00	2,666.0	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	
3,388.0	0.00	0.00	3,388.0	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	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,120.0	0.00	0.00	4,120.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,293.0	0.00	0.00	4,293.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site:	S1-T22N-R6W	North Reference:	True
Well:	Lybrook G01-2206 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
4,300.0	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	
4,671.0	0.00	0.00	4,671.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4671'
4,700.0	2.90	94.99	4,700.0	-0.1	0.7	0.1	10.00	10.00	
4,800.0	12.90	94.99	4,798.9	-1.3	14.4	1.0	10.00	10.00	
4,884.9	21.39	94.99	4,880.0	-3.4	39.3	2.8	10.00	10.00	Mancos Silt
4,900.0	22.90	94.99	4,894.0	-3.9	45.0	3.2	10.00	10.00	
5,000.0	32.90	94.99	4,982.2	-8.0	91.5	6.5	10.00	10.00	
5,100.0	42.90	94.99	5,061.0	-13.3	152.7	10.9	10.00	10.00	
5,200.0	52.90	94.99	5,128.0	-19.8	226.5	16.2	10.00	10.00	
5,245.3	57.43	94.99	5,153.8	-23.0	263.5	18.8	10.00	10.00	Gallup Fm.
5,300.0	62.90	94.99	5,181.1	-27.1	310.8	22.2	10.00	10.00	
5,374.1	70.31	94.99	5,210.5	-33.0	378.5	27.0	10.00	10.00	Start build/turn @ 5374' MD
5,400.0	70.42	97.74	5,219.2	-35.7	402.7	29.3	10.00	0.40	
5,500.0	71.21	108.30	5,252.1	-57.0	494.6	49.1	10.00	0.79	
5,561.7	71.99	114.75	5,271.6	-78.5	549.0	69.7	10.00	1.27	7" Casing
5,600.0	72.58	118.72	5,283.3	-94.9	581.6	85.6	10.00	1.55	
5,700.0	74.49	128.97	5,311.7	-148.2	661.1	137.7	10.00	1.91	
5,800.0	76.85	139.00	5,336.5	-215.5	730.6	203.8	10.00	2.37	
5,900.0	79.60	148.83	5,356.9	-294.5	788.2	281.9	10.00	2.75	
6,000.0	82.64	158.47	5,372.4	-382.9	831.9	369.7	10.00	3.04	
6,100.0	85.89	167.99	5,382.4	-478.1	860.6	464.3	10.00	3.24	
6,200.0	89.24	177.42	5,386.7	-577.0	873.3	563.1	10.00	3.36	
6,237.1	90.50	180.91	5,386.8	-614.2	873.8	600.2	10.00	3.38	LP @ 5386' TVD; 90.5°
6,300.0	90.50	180.91	5,386.2	-677.0	872.8	663.1	0.00	0.00	
6,400.0	90.50	180.91	5,385.3	-777.0	871.2	763.1	0.00	0.00	
6,500.0	90.50	180.91	5,384.5	-877.0	869.6	863.1	0.00	0.00	
6,600.0	90.50	180.91	5,383.6	-977.0	868.0	963.1	0.00	0.00	
6,700.0	90.50	180.91	5,382.7	-1,077.0	866.4	1,063.1	0.00	0.00	
6,800.0	90.50	180.91	5,381.8	-1,176.9	864.8	1,163.1	0.00	0.00	
6,900.0	90.50	180.91	5,381.0	-1,276.9	863.2	1,263.1	0.00	0.00	
7,000.0	90.50	180.91	5,380.1	-1,376.9	861.6	1,363.1	0.00	0.00	
7,100.0	90.50	180.91	5,379.2	-1,476.9	860.0	1,463.0	0.00	0.00	
7,200.0	90.50	180.91	5,378.4	-1,576.9	858.4	1,563.0	0.00	0.00	
7,300.0	90.50	180.91	5,377.5	-1,676.9	856.8	1,663.0	0.00	0.00	
7,400.0	90.50	180.91	5,376.6	-1,776.8	855.2	1,763.0	0.00	0.00	
7,500.0	90.50	180.91	5,375.7	-1,876.8	853.7	1,863.0	0.00	0.00	
7,600.0	90.50	180.91	5,374.9	-1,976.8	852.1	1,963.0	0.00	0.00	
7,700.0	90.50	180.91	5,374.0	-2,076.8	850.5	2,063.0	0.00	0.00	
7,800.0	90.50	180.91	5,373.1	-2,176.8	848.9	2,163.0	0.00	0.00	
7,900.0	90.50	180.91	5,372.2	-2,276.8	847.3	2,263.0	0.00	0.00	
8,000.0	90.50	180.91	5,371.4	-2,376.7	845.7	2,363.0	0.00	0.00	
8,100.0	90.50	180.91	5,370.5	-2,476.7	844.1	2,463.0	0.00	0.00	
8,200.0	90.50	180.91	5,369.6	-2,576.7	842.5	2,563.0	0.00	0.00	
8,300.0	90.50	180.91	5,368.8	-2,676.7	840.9	2,663.0	0.00	0.00	
8,400.0	90.50	180.91	5,367.9	-2,776.7	839.3	2,763.0	0.00	0.00	
8,500.0	90.50	180.91	5,367.0	-2,876.7	837.7	2,863.0	0.00	0.00	
8,600.0	90.50	180.91	5,366.1	-2,976.6	836.1	2,963.0	0.00	0.00	
