

RECEIVED

Form 3160-5  
(August 2007)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

AUG 31 2012

FORM APPROVED  
OMB No 1004-0137  
Expires July 31, 2010Farmington Field  
Bureau of Land Management**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 NM 109386  
6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2.

## 1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

## 2. Name of Operator

Encana Oil &amp; Gas (USA) Inc.

## 3a. Address

370 17th Street, Suite 1700  
Denver, CO 80202

## 3b. Phone No. (include area code)

720-876-3437

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

8. Well Name and No.  
Lybrook A03-2206 01H9. API Well No  
30-043-21130

## 4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: 827' FNL and 432' FEL Section 3, T22N, R6W  
BHL: 827' FNL and 330' FWL Section 3, T22N, R6W10. Field and Pool or Exploratory Area  
Wildcat Gallup11. Country or Parish, State  
Sandoval, New Mexico

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

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                   |                                           |                                                    |                                         |
|------------------------------------------------------|--------------------------------------------------|-------------------------------------------|----------------------------------------------------|-----------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize                 | <input type="checkbox"/> Deepen           | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing            | <input type="checkbox"/> Fracture Treat   | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair           | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other _____    |
|                                                      | <input checked="" type="checkbox"/> Change Plans | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon       |                                         |
|                                                      | <input type="checkbox"/> Convert to Injection    | <input type="checkbox"/> Plug Back        | <input type="checkbox"/> 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 recompleting 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 recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) would like to revise casing, cement, BOP and directional plans for the Lybrook A03-2206 01H oil well as well as add a pilot hole. Please see attached wellbore diagram, 10-point drilling plan, directional plan, casing specs and BOP diagram.

RCVD SEP 13 '12  
OIL CONS. DIV.  
DIST. 3

CONFIDENTIAL

**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.**

**CONDITIONS OF APPROVAL**  
Adhere to previously issued stipulations.

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

Amanda Cavoto

Title Engineering Technologist

Signature

Date 08/30/12

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Troy L. Salvers

Title Petroleum Engineer

Date 9/10/2012

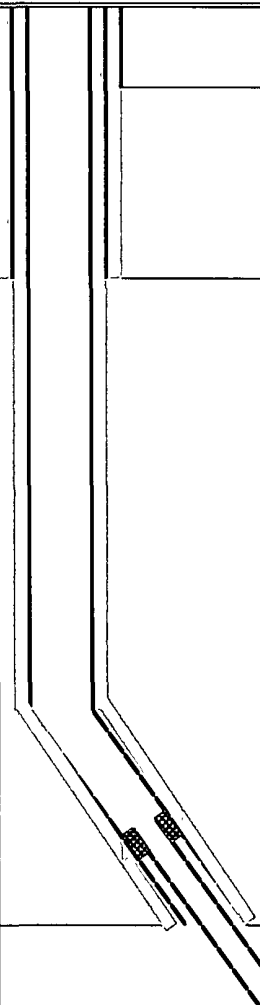
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

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)

NMOCDA

| LOC: Sec 3, T22N, R6W<br>County: Sandoval<br>WELL: Lybrook A03-2206 01H |                      |                                                                                                                                                                                                                        | Encana Natural Gas<br>WELL SUMMARY                                                                                           |      |                                                                                    | <div>encana™</div> <div>natural gas</div>                                                             |                                                | ENG: J. Fox/ A.<br>RIG:<br>GLE: 6985<br>RKBE: 6998 |                                          | 8/30/12                    |
|-------------------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------|------------------------------------------|----------------------------|
| MWD<br>LWD                                                              | OPEN HOLE<br>LOGGING | FORM                                                                                                                                                                                                                   | DEPTH                                                                                                                        |      |                                                                                    | HOLE<br>SIZE                                                                                          | CASING<br>SPECS                                | MW<br>MUD TYPE                                     | DEVIATION<br>INFORMATION                 |                            |
|                                                                         |                      |                                                                                                                                                                                                                        | TVD                                                                                                                          | MD   |                                                                                    |                                                                                                       |                                                |                                                    |                                          |                            |
|                                                                         |                      |                                                                                                                                                                                                                        | 60                                                                                                                           | 60'  |  | 30                                                                                                    | 20" 94#<br>100sx Type I Neat 48 8ppg cmt       | Fresh wtr<br>8 3-9 2                               |                                          |                            |
| Surveys<br>After csg is run                                             | None                 |                                                                                                                                                                                                                        |                                                                                                                              |      |                                                                                    | 12 1/4                                                                                                | 9 5/8" 36ppf J55 STC<br><br>TOC @ surface      | Fresh wtr<br>8 4-8 6                               | Vertical<br><1°                          |                            |
| Surveys<br>every 500'                                                   | No OH logs           | Ojo Alamo<br>Kirtland Shale<br><br>Fruitland Coal<br><br>Pictured Cliffs Ss<br>Lewis Shale<br><br>Cliffhouse Ss<br>Menefee Fn<br>Point Lookout Ss<br>Mancos Sh<br>Mancos Silt<br><br>KICK OFF PT<br><br><br>Gallup Top | 1285<br>1457<br><br>1583<br><br>1884<br>1962<br><br>2655<br>3410<br>4125<br>4310<br>4871<br><br>4841<br><br>5143<br><br>5414 |      |                                                                                    | 8 1/2                                                                                                 | 7" 26ppf J55 LTC<br><br>TOC @ surface          | Fresh Wtr<br>8 5-8 8                               | Vertical<br><1°                          | KOP<br>4841<br>10 deg/100' |
|                                                                         | Mud logger<br>onsite |                                                                                                                                                                                                                        |                                                                                                                              | 5721 |                                                                                    | 6 1/8                                                                                                 | 200' overlap at liner top<br><br>4100' Lateral |                                                    |                                          |                            |
| Surveys<br>every 500'<br>Gyro<br>at CP<br>MWD<br>Gamma<br>Directional   | No OH Logs           | horz target<br>Base Gallup<br><br>Pilot Hole TD                                                                                                                                                                        | 5414<br>5460<br><br>5660                                                                                                     | 5745 |                                                                                    | 4 1/2" 11.6ppf SB80 LTC<br><br>Running external swellable csg packers for<br>isolation of prod string | OBM<br>8.6-9.0                                 |                                                    | 5deg updip<br>5387' TVD<br>TD = 9644' MD |                            |

