

State of New Mexico  
Energy, Minerals and Natural Resources Department

Susana Martinez  
Governor

David Martin  
Cabinet Secretary

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

David R. Catanach, Division Director  
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 8-14-14

Well information;

Operator Encana, Well Name and Number Gallo Canyon Unit 015 2306 #2H

API# 30-039-31269, Section 15, Township 23 (N/S), Range 6 E/W

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☐ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Charles Bern  
NMOCD Approved by Signature

3-6-2015  
Date KC

RECEIVED

Form 3100-3  
(August 2007)

MAR 02 2015

NMOCB UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

AUG 15 2014

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

5. Lease Serial No.  
NMNM 17009 & NMNM 118128

6. If Indian, Allottee or Tribe Name  
N/A

1a. Type of work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.  
NMNM 131017X

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.  
Gallo Canyon Unit O15-2306 02H

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

9. API Well No.

30-039-31269

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

3b. Phone No. (include area code)  
720-876-3533

10. Field and Pool, or Exploratory  
Counselors Gallup-Dakota

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

At surface 516' FSL and 2029' FEL Section 15, T23N, R6W SUSE

At proposed prod. zone 345' FNL and 115' FWL Section 25, T23N, R6W NWNW

11. Sec., T. R. M. or Blk. and Survey or Area  
Section 15, T23N, R6W NMPM

Sec 25, T23N R6W

14. Distance in miles and direction from nearest town or post office\*  
+/- 54.6 miles southeast of the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM

12. County or Parish  
Rio Arriba

13. State  
NM

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any)  
BHL is 345' from north lease line Section 25, T23N, R6W

16. No. of acres in lease  
NMNM 17009 - 2,560 ac.  
NMNM 118128 - 1,920 ac.

17. Spacing Unit dedicated to this well  
5,120 acres - Sections 22-26 and 33-36

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.  
Gallo Canyon Unit O15 01H is +/- 30' from SHL

19. Proposed Depth  
5,544' TVD/13,915' MD

20. BLM/BIA Bond No. on file  
COB-000235

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
6,974' GL, 6,990' KB

22. Approximate date work will start\*  
02/07/2015

23. Estimated duration  
20 days

#### 24. Attachments

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

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

- Bond to cover the operations unless covered by an existing bond on file (see item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature

*Katie Wegner*

Name (Printed/Typed)  
Katie Wegner

Date

8/14/14

Title

Regulatory Analyst

Approved by (Signature)

*D. Manley*

Name (Printed/Typed)

Date

2/26/15

Title

AFM

Office

FFO

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

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

(Continued)  
**DRILLING OPERATIONS  
AUTHORIZED ARE SUBJECT TO  
COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS"**

**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**

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

NMOCB

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) 331-6178 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

AUG 15 2014

AMENDED REPORT  
Faint handwritten notes and stamps.

WELL LOCATION AND ACREAGE DEDICATION PLAT

|                                         |                                                           |                                                    |
|-----------------------------------------|-----------------------------------------------------------|----------------------------------------------------|
| <sup>1</sup> API Number<br>30-039-31269 | <sup>2</sup> Pool Code<br>13379                           | <sup>3</sup> Pool Name<br>COUNSELORS GALLUP-DAKOTA |
| <sup>4</sup> Property Code<br>314234    | <sup>5</sup> Property Name<br>GALLO CANYON UNIT 015-2306  | <sup>6</sup> Well Number<br>02H                    |
| <sup>7</sup> GRID No.<br>282327         | <sup>8</sup> Operator Name<br>ENCANA OIL & GAS (USA) INC. | <sup>9</sup> Elevation<br>6974                     |