8,700.0	90.50	180.91	5,365.3	-3,076.6	834.5	3,063.0	0.00	0.00	
8,800.0	90.50	180.91	5,364.4	-3,176.6	832.9	3,163.0	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site:	S1-T22N-R6W	North Reference:	True
Well:	Lybrook G01-2206 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	90.50	180.91	5,363.5	-3,276.6	831.3	3,263.0	0.00	0.00	
9,000.0	90.50	180.91	5,362.6	-3,376.6	829.7	3,363.0	0.00	0.00	
9,100.0	90.50	180.91	5,361.8	-3,476.6	828.1	3,463.0	0.00	0.00	
9,200.0	90.50	180.91	5,360.9	-3,576.5	826.5	3,563.0	0.00	0.00	
9,300.0	90.50	180.91	5,360.0	-3,676.5	824.9	3,663.0	0.00	0.00	
9,400.0	90.50	180.91	5,359.1	-3,776.5	823.3	3,763.0	0.00	0.00	
9,500.0	90.50	180.91	5,358.3	-3,876.5	821.7	3,863.0	0.00	0.00	
9,600.0	90.50	180.91	5,357.4	-3,976.5	820.1	3,963.0	0.00	0.00	
9,700.0	90.50	180.91	5,356.5	-4,076.5	818.5	4,062.9	0.00	0.00	
9,800.0	90.50	180.91	5,355.7	-4,176.4	817.0	4,162.9	0.00	0.00	
9,900.0	90.50	180.91	5,354.8	-4,276.4	815.4	4,262.9	0.00	0.00	
10,000.0	90.50	180.91	5,353.9	-4,376.4	813.8	4,362.9	0.00	0.00	
10,100.0	90.50	180.91	5,353.0	-4,476.4	812.2	4,462.9	0.00	0.00	
10,200.0	90.50	180.91	5,352.2	-4,576.4	810.6	4,562.9	0.00	0.00	
10,300.0	90.50	180.91	5,351.3	-4,676.4	809.0	4,662.9	0.00	0.00	
10,400.0	90.50	180.91	5,350.4	-4,776.3	807.4	4,762.9	0.00	0.00	
10,500.0	90.50	180.91	5,349.5	-4,876.3	805.8	4,862.9	0.00	0.00	
10,600.0	90.50	180.91	5,348.7	-4,976.3	804.2	4,962.9	0.00	0.00	
10,700.0	90.50	180.91	5,347.8	-5,076.3	802.6	5,062.9	0.00	0.00	
10,800.0	90.50	180.91	5,346.9	-5,176.3	801.0	5,162.9	0.00	0.00	
10,900.0	90.50	180.91	5,346.1	-5,276.3	799.4	5,262.9	0.00	0.00	
11,000.0	90.50	180.91	5,345.2	-5,376.2	797.8	5,362.9	0.00	0.00	
11,100.0	90.50	180.91	5,344.3	-5,476.2	796.2	5,462.9	0.00	0.00	
11,200.0	90.50	180.91	5,343.4	-5,576.2	794.6	5,562.9	0.00	0.00	
11,300.0	90.50	180.91	5,342.6	-5,676.2	793.0	5,662.9	0.00	0.00	
11,400.0	90.50	180.91	5,341.7	-5,776.2	791.4	5,762.9	0.00	0.00	
11,500.0	90.50	180.91	5,340.8	-5,876.2	789.8	5,862.9	0.00	0.00	
11,600.0	90.50	180.91	5,339.9	-5,976.1	788.2	5,962.9	0.00	0.00	
11,700.0	90.50	180.91	5,339.1	-6,076.1	786.6	6,062.9	0.00	0.00	
11,800.0	90.50	180.91	5,338.2	-6,176.1	785.0	6,162.9	0.00	0.00	
11,900.0	90.50	180.91	5,337.3	-6,276.1	783.4	6,262.9	0.00	0.00	
12,000.0	90.50	180.91	5,336.5	-6,376.1	781.8	6,362.9	0.00	0.00	
12,100.0	90.50	180.91	5,335.6	-6,476.1	780.3	6,462.9	0.00	0.00	
12,200.0	90.50	180.91	5,334.7	-6,576.0	778.7	6,562.9	0.00	0.00	
12,300.0	90.50	180.91	5,333.8	-6,676.0	777.1	6,662.8	0.00	0.00	
12,400.0	90.50	180.91	5,333.0	-6,776.0	775.5	6,762.8	0.00	0.00	
12,500.0	90.50	180.91	5,332.1	-6,876.0	773.9	6,862.8	0.00	0.00	
12,600.0	90.50	180.91	5,331.2	-6,976.0	772.3	6,962.8	0.00	0.00	
12,700.0	90.50	180.91	5,330.3	-7,076.0	770.7	7,062.8	0.00	0.00	
12,800.0	90.50	180.91	5,329.5	-7,176.0	769.1	7,162.8	0.00	0.00	
12,900.0	90.50	180.91	5,328.6	-7,275.9	767.5	7,262.8	0.00	0.00	
13,000.0	90.50	180.91	5,327.7	-7,375.9	765.9	7,362.8	0.00	0.00	
13,100.0	90.50	180.91	5,326.8	-7,475.9	764.3	7,462.8	0.00	0.00	
13,200.0	90.50	180.91	5,326.0	-7,575.9	762.7	7,562.8	0.00	0.00	
13,300.0	90.50	180.91	5,325.1	-7,675.9	761.1	7,662.8	0.00	0.00	
13,400.0	90.50	180.91	5,324.2	-7,775.9	759.5	7,762.8	0.00	0.00	
13,500.0	90.50	180.91	5,323.4	-7,875.8	757.9	7,862.8	0.00	0.00	
13,586.5	90.50	180.91	5,322.6	-7,962.4	756.5	7,949.3	0.00	0.00	TD at 13586.5