Lybrook A03-2206 01H  
API: 30-043-21130  
SHL: NENE Section 3, T22N, R6W  
827 FNL and 432 FEL  
BHL: NWNW Section 3, T22N, R6W  
827 FNL and 330 FWL  
Sandoval County, New Mexico  
Lease Number: NM NM 109386

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

**1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)**

The estimated tops of important geologic markers are as follows:

| <b><u>Formation</u></b> | <b><u>Depth (TVD)</u></b> |
|-------------------------|---------------------------|
| Ojo Alamo               | 1285'                     |
| Kirtland                | 1457'                     |
| Fruitland Coal          | 1583'                     |
| Pictured Cliffs         | 1884'                     |
| Lewis                   | 1962'                     |
| Cliffhouse              | 2655'                     |
| Menefee                 | 3410'                     |
| Point Lookout           | 4125'                     |
| Mancos                  | 4310'                     |
| Gallup                  | 5143'                     |

The referenced surface elevation is 6985', KB 6998'

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

| <b><u>Substance</u></b> | <b><u>Formation</u></b> | <b><u>Depth (TVD)</u></b> |
|-------------------------|-------------------------|---------------------------|
| Water                   | Ojo Alamo               | 1285'                     |
| Gas                     | Fruitland Coal          | 1583'                     |
| Gas                     | Pictured Cliffs         | 1884'                     |
| Gas                     | Cliffhouse              | 2655'                     |
| Gas                     | Point Lookout           | 4125'                     |
| Oil/Gas                 | Mancos                  | 4871'                     |

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.
- 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.

**Lybrook A03-2206 01H**

**API: 30-043-21130**

**SHL: NENE Section 3, T22N, R6W  
827 FNL and 432 FEL**

**BHL: NWNW Section 3, T22N, R6W  
827 FNL and 330 FWL**

**Sandoval County, New Mexico**

**Lease Number: NM NM 109386**

- 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:

| <b>Casing</b>    | <b>Depth</b> | <b>Hole Size</b> | <b>Csg Size</b> | <b>Weight</b> | <b>Grade</b>  |
|------------------|--------------|------------------|-----------------|---------------|---------------|
| Conductor        | 0-60'        | 30"              | 20"             | 94#           | H40, STC New  |
| Surface          | 0'-500'      | 12 1/4"          | 9 5/8"          | 36#           | J55, STC New  |
| Intermediate     | 0'-5721'     | 8 1/2"           | 7"              | 26#           | J55, LTC New  |
| Production Liner | 5521'-9644'  | 6 1/8"           | 4 1/2"          | 11.6#         | B80*, LTC New |

| <b>Casing String</b> |                       |              |                   | <b>Casing Strength Properties</b> |                    |                         | <b>Minimum Design Factors</b> |              |                |
|----------------------|-----------------------|--------------|-------------------|-----------------------------------|--------------------|-------------------------|-------------------------------|--------------|----------------|
| <b>Size</b>          | <b>Weight (lb/ft)</b> | <b>Grade</b> | <b>Connection</b> | <b>Collapse (psi)</b>             | <b>Burst (psi)</b> | <b>Tensile (1000lb)</b> | <b>Collapse</b>               | <b>Burst</b> | <b>Tension</b> |
| 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 1/2"               | 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.

- b) The proposed cementing program is as follows:  
Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

**Lybrook A03-2206 01H**  
**API: 30-043-21130**  
**SHL: NENE Section 3, T22N, R6W**  
**827 FNL and 432 FEL**  
**BHL: NWNW Section 3, T22N, R6W**  
**827 FNL and 330 FWL**  
**Sandoval County, New Mexico**  
**Lease Number: NM NM 109386**

| Casing               | Depth                | Cement Volume (sacks)                                 | Cement Type&Yield                                                                                                                                                                              | Designed TOC | Centralizers                                                                    |
|----------------------|----------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------|
| Conductor            | 60'                  | 100sk                                                 | Type I Neat 14.8ppg                                                                                                                                                                            | Surface      | None                                                                            |
| Surface              | 500'                 | 178sk                                                 | Type III Cement +<br>1% CaCl + 0.25lb/sk<br>Cello Flake + 0.2%<br>FL, 14.6ppg,<br>1.38cuf/sk                                                                                                   | Surface      | 1 turbolizer per<br>joint on bottom 3<br>joints                                 |
| Intermediate         | 5414'TVD/<br>5721'MD | 30% open<br>hole excess<br>Lead: 155sk<br>Tail: 460sk | <b>Lead:</b> PremLite +<br>3% CaCl + 0.25lb/sk<br>CelloFlake + 5lb/sk<br>LCM, 12.1ppg<br>2.13cuf/sk<br><b>Tail:</b> Type III Cmt +<br>1% CaCl + 0.25lb/sk<br>Cello Flake 14.5ppg<br>1.38cuf/sk | Surface      | 1 per joint for<br>bottom 3 joints, 1<br>every 3 joints for<br>remaining joints |
| Production<br>Liner* | 5521'MD-<br>9644'MD  | None –<br>External<br>casing<br>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 adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

## 5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed well will be drilled in two phases. A pilot hole will be drilled in the first phase, followed by kicking off a horizontal lateral in the existing wellbore in the second phase. The intent of drilling a pilot hole is to obtain open hole log data. The intent of the second phase of the well is to plug back the pilot hole with cement to the kick off point. After plugging back, the plan is to drill a horizontal lateral from the kick off point in the existing wellbore to the proposed bottom hole location.