<sup>10</sup> Surface Location

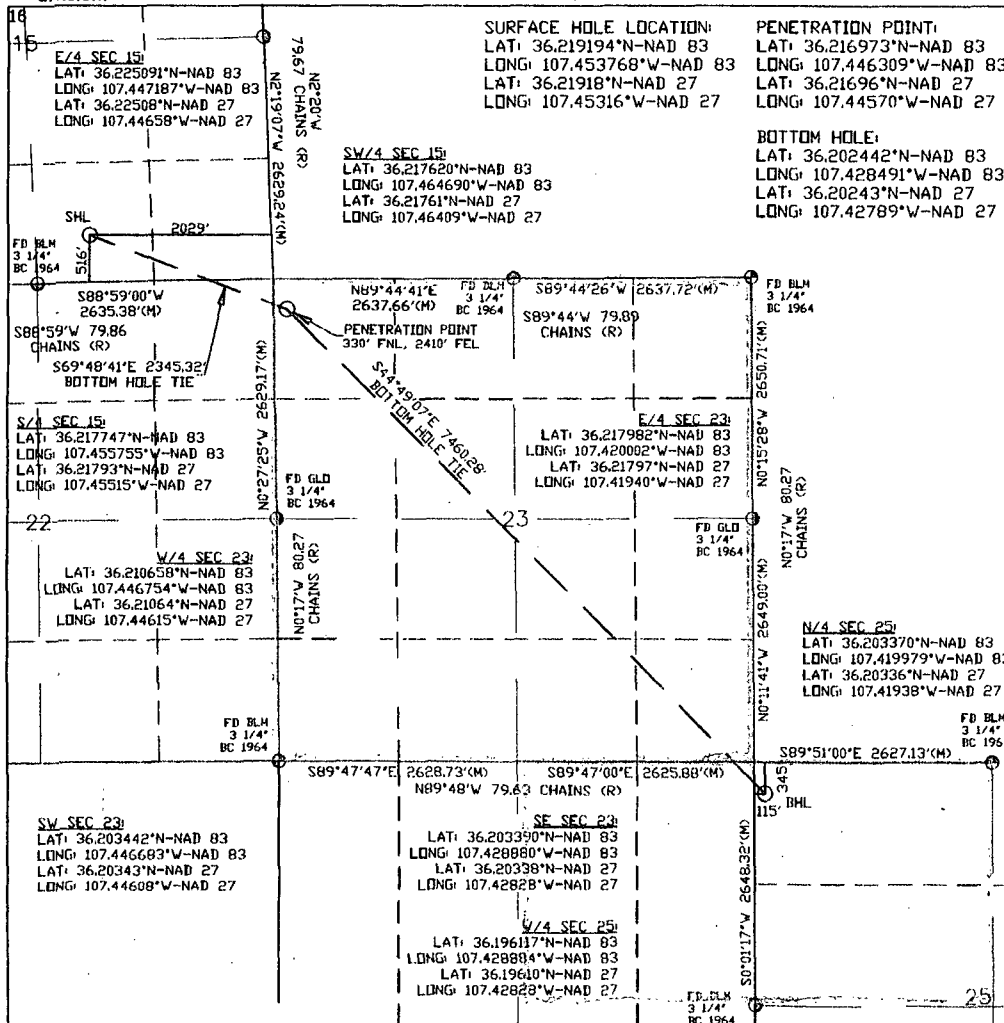
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County     |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|------------|
| 0             | 15      | 23-N     | 6-W   |         | 516'          | SOUTH            | 2029'         | EAST           | RIO ARRIBA |

<sup>11</sup> Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County   |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| D             | 25      | 23-N     | 6-W   |         | 345'          | NORTH            | 115'          | WEST           | SANDOVAL |

|                                                                                                                                                                      |                               |                                  |                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------|----------------------------------------------------|
| <sup>12</sup> Dedicated Acres<br>5.760<br>5.760 Acres Sec. 22-26, 34-36 - Undivided Unit<br>Penetrated Spacing Units: All Sec 23; NE4 Sec 26; NW4 Sec 25 (960 acres) | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code | <sup>15</sup> Order No.<br>R-13718-A (5,120 acres) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------|----------------------------------------------------|

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



<sup>17</sup> 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: *Katie Wegner*  
Date: 8/14/14  
Katie Wegner

Printed Name

Katie.Wegner@encana.com

E-mail Address

<sup>18</sup> 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.