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site:	S1-T22N-R6W	North Reference:	True
Well:	Lybrook G01-2206 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
Lybrook G01-2206 02H I	- plan hits target center - Point	0.00	0.00	5,322.6	-7,962.4	756.5	1,874,319.17	1,297,042.74	36.145589 -107.413026
Lybrook G01-2206 02H I	- plan hits target center - Point	0.00	0.00	5,386.8	-614.2	873.8	1,881,665.44	1,297,248.23	36.165773 -107.412628

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
5,561.7	5,271.6	7" Casing	0.000	0.000
500.0	500.0	9 5/8"	0.000	0.000

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,308.0	1,308.0	Ojo Alamo Ss.		-0.50	180.91
1,484.0	1,484.0	Kirtland Shale		-0.50	180.91
1,645.0	1,645.0	Fruitland Coal		-0.50	180.91
1,861.0	1,861.0	Pictured Cliffs Ss.		-0.50	180.91
1,961.0	1,961.0	Lewis Shale		-0.50	180.91
2,666.0	2,666.0	Cliffhouse Ss.		-0.50	180.91
3,388.0	3,388.0	Menefee Fn.		-0.50	180.91
4,120.0	4,120.0	Point Lookout Ss.		-0.50	180.91
4,293.0	4,293.0	Mancos Shale		-0.50	180.91
4,884.9	4,880.0	Mancos Silt		-0.50	180.91
5,245.3	5,154.0	Gallup Fm.		-0.50	180.91

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,671.0	4,671.0	0.0	0.0	KOP @ 4671'
5,374.1	5,210.5	-33.0	378.5	Start build/turn @ 5374' MD
6,237.1	5,386.8	-614.2	873.8	LP @ 5386' TVD; 90.5°
13,586.5	5,322.6	-7,962.4	756.5	TD at 13586.5

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

S1-T22N-R6W

Lybrook G01-2206 02H

Hz

Plan #1

Anticollision Report

04 February, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Reference Site:	S1-T22N-R6W	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook G01-2206 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:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
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 1,200.4ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 2/4/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
0.0	13,586.2	Plan #1 (Hz)	Geolink MWD
			Description
			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						
S1-T22N-R6W						
Lybrook G01-2206 01H - Hz - Plan #1	4,600.0	4,600.0	30.1	14.1	1.882	CC, ES, SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Reference Site:	S1-T22N-R6W	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook G01-2206 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 S1-T22N-R6W - Lybrook G01-2206 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		
0.0	0.0	0.0	0.0	0.0	0.0	-88.61	0.7	-30.1	30.1					
100.0	100.0	100.0	100.0	0.1	0.1	-88.61	0.7	-30.1	30.1	29.8	0.29	102.719		
200.0	200.0	200.0	200.0	0.3	0.3	-88.61	0.7	-30.1	30.1	29.5	0.64	46.894		
300.0	300.0	300.0	300.0	0.5	0.5	-88.61	0.7	-30.1	30.1	29.1	0.99	30.382		
400.0	400.0	400.0	400.0	0.7	0.7	-88.61	0.7	-30.1	30.1	28.8	1.34	22.470		
500.0	500.0	500.0	500.0	0.8	0.8	-88.61	0.7	-30.1	30.1	28.4	1.69	17.827		
600.0	600.0	600.0	600.0	1.0	1.0	-88.61	0.7	-30.1	30.1	28.1	2.04	14.775		
700.0	700.0	700.0	700.0	1.2	1.2	-88.61	0.7	-30.1	30.1	27.7	2.39	12.615		
800.0	800.0	800.0	800.0	1.4	1.4	-88.61	0.7	-30.1	30.1	27.4	2.74	11.006		
900.0	900.0	900.0	900.0	1.5	1.5	-88.61	0.7	-30.1	30.1	27.0	3.09	9.761		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-88.61	0.7	-30.1	30.1	26.7	3.43	8.769		
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-88.61	0.7	-30.1	30.1	26.3	3.78	7.960		
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-88.61	0.7	-30.1	30.1	26.0	4.13	7.288		
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-88.61	0.7	-30.1	30.1	25.6	4.48	6.720		
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-88.61	0.7	-30.1	30.1	25.3	4.83	6.234		
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-88.61	0.7	-30.1	30.1	24.9	5.18	5.814		
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-88.61	0.7	-30.1	30.1	24.6	5.53	5.447		
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-88.61	0.7	-30.1	30.1	24.2	5.88	5.124		
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-88.61	0.7	-30.1	30.1	23.9	6.23	4.837		
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-88.61	0.7	-30.1	30.1	23.5	6.58	4.580		
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-88.61	0.7	-30.1	30.1	23.2	6.93	4.349		
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-88.61	0.7	-30.1	30.1	22.8	7.27	4.140		
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-88.61	0.7	-30.1	30.1	22.5	7.62	3.951		
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-88.61	0.7	-30.1	30.1	22.1	7.97	3.778		
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-88.61	0.7	-30.1	30.1	21.8	8.32	3.619		
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	-88.61	0.7	-30.1	30.1	21.4	8.67	3.474		
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	-88.61	0.7	-30.1	30.1	21.1	9.02	3.339		
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	-88.61	0.7	-30.1	30.1	20.7	9.37	3.215		
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	-88.61	0.7	-30.1	30.1	20.4	9.72	3.099		
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	-88.61	0.7	-30.1	30.1	20.1	10.07	2.992		
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	-88.61	0.7	-30.1	30.1	19.7	10.42	2.892		
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	-88.61	0.7	-30.1	30.1	19.4	10.77	2.798		
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	-88.61	0.7	-30.1	30.1	19.0	11.11	2.710		
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	-88.61	0.7	-30.1	30.1	18.7	11.46	2.627		
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	-88.61	0.7	-30.1	30.1	18.3	11.81	2.550		
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	-88.61	0.7	-30.1	30.1	18.0	12.16	2.477		
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	-88.61	0.7	-30.1	30.1	17.6	12.51	2.407		
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	-88.61	0.7	-30.1	30.1	17.3	12.86	2.342		
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	-88.61	0.7	-30.1	30.1	16.9	13.21	2.280		
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	-88.61	0.7	-30.1	30.1	16.6	13.56	2.222		
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	-88.61	0.7	-30.1	30.1	16.2	13.91	2.166		
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	-88.61	0.7	-30.1	30.1	15.9	14.26	2.113		
4,200.0	4,200.0	4,200.0	4,200.0	7.3	7.3	-88.61	0.7	-30.1	30.1	15.5	14.60	2.062		
4,300.0	4,300.0	4,300.0	4,300.0	7.5	7.5	-88.61	0.7	-30.1	30.1	15.2	14.95	2.014		
4,400.0	4,400.0	4,400.0	4,400.0	7.7	7.7	-88.61	0.7	-30.1	30.1	14.8	15.30	1.968		
4,500.0	4,500.0	4,500.0	4,500.0	7.8	7.8	-88.61	0.7	-30.1	30.1	14.5	15.65	1.924		
4,600.0	4,600.0	4,600.0	4,600.0	8.0	8.0	-88.61	0.7	-30.1	30.1	14.1	16.00	1.882 CC, ES, SF		
4,700.0	4,700.0	4,694.7	4,694.4	8.2	8.2	174.90	-0.1	-36.5	37.6	21.3	16.33	2.303		
4,800.0	4,798.9	4,780.1	4,777.6	8.4	8.3	173.30	-2.6	-55.3	72.9	56.5	16.39	4.447		
4,900.0	4,894.0	4,850.0	4,843.0	8.6	8.5	172.35	-5.8	-79.6	134.7	118.6	16.09	8.368		
5,000.0	4,882.2	4,892.2	4,880.8	8.9	8.6	170.84	-8.2	-98.1	215.1	199.6	15.49	13.887		
5,100.0	5,061.0	4,919.0	4,904.1	9.5	8.7	167.18	-9.9	-111.2	307.1	292.3	14.73	20.841		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Reference Site:	S1-T22N-R6W	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook G01-2206 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 S1-T22N-R6W - Lybrook G01-2206 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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	5,128.0	4,930.8	4,914.2	10.3	8.8	150.26	-10.7	-117.4	405.0	390.0	15.05	26.907		
5,300.0	5,181.1	4,931.3	4,914.6	11.5	8.8	26.44	-10.8	-117.7	504.8	490.4	14.43	34.989		
5,400.0	5,219.2	4,923.6	4,908.0	13.1	8.8	20.15	-10.2	-113.6	603.4	589.8	13.55	44.532		
5,500.0	5,252.1	4,915.4	4,901.0	14.8	8.7	45.37	-9.7	-109.4	700.2	681.2	19.05	36.762		
5,600.0	5,283.3	4,900.0	4,887.7	16.6	8.7	53.71	-8.7	-101.8	794.3	772.6	21.71	36.581		
5,700.0	5,311.7	4,900.0	4,887.7	18.3	8.7	58.62	-8.7	-101.8	883.9	860.4	23.52	37.588		
5,800.0	5,336.5	4,900.0	4,887.7	19.8	8.7	60.62	-8.7	-101.8	968.1	943.7	24.44	39.615		
5,900.0	5,356.9	4,900.0	4,887.7	21.3	8.7	61.42	-8.7	-101.8	1,046.0	1,021.2	24.72	42.315		
6,000.0	5,372.4	4,900.0	4,887.7	22.5	8.7	61.79	-8.7	-101.8	1,116.7	1,092.2	24.47	45.641		
6,100.0	5,382.4	4,900.0	4,887.7	23.6	8.7	62.12	-8.7	-101.8	1,179.6	1,155.8	23.78	49.612		

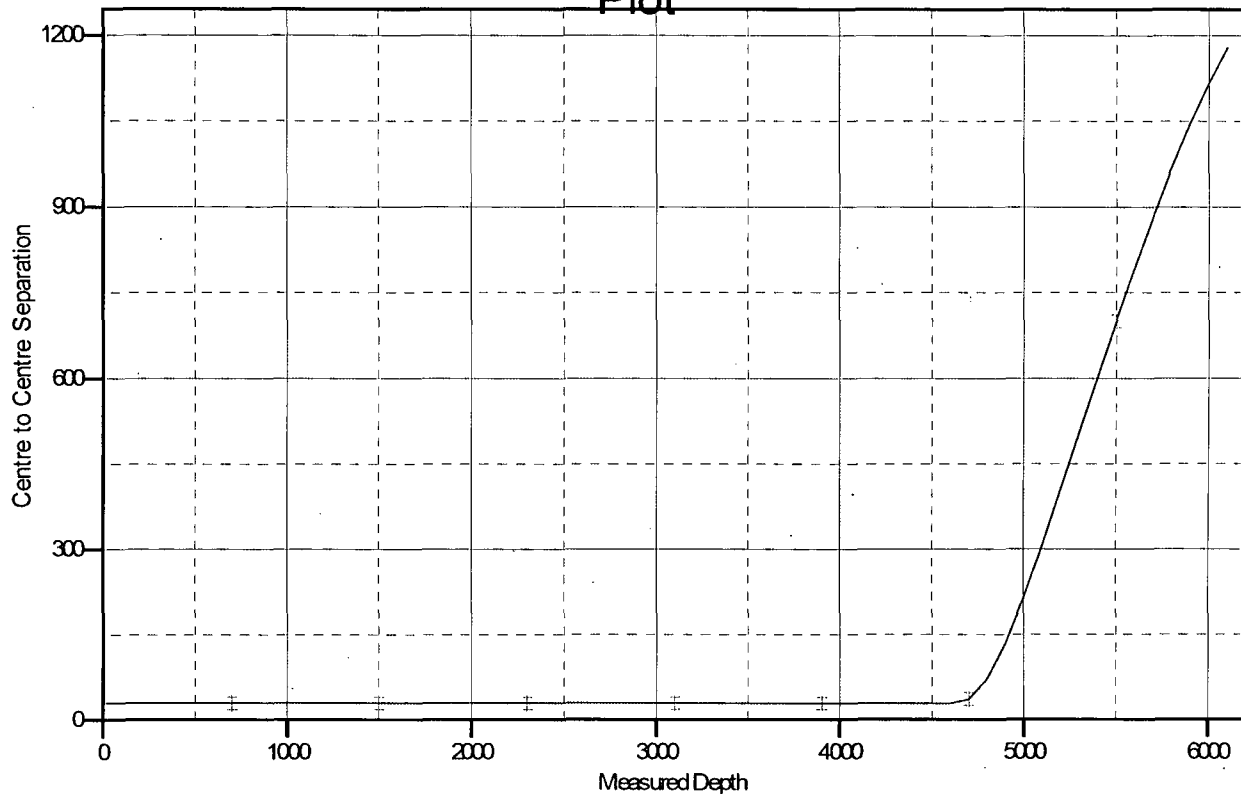
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook G01-2206 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 6955.0ft (Original Well Elev)
Reference Site:	S1-T22N-R6W	MD Reference:	WELL @ 6955.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook G01-2206 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 Depths are relative to WELL @ 6955.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -106.250000 °

Coordinates are relative to: Lybrook G01-2206 02H
Coordinate System is US State Plane 1983, New Mexico Central Zone
Grid Convergence at Surface is: -0.69°

Ladder Plot



LEGEND

— Lybrook G01-2206 01H, Hz, Plan #1 V0



June 4, 2014

Mr. Charlie Perrin
EMNRD—Oil and Gas Division
Aztec Field Office, District III
1000 Rio Brazos Road
Aztec, NM 87410

**Re: Request for Tight-Hole Status
Lybrook G01-2206 02H
API: 30-043-21224**

Mr. Perrin:

Encana Oil & Gas (USA) Inc. (Encana) requests tight-hole/confidential status on the following proposed wells:

- Lybrook G01-2206 02H

Specifically, in accordance with 19.15.7.16.C NMAC, we request that the form C-105 and accompanying data be kept confidential for 90 days from the date of well completion.

Please feel free to contact me directly at 505.599.2413 or via email at michelle.yazzie@encana.com should you have any questions.

Encana Oil & Gas (USA) Inc.

Michelle Yazzie
Permitting Technician

OIL CONS. DIV DIST. 3
JUN 4 2014
OIL CONS. DIV DIST. 3
JUN 4 2014

Encana Oil & Gas (USA) Inc.

6584 Easyt Main Street, Farmington NM 87402

505.599.2413 (O)

michelle.yazzie@encana.com

Ar

ENCANA OIL & GAS (USA) INC.
LYBROOK G01-2206 #02H
2407' FNL & 1284' FEL
LOCATED IN THE SW/4 NE/4 OF SECTION 1,
T22N, R8W, N.M.P.M.,
SANDOVAL COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, GO SOUTH ON HWY 550, 53.6 MILES TO M.P. 97.7.
- 2) TURN RIGHT AND GO 3.3 MILES TO UNIMPROVED ROADWAY.
- 3) TURN LEFT ALONG LYBROOK ACCESS ROAD #1 FOR 12,155 FEET TO "T" INTERSECTION IN PROPOSED ROADWAY.
- 4) TURN LEFT AND GO 7,398 FEET ALONG UNIMPROVED ROADWAY TO STAKED ENCANA LYBROOK H01-2206 #01H LOCATION WHERE ACCESS IS STAKED ON WEST SIDE OF PAD.

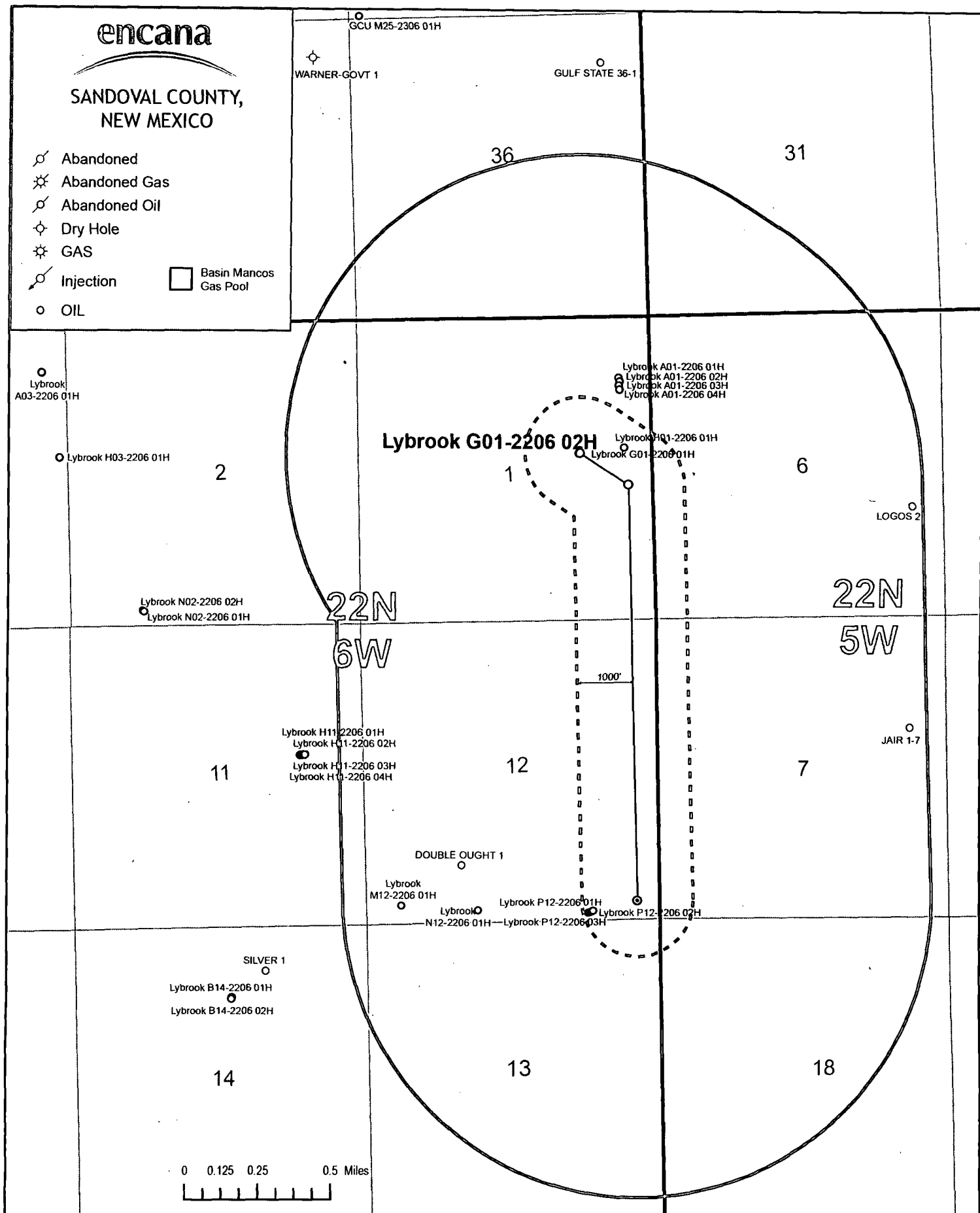
WELL FLAG LOCATED AT LAT. 36.167460° N, LONG. 107.415588° W (NAD 83).



-  Abandoned
-  Abandoned Gas
-  Abandoned Oil
-  Dry Hole
-  GAS
-  Injection
-  OIL

Basin Mancos

Gas Pool



encana

Well Name and Number:
Lybrook G01-2206 02H