Directional plans are attached.

| Well Phase | Description         | Proposed Depth (TVD/MD) | Formation |
|------------|---------------------|-------------------------|-----------|
| 1          | Vertical Pilot Hole | 5660'/5660'             | Gallup    |
| 2          | Horizontal Lateral  | 5387'/9644'             | Gallup    |

**Lybrook A03-2206 01H**  
**API: 30-043-21130**  
**SHL: NENE Section 3, T22N, R6W**  
**827 FNL and 432 FEL**  
**BHL: NWNW Section 3, T22N, R6W**  
**827 FNL and 330 FWL**  
**Sandoval County, New Mexico**  
**Lease Number: NM NM 109386**

**Proposed Plug Back Procedure:**  
 KOP 4841'

Set kick plug at KOP

1. Spot 300' kick plug from 4741' – 5041'
  - a. 91sx of Class A cement with salt (1.3ft<sup>3</sup>/sk yield)
  - b. Spot tuned spacer
2. Pull uphole and reverse out
3. Pump bottoms up 2 times, pull uphole
4. Tag plug, drill ahead to KOP when cement is solid

## 6. DRILLING FLUIDS PROGRAM

a) Vertical Pilot Hole:

| Hole Size (in) | TVD (ft)  | Mud Type            | Density (lb/gal) | Viscosity (sec/qt) | Fluid Loss (cc) |
|----------------|-----------|---------------------|------------------|--------------------|-----------------|
| 30"            | 0-60'     | Fresh Water         | 8.3-9.2          | 38-100             | 4-28            |
| 12 1/4"        | 0-500'    | Fresh Water         | 8.4-8.6          | 60-70              | NC              |
| 8 1/2"         | 500-5660' | Fresh Water<br>LSND | 8.5-8.8          | 40-50              | 8-10            |

b) Kick off Point to Intermediate Casing Point:

| Hole Size (in) | TVD (ft)                        | Mud Type            | Density (lb/gal) | Viscosity (sec/qt) | Fluid Loss (cc) |
|----------------|---------------------------------|---------------------|------------------|--------------------|-----------------|
| 8 1/2"         | 4841' (KOP)-<br>5414' (5721'MD) | Fresh Water<br>LSND | 8.5-8.8          | 40-50              | 8-10            |

c) Intermediate Casing Point to TD:

| Hole Size (in) | Depth (ft)          | Mud Type                   | Density (lb/gal) | Viscosity (sec/qt) | Fluid Loss (cc) |
|----------------|---------------------|----------------------------|------------------|--------------------|-----------------|
| 6 1/8"         | 5721'MD-<br>9644'MD | Synthetic Oil<br>Based Mud | 8.6-9.0          | 15-25              | <15             |

- d) 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.
- e) 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, including fresh water and oil-based operations. 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.

**Lybrook A03-2206 01H**  
**API: 30-043-21130**  
**SHL: NENE Section 3, T22N, R6W**  
**827 FNL and 432 FEL**  
**BHL: NWNW Section 3, T22N, R6W**  
**827 FNL and 330 FWL**  
**Sandoval County, New Mexico**  
**Lease Number: NM NM 109386**

## **7. TESTING, CORING and LOGGING**

- a) Drill Stem Testing – None anticipated
- b) Coring – Obtain core starting in the Mancos formation. Specific cored intervals will be determined real time by onsite geologists.
- c) Mud Logging – Mud loggers will be on location from Surface Casing to TD.
- d) Logging – See Below

Open Hole:

Triple combo with Spectral Gamma TD to surface casing  
Specialty logs will be decided real time by onsite geologists

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 +/- 2,649 psi based on a 9.0 ppg at 5660' TVD of the vertical pilot hole. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H<sub>2</sub>S is encountered, the guidelines in Onshore Order No. 6 will be followed.

## **9. ANTICIPATED START DATE AND DURATION OF OPERATIONS**

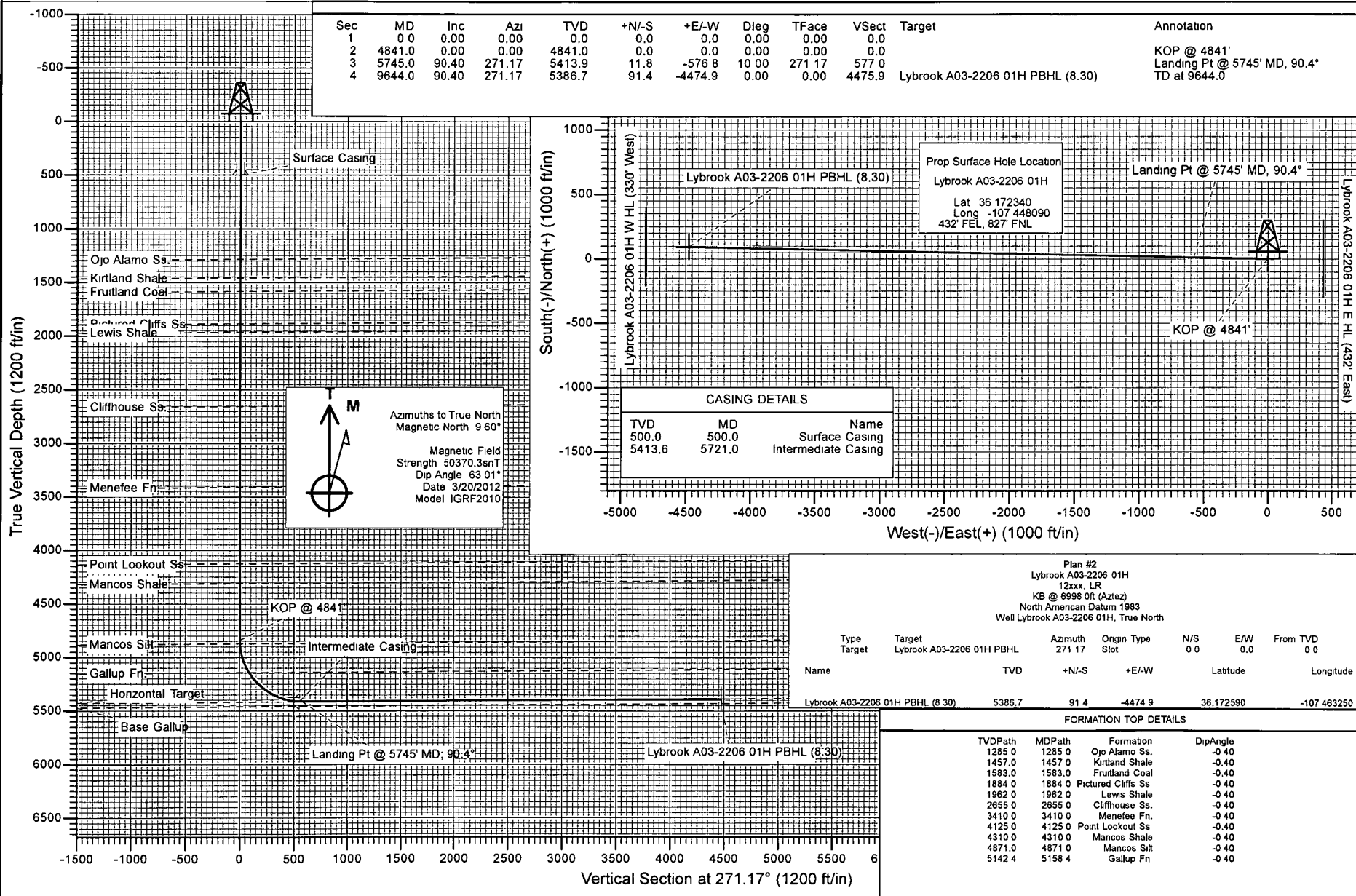
Drilling is estimated to commence on September 22, 2012. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

It is anticipated that the drilling of this well will take approximately 45 days.

# encana™

natural gas

Project: Sandoval County, NM  
Site: Lybrook  
Well: Lybrook A03-2206 01H  
Wellbore: Hz  
Design: Plan #2





# Planning Report

|                  |                             |                                     |                           |
|------------------|-----------------------------|-------------------------------------|---------------------------|
| <b>Database:</b> | USA EDM 5000 Multi Users DB | <b>Local Co-ordinate Reference:</b> | Well Lybrook A03-2206 01H |
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc  | <b>TVD Reference:</b>               | KB @ 6998 0ft (Aztez)     |
| <b>Project:</b>  | Sandoval County, NM         | <b>MD Reference:</b>                | KB @ 6998.0ft (Aztez)     |
| <b>Site:</b>     | Lybrook                     | <b>North Reference:</b>             | True                      |
| <b>Well:</b>     | Lybrook A03-2206 01H        | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Wellbore:</b> | H2                          |                                     |                           |
| <b>Design:</b>   | Plan #2                     |                                     |                           |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Sandoval County, NM       |                      |                |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | New Mexico Central Zone   |                      |                |

|                       |          |              |                 |                   |             |
|-----------------------|----------|--------------|-----------------|-------------------|-------------|
| Site                  |          | Lybrook      |                 |                   |             |
| Site Position:        |          | Northing:    | 1,882,676.45 ft | Latitude:         | 36 168210   |
| From:                 | Lat/Long | Easting:     | 1,287,068.90 ft | Longitude:        | -107 447150 |
| Position Uncertainty: | 0 0 ft   | Slot Radius: | 13 200 in       | Grid Convergence: | -0 71 °     |

|                      |                      |        |                     |                 |               |             |
|----------------------|----------------------|--------|---------------------|-----------------|---------------|-------------|
| Well                 | Lybrook A03-2206 01H |        |                     |                 |               |             |
| Well Position        | +N-S                 | 0 0 ft | Northing:           | 1,884,183 35 ft | Latitude:     | 36 172340   |
|                      | +E-W                 | 0 0 ft | Easting:            | 1,286,810 00 ft | Longitude:    | -107 448090 |
| Position Uncertainty |                      | 0 0 ft | Wellhead Elevation: | ft              | Ground Level: | 6,985 0 ft  |

|                  |                   |                    |                    |                  |                       |
|------------------|-------------------|--------------------|--------------------|------------------|-----------------------|
| <b>Wellbore</b>  | H2                |                    |                    |                  |                       |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination</b> | <b>Dip Angle</b> | <b>Field Strength</b> |
|                  |                   |                    | (°)                | (°)              | (nT)                  |
|                  | IGRF2010          | 3/20/2012          | 9 60               | 63 01            | 50,370                |

|                          |                         |              |                      |                  |
|--------------------------|-------------------------|--------------|----------------------|------------------|
| <b>Design</b>            | Plan #2                 |              |                      |                  |
| <b>Audit Notes:</b>      |                         |              |                      |                  |
| <b>Version:</b>          | <b>Phase:</b>           | PLAN         | <b>Tie On Depth:</b> | 0 0              |
| <b>Vertical Section:</b> | <b>Depth From (TVD)</b> | <b>+N/-S</b> | <b>+E/-W</b>         | <b>Direction</b> |
|                          | (ft)                    | (ft)         | (ft)                 | (°)              |
|                          | 0 0                     | 0 0          | 0 0                  | 271 17           |

|                      |                    |                |                 |              |              |               |              |             |            |                      |
|----------------------|--------------------|----------------|-----------------|--------------|--------------|---------------|--------------|-------------|------------|----------------------|
| <b>Plan Sections</b> |                    |                |                 |              |              |               |              |             |            |                      |
| <b>Measured</b>      | <b>Inclination</b> | <b>Azimuth</b> | <b>Vertical</b> | <b>+N/-S</b> | <b>+E/-W</b> | <b>Dogleg</b> | <b>Build</b> | <b>Turn</b> | <b>TFO</b> | <b>Target</b>        |
| <b>Depth</b>         | (°)                | (°)            | <b>Depth</b>    | (ft)         | (ft)         | <b>Rate</b>   | <b>Rate</b>  | <b>Rate</b> | (°)        |                      |
| (ft)                 |                    |                | (ft)            |              |              | (°/100ft)     | (°/100ft)    | (°/100ft)   |            |                      |
| 0 0                  | 0 00               | 0 00           | 0 0             | 0 0          | 0 0          | 0 00          | 0 00         | 0 00        | 0 00       |                      |
| 4,841.0              | 0 00               | 0 00           | 4,841 0         | 0 0          | 0 0          | 0 00          | 0 00         | 0 00        | 0 00       |                      |
| 5,745 0              | 90.40              | 271 17         | 5,413 9         | 11 8         | -576 8       | 10.00         | 10.00        | 0 00        | 271 17     |                      |
| 9,644 0              | 90.40              | 271.17         | 5,386 7         | 91 4         | -4,474 9     | 0 00          | 0 00         | 0 00        | 0 00       | Lybrook A03-2206 01H |

# Planning Report

|                  |                             |                                     |                           |
|------------------|-----------------------------|-------------------------------------|---------------------------|
| <b>Database:</b> | USA EDM 5000 Multi Users DB | <b>Local Co-ordinate Reference:</b> | Well Lybrook A03-2206 01H |
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc  | <b>TVD Reference:</b>               | KB @ 6998 0ft (Aztez)     |
| <b>Project:</b>  | Sandoval County, NM         | <b>MD Reference:</b>                | KB @ 6998 0ft (Aztez)     |
| <b>Site:</b>     | Lybrook                     | <b>North Reference:</b>             | True                      |
| <b>Well:</b>     | Lybrook A03-2206 01H        | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Wellbore:</b> | Hz                          |                                     |                           |
| <b>Design:</b>   | Plan #2                     |                                     |                           |

## Planned Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Vertical<br>Section<br>(ft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Comments /<br>Formations                         |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|--------------------------------------------------|
| 0 0                       | 0 00               | 0 00           | 0 0                       | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Lybrook A03-2206 01H W HL - Lybrook A03-2206 01H |
| 100 0                     | 0 00               | 0 00           | 100 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 200 0                     | 0 00               | 0 00           | 200 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 300 0                     | 0 00               | 0 00           | 300 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 400 0                     | 0 00               | 0 00           | 400 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 500 0                     | 0 00               | 0 00           | 500 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Surface Casing                                   |
| 600 0                     | 0 00               | 0 00           | 600 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 700 0                     | 0 00               | 0 00           | 700 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 800 0                     | 0 00               | 0 00           | 800 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 900 0                     | 0 00               | 0 00           | 900 0                     | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,000 0                   | 0 00               | 0 00           | 1,000 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Ojo Alamo Ss.                                    |
| 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                       |                                                  |
| 1,285 0                   | 0 00               | 0 00           | 1,285 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                       |                                                  |
| 1,400 0                   | 0 00               | 0 00           | 1,400 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Kirtland Shale                                   |
| 1,457 0                   | 0 00               | 0 00           | 1,457 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,500 0                   | 0 00               | 0 00           | 1,500 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,583 0                   | 0 00               | 0 00           | 1,583 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,600 0                   | 0 00               | 0 00           | 1,600 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,700 0                   | 0 00               | 0 00           | 1,700 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Pictured Cliffs Ss.                              |
| 1,800 0                   | 0 00               | 0 00           | 1,800 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,884 0                   | 0 00               | 0 00           | 1,884 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,900 0                   | 0 00               | 0 00           | 1,900 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 1,962 0                   | 0 00               | 0 00           | 1,962 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                       | Lewis Shale                                      |
| 2,100 0                   | 0 00               | 0 00           | 2,100 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,200 0                   | 0 00               | 0 00           | 2,200 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,300 0                   | 0 00               | 0 00           | 2,300 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,400 0                   | 0 00               | 0 00           | 2,400 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,500 0                   | 0 00               | 0 00           | 2,500 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Cliffhouse Ss                                    |
| 2,600 0                   | 0 00               | 0 00           | 2,600 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,655 0                   | 0 00               | 0 00           | 2,655 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,700 0                   | 0 00               | 0 00           | 2,700 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,800 0                   | 0 00               | 0 00           | 2,800 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 2,900 0                   | 0 00               | 0 00           | 2,900 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Menefee Fn                                       |
| 3,000 0                   | 0 00               | 0 00           | 3,000 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 3,100 0                   | 0 00               | 0 00           | 3,100 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 3,200 0                   | 0 00               | 0 00           | 3,200 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 3,300 0                   | 0 00               | 0 00           | 3,300 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 3,400 0                   | 0 00               | 0 00           | 3,400 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       | Point Lookout Ss                                 |
| 3,410 0                   | 0 00               | 0 00           | 3,410 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                       |                                                  |
| 4,125 0                   | 0 00               | 0 00           | 4,125 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 4,200 0                   | 0 00               | 0 00           | 4,200 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |
| 4,300 0                   | 0 00               | 0 00           | 4,300 0                   | 0 0           | 0 0           | 0 0                         | 0 00                        | 0 00                       |                                                  |

# Planning Report

|                  |                             |                                     |                           |
|------------------|-----------------------------|-------------------------------------|---------------------------|
| <b>Database:</b> | USA EDM 5000 Multi Users DB | <b>Local Co-ordinate Reference:</b> | Well Lybrook A03-2206 01H |
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc  | <b>TVD Reference:</b>               | KB @ 6998.0ft (Aztez)     |
| <b>Project:</b>  | Sandoval County, NM         | <b>MD Reference:</b>                | KB @ 6998.0ft (Aztez)     |
| <b>Site:</b>     | Lybrook                     | <b>North Reference:</b>             | True                      |
| <b>Well:</b>     | Lybrook A03-2206 01H        | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Wellbore:</b> | Hz                          |                                     |                           |
| <b>Design:</b>   | Plan #2                     |                                     |                           |

| Planned Survey            |                    |                |                           |               |               |                             |                             |                            |                          |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|--------------------------|
| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Vertical<br>Section<br>(ft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Comments /<br>Formations |
| 4,310.0                   | 0.00               | 0.00           | 4,310.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       | Mancos Shale             |
| 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                       |                          |
| 4,700.0                   | 0.00               | 0.00           | 4,700.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 4,800.0                   | 0.00               | 0.00           | 4,800.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 4,841.0                   | 0.00               | 0.00           | 4,841.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 4,841.0                   | 0.00               | 271.17         | 4,841.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 4,871.0                   | 3.00               | 271.17         | 4,871.0                   | 0.0           | -0.8          | 0.8                         | 10.02                       | 10.02                      | Mancos Silt              |
| 4,900.0                   | 5.90               | 271.17         | 4,899.9                   | 0.1           | -3.0          | 3.0                         | 10.00                       | 10.00                      |                          |
| 5,000.0                   | 15.90              | 271.17         | 4,998.0                   | 0.4           | -21.9         | 21.9                        | 10.00                       | 10.00                      |                          |
| 5,100.0                   | 25.90              | 271.17         | 5,091.3                   | 1.2           | -57.5         | 57.6                        | 10.00                       | 10.00                      |                          |
| 5,158.4                   | 31.74              | 271.17         | 5,142.4                   | 1.7           | -85.7         | 85.7                        | 10.00                       | 10.00                      | Gallup Fn                |
| 5,200.0                   | 35.90              | 271.17         | 5,177.0                   | 2.2           | -108.8        | 108.9                       | 10.00                       | 10.00                      |                          |
| 5,300.0                   | 45.90              | 271.17         | 5,252.4                   | 3.6           | -174.2        | 174.2                       | 10.00                       | 10.00                      |                          |
| 5,400.0                   | 55.90              | 271.17         | 5,315.4                   | 5.1           | -251.7        | 251.8                       | 10.00                       | 10.00                      |                          |
| 5,500.0                   | 65.90              | 271.17         | 5,364.0                   | 6.9           | -339.0        | 339.0                       | 10.00                       | 10.00                      |                          |
| 5,600.0                   | 75.90              | 271.17         | 5,396.7                   | 8.8           | -433.3        | 433.4                       | 10.00                       | 10.00                      |                          |
| 5,700.0                   | 85.90              | 271.17         | 5,412.5                   | 10.9          | -531.9        | 532.0                       | 10.00                       | 10.00                      |                          |
| 5,721.0                   | 88.00              | 271.17         | 5,413.6                   | 11.3          | -552.9        | 553.0                       | 10.00                       | 10.00                      |                          |
| 5,745.0                   | 90.40              | 271.17         | 5,413.9                   | 11.8          | -576.8        | 577.0                       | 10.00                       | 10.00                      | Intermediate Casing      |
| 5,745.0                   | 90.40              | 271.17         | 5,413.9                   | 11.8          | -576.9        | 577.0                       | 0.00                        | 0.00                       |                          |
| 5,800.0                   | 90.40              | 271.17         | 5,413.5                   | 12.9          | -631.8        | 632.0                       | 0.00                        | 0.00                       |                          |
| 5,900.0                   | 90.40              | 271.17         | 5,412.8                   | 14.9          | -731.8        | 732.0                       | 0.00                        | 0.00                       |                          |
| 6,000.0                   | 90.40              | 271.17         | 5,412.1                   | 17.0          | -831.8        | 832.0                       | 0.00                        | 0.00                       |                          |
| 6,100.0                   | 90.40              | 271.17         | 5,411.4                   | 19.0          | -931.8        | 932.0                       | 0.00                        | 0.00                       |                          |
| 6,200.0                   | 90.40              | 271.17         | 5,410.7                   | 21.1          | -1,031.8      | 1,032.0                     | 0.00                        | 0.00                       |                          |
| 6,300.0                   | 90.40              | 271.17         | 5,410.0                   | 23.1          | -1,131.7      | 1,132.0                     | 0.00                        | 0.00                       |                          |
| 6,400.0                   | 90.40              | 271.17         | 5,409.3                   | 25.1          | -1,231.7      | 1,232.0                     | 0.00                        | 0.00                       |                          |
| 6,500.0                   | 90.40              | 271.17         | 5,408.6                   | 27.2          | -1,331.7      | 1,332.0                     | 0.00                        | 0.00                       |                          |
| 6,600.0                   | 90.40              | 271.17         | 5,408.0                   | 29.2          | -1,431.7      | 1,432.0                     | 0.00                        | 0.00                       |                          |
| 6,700.0                   | 90.40              | 271.17         | 5,407.3                   | 31.3          | -1,531.6      | 1,532.0                     | 0.00                        | 0.00                       |                          |
| 6,800.0                   | 90.40              | 271.17         | 5,406.6                   | 33.3          | -1,631.6      | 1,632.0                     | 0.00                        | 0.00                       |                          |
| 6,900.0                   | 90.40              | 271.17         | 5,405.9                   | 35.4          | -1,731.6      | 1,732.0                     | 0.00                        | 0.00                       |                          |
| 7,000.0                   | 90.40              | 271.17         | 5,405.2                   | 37.4          | -1,831.6      | 1,832.0                     | 0.00                        | 0.00                       |                          |
| 7,100.0                   | 90.40              | 271.17         | 5,404.5                   | 39.4          | -1,931.5      | 1,931.9                     | 0.00                        | 0.00                       |                          |
| 7,200.0                   | 90.40              | 271.17         | 5,403.8                   | 41.5          | -2,031.5      | 2,031.9                     | 0.00                        | 0.00                       |                          |
| 7,300.0                   | 90.40              | 271.17         | 5,403.1                   | 43.5          | -2,131.5      | 2,131.9                     | 0.00                        | 0.00                       |                          |
| 7,400.0                   | 90.40              | 271.17         | 5,402.4                   | 45.6          | -2,231.5      | 2,231.9                     | 0.00                        | 0.00                       |                          |
| 7,500.0                   | 90.40              | 271.17         | 5,401.7                   | 47.6          | -2,331.5      | 2,331.9                     | 0.00                        | 0.00                       |                          |
| 7,600.0                   | 90.40              | 271.17         | 5,401.0                   | 49.6          | -2,431.4      | 2,431.9                     | 0.00                        | 0.00                       |                          |
| 7,700.0                   | 90.40              | 271.17         | 5,400.3                   | 51.7          | -2,531.4      | 2,531.9                     | 0.00                        | 0.00                       |                          |
| 7,800.0                   | 90.40              | 271.17         | 5,399.6                   | 53.7          | -2,631.4      | 2,631.9                     | 0.00                        | 0.00                       |                          |
| 7,900.0                   | 90.40              | 271.17         | 5,398.9                   | 55.8          | -2,731.4      | 2,731.9                     | 0.00                        | 0.00                       |                          |
| 8,000.0                   | 90.40              | 271.17         | 5,398.2                   | 57.8          | -2,831.3      | 2,831.9                     | 0.00                        | 0.00                       |                          |
| 8,100.0                   | 90.40              | 271.17         | 5,397.5                   | 59.8          | -2,931.3      | 2,931.9                     | 0.00                        | 0.00                       |                          |
| 8,200.0                   | 90.40              | 271.17         | 5,396.8                   | 61.9          | -3,031.3      | 3,031.9                     | 0.00                        | 0.00                       |                          |
| 8,300.0                   | 90.40              | 271.17         | 5,396.1                   | 63.9          | -3,131.3      | 3,131.9                     | 0.00                        | 0.00                       |                          |
| 8,400.0                   | 90.40              | 271.17         | 5,395.4                   | 66.0          | -3,231.2      | 3,231.9                     | 0.00                        | 0.00                       |                          |
| 8,500.0                   | 90.40              | 271.17         | 5,394.7                   | 68.0          | -3,331.2      | 3,331.9                     | 0.00                        | 0.00                       |                          |
| 8,600.0                   | 90.40              | 271.17         | 5,394.0                   | 70.1          | -3,431.2      | 3,431.9                     | 0.00                        | 0.00                       |                          |
| 8,700.0                   | 90.40              | 271.17         | 5,393.3                   | 72.1          | -3,531.2      | 3,531.9                     | 0.00                        | 0.00                       |                          |

# Planning Report

|                  |                             |                                     |                           |
|------------------|-----------------------------|-------------------------------------|---------------------------|
| <b>Database:</b> | USA EDM 5000 Multi Users DB | <b>Local Co-ordinate Reference:</b> | Well Lybrook A03-2206 01H |
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc  | <b>TVD Reference:</b>               | KB @ 6998.0ft (Aztez)     |
| <b>Project:</b>  | Sandoval County, NM         | <b>MD Reference:</b>                | KB @ 6998 0ft (Aztez)     |
| <b>Site:</b>     | Lybrook                     | <b>North Reference:</b>             | True                      |
| <b>Well:</b>     | Lybrook A03-2206 01H        | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Wellbore:</b> | H2                          |                                     |                           |
| <b>Design:</b>   | Plan #2                     |                                     |                           |

| 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             | 90.40           | 271.17      | 5,392.6             | 74.1       | -3,631.2   | 3,631.9               | 0.00                  | 0.00                 |                                             |
| 8,900.0             | 90.40           | 271.17      | 5,391.9             | 76.2       | -3,731.1   | 3,731.9               | 0.00                  | 0.00                 |                                             |
| 9,000.0             | 90.40           | 271.17      | 5,391.2             | 78.2       | -3,831.1   | 3,831.9               | 0.00                  | 0.00                 |                                             |
| 9,100.0             | 90.40           | 271.17      | 5,390.5             | 80.3       | -3,931.1   | 3,931.9               | 0.00                  | 0.00                 |                                             |
| 9,200.0             | 90.40           | 271.17      | 5,389.8             | 82.3       | -4,031.1   | 4,031.9               | 0.00                  | 0.00                 |                                             |
| 9,300.0             | 90.40           | 271.17      | 5,389.1             | 84.3       | -4,131.0   | 4,131.9               | 0.00                  | 0.00                 |                                             |
| 9,400.0             | 90.40           | 271.17      | 5,388.4             | 86.4       | -4,231.0   | 4,231.9               | 0.00                  | 0.00                 |                                             |
| 9,500.0             | 90.40           | 271.17      | 5,387.7             | 88.4       | -4,331.0   | 4,331.9               | 0.00                  | 0.00                 |                                             |
| 9,600.0             | 90.40           | 271.17      | 5,387.0             | 90.5       | -4,431.0   | 4,431.9               | 0.00                  | 0.00                 |                                             |
| 9,643.5             | 90.40           | 271.17      | 5,386.7             | 91.4       | -4,474.5   | 4,475.4               | 0.00                  | 0.00                 | Lybrook A03-2206 01H PBHL                   |
| 9,644.0             | 90.40           | 271.17      | 5,386.7             | 91.4       | -4,474.9   | 4,475.9               | 0.00                  | 0.00                 | TD at 9644.0 - Lybrook A03-2206 01H PBHL (8 |

| Targets                                                                              |                   |               |              |          |            |            |               |              |                       |
|--------------------------------------------------------------------------------------|-------------------|---------------|--------------|----------|------------|------------|---------------|--------------|-----------------------|
| Target Name                                                                          | - hit/miss target | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) |                       |
| - Shape                                                                              |                   |               |              |          |            |            |               |              | Latitude Longitude    |
| Lybrook A03-2206 01H V                                                               |                   | 0.00          | 0.00         | -5,461.7 | 91.4       | -4,474.9   | 1,884,329.94  | 1,282,336.54 | 36 172590 -107.463250 |
| - plan misses target center by 7061.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)          |                   |               |              |          |            |            |               |              |                       |
| - Polygon                                                                            |                   |               |              |          |            |            |               |              |                       |
| Point 1                                                                              |                   |               |              | -5,461.7 | 300.0      | -330.0     | 1,884,633.99  | 1,282,010.27 |                       |
| Point 2                                                                              |                   |               |              | -5,461.7 | -300.0     | -330.0     | 1,884,034.03  | 1,282,002.86 |                       |
| Lybrook A03-2206 01H F                                                               |                   | 0.00          | 0.00         | 5,386.7  | 91.4       | -4,474.9   | 1,884,329.94  | 1,282,336.54 | 36 172590 -107.463250 |
| - plan hits target center                                                            |                   |               |              |          |            |            |               |              |                       |
| - Point                                                                              |                   |               |              |          |            |            |               |              |                       |
| Lybrook A03-2206 01H E                                                               |                   | 0.00          | 0.00         | 5,453.7  | 91.4       | -4,474.9   | 1,884,329.94  | 1,282,336.54 | 36 172590 -107.463250 |
| - plan misses target center by 67.0ft at 9643.5ft MD (5386.7 TVD, 91.4 N, -4474.5 E) |                   |               |              |          |            |            |               |              |                       |
| - Point                                                                              |                   |               |              |          |            |            |               |              |                       |
| Lybrook A03-2206 01H E                                                               |                   | 0.00          | 0.00         | -5,461.7 | 0.0        | 0.0        | 1,884,183.35  | 1,286,810.00 | 36 172340 -107.448090 |
| - plan misses target center by 5461.7ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)          |                   |               |              |          |            |            |               |              |                       |
| - Polygon                                                                            |                   |               |              |          |            |            |               |              |                       |
| Point 1                                                                              |                   |               |              | -5,461.7 | 300.0      | 432.0      | 1,884,477.99  | 1,287,245.67 |                       |
| Point 2                                                                              |                   |               |              | -5,461.7 | -300.0     | 432.0      | 1,883,878.04  | 1,287,238.26 |                       |

| Casing Points       |                     |                     |                      |                    |  |
|---------------------|---------------------|---------------------|----------------------|--------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name                | Casing Diameter (in) | Hole Diameter (in) |  |
| 5,721.0             | 5,413.6             | Intermediate Casing | 0.000                | 0.000              |  |
| 500.0               | 500.0               | Surface Casing      | 0.000                | 0.000              |  |

# Planning Report

|                  |                             |                                     |                           |
|------------------|-----------------------------|-------------------------------------|---------------------------|
| <b>Database:</b> | USA EDM 5000 Multi Users DB | <b>Local Co-ordinate Reference:</b> | Well Lybrook A03-2206 01H |
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc  | <b>TVD Reference:</b>               | KB @ 6998.0ft (Aztez)     |
| <b>Project:</b>  | Sandoval County, NM         | <b>MD Reference:</b>                | KB @ 6998.0ft (Aztez)     |
| <b>Site:</b>     | Lybrook                     | <b>North Reference:</b>             | True                      |
| <b>Well:</b>     | Lybrook A03-2206 01H        | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Wellbore:</b> | H2                          |                                     |                           |
| <b>Design:</b>   | Plan #2                     |                                     |                           |

| Formations          |                     |                    |           |         |                   |
|---------------------|---------------------|--------------------|-----------|---------|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name               | Lithology | Dip (°) | Dip Direction (°) |
| 1,285.0             | 1,285.0             | Ojo Alamo Ss.      |           | -0.40   | 271.17            |
| 1,457.0             | 1,457.0             | Kirtland Shale     |           | -0.40   | 271.17            |
| 1,583.0             | 1,583.0             | Fruitland Coal     |           | -0.40   | 271.17            |
| 1,884.0             | 1,884.0             | Pictured Cliffs Ss |           | -0.40   | 271.17            |
| 1,962.0             | 1,962.0             | Lewis Shale        |           | -0.40   | 271.17            |
| 2,655.0             | 2,655.0             | Cliffhouse Ss      |           | -0.40   | 271.17            |
| 3,410.0             | 3,410.0             | Menefee Fn.        |           | -0.40   | 271.17            |
| 4,125.0             | 4,125.0             | Point Lookout Ss   |           | -0.40   | 271.17            |
| 4,310.0             | 4,310.0             | Mancos Shale       |           | -0.40   | 271.17            |
| 4,871.0             | 4,871.0             | Mancos Silt        |           | -0.40   | 271.17            |
| 5,158.4             | 5,143.0             | Gallup Fn.         |           | -0.40   | 271.17            |

| Plan Annotations    |                     |                   |            |                              |
|---------------------|---------------------|-------------------|------------|------------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates |            | Comment                      |
|                     |                     | +N/-S (ft)        | +E/-W (ft) |                              |
| 4,841.0             | 4,841.0             | 0.0               | 0.0        | KOP @ 4841'                  |
| 5,745.0             | 5,414.0             | 11.8              | -576.8     | Landing Pt @ 5745' MD, 90.4° |
| 9,644.0             | 5,386.8             | 91.4              | -4,474.9   | TD at 9644.0                 |



# 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   |

# WELLHEAD BLOWOUT CONTROL SYSTEM



Well name and number:

Lybrook A03-2206 01H