FEB 1, 2014  
Date of Survey

Signature and Seal of Professional Surveyor:

WILLIAM E. MAHNKE II  
NEW MEXICO  
# 8466  
REGISTERED  
WILLIAM E. MAHNKE II  
Certificate Number: PS 8466

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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

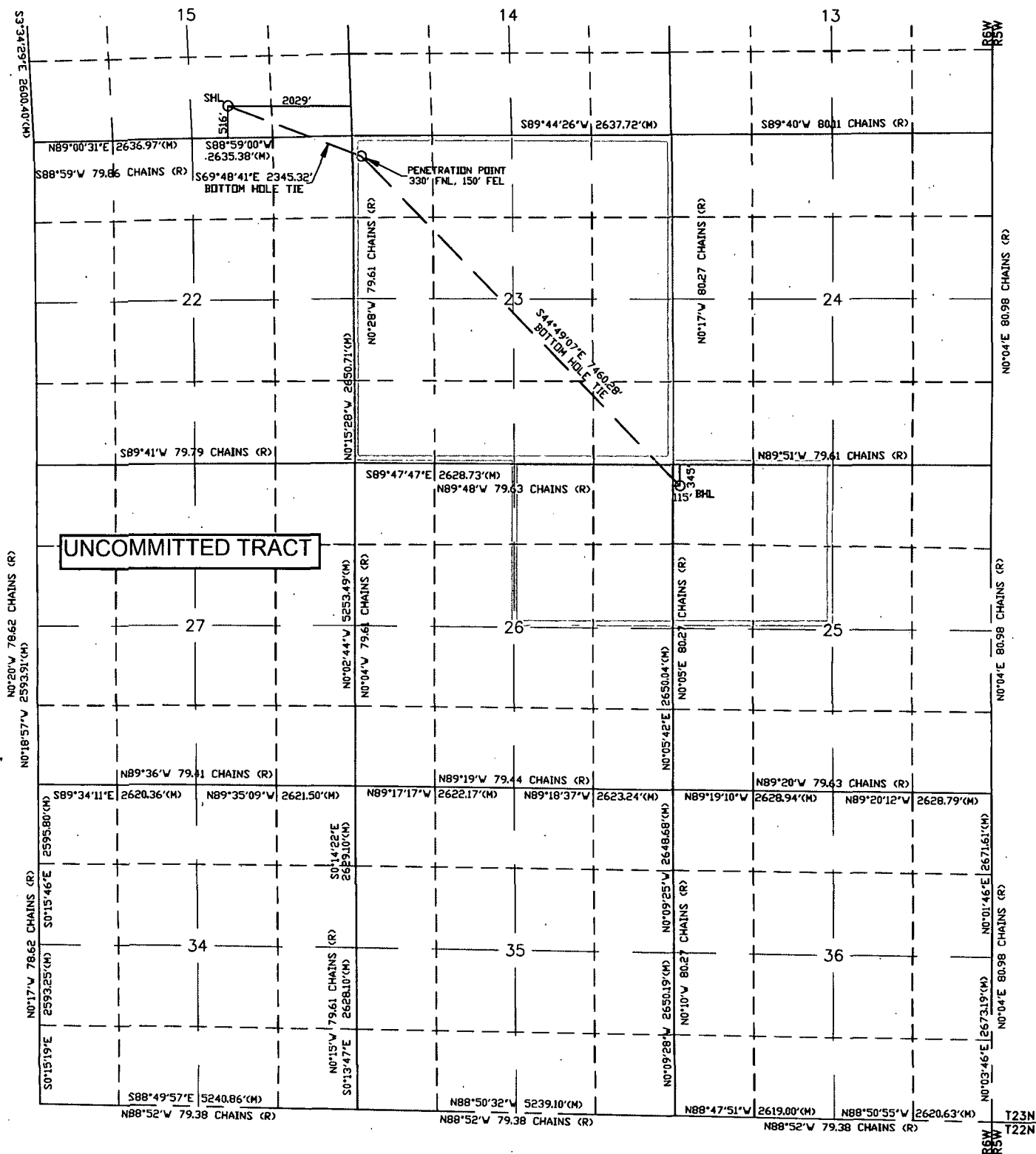
☐ AMENDED REPORT

SURFACE HOLE LOCATION:  
LAT: 36.219194°N-NAD 83  
LONG: 107.453768°W-NAD 83  
LAT: 36.21918°N-NAD 27  
LONG: 107.45316°W-NAD 27

PENETRATION POINT:  
LAT: 36.216973°N-NAD 83  
LONG: 107.446309°W-NAD 83  
LAT: 36.21696°N-NAD 27  
LONG: 107.44570°W-NAD 27

BOTTOM HOLE:  
LAT: 36.202442°N-NAD 83  
LONG: 107.428491°W-NAD 83  
LAT: 36.20243°N-NAD 27  
LONG: 107.42789°W-NAD 27

ENCANA OIL & GAS (USA) INC.  
GALLO CANYON UNIT 015-2306 02H



GCU O15-2306 02H  
SHL: SWSE Sec 15 T23N R6W  
516' FSL, 2029' FEL  
BHL: NWNW Sec 25 T23N R6W  
345' FNL, 115' FWL  
Rio Arriba, New Mexico

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

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

The estimated tops of important geologic markers are as follows:

| <b>Formation</b>    | <b>Depth (TVD) units = feet</b> |
|---------------------|---------------------------------|
| Ojo Alamo Ss.       | 1,503                           |
| Kirtland Shale      | 1,694                           |
| Fruitland Coal      | 1,869                           |
| Pictured Cliffs Ss. | 2,113                           |
| Lewis Shale         | 2,211                           |
| Cliffhouse Ss.      | 2,904                           |
| Menefee Fn.         | 3,621                           |
| Point Lookout Ss.   | 4,324                           |
| Mancos Shale        | 4,533                           |
| Mancos Silt         | 5,153                           |
| Gallup Fn.          | 5,389                           |

The referenced surface elevation is 6974', KB 6990'

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

| <b>Substance</b> | <b>Formation</b>    | <b>Depth (TVD) units = feet</b> |
|------------------|---------------------|---------------------------------|
| Water/Gas        | Fruitland Coal      | 1,869                           |
| Oil/Gas          | Pictured Cliffs Ss. | 2,113                           |
| Oil/Gas          | Cliffhouse Ss.      | 2,904                           |
| Gas              | Menefee Fn.         | 3,621                           |
| Oil/Gas          | Point Lookout Ss.   | 4,324                           |
| Oil/Gas          | Mancos Shale        | 4,533                           |
| Oil/Gas          | Mancos Silt         | 5,153                           |
| Oil/Gas          | Gallup Fn.          | 5,389                           |

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.

GCU O15-2306 02H

SHL: SWSE Sec 15 T23N R6W

516' FSL, 2029' FEL

BHL: NWNW Sec 25 T23N R6W

345' FNL, 115' FWL

Rio Arriba, New Mexico

- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all 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'       | 30"       | 20"      | 94#    |               |
| Surface          | 0'-500'      | 12 1/4"   | 9 5/8"   | 36#    | J55, STC New  |
| Intermediate     | 0'-6456'     | 8 3/4"    | 7"       | 26#    | J55, LTC New  |
| Production Liner | 6256'-13915' | 6 1/8"    | 4 1/2"   | 11.6#  | B80*, LTC New |

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

\*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

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

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'      | 314 sks                                                                                         | HALCEM™ SYSTEM + 2% CaCl <sub>2</sub> + 0.125lbm/sk Poly-E-Flake. 15.8 ppg, 1.174 cuft/sk                                                                                                                                                                                                                                        | Surface      | 1 per joint on bottom 3 joints               |
| Intermediate     | 0'-6456'     | 30% open hole excess<br>Stage 1 Lead: 444 sks<br>Stage 1 Tail: 382 sks<br>Stage 2 Lead: 220 sks | Stage 1 Lead: HALCEM™ SYSTEM + 0.2% HR-5 + 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-E-Flake. 12.3 ppg, 1.948 cuft/sk<br>Stage 1 Tail: VARICEM™ CEMENT + .15% CFR-3 + 5lbm/sk Kol-Seal + 0.125% Poly-E-Flake. 13.5 ppg, 1.308 cuft/sk.<br>Stage 2 Contingency: HALCEM™ SYSTEM + 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-E-Flake. 12.3 ppg, | Surface      | 1 every 3 joints through water bearing zones |
| Production Liner | 6256'-13915' | None - External Casing Packers                                                                  | N/A                                                                                                                                                                                                                                                                                                                              | N/A          | N/A                                          |

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

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

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

## 5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed horizontal well will have a kick off point of 1500'. Directional plans are attached.

| Description           | Proposed Depth (TVD/MD) | Formation |
|-----------------------|-------------------------|-----------|
| Horizontal Lateral TD | 5544'/13915'            | Gallup    |

GCU O15-2306 02H

SHL: SWSE Sec 15 T23N R6W

516' FSL, 2029' FEL

BHL: NWNW Sec 25 T23N R6W

345' FNL, 115' FWL

Rio Arriba, 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'-5610'/6456' | 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"         | 5610'/6456'-<br>5544'/13915' | 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 +/- 2641 psi based on a 9.0 ppg at 5644' TVD of the horizontal lateral target. 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.

**GCU O15-2306 02H**

**SHL: SWSE Sec 15 T23N R6W  
516' FSL, 2029' FEL**

**BHL: NWNW Sec 25 T23N R6W  
345' FNL, 115' FWL**

**Rio Arriba, New Mexico**

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

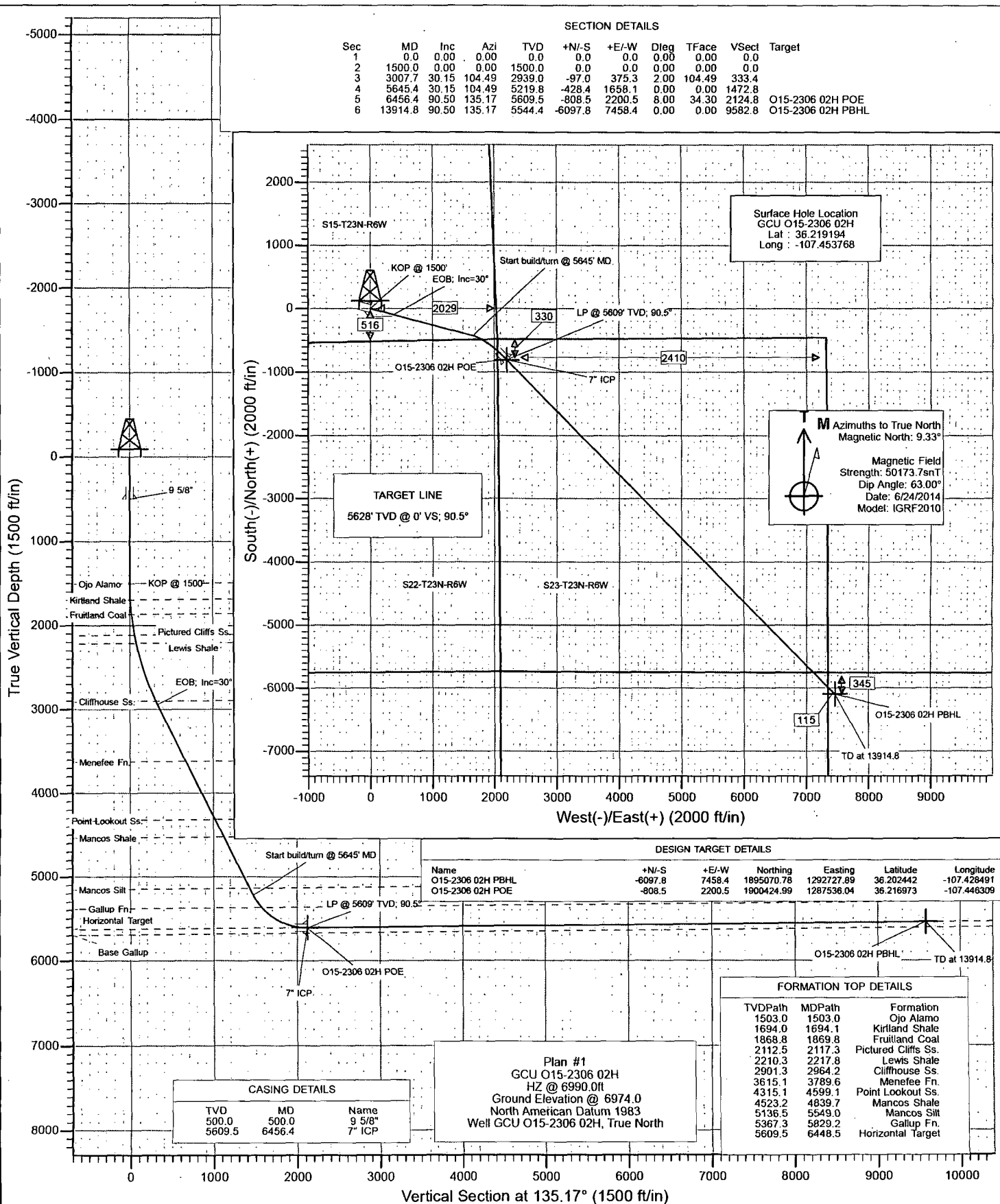
Drilling is estimated to commence on February 7, 2015. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

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

| LOC: SW/4 SE/4 Sec 15 T23N R6W, 516' FSL                                                                                                                                                     |                      |                                                                                                                                                                               | Encana Natural Gas                                                                            |                     |  |        | ENG: Mike Sanchez 8/11/14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                 |                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------|--|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|-----------------------------------------------------------|
| County: Rio Arriba (SHL)                                                                                                                                                                     |                      |                                                                                                                                                                               | WELL SUMMARY                                                                                  |                     |  |        | RIG: Aztec 950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                 |                                                           |
| WELL: GCU 015-2306 02H                                                                                                                                                                       |                      |                                                                                                                                                                               |                                                                                               |                     |  |        | GLE: 6974                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                 |                                                           |
|                                                                                                                                                                                              |                      |                                                                                                                                                                               |                                                                                               |                     |  |        | RKBE: 6990                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                 |                                                           |
| MWD                                                                                                                                                                                          | OPEN HOLE            |                                                                                                                                                                               | DEPTH                                                                                         |                     |  | HOLE   | CASING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MW                      | DEVIATION       |                                                           |
| LWD                                                                                                                                                                                          | LOGGING              | FORM                                                                                                                                                                          | TVD                                                                                           | MD                  |  | SIZE   | SPECS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MUD TYPE                | INFORMATION     |                                                           |
|                                                                                                                                                                                              |                      |                                                                                                                                                                               | 60                                                                                            | 60'                 |  | 30     | 16" 42.09#<br>100sx Type I Neat 16.0ppg cmt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Fresh wtr<br>8.3-9.2    |                 |                                                           |
| Multi-Well pad<br>- take survey<br>every stand<br>and run anti-<br>collision<br>report prior to<br>spud                                                                                      | None                 | Nacimiento<br>9 5/8" Csg                                                                                                                                                      | 0<br>500                                                                                      | 500.00              |  | 12 1/4 | 9 5/8" 36ppf J55 STC<br><br>TOC Surface with 100% OH Excess:<br>314 sks of HALCEM™ SYSTEM + 2%<br>CaCl2 + 0.125lbm/sk Poly-E-Flake.<br>Mixed at 15.8 ppg. Yield 1.174 cuft/sk.                                                                                                                                                                                                                                                                                                                                                                                               | Fresh wtr<br><br>8.3-10 | Vertical<br><1° |                                                           |
| Survey Every<br>60'-120',<br>updating<br>anticollision<br>report after<br>surveys. Stop<br>operations<br>and contact<br>drilling<br>engineer if<br>separation<br>factor<br>approaches<br>1.5 | No OH logs.          | Ojo Alamo Ss.<br>Kirtland Shale<br><br>Fruitland Coal<br><br>Pictured Cliffs Ss.<br>Lewis Shale<br><br>Cliffhouse Ss.<br>Menefee Fn.<br><br>Point Lookout Ss.<br>Mancos Shale | 1,503<br>1,694<br><br>1,869<br><br>2,113<br>2,211<br><br>2,904<br>3,621<br><br>4,324<br>4,533 |                     |  | 8 3/4  | 7" 26ppf J55 LTC<br><br>TOC @ surface (30% OH excess)<br>Stage 1 Total: 826sks<br>If necessary, Stage 2 Total: 220sks<br><br>Stage 1 Lead: 444 sks HALCEM™<br>SYSTEM + 0.2% HR-5 + 5lbm/sk Kol-<br>Seal + 0.125lbm/sk Poly-E-Flake. Mixed<br>at 12.3 ppg. Yield 1.948 cuft/sk.<br><br>Stage 1 Tail: 382 sks VARICEM™<br>CEMENT + .15% CFR-3 + 5lbm/sk Kol-<br>Seal + 0.125% Poly-E-Flake. Mixed at<br>13.5 ppg. Yield 1.308 cuft/sk.<br><br>Stage 2: 220 sks HALCEM™ SYSTEM<br>+ 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-<br>E-Flake. Mixed at 12.3 ppg. Yield 1.946<br>cuft/sk. | Fresