

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DEC 05 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 36943

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)
720-876-5994

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

8. Well Name and No.
Lybrook L29-2307 03H

9. API Well No.
30-043-21230

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 1701' FSL and 784' FSL Section 29, T23N, R7W
BHL: 1005' FSL and 330' FWL Section 30, T23N, R7W

10. Field and Pool or Exploratory Area
Basin Mancos

11. County or Parish, State
Sandoval 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.)

The BHL for the Lybrook L29-2307 03H was modified from 620' FSL, 330' FWL (Section 30, T23N, R7W) to 1005' FSL, 330' FWL (Section 30, T23N, R7W). The POE for the Lybrook L29-2307 03H was modified from 620' FSL, 330' FEL (Section 30, T23N, R7W) to 1005' FSL, 330' FEL (Section 30, T23N, R7W). Attached is an updated Directional Plan, Drilling Plan and Wellbore Diagram, which have been updated to reflect this change in BHL and POE. The plans were also updated to include a cemented production liner, instead of running open hole swell packers, as previously planned. Finally, the 7" ICP was moved from approximately 72 degrees to 55 degrees.

OIL CONS. DIV DIST. 3

DEC 09 2014

CONDITIONS OF APPROVAL

there 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**

ADHERE TO PREVIOUS NMOC

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

Shawn Turk

Title Regulatory Analyst

Signature

Date 12/04/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekou

Title Petroleum Engineer

Date 12/08/2014

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)

NMOC

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District I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

DEC 05 2014 ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21230	² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 313379	⁵ Property Name LYBROOK L29-2307	
⁷ OGRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁶ Well Number 03H
		⁹ Elevation 6874'

¹⁰ Surface Location

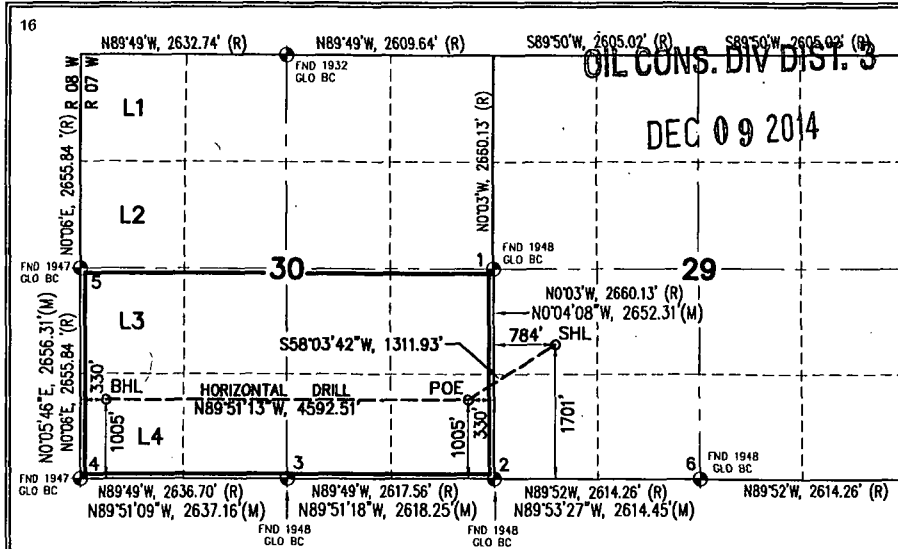
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
L	29	23N	7W		1701	SOUTH	784	WEST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
M	30	23N	7W	4	1005	SOUTH	330	WEST	SANDOVAL

¹² Dedicated Acres 320 ACRES 321-26 S/2-SECTION 30	PROJECT AREA	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



¹⁷ OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

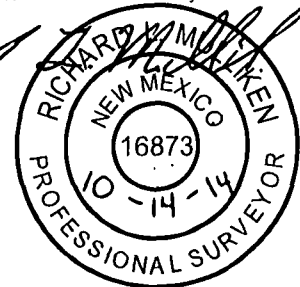
Signature: *Shawn Turk* Date: *12/4/14*
Printed Name: **Shawn Turk**
E-mail Address: **shawn.turk@encana.com**

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.

October 7, 2014
Date of Survey

Signature and Seal of Professional Surveyor:

RICHARD L. MULLIKEN
Certificate Number **16873**



LYBROOK L29-2307 03H WELL
SHL (WELL FLAG)
LAT. 36.195260'N (NAD83)
LONG. 107.603879'W (NAD83)
LAT. 36.195246'N (NAD27)
LONG. 107.603271'W (NAD27)
POE (POINT OF ENTRY)
LAT. 36.193355'N (NAD83)
LONG. 107.607652'W (NAD83)
LAT. 36.193341'N (NAD27)
LONG. 107.607043'W (NAD27)
BHL (BOTTOM HOLE LOCATION)
LAT. 36.193388'N (NAD83)
LONG. 107.623210'W (NAD83)
LAT. 36.193374'N (NAD27)
LONG. 107.622601'W (NAD27)

SECTION CORNERS

1 LAT. 36.197876'N (NAD83)
LONG. 107.608539'W (NAD83)
LAT. 36.197862'N (NAD27)
LONG. 107.605931'W (NAD27)
2 LAT. 36.190593'N (NAD83)
LONG. 107.608530'W (NAD83)
LAT. 36.190579'N (NAD27)
LONG. 107.605922'W (NAD27)
3 LAT. 36.190612'N (NAD83)
LONG. 107.615400'W (NAD83)
LAT. 36.190598'N (NAD27)
LONG. 107.614791'W (NAD27)
4 LAT. 36.190631'N (NAD83)
LONG. 107.624333'W (NAD83)
LAT. 36.190617'N (NAD27)
LONG. 107.623724'W (NAD27)
5 LAT. 36.197925'N (NAD83)
LONG. 107.624318'W (NAD83)
LAT. 36.197911'N (NAD27)
LONG. 107.623709'W (NAD27)
6 LAT. 36.190577'N (NAD83)
LONG. 107.597874'W (NAD83)
LAT. 36.190563'N (NAD27)
LONG. 107.597065'W (NAD27)

LOC: 1701' FSL, 784' FWL Sec 29 23N 07W County: Sandoval WELL: Lybrook L29-2307 03H			Encana Natural Gas WELL SUMMARY				ENG: Michael Sanch 12-4-14 RIG: Aztec 1099 GLE: 6874 RKBE: 6891.5		
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60	60'		26	16" 42.09# 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	San Jose Fn.	0			12 1/4	9 5/8" 36ppf J55 LTC TOC Surface with 100% OH Excess: 228 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water.	Fresh wtr 8.3-10	Vertical <1°
		Nacimiento Fn. 9 5/8" Csg	surface 500	500.0					
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.	884		8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 820sks Stage 1 Lead: 462 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: 357 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.	Fresh Wtr 8.3-10	Vertical <1°	
		Kirtland Shale /	1,094						
		Fruitland Coal	1,362						
		Pictured Cliffs Ss.	1,480						
		Lewis Shale	1,602						
		Cliffhouse Ss.	2,296						
Surveys every 30' through the curve	Mud logger onsite	Menefee Fn.	3,004		6 1/8	100' overlap at liner top 5021' Drilled Lateral	WBM 8.3-10 TOC @ hanger (50% OH excess) Stage 1 Total: 290sks Stage 1 Blend: 290 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL-52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk.	TD = 10,015.1 MD	
		Point Lookout Ss.	3,838						
		Mancos Shale	4,042						
		KOP	2,432						2,432.0
		Mancos Silt	4,556						
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Gallup Fn.	4,815						
		7" Csg	4,740						4,994.3
MWD Gamma Directional		Horizontal Target TD	4,871 4,851	10,015.1					
		Base Gallup	5,135						

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 2432', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 4994' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~55 deg, drill lateral to 10015' run 4 1/2 inch cemented liner

OIL CONS. DIV DIST. 3
DEC 09 2014

Lybrook L29-2307 03H

SHL: 1701' FSL, 784' FWL Sec 29 23N 07W

BHL: 1005' FSL, 330' FWL Sec 30 23N 07W

Sandoval, New Mexico

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

OIL CONS. DIV DIST. 3

DEC 09 2014

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

Formation	Depth (TVD) units = feet
San Jose Fn.	n/a
Nacimiento Fn.	surface
Ojo Alamo Ss.	884
Kirtland Shale	1,094
Fruitland Coal	1,362
Pictured Cliffs Ss.	1,480
Lewis Shale	1,602
Cliffhouse Ss.	2,296
Menefee Fn.	3,004
Point Lookout Ss.	3,838
Mancos Shale	4,042
Mancos Silt	4,556
Gallup Fn.	4,815
Base Gallup	5,135

The referenced surface elevation is 6874', KB 6892'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,362
Oil/Gas	Pictured Cliffs Ss.	1,480
Oil/Gas	Cliffhouse Ss.	2,296
Gas	Menefee Fn.	3,004
Oil/Gas	Point Lookout Ss.	3,838
Oil/Gas	Mancos Shale	4,042
Oil/Gas	Mancos Silt	4,556
Oil/Gas	Gallup Fn.	4,815

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

Lybrook L29-2307 03H

SHL: 1701' FSL, 784' FWL Sec 29 23N 07W

BHL: 1005' FSL, 330' FWL Sec 30 23N 07W

Sandoval, New Mexico

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.
- 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 times.
- 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'	26"	16"	42.09#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-4994'	8 3/4"	7"	26#	J55, LTC New
Production Liner	4894'-10015'	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

Lybrook L29-2307 03H

SHL: 1701' FSL, 784' FWL Sec 29 23N 07W

BHL: 1005' FSL, 330' FWL Sec 30 23N 07W

Sandoval, New Mexico

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.

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'	228 sks	Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water	Surface	1 per joint on bottom 3 joints
Intermediate	0'-4994'	100% open hole excess Stage 1 Lead: 462 sks Stage 1 Tail: 357 sks	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail: 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	4894'- 10015'	50% OH excess Stage 1 Blend Total: 290sks	Blend: Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL- 52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk	Liner Hanger	N/A

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 2432'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	4851'/10015'	Gallup

Lybrook L29-2307 03H

SHL: 1701' FSL, 784' FWL Sec 29 23N 07W

BHL: 1005' FSL, 330' FWL Sec 30 23N 07W

Sandoval, New Mexico

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'-4740'/4994'	Fresh Water LSND	8.3-10	40-50	8-10

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"	4740'/4994'- 4851'/10015'	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 +/- 2279 psi based on a 9.0 ppg at 4871' 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.

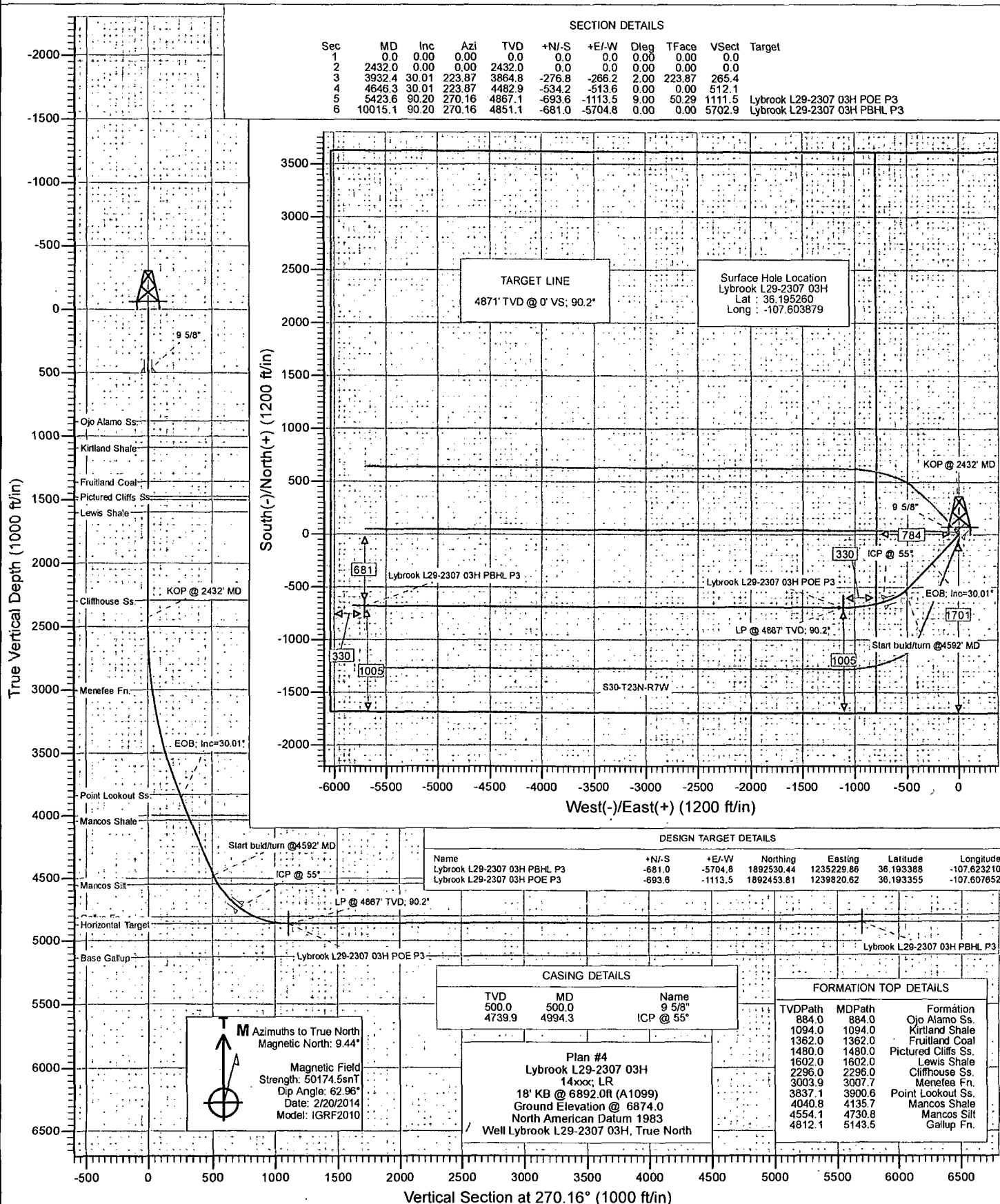
9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on November 5, 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.



Project: Sandoval County, NM
Site: S29-T23N-R7W
Well: Lybrook L29-2307 03H
Wellbore: Hz
Design: Plan #4



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	18' KB @ 6892.0ft (A1099)
Project:	Sandoval County, NM	MD Reference:	18' KB @ 6892.0ft (A1099)
Site:	S29-T23N-R7W	North Reference:	True
Well:	Lybrook L29-2307 03H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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	S29-T23N-R7W		
Site Position:		Northing:	1,893,172.01 ft
From:	Lat/Long	Easting:	1,240,929.16 ft
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in
		Latitude:	36.195370
		Longitude:	-107.603930
		Grid Convergence:	-0.80 °

Well	Lybrook L29-2307 03H		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36.195260
		Longitude:	-107.603879
		Ground Level:	6,874.0 ft

Wellbore	Hz		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2/20/2014	9.43
			Dip Angle
			62.96
			Field Strength
			50,174

Design	Plan #4		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction
			270.16

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	
2,432.0	0.00	0.00	2,432.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,932.4	30.01	223.87	3,864.8	-276.8	-266.2	2.00	2.00	0.00	223.87	
4,646.3	30.01	223.87	4,482.9	-534.2	-513.6	0.00	0.00	0.00	0.00	
5,423.6	90.20	270.16	4,867.1	-693.6	-1,113.5	9.00	7.74	5.95	50.29	Lybrook L29-2307 03H
10,015.1	90.20	270.16	4,851.1	-681.0	-5,704.8	0.00	0.00	0.00	0.00	Lybrook L29-2307 03H

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	18' KB @ 6892.0ft (A1099)
Project:	Sandoval County, NM	MD Reference:	18' KB @ 6892.0ft (A1099)
Site:	S29-T23N-R7W	North Reference:	True
Well:	Lybrook L29-2307 03H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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	
884.0	0.00	0.00	884.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
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	
1,094.0	0.00	0.00	1,094.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,362.0	0.00	0.00	1,362.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,602.0	0.00	0.00	1,602.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
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	
2,296.0	0.00	0.00	2,296.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
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	
2,432.0	0.00	0.00	2,432.0	0.0	0.0	0.0	0.00	0.00	KOP @ 2432'MD
2,500.0	1.36	223.87	2,500.0	-0.6	-0.6	0.6	2.00	2.00	
2,600.0	3.36	223.87	2,599.9	-3.5	-3.4	3.4	2.00	2.00	
2,700.0	5.36	223.87	2,699.6	-9.0	-8.7	8.7	2.00	2.00	
2,800.0	7.36	223.87	2,799.0	-17.0	-16.4	16.3	2.00	2.00	
2,900.0	9.36	223.87	2,897.9	-27.5	-26.4	26.4	2.00	2.00	
3,000.0	11.36	223.87	2,996.3	-40.5	-38.9	38.8	2.00	2.00	
3,007.7	11.51	223.87	3,003.9	-41.6	-40.0	39.8	2.00	2.00	Menefee Fn.
3,100.0	13.36	223.87	3,094.0	-55.9	-53.7	53.6	2.00	2.00	
3,200.0	15.36	223.87	3,190.8	-73.8	-70.9	70.7	2.00	2.00	
3,300.0	17.36	223.87	3,286.8	-94.1	-90.4	90.2	2.00	2.00	
3,400.0	19.36	223.87	3,381.7	-116.8	-112.3	111.9	2.00	2.00	
3,500.0	21.36	223.87	3,475.4	-141.9	-136.4	136.0	2.00	2.00	
3,600.0	23.36	223.87	3,567.9	-169.3	-162.8	162.3	2.00	2.00	
3,700.0	25.36	223.87	3,659.0	-199.0	-191.3	190.8	2.00	2.00	
3,800.0	27.36	223.87	3,748.6	-231.0	-222.1	221.5	2.00	2.00	
3,900.0	29.36	223.87	3,836.6	-265.2	-255.0	254.3	2.00	2.00	
3,900.6	29.37	223.87	3,837.1	-265.5	-255.2	254.5	2.00	2.00	Point Lookout Ss.
3,932.4	30.01	223.87	3,864.8	-276.8	-266.2	265.4	2.00	2.00	EOB; Inc=30.01°
4,000.0	30.01	223.87	3,923.3	-301.2	-289.6	288.7	0.00	0.00	
4,100.0	30.01	223.87	4,009.9	-337.2	-324.2	323.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	18' KB @ 6892.0ft (A1099)
Project:	Sandoval County, NM	MD Reference:	18' KB @ 6892.0ft (A1099)
Site:	S29-T23N-R7W	North Reference:	True
Well:	Lybrook L29-2307 03H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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
4,135.7	30.01	223.87	4,040.8	-350.1	-336.6	335.7	0.00	0.00	Mancos Shale
4,200.0	30.01	223.87	4,096.5	-373.3	-358.9	357.9	0.00	0.00	
4,300.0	30.01	223.87	4,183.1	-409.3	-393.6	392.4	0.00	0.00	
4,400.0	30.01	223.87	4,269.7	-445.4	-428.2	427.0	0.00	0.00	
4,500.0	30.01	223.87	4,356.3	-481.4	-462.9	461.6	0.00	0.00	
4,600.0	30.01	223.87	4,442.9	-517.5	-497.6	496.1	0.00	0.00	
4,646.3	30.01	223.87	4,482.9	-534.2	-513.6	512.1	0.00	0.00	Start build/turn @4592' MD
4,700.0	33.29	230.66	4,528.7	-553.2	-534.3	532.8	9.00	6.10	
4,730.8	35.31	234.02	4,554.1	-563.8	-548.1	546.5	9.00	6.57	Mancos Silt
4,800.0	40.15	240.46	4,608.8	-586.6	-583.7	582.1	9.00	6.99	
4,900.0	47.62	247.72	4,680.9	-616.5	-646.0	644.3	9.00	7.47	
4,994.3	55.00	253.10	4,739.9	-641.0	-715.4	713.6	9.00	7.82	ICP @ 55°
5,000.0	55.45	253.39	4,743.1	-642.4	-719.8	718.0	9.00	7.95	
5,100.0	63.50	258.08	4,793.9	-663.4	-803.3	801.4	9.00	8.05	
5,143.5	67.04	259.90	4,812.1	-671.0	-842.0	840.1	9.00	8.15	Gallup Fn.
5,200.0	71.68	262.14	4,832.0	-679.2	-894.2	892.3	9.00	8.20	
5,300.0	79.94	265.83	4,856.5	-689.3	-990.6	988.6	9.00	8.26	
5,400.0	88.24	269.34	4,866.8	-693.4	-1,089.8	1,087.9	9.00	8.30	
5,423.6	90.20	270.16	4,867.1	-693.6	-1,113.5	1,111.5	9.00	8.31	LP @ 4867' TVD; 90.2°
5,500.0	90.20	270.16	4,866.8	-693.3	-1,189.8	1,187.9	0.00	0.00	
5,600.0	90.20	270.16	4,866.5	-693.1	-1,289.8	1,287.9	0.00	0.00	
5,700.0	90.20	270.16	4,866.1	-692.8	-1,389.8	1,387.9	0.00	0.00	
5,800.0	90.20	270.16	4,865.8	-692.5	-1,489.8	1,487.9	0.00	0.00	
5,900.0	90.20	270.16	4,865.4	-692.3	-1,589.8	1,587.9	0.00	0.00	
6,000.0	90.20	270.16	4,865.1	-692.0	-1,689.8	1,687.9	0.00	0.00	
6,100.0	90.20	270.16	4,864.7	-691.7	-1,789.8	1,787.9	0.00	0.00	
6,200.0	90.20	270.16	4,864.4	-691.4	-1,889.8	1,887.9	0.00	0.00	
6,300.0	90.20	270.16	4,864.0	-691.2	-1,989.8	1,987.9	0.00	0.00	
6,400.0	90.20	270.16	4,863.7	-690.9	-2,089.8	2,087.9	0.00	0.00	
6,500.0	90.20	270.16	4,863.3	-690.6	-2,189.8	2,187.9	0.00	0.00	
6,600.0	90.20	270.16	4,863.0	-690.3	-2,289.8	2,287.9	0.00	0.00	
6,700.0	90.20	270.16	4,862.6	-690.1	-2,389.8	2,387.9	0.00	0.00	
6,800.0	90.20	270.16	4,862.3	-689.8	-2,489.8	2,487.9	0.00	0.00	
6,900.0	90.20	270.16	4,862.0	-689.5	-2,589.8	2,587.9	0.00	0.00	
7,000.0	90.20	270.16	4,861.6	-689.2	-2,689.8	2,687.9	0.00	0.00	
7,100.0	90.20	270.16	4,861.3	-689.0	-2,789.8	2,787.9	0.00	0.00	
7,200.0	90.20	270.16	4,860.9	-688.7	-2,889.8	2,887.9	0.00	0.00	
7,300.0	90.20	270.16	4,860.6	-688.4	-2,989.8	2,987.9	0.00	0.00	
7,400.0	90.20	270.16	4,860.2	-688.1	-3,089.8	3,087.9	0.00	0.00	
7,500.0	90.20	270.16	4,859.9	-687.9	-3,189.8	3,187.9	0.00	0.00	
7,600.0	90.20	270.16	4,859.5	-687.6	-3,289.8	3,287.9	0.00	0.00	
7,700.0	90.20	270.16	4,859.2	-687.3	-3,389.8	3,387.9	0.00	0.00	
7,800.0	90.20	270.16	4,858.8	-687.1	-3,489.8	3,487.9	0.00	0.00	
7,900.0	90.20	270.16	4,858.5	-686.8	-3,589.8	3,587.9	0.00	0.00	
8,000.0	90.20	270.16	4,858.1	-686.5	-3,689.8	3,687.9	0.00	0.00	
8,100.0	90.20	270.16	4,857.8	-686.2	-3,789.8	3,787.9	0.00	0.00	
8,200.0	90.20	270.16	4,857.4	-686.0	-3,889.8	3,887.9	0.00	0.00	
8,300.0	90.20	270.16	4,857.1	-685.7	-3,989.8	3,987.9	0.00	0.00	
8,400.0	90.20	270.16	4,856.7	-685.4	-4,089.8	4,087.9	0.00	0.00	
8,500.0	90.20	270.16	4,856.4	-685.1	-4,189.8	4,187.9	0.00	0.00	
8,600.0	90.20	270.16	4,856.0	-684.9	-4,289.8	4,287.9	0.00	0.00	
8,700.0	90.20	270.16	4,855.7	-684.6	-4,389.8	4,387.9	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	18' KB @ 6892.0ft (A1099)
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Site:	S29-T23N-R7W	North Reference:	True
Well:	Lybrook L29-2307 03H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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
8,800.0	90.20	270.16	4,855.3	-684.3	-4,489.8	4,487.9	0.00	0.00	
8,900.0	90.20	270.16	4,855.0	-684.0	-4,589.8	4,587.9	0.00	0.00	
9,000.0	90.20	270.16	4,854.6	-683.8	-4,689.8	4,687.9	0.00	0.00	
9,100.0	90.20	270.16	4,854.3	-683.5	-4,789.8	4,787.9	0.00	0.00	
9,200.0	90.20	270.16	4,853.9	-683.2	-4,889.8	4,887.9	0.00	0.00	
9,300.0	90.20	270.16	4,853.6	-683.0	-4,989.8	4,987.9	0.00	0.00	
9,400.0	90.20	270.16	4,853.2	-682.7	-5,089.8	5,087.9	0.00	0.00	
9,500.0	90.20	270.16	4,852.9	-682.4	-5,189.8	5,187.9	0.00	0.00	
9,600.0	90.20	270.16	4,852.5	-682.1	-5,289.8	5,287.9	0.00	0.00	
9,700.0	90.20	270.16	4,852.2	-681.9	-5,389.8	5,387.9	0.00	0.00	
9,800.0	90.20	270.16	4,851.8	-681.6	-5,489.8	5,487.9	0.00	0.00	
9,900.0	90.20	270.16	4,851.5	-681.3	-5,589.8	5,587.9	0.00	0.00	
10,000.0	90.20	270.16	4,851.1	-681.0	-5,689.8	5,687.9	0.00	0.00	
10,015.1	90.20	270.16	4,851.1	-681.0	-5,704.8	5,702.9	0.00	0.00	TD at 10015.1

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook L29-2307 03H F - hit/miss target - Shape - Point	0.00	0.00	5,093.4	-1,077.7	-1,112.9	1,892,069.73	1,239,815.83	36.192300	-107.607650
- plan misses target center by 445.8ft at 5423.6ft MD (4867.1 TVD, -693.6 N, -1113.5 E)									
Lybrook L29-2307 03H F - plan hits target center - Point	0.00	0.00	4,867.1	-693.6	-1,113.5	1,892,453.81	1,239,820.62	36.193355	-107.607652
Lybrook L29-2307 03H F - plan misses target center by 428.1ft at 10013.4ft MD (4851.1 TVD, -681.0 N, -5703.2 E) - Point	0.00	0.00	5,045.3	-1,062.6	-5,704.9	1,892,148.92	1,235,224.45	36.192340	-107.623210
Lybrook L29-2307 03H F - plan hits target center - Point	0.00	0.00	4,851.1	-681.0	-5,704.8	1,892,530.44	1,235,229.86	36.193388	-107.623210
								500.0	500.0
								4,994.3	4,739.9
								9 5/8"	ICP @ 55°
								0.000	0.000
								0.000	0.000

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	18' KB @ 6892.0ft (A1099)
Project:	Sandoval County, NM	MD Reference:	18' KB @ 6892.0ft (A1099)
Site:	S29-T23N-R7W	North Reference:	True
Well:	Lybrook L29-2307 03H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
884.0	884.0	Ojo Alamo Ss.		-0.20	270.16
1,094.0	1,094.0	Kirtland Shale		-0.20	270.16
1,362.0	1,362.0	Fruitland Coal		-0.20	270.16
1,480.0	1,480.0	Pictured Cliffs Ss.		-0.20	270.16
1,602.0	1,602.0	Lewis Shale		-0.20	270.16
2,296.0	2,296.0	Cliffhouse Ss.		-0.20	270.16
3,007.7	3,004.0	Menefee Fn.		-0.20	270.16
3,900.6	3,838.0	Point Lookout Ss.		-0.20	270.16
4,135.7	4,042.0	Mancos Shale		-0.20	270.16
4,730.8	4,556.0	Mancos Silt		-0.20	270.16
5,143.5	4,815.0	Gallup Fn.		-0.20	270.16

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,432.0	2,432.0	0.0	0.0	KOP @ 2432' MD	
3,932.4	3,864.8	-276.8	-266.2	EOB; Inc=30.01°	
4,646.3	4,482.9	-534.2	-513.6	Start build/turn @4592' MD	
5,423.6	4,867.1	-693.6	-1,113.5	LP @ 4867' TVD; 90.2°	
10,015.1	4,851.1	-681.0	-5,704.8	TD at 10015.1	

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

S29-T23N-R7W

Lybrook L29-2307 03H

Hz

Plan #4

Anticollision Report

02 December, 2014

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Reference	Plan #4		
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 1,201.5ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	12/2/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,014.8	Plan #4 (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						
S29-T23N-R7W						
Lybrook L29-2307 01H - Hz - Plan #3	2,400.0	2,400.0	40.1	31.8	4.819	CC
Lybrook L29-2307 01H - Hz - Plan #3	2,500.0	2,500.0	40.4	31.7	4.664	ES, SF
Lybrook L29-2307 02H - Hz - Plan #3	2,400.0	2,400.0	20.1	11.8	2.416	CC
Lybrook L29-2307 02H - Hz - Plan #3	2,500.0	2,500.0	20.4	11.8	2.358	ES, SF
Lybrook L29-2307 04H - HZ - Plan #1	2,100.0	2,100.0	20.0	12.7	2.749	CC, ES
Lybrook L29-2307 04H - HZ - Plan #1	10,015.5	10,386.3	614.8	354.1	2.359	SF
S30-T23N-R7W						
Lybrook O30-2307 01H - Hz - Plan #3	6,848.0	5,000.0	675.1	605.9	9.756	CC
Lybrook O30-2307 01H - Hz - Plan #3	6,900.0	5,025.8	676.1	605.0	9.509	ES
Lybrook O30-2307 01H - Hz - Plan #3	7,200.0	5,150.0	731.5	650.3	9.004	SF
Lybrook O30-2307 02H - Hz - Plan #3	5,925.4	4,737.0	784.1	740.2	17.892	CC, ES
Lybrook O30-2307 02H - Hz - Plan #3	6,100.0	4,700.0	801.9	755.7	17.371	SF
Lybrook O30-2307 03H - Hz - Plan #2	6,261.6	4,800.0	700.2	649.7	13.860	CC, ES
Lybrook O30-2307 03H - Hz - Plan #2	6,400.0	4,768.0	712.3	659.7	13.524	SF
Lybrook O30-2307 04H - HZ - Plan #1	5,685.9	4,834.3	768.1	725.7	18.118	CC
Lybrook O30-2307 04H - HZ - Plan #1	5,700.0	4,830.7	768.3	725.7	18.047	ES
Lybrook O30-2307 04H - HZ - Plan #1	5,900.0	4,777.4	793.4	748.6	17.705	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S29-T23N-R7W - Lybrook L29-2307 01H - HZ - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-22.06	37.1	-15.1	40.1					
100.0	100.0	100.0	100.0	0.1	0.1	-22.06	37.1	-15.1	40.1	39.8	0.29	139.991		
200.0	200.0	200.0	200.0	0.3	0.3	-22.06	37.1	-15.1	40.1	39.4	0.64	63.073		
300.0	300.0	300.0	300.0	0.5	0.5	-22.06	37.1	-15.1	40.1	39.1	0.98	40.707		
400.0	400.0	400.0	400.0	0.7	0.7	-22.06	37.1	-15.1	40.1	38.7	1.33	30.050		
500.0	500.0	500.0	500.0	0.8	0.8	-22.06	37.1	-15.1	40.1	38.4	1.68	23.816		
600.0	600.0	600.0	600.0	1.0	1.0	-22.06	37.1	-15.1	40.1	38.0	2.03	19.724		
700.0	700.0	700.0	700.0	1.2	1.2	-22.06	37.1	-15.1	40.1	37.7	2.38	16.832		
800.0	800.0	800.0	800.0	1.4	1.4	-22.06	37.1	-15.1	40.1	37.3	2.73	14.679		
900.0	900.0	900.0	900.0	1.5	1.5	-22.06	37.1	-15.1	40.1	37.0	3.08	13.015		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-22.06	37.1	-15.1	40.1	36.6	3.43	11.690		
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-22.06	37.1	-15.1	40.1	36.3	3.78	10.609		
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-22.06	37.1	-15.1	40.1	35.9	4.13	9.712		
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-22.06	37.1	-15.1	40.1	35.6	4.48	8.954		
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-22.06	37.1	-15.1	40.1	35.2	4.82	8.306		
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-22.06	37.1	-15.1	40.1	34.9	5.17	7.746		
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-22.06	37.1	-15.1	40.1	34.5	5.52	7.256		
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-22.06	37.1	-15.1	40.1	34.2	5.87	6.825		
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-22.06	37.1	-15.1	40.1	33.8	6.22	6.442		
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-22.06	37.1	-15.1	40.1	33.5	6.57	6.099		
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-22.06	37.1	-15.1	40.1	33.2	6.92	5.792		
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-22.06	37.1	-15.1	40.1	32.8	7.27	5.514		
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-22.06	37.1	-15.1	40.1	32.5	7.62	5.261		
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-22.06	37.1	-15.1	40.1	32.1	7.97	5.030		
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-22.06	37.1	-15.1	40.1	31.8	8.31	4.819 CC		
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	115.10	37.1	-15.1	40.4	31.7	8.66	4.664 ES, SF		
2,600.0	2,599.9	2,599.9	2,599.9	4.5	4.5	120.12	37.1	-15.1	42.3	33.3	9.01	4.696		
2,700.0	2,699.6	2,699.6	2,699.6	4.7	4.7	128.15	37.1	-15.1	46.6	37.2	9.36	4.981		
2,800.0	2,799.0	2,799.0	2,799.0	4.9	4.9	137.27	37.1	-15.1	54.2	44.5	9.69	5.587		
2,900.0	2,897.9	2,897.9	2,897.9	5.1	5.0	145.76	37.1	-15.1	65.6	55.6	10.02	6.550		
3,000.0	2,996.3	2,994.4	2,994.3	5.3	5.2	151.16	38.8	-16.7	82.3	72.0	10.33	7.963		
3,100.0	3,094.0	3,089.6	3,089.3	5.6	5.4	153.01	43.7	-21.8	104.7	94.0	10.65	9.826		
3,200.0	3,190.8	3,183.2	3,182.2	5.9	5.5	152.85	51.7	-30.1	132.3	121.3	10.99	12.040		
3,300.0	3,286.8	3,274.5	3,272.1	6.3	5.7	151.70	62.6	-41.3	164.9	153.5	11.34	14.533		
3,400.0	3,381.7	3,363.1	3,358.6	6.7	6.0	150.11	76.1	-55.1	202.4	190.7	11.74	17.240		
3,500.0	3,475.4	3,448.7	3,441.2	7.2	6.2	148.35	91.7	-71.2	244.8	232.7	12.18	20.094		
3,600.0	3,567.9	3,531.0	3,519.5	7.7	6.5	146.57	109.1	-89.2	291.9	279.3	12.68	23.023		
3,700.0	3,659.0	3,609.6	3,593.4	8.3	6.8	144.81	127.9	-108.6	343.5	330.3	13.23	25.961		
3,800.0	3,748.6	3,684.6	3,662.7	9.0	7.2	143.09	147.8	-129.1	399.4	385.6	13.85	28.833		
3,900.0	3,836.6	3,755.8	3,727.5	9.8	7.5	141.42	168.5	-150.4	459.3	444.8	14.54	31.586		
4,000.0	3,923.3	3,823.6	3,788.0	10.6	7.9	140.42	189.7	-172.2	522.5	507.2	15.30	34.143		
4,100.0	4,009.9	3,889.0	3,845.4	11.4	8.4	139.67	211.5	-194.7	587.4	571.2	16.12	36.435		
4,200.0	4,096.5	3,964.2	3,910.7	12.2	8.9	138.85	237.4	-221.4	653.0	635.9	17.02	38.355		
4,300.0	4,183.1	4,039.3	3,976.1	13.1	9.4	138.17	263.3	-248.0	718.7	700.7	17.95	40.040		
4,400.0	4,269.7	4,114.5	4,041.4	13.9	10.0	137.61	289.2	-274.7	784.4	765.5	18.89	41.522		
4,500.0	4,356.3	4,189.7	4,106.8	14.8	10.6	137.14	315.0	-301.4	850.1	830.3	19.85	42.824		
4,600.0	4,442.9	4,264.8	4,172.1	15.7	11.2	136.73	340.9	-328.0	915.9	895.1	20.83	43.973		
4,700.0	4,528.7	4,340.2	4,237.6	16.6	11.8	126.00	366.9	-354.7	981.6	959.3	22.30	44.027		
4,800.0	4,608.8	4,415.9	4,303.4	17.7	12.4	112.17	392.9	-381.6	1,045.7	1,021.4	24.30	43.037		
4,900.0	4,680.9	4,490.3	4,368.1	19.0	13.0	101.85	418.5	-408.0	1,107.2	1,080.8	26.36	41.999		
5,000.0	4,743.1	4,561.7	4,430.2	20.5	13.6	94.41	443.1	-433.3	1,165.5	1,137.0	28.44	40.976		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S29-T23N-R7W - Lybrook L29-2307 02H - Hz - Plan #3													Offset Site Error:
Survey Program: 0-Geolink MWD													0.0 ft
Reference													Offset Well Error:
Offset													0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-22.45	18.6	-7.7	20.1				
100.0	100.0	100.0	100.0	0.1	0.1	-22.45	18.6	-7.7	20.1	19.8	0.29	70.191	
200.0	200.0	200.0	200.0	0.3	0.3	-22.45	18.6	-7.7	20.1	19.5	0.64	31.624	
300.0	300.0	300.0	300.0	0.5	0.5	-22.45	18.6	-7.7	20.1	19.1	0.98	20.410	
400.0	400.0	400.0	400.0	0.7	0.7	-22.45	18.6	-7.7	20.1	18.8	1.33	15.067	
500.0	500.0	500.0	500.0	0.8	0.8	-22.45	18.6	-7.7	20.1	18.4	1.68	11.941	
600.0	600.0	600.0	600.0	1.0	1.0	-22.45	18.6	-7.7	20.1	18.1	2.03	9.889	
700.0	700.0	700.0	700.0	1.2	1.2	-22.45	18.6	-7.7	20.1	17.7	2.38	8.439	
800.0	800.0	800.0	800.0	1.4	1.4	-22.45	18.6	-7.7	20.1	17.4	2.73	7.360	
900.0	900.0	900.0	900.0	1.5	1.5	-22.45	18.6	-7.7	20.1	17.0	3.08	6.526	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-22.45	18.6	-7.7	20.1	16.7	3.43	5.861	
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-22.45	18.6	-7.7	20.1	16.3	3.78	5.319	
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-22.45	18.6	-7.7	20.1	16.0	4.13	4.869	
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-22.45	18.6	-7.7	20.1	15.6	4.48	4.490	
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-22.45	18.6	-7.7	20.1	15.3	4.82	4.165	
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-22.45	18.6	-7.7	20.1	14.9	5.17	3.884	
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-22.45	18.6	-7.7	20.1	14.6	5.52	3.638	
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-22.45	18.6	-7.7	20.1	14.2	5.87	3.422	
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-22.45	18.6	-7.7	20.1	13.9	6.22	3.230	
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-22.45	18.6	-7.7	20.1	13.5	6.57	3.058	
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-22.45	18.6	-7.7	20.1	13.2	6.92	2.904	
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-22.45	18.6	-7.7	20.1	12.8	7.27	2.764	
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-22.45	18.6	-7.7	20.1	12.5	7.62	2.638	
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-22.45	18.6	-7.7	20.1	12.1	7.97	2.522	
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-22.45	18.6	-7.7	20.1	11.8	8.31	2.416	
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-22.45	18.6	-7.7	20.1	11.8	8.31	2.416 CC	
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	115.74	18.6	-7.7	20.4	11.8	8.66	2.358 ES, SF	
2,600.0	2,599.9	2,599.9	2,599.9	4.5	4.5	125.18	18.6	-7.7	22.5	13.5	9.01	2.500	
2,700.0	2,699.6	2,699.6	2,699.6	4.7	4.7	138.09	18.6	-7.7	27.6	18.3	9.35	2.953	
2,800.0	2,799.0	2,799.0	2,799.0	4.9	4.9	149.84	18.6	-7.7	36.6	26.9	9.68	3.784	
2,900.0	2,897.9	2,897.9	2,897.9	5.1	5.0	158.02	18.6	-7.7	49.7	39.7	9.99	4.977	
3,000.0	2,996.3	2,996.3	2,996.3	5.3	5.2	163.70	18.6	-7.7	66.8	56.5	10.30	6.484	
3,100.0	3,094.0	3,094.0	3,094.0	5.6	5.4	167.54	18.6	-7.7	87.6	77.0	10.59	8.266	
3,200.0	3,190.8	3,190.8	3,190.8	5.9	5.5	170.19	18.6	-7.7	111.9	101.0	10.87	10.292	
3,300.0	3,286.8	3,286.8	3,286.8	6.3	5.7	172.08	18.6	-7.7	139.8	128.6	11.15	12.541	
3,400.0	3,381.7	3,381.7	3,381.7	6.7	5.9	173.46	18.6	-7.7	171.1	159.6	11.41	14.997	
3,500.0	3,475.4	3,475.4	3,475.4	7.2	6.0	174.49	18.6	-7.7	205.7	194.0	11.65	17.649	
3,600.0	3,567.9	3,567.9	3,567.9	7.7	6.2	175.28	18.6	-7.7	243.8	231.7	11.89	20.487	
3,700.0	3,659.0	3,659.0	3,659.0	8.3	6.4	175.90	18.6	-7.7	284.7	272.6	12.11	23.505	
3,800.0	3,748.6	3,748.6	3,748.6	9.0	6.5	176.39	18.6	-7.7	329.0	316.7	12.32	26.699	
3,900.0	3,836.6	3,836.6	3,836.6	9.8	6.7	176.79	18.6	-7.7	376.5	364.0	12.52	30.084	
4,000.0	3,923.3	3,923.3	3,923.3	10.6	6.8	177.14	18.6	-7.7	426.3	413.5	12.80	33.295	
4,100.0	4,009.9	4,009.9	4,009.9	11.4	7.0	177.44	18.6	-7.7	476.3	463.1	13.13	36.280	
4,200.0	4,096.5	4,096.5	4,096.5	12.2	7.1	177.69	18.6	-7.7	526.2	512.8	13.45	39.123	
4,300.0	4,183.1	4,183.1	4,183.1	13.1	7.3	177.89	18.6	-7.7	576.2	562.4	13.77	41.833	
4,400.0	4,269.7	4,250.0	4,250.0	13.9	7.4	178.02	18.6	-7.6	626.6	612.5	14.07	44.544	
4,500.0	4,356.3	4,348.7	4,348.6	14.8	7.6	178.37	20.1	-3.8	679.9	665.5	14.40	47.204	
4,600.0	4,442.9	4,404.3	4,598.8	15.7	8.1	175.60	24.9	-49.3	720.7	705.6	15.11	47.702	
4,700.0	4,528.7	4,466.9	4,823.2	16.6	9.2	161.92	29.4	-182.8	741.5	724.8	16.64	44.549	
4,800.0	4,608.8	5,100.7	4,971.8	17.7	11.8	145.07	32.8	-361.9	751.2	731.0	20.28	37.046	
4,900.0	4,680.9	5,298.5	5,047.7	19.0	15.2	131.63	34.5	-543.9	754.2	728.4	25.82	29.210	
5,000.0	4,743.1	5,464.2	5,071.6	20.5	18.7	120.93	35.4	-707.5	753.3	721.2	32.08	23.483	

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

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Reference Site: S29-T23N-R7W
 Site Error: 0.0ft
 Reference Well: Lybrook L29-2307 03H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #4

Local Co-ordinate Reference: Well Lybrook L29-2307 03H
 TVD Reference: 18' KB @ 6892.0ft (A1099)
 MD Reference: 18' KB @ 6892.0ft (A1099)
 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

Offset Design: S29-T23N-R7W - Lybrook L29-2307 02H - Hz - Plan #3													Offset Site Error: 0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	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
5,079.5	4,784.5	5,542.5	5,071.6	21.7	20.5	115.67	35.6	-785.8	752.1	716.3	35.82	20.995	
5,100.0	4,793.9	5,560.2	5,071.5	22.1	20.9	114.57	35.7	-803.4	752.2	715.5	36.70	20.493	
5,200.0	4,832.0	5,650.8	5,070.8	23.8	22.9	109.98	35.9	-894.1	753.9	712.7	41.24	18.279	
5,300.0	4,856.5	5,747.0	5,070.2	25.7	25.1	106.89	36.1	-990.2	756.2	710.4	45.84	16.498	
5,400.0	4,866.8	5,846.2	5,069.5	27.7	27.5	105.53	36.4	-1,089.4	757.4	707.2	50.27	15.067	
5,500.0	4,866.8	5,946.1	5,068.8	29.7	29.8	105.46	36.6	-1,189.4	757.4	702.7	54.71	13.845	
5,600.0	4,866.5	6,046.1	5,068.1	31.8	32.2	105.44	36.9	-1,289.4	757.3	698.0	59.23	12.785	
5,700.0	4,866.1	6,146.1	5,067.4	33.9	34.6	105.41	37.1	-1,389.4	757.1	693.4	63.79	11.869	
5,800.0	4,865.8	6,246.1	5,066.7	36.1	37.0	105.39	37.4	-1,489.4	757.0	688.6	68.39	11.070	
5,900.0	4,865.4	6,346.1	5,066.0	38.3	39.4	105.36	37.6	-1,589.4	756.9	683.9	73.01	10.368	
6,000.0	4,865.1	6,446.1	5,065.3	40.6	41.8	105.34	37.9	-1,689.4	756.8	679.2	77.65	9.747	
6,100.0	4,864.7	6,546.1	5,064.6	42.8	44.2	105.31	38.1	-1,789.4	756.7	674.4	82.31	9.194	
6,200.0	4,864.4	6,646.1	5,063.9	45.1	46.7	105.29	38.4	-1,889.3	756.6	669.6	86.98	8.699	
6,300.0	4,864.0	6,746.1	5,063.2	47.4	49.1	105.26	38.7	-1,989.3	756.5	664.8	91.66	8.253	
6,400.0	4,863.7	6,846.1	5,062.5	49.8	51.6	105.24	38.9	-2,089.3	756.4	660.0	96.36	7.849	
6,500.0	4,863.3	6,946.1	5,061.8	52.1	54.0	105.21	39.2	-2,189.3	756.3	655.2	101.07	7.483	
6,600.0	4,863.0	7,046.1	5,061.1	54.5	56.4	105.19	39.4	-2,289.3	756.2	650.4	105.78	7.148	
6,700.0	4,862.6	7,146.0	5,060.4	56.8	58.9	105.16	39.7	-2,389.3	756.1	645.6	110.50	6.842	
6,800.0	4,862.3	7,246.0	5,059.7	59.2	61.3	105.14	40.0	-2,489.3	756.0	640.7	115.23	6.560	
6,900.0	4,862.0	7,346.0	5,059.0	61.6	63.8	105.11	40.2	-2,589.3	755.9	635.9	119.97	6.301	
7,000.0	4,861.6	7,446.0	5,058.3	64.0	66.2	105.08	40.5	-2,689.3	755.8	631.1	124.71	6.060	
7,100.0	4,861.3	7,546.0	5,057.6	66.4	68.7	105.06	40.8	-2,789.2	755.7	626.2	129.45	5.838	
7,200.0	4,860.9	7,646.0	5,056.9	68.8	71.1	105.03	41.0	-2,889.2	755.6	621.4	134.20	5.630	
7,300.0	4,860.6	7,746.0	5,056.2	71.2	73.6	105.01	41.3	-2,989.2	755.5	616.5	138.96	5.437	
7,400.0	4,860.2	7,846.0	5,055.5	73.6	76.1	104.98	41.6	-3,089.2	755.4	611.7	143.71	5.256	
7,500.0	4,859.9	7,946.0	5,054.8	76.0	78.5	104.96	41.8	-3,189.2	755.3	606.8	148.48	5.087	
7,600.0	4,859.5	8,046.0	5,054.1	78.4	81.0	104.93	42.1	-3,289.2	755.2	602.0	153.24	4.928	
7,700.0	4,859.2	8,146.0	5,053.4	80.9	83.4	104.91	42.4	-3,389.2	755.1	597.1	158.01	4.779	
7,800.0	4,858.8	8,246.0	5,052.7	83.3	85.9	104.88	42.7	-3,489.2	755.0	592.2	162.78	4.638	
7,900.0	4,858.5	8,345.9	5,052.0	85.7	88.4	104.85	42.9	-3,589.2	754.9	587.4	167.56	4.506	
8,000.0	4,858.1	8,445.9	5,051.3	88.2	90.8	104.83	43.2	-3,689.1	754.9	582.5	172.33	4.380	
8,100.0	4,857.8	8,545.9	5,050.6	90.6	93.3	104.80	43.5	-3,789.1	754.8	577.7	177.11	4.262	
8,200.0	4,857.4	8,645.9	5,049.9	93.0	95.8	104.78	43.8	-3,889.1	754.7	572.8	181.89	4.149	
8,300.0	4,857.1	8,745.9	5,049.2	95.5	98.2	104.75	44.0	-3,989.1	754.6	567.9	186.68	4.042	
8,400.0	4,856.7	8,845.9	5,048.5	97.9	100.7	104.73	44.3	-4,089.1	754.5	563.1	191.46	3.941	
8,500.0	4,856.4	8,945.9	5,047.8	100.3	103.1	104.70	44.6	-4,189.1	754.4	558.2	196.25	3.844	
8,600.0	4,856.0	9,045.9	5,047.1	102.8	105.6	104.67	44.9	-4,289.1	754.4	553.3	201.04	3.752	
8,700.0	4,855.7	9,145.9	5,046.4	105.2	108.1	104.65	45.2	-4,389.1	754.3	548.4	205.84	3.664	
8,800.0	4,855.3	9,245.9	5,045.7	107.7	110.5	104.62	45.4	-4,489.1	754.2	543.6	210.63	3.581	
8,900.0	4,855.0	9,345.9	5,045.0	110.1	113.0	104.60	45.7	-4,589.0	754.1	538.7	215.43	3.501	
9,000.0	4,854.6	9,445.9	5,044.3	112.6	115.5	104.57	46.0	-4,689.0	754.0	533.8	220.23	3.424	
9,100.0	4,854.3	9,545.8	5,043.6	115.0	117.9	104.54	46.3	-4,789.0	754.0	528.9	225.03	3.351	
9,200.0	4,853.9	9,645.8	5,042.9	117.5	120.4	104.52	46.6	-4,889.0	753.9	524.1	229.83	3.280	
9,300.0	4,853.6	9,745.8	5,042.2	119.9	122.9	104.49	46.9	-4,989.0	753.8	519.2	234.63	3.213	
9,400.0	4,853.2	9,845.8	5,041.5	122.4	125.4	104.47	47.2	-5,089.0	753.8	514.3	239.44	3.148	
9,500.0	4,852.9	9,945.8	5,040.8	124.8	127.8	104.44	47.5	-5,189.0	753.7	509.4	244.25	3.086	
9,600.0	4,852.5	10,045.8	5,040.1	127.3	130.3	104.41	47.8	-5,289.0	753.6	504.6	249.06	3.026	
9,700.0	4,852.2	10,145.8	5,039.4	129.7	132.8	104.39	48.1	-5,389.0	753.6	499.7	253.87	2.968	
9,800.0	4,851.8	10,245.8	5,038.7	132.2	135.2	104.36	48.3	-5,489.0	753.5	494.8	258.68	2.913	
9,900.0	4,851.5	10,345.8	5,038.0	134.7	137.7	104.34	48.6	-5,589.0	753.4	489.9	263.49	2.859	
10,000.0	4,851.1	10,445.8	5,037.3	137.1	140.2	104.31	48.9	-5,689.0	753.4	485.0	268.31	2.808	
10,015.5	4,851.1	10,460.8	5,037.2	137.5	140.5	104.31	49.0	-5,704.0	753.3	484.3	269.04	2.800	

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

Cathedral Energy Services
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S29-T23N-R7W - Lybrook L29-2307 04H - HZ - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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	Warning		
5,200.0	4,832.0	5,264.6	4,893.7	23.8	28.2	-102.29	-1,193.0	-630.1	581.0	541.2	39.75	14.616			
5,300.0	4,856.5	5,488.2	5,001.4	25.7	29.2	-106.20	-1,249.3	-816.6	604.1	561.3	42.80	14.115			
5,400.0	4,866.8	5,739.5	5,055.5	27.7	33.0	-107.96	-1,277.5	-1,059.1	614.5	567.9	46.68	13.166			
5,500.0	4,866.8	5,872.5	5,056.8	29.7	35.1	-108.00	-1,278.1	-1,192.1	614.8	563.9	50.94	12.068			
5,600.0	4,866.5	5,972.5	5,056.5	31.8	36.9	-108.00	-1,277.8	-1,292.1	614.8	559.4	55.35	11.107			
5,700.0	4,866.1	6,072.5	5,056.1	33.9	38.7	-108.00	-1,277.5	-1,392.1	614.8	555.0	59.81	10.279			
5,800.0	4,865.8	6,172.5	5,055.8	36.1	40.5	-108.00	-1,277.2	-1,492.1	614.8	550.5	64.30	9.561			
5,900.0	4,865.4	6,272.5	5,055.4	38.3	42.5	-108.00	-1,277.0	-1,592.1	614.8	546.0	68.82	8.933			
6,000.0	4,865.1	6,372.5	5,055.1	40.6	44.5	-108.00	-1,276.7	-1,692.1	614.8	541.4	73.37	8.380			
6,100.0	4,864.7	6,472.5	5,054.7	42.8	46.5	-108.00	-1,276.4	-1,792.1	614.8	536.9	77.93	7.889			
6,200.0	4,864.4	6,572.5	5,054.4	45.1	48.6	-108.00	-1,276.1	-1,892.1	614.8	532.3	82.51	7.451			
6,300.0	4,864.0	6,672.5	5,054.0	47.4	50.7	-108.00	-1,275.9	-1,992.1	614.8	527.7	87.10	7.058			
6,400.0	4,863.7	6,772.5	5,053.7	49.8	52.9	-108.00	-1,275.6	-2,092.1	614.8	523.1	91.71	6.704			
6,500.0	4,863.3	6,872.5	5,053.3	52.1	55.1	-108.00	-1,275.3	-2,192.1	614.8	518.5	96.32	6.383			
6,600.0	4,863.0	6,972.5	5,053.0	54.5	57.3	-108.00	-1,275.0	-2,292.1	614.8	513.9	100.95	6.090			
6,700.0	4,862.6	7,072.5	5,052.6	56.8	59.5	-108.00	-1,274.8	-2,392.1	614.8	509.2	105.58	5.823			
6,800.0	4,862.3	7,172.5	5,052.3	59.2	61.8	-108.00	-1,274.5	-2,492.1	614.8	504.6	110.22	5.578			
6,900.0	4,862.0	7,272.5	5,051.9	61.6	64.1	-108.00	-1,274.2	-2,592.1	614.8	499.9	114.86	5.353			
7,000.0	4,861.6	7,372.5	5,051.6	64.0	66.4	-108.00	-1,274.0	-2,692.1	614.8	495.3	119.51	5.144			
7,100.0	4,861.3	7,472.5	5,051.2	66.4	68.7	-108.00	-1,273.7	-2,792.1	614.8	490.6	124.16	4.952			
7,200.0	4,860.9	7,572.5	5,050.9	68.8	71.0	-108.00	-1,273.4	-2,892.1	614.8	486.0	128.82	4.773			
7,300.0	4,860.6	7,672.5	5,050.5	71.2	73.3	-108.00	-1,273.1	-2,992.1	614.8	481.3	133.48	4.606			
7,400.0	4,860.2	7,772.5	5,050.2	73.6	75.6	-108.00	-1,272.9	-3,092.1	614.8	476.7	138.14	4.450			
7,500.0	4,859.9	7,872.5	5,049.8	76.0	78.0	-108.00	-1,272.6	-3,192.1	614.8	472.0	142.81	4.305			
7,600.0	4,859.5	7,972.5	5,049.5	78.4	80.3	-108.00	-1,272.3	-3,292.1	614.8	467.3	147.48	4.169			
7,700.0	4,859.2	8,072.5	5,049.1	80.9	82.7	-108.00	-1,272.0	-3,392.1	614.8	462.6	152.15	4.041			
7,800.0	4,858.8	8,172.5	5,048.8	83.3	85.1	-108.00	-1,271.8	-3,492.1	614.8	458.0	156.83	3.920			
7,900.0	4,858.5	8,272.5	5,048.4	85.7	87.5	-108.00	-1,271.5	-3,592.1	614.8	453.3	161.50	3.807			
8,000.0	4,858.1	8,372.5	5,048.1	88.2	89.8	-108.00	-1,271.2	-3,692.1	614.8	448.6	166.18	3.700			
8,100.0	4,857.8	8,472.5	5,047.7	90.6	92.2	-108.00	-1,270.9	-3,792.1	614.8	443.9	170.86	3.598			
8,200.0	4,857.4	8,572.5	5,047.4	93.0	94.6	-108.00	-1,270.7	-3,892.1	614.8	439.3	175.54	3.502			
8,300.0	4,857.1	8,672.5	5,047.0	95.5	97.0	-108.00	-1,270.4	-3,992.1	614.8	434.6	180.22	3.411			
8,400.0	4,856.7	8,772.5	5,046.7	97.9	99.4	-108.00	-1,270.1	-4,092.1	614.8	429.9	184.91	3.325			
8,500.0	4,856.4	8,872.5	5,046.3	100.3	101.8	-108.00	-1,269.9	-4,192.1	614.8	425.2	189.59	3.243			
8,600.0	4,856.0	8,972.5	5,046.0	102.8	104.2	-108.00	-1,269.6	-4,292.1	614.8	420.5	194.28	3.165			
8,700.0	4,855.7	9,072.5	5,045.6	105.2	106.6	-108.00	-1,269.3	-4,392.1	614.8	415.8	198.97	3.090			
8,800.0	4,855.3	9,172.5	5,045.3	107.7	109.0	-108.00	-1,269.0	-4,492.1	614.8	411.1	203.65	3.019			
8,900.0	4,855.0	9,272.5	5,044.9	110.1	111.5	-108.00	-1,268.8	-4,592.1	614.8	406.5	208.34	2.951			
9,000.0	4,854.6	9,372.5	5,044.6	112.6	113.9	-108.00	-1,268.5	-4,692.1	614.8	401.8	213.03	2.886			
9,100.0	4,854.3	9,472.5	5,044.3	115.0	116.3	-108.00	-1,268.2	-4,792.1	614.8	397.1	217.72	2.824			
9,200.0	4,853.9	9,572.5	5,043.9	117.5	118.7	-108.00	-1,267.9	-4,892.1	614.8	392.4	222.42	2.764			
9,300.0	4,853.6	9,672.5	5,043.6	119.9	121.1	-108.00	-1,267.7	-4,992.1	614.8	387.7	227.11	2.707			
9,400.0	4,853.2	9,772.5	5,043.2	122.4	123.6	-108.00	-1,267.4	-5,092.1	614.8	383.0	231.80	2.652			
9,500.0	4,852.9	9,872.5	5,042.9	124.8	126.0	-108.00	-1,267.1	-5,192.1	614.8	378.3	236.49	2.600			
9,600.0	4,852.5	9,972.5	5,042.5	127.3	128.4	-108.00	-1,266.8	-5,292.1	614.8	373.6	241.19	2.549			
9,700.0	4,852.2	10,072.5	5,042.2	129.7	130.9	-108.00	-1,266.6	-5,392.1	614.8	368.9	245.88	2.500			
9,800.0	4,851.8	10,172.5	5,041.8	132.2	133.3	-108.00	-1,266.3	-5,492.1	614.8	364.2	250.58	2.454			
9,900.0	4,851.5	10,272.5	5,041.5	134.7	135.7	-108.00	-1,266.0	-5,592.1	614.8	359.5	255.27	2.408			
10,000.0	4,851.1	10,372.5	5,041.1	137.1	138.2	-108.00	-1,265.8	-5,692.1	614.8	354.8	259.97	2.365			
10,013.8	4,851.1	10,386.3	5,041.1	137.5	138.5	-108.00	-1,265.7	-5,705.8	614.8	354.2	260.62	2.359			
10,015.5	4,851.1	10,386.3	5,041.1	137.5	138.5	-108.00	-1,265.7	-5,705.8	614.8	354.1	260.66	2.359 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 01H - Hz - Plan #3														Offset Site Error:
Survey Program: 0-Geolink MWD														0.0 ft
Reference	Offset	Semi Major Axis		Distance		Total		Separation		Warning				Offset Well Error:
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 ft
5,700.0	4,868.1	4,580.3	4,588.2	33.9	8.1	-55.45	-1,339.5	-2,247.7	1,164.7	1,131.2	33.50	34.773		
5,800.0	4,865.8	4,600.0	4,585.5	36.1	8.2	-56.51	-1,339.6	-2,257.0	1,092.8	1,056.9	35.87	30.467		
5,900.0	4,865.4	4,622.1	4,604.6	38.3	8.3	-57.71	-1,339.8	-2,268.0	1,024.5	986.2	38.37	26.703		
6,000.0	4,865.1	4,650.0	4,628.3	40.6	8.4	-59.24	-1,340.1	-2,282.9	960.7	919.6	41.07	23.393		
6,100.0	4,864.7	4,674.8	4,648.7	42.8	8.6	-60.60	-1,340.3	-2,296.9	901.8	858.0	43.77	20.603		
6,200.0	4,864.4	4,700.0	4,669.0	45.1	8.7	-61.99	-1,340.5	-2,311.9	848.6	802.1	46.53	18.239		
6,300.0	4,864.0	4,750.0	4,707.5	47.4	9.0	-64.72	-1,341.0	-2,343.8	801.8	751.8	50.01	16.031		
6,400.0	4,863.7	4,783.4	4,731.8	49.8	9.3	-66.52	-1,341.4	-2,366.7	761.8	708.7	53.13	14.340		
6,500.0	4,863.3	4,830.3	4,764.0	52.1	9.7	-68.97	-1,341.9	-2,400.7	729.3	672.7	56.64	12.876		
6,600.0	4,863.0	4,883.7	4,797.6	54.5	10.3	-71.62	-1,342.6	-2,442.2	704.2	643.8	60.36	11.667		
6,700.0	4,862.6	4,941.2	4,830.1	56.8	11.0	-74.26	-1,343.4	-2,489.6	686.2	622.0	64.18	10.691		
6,800.0	4,862.3	4,983.7	4,852.9	59.2	11.6	-76.19	-1,345.7	-2,525.4	676.4	608.8	67.64	10.000		
6,848.0	4,862.1	5,000.0	4,861.6	60.4	11.8	-76.94	-1,347.3	-2,539.1	675.1	605.9	69.20	9.756 CC		
6,900.0	4,862.0	5,025.8	4,875.3	61.6	12.2	-78.14	-1,350.6	-2,560.8	676.1	605.0	71.10	9.509 ES		
7,000.0	4,861.6	5,067.2	4,897.1	64.0	12.8	-80.08	-1,358.0	-2,595.1	685.4	610.9	74.52	9.197		
7,100.0	4,861.3	5,100.0	4,914.1	66.4	13.3	-81.61	-1,365.6	-2,622.1	704.1	626.4	77.71	9.060		
7,200.0	4,860.9	5,150.0	4,939.6	68.8	14.1	-83.88	-1,380.1	-2,662.6	731.5	650.3	81.24	9.004 SF		
7,300.0	4,860.6	5,184.3	4,956.7	71.2	14.6	-85.37	-1,392.1	-2,689.7	767.1	682.7	84.36	9.093		
7,400.0	4,860.2	5,220.3	4,974.3	73.6	15.1	-86.87	-1,406.5	-2,717.7	809.9	722.4	87.46	9.280		
7,500.0	4,859.9	5,250.0	4,988.4	76.0	15.6	-88.04	-1,419.7	-2,740.2	859.2	768.8	90.40	9.504		
7,600.0	4,859.5	5,300.0	5,011.5	78.4	16.3	-89.86	-1,444.4	-2,777.1	914.1	820.6	93.58	9.769		
7,700.0	4,859.2	5,318.1	5,019.6	80.9	16.6	-90.47	-1,454.1	-2,790.0	973.6	877.3	96.26	10.114		
7,800.0	4,858.8	5,350.0	5,033.4	83.3	17.1	-91.48	-1,472.3	-2,812.2	1,037.4	938.3	99.10	10.468		
7,900.0	4,858.5	5,374.6	5,043.8	85.7	17.5	-92.20	-1,487.2	-2,828.9	1,104.8	1,003.0	101.81	10.851		
8,000.0	4,858.1	5,400.0	5,054.2	88.2	17.8	-92.89	-1,503.2	-2,845.6	1,175.4	1,070.9	104.52	11.245		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 02H - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: D-Geolink MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Reference	Offset	Reference	Offset	(ft)	(ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,000.0	4,743.1	4,833.7	4,703.2	20.5	13.7	-33.98	-1,425.2	-1,579.9	1,177.9	1,157.6	20.30	58.033		
5,100.0	4,793.9	4,850.0	4,715.2	22.1	13.8	-44.32	-1,434.6	-1,574.2	1,113.5	1,089.6	23.88	46.622		
5,200.0	4,832.0	4,850.0	4,715.2	23.8	13.8	-52.95	-1,434.6	-1,574.2	1,050.0	1,022.2	27.78	37.803		
5,300.0	4,856.5	4,850.0	4,715.2	25.7	13.8	-60.59	-1,434.6	-1,574.2	989.5	957.8	31.76	31.154		
5,400.0	4,866.8	4,828.8	4,699.5	27.7	13.7	-65.51	-1,422.4	-1,581.7	933.8	898.9	34.93	26.731		
5,500.0	4,866.8	4,800.0	4,677.8	29.7	13.4	-64.90	-1,406.7	-1,592.1	885.2	848.5	36.69	24.126		
5,600.0	4,866.5	4,800.0	4,677.8	31.8	13.4	-64.90	-1,406.7	-1,592.1	844.6	805.8	38.78	21.778		
5,700.0	4,866.1	4,778.1	4,660.9	33.9	13.2	-63.44	-1,395.4	-1,600.2	813.6	773.3	40.32	20.180		
5,800.0	4,865.8	4,750.0	4,638.7	36.1	13.0	-61.55	-1,381.7	-1,610.8	793.5	751.8	41.62	19.068		
5,900.0	4,865.4	4,750.0	4,638.7	38.3	13.0	-61.55	-1,381.7	-1,610.8	784.5	740.8	43.70	17.953		
5,925.4	4,865.4	4,737.0	4,628.3	38.9	12.9	-60.67	-1,375.7	-1,615.8	784.1	740.2	43.82	17.892 CC, ES		
6,000.0	4,865.1	4,722.9	4,616.9	40.6	12.8	-59.72	-1,369.5	-1,621.2	787.3	742.4	44.90	17.535		
6,100.0	4,864.7	4,700.0	4,598.1	42.8	12.7	-58.19	-1,359.9	-1,630.2	801.9	755.7	46.16	17.371 SF		
6,200.0	4,864.4	4,683.8	4,584.7	45.1	12.5	-57.11	-1,353.4	-1,636.6	827.3	779.7	47.59	17.384		
6,300.0	4,864.0	4,663.5	4,567.7	47.4	12.4	-55.79	-1,345.9	-1,644.7	862.8	813.9	48.81	17.674		
6,400.0	4,863.7	4,650.0	4,556.3	49.8	12.3	-54.92	-1,341.2	-1,650.2	907.0	856.8	50.25	18.050		
6,500.0	4,863.3	4,621.9	4,532.2	52.1	12.1	-53.14	-1,332.1	-1,661.6	958.7	907.7	51.01	18.793		
6,600.0	4,863.0	4,600.0	4,513.4	54.5	11.9	-51.80	-1,325.8	-1,670.6	1,016.8	964.8	51.98	19.563		
6,700.0	4,862.6	4,578.7	4,494.8	56.8	11.8	-50.53	-1,320.3	-1,679.5	1,080.2	1,027.3	52.90	20.418		
6,800.0	4,862.3	4,550.0	4,469.5	59.2	11.6	-48.89	-1,313.8	-1,691.5	1,148.1	1,094.6	53.44	21.484		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 03H - Hz - Plan #2														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			
5,300.0	4,856.5	4,866.2	4,896.6	25.7	10.0	-67.35	-1,418.3	-1,890.1	1,163.3	1,133.2	30.07	38.684			
5,400.0	4,866.8	4,950.0	4,884.2	27.7	9.9	-77.28	-1,409.6	-1,895.8	1,086.5	1,053.0	33.53	32.401			
5,500.0	4,866.8	4,950.0	4,884.2	29.7	9.9	-79.57	-1,409.6	-1,895.8	1,014.7	978.7	35.93	28.239			
5,600.0	4,866.5	4,921.1	4,861.8	31.8	9.7	-77.60	-1,394.7	-1,906.3	947.0	909.2	37.86	25.017			
5,700.0	4,866.1	4,900.0	4,845.0	33.9	9.6	-76.12	-1,384.5	-1,914.0	885.0	845.2	39.84	22.215			
5,800.0	4,865.8	4,885.4	4,833.3	36.1	9.5	-75.07	-1,377.8	-1,919.4	829.6	787.7	41.89	19.803			
5,900.0	4,865.4	4,866.9	4,818.2	38.3	9.4	-73.72	-1,369.6	-1,926.4	782.2	738.3	43.85	17.839			
6,000.0	4,865.1	4,850.0	4,804.2	40.6	9.3	-72.47	-1,362.5	-1,932.9	744.3	698.5	45.79	16.254			
6,100.0	4,864.7	4,828.6	4,786.4	42.8	9.2	-70.87	-1,354.1	-1,941.1	717.4	669.8	47.59	15.074			
6,200.0	4,864.4	4,800.0	4,762.2	45.1	9.0	-68.73	-1,343.7	-1,952.3	702.9	653.7	49.13	14.306			
6,261.6	4,864.2	4,800.0	4,762.2	46.6	9.0	-68.73	-1,343.7	-1,952.3	700.2	649.7	50.52	13.860 CC, ES			
6,300.0	4,864.0	4,800.0	4,762.2	47.4	9.0	-68.73	-1,343.7	-1,952.3	701.2	649.8	51.38	13.648			
6,400.0	4,863.7	4,768.0	4,734.7	49.8	8.9	-66.34	-1,333.4	-1,965.0	712.3	659.7	52.67	13.524 SF			
6,500.0	4,863.3	4,750.0	4,719.0	52.1	8.8	-65.00	-1,328.2	-1,972.2	736.0	681.7	54.30	13.555			
6,600.0	4,863.0	4,725.9	4,697.9	54.5	8.7	-63.23	-1,321.9	-1,981.9	770.9	715.2	55.64	13.854			
6,700.0	4,862.6	4,700.0	4,675.0	56.8	8.6	-61.38	-1,316.1	-1,992.5	815.6	758.7	56.83	14.351			
6,800.0	4,862.3	4,682.6	4,659.4	59.2	8.5	-60.16	-1,312.6	-1,999.6	868.4	810.1	58.27	14.903			
6,900.0	4,862.0	4,650.0	4,630.3	61.6	8.4	-57.96	-1,307.3	-2,013.1	928.2	869.2	59.02	15.727			
7,000.0	4,861.6	4,650.0	4,630.3	64.0	8.4	-57.96	-1,307.3	-2,013.1	993.5	932.4	61.09	16.263			
7,100.0	4,861.3	4,616.0	4,599.6	66.4	8.3	-55.79	-1,303.3	-2,027.1	1,063.1	1,001.5	61.64	17.247			
7,200.0	4,860.9	4,600.0	4,585.1	68.8	8.2	-54.81	-1,302.0	-2,033.8	1,136.6	1,073.7	62.93	18.061			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook L29-2307 03H
Project:	Sandoval County, NM	TVD Reference:	18' KB @ 6892.0ft (A1099)
Reference Site:	S29-T23N-R7W	MD Reference:	18' KB @ 6892.0ft (A1099)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook L29-2307 03H	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 #4	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 04H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Reference	Offset	Reference	Offset	(ft)	(ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
4,700.0	4,528.7	4,900.0	4,696.6	16.6	17.4	-8.25	-1,395.9	-1,342.8	1,167.9	1,146.9	21.00	55.620		
4,800.0	4,608.8	4,900.0	4,696.6	17.7	17.4	-21.18	-1,395.9	-1,342.8	1,111.5	1,090.0	21.47	51.777		
4,900.0	4,680.9	4,926.1	4,715.0	19.0	17.7	-33.50	-1,409.2	-1,330.0	1,053.5	1,029.9	23.58	44.686		
5,000.0	4,743.1	4,935.3	4,721.4	20.5	17.8	-43.48	-1,414.1	-1,325.5	996.2	969.9	26.35	37.804		
5,100.0	4,793.9	4,950.0	4,731.5	22.1	18.0	-52.57	-1,422.0	-1,318.4	941.7	911.8	29.98	31.414		
5,200.0	4,832.0	4,934.0	4,720.5	23.8	17.8	-58.08	-1,413.3	-1,326.1	891.6	858.8	32.81	27.171		
5,300.0	4,856.5	4,922.8	4,712.7	25.7	17.7	-62.51	-1,407.5	-1,331.6	848.3	812.5	35.77	23.717		
5,400.0	4,866.8	4,900.0	4,696.6	27.7	17.4	-64.74	-1,395.9	-1,342.8	813.2	775.0	38.20	21.288		
5,500.0	4,866.8	4,880.8	4,682.8	29.7	17.2	-64.19	-1,386.7	-1,352.4	787.4	747.5	39.94	19.714		
5,600.0	4,866.5	4,850.0	4,660.2	31.8	16.9	-62.23	-1,372.8	-1,368.1	772.3	731.2	41.12	18.783		
5,685.9	4,866.2	4,834.3	4,648.5	33.6	16.8	-61.24	-1,366.2	-1,376.3	768.1	725.7	42.40	18.118 CC		
5,700.0	4,866.1	4,830.7	4,645.8	33.9	16.7	-61.00	-1,364.7	-1,378.2	768.3	725.7	42.57	18.047 ES		
5,800.0	4,865.8	4,800.0	4,622.6	36.1	16.4	-59.07	-1,352.8	-1,394.3	775.5	731.9	43.59	17.789		
5,900.0	4,865.4	4,777.4	4,605.2	38.3	16.2	-57.66	-1,344.9	-1,406.4	793.4	748.6	44.81	17.705 SF		
6,000.0	4,865.1	4,750.0	4,583.9	40.6	15.9	-55.99	-1,336.1	-1,421.2	821.4	775.7	45.79	17.938		
6,100.0	4,864.7	4,721.3	4,561.2	42.8	15.6	-54.29	-1,328.0	-1,436.9	858.5	811.8	46.85	18.402		
6,200.0	4,864.4	4,700.0	4,544.3	45.1	15.4	-53.07	-1,322.7	-1,448.6	903.4	855.6	47.74	18.923		
6,300.0	4,864.0	4,662.8	4,514.4	47.4	15.0	-51.03	-1,315.0	-1,469.3	954.9	906.7	48.13	19.838		
6,400.0	4,863.7	4,633.0	4,490.2	49.8	14.7	-49.49	-1,310.1	-1,486.1	1,012.0	963.2	48.77	20.750		
6,500.0	4,863.3	4,600.0	4,463.2	52.1	14.3	-47.90	-1,306.2	-1,504.7	1,073.9	1,024.6	49.25	21.804		
6,600.0	4,863.0	4,572.3	4,440.6	54.5	14.0	-46.68	-1,304.0	-1,520.3	1,139.6	1,089.7	49.93	22.825		

Cathedral Energy Services

Anticollision Report

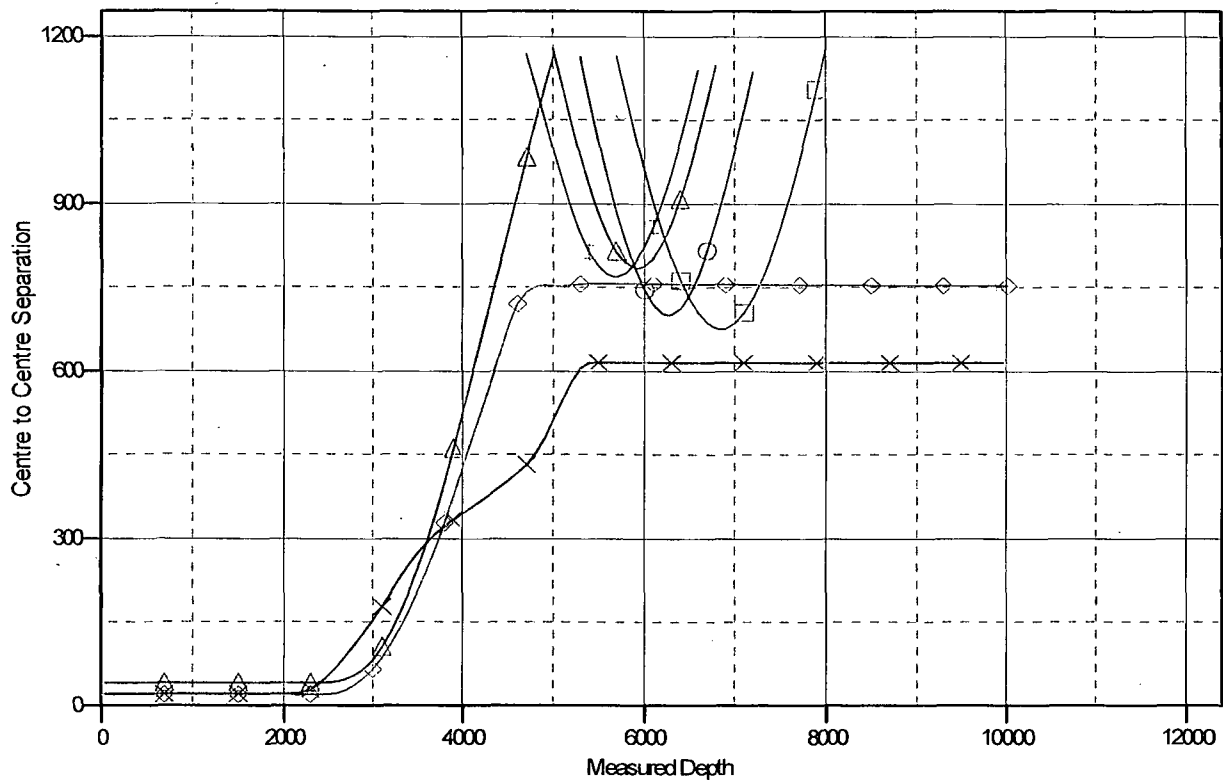
Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Reference Site: S29-T23N-R7W
 Site Error: 0.0ft
 Reference Well: Lybrook L29-2307 03H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #4

Local Co-ordinate Reference:
 TVD Reference: 18' KB @ 6892.0ft (A1099)
 MD Reference: 18' KB @ 6892.0ft (A1099)
 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 18' KB @ 6892.0ft (A1099)
 Offset Depths are relative to Offset Datum
 Central Meridian is -106.250000 °

Coordinates are relative to: Lybrook L29-2307 03H
 Coordinate System is US State Plane 1983, New Mexico Central Zone
 Grid Convergence at Surface is: -0.80°

Ladder Plot



LEGEND

- Lybrook C30-2307 02H, Hz, Plan #3 V0
- Lybrook C30-2307 03H, Hz, Plan #2 V0
- Lybrook L29-2307 04H, Hz, Plan #1 V0
- Lybrook C30-2307 04H, Hz, Plan #1 V0
- Lybrook L29-2307 01H, Hz, Plan #3 V0
- Lybrook C30-2307 01H, Hz, Plan #3 V0
- Lybrook L29-2307 02H, Hz, Plan #3 V0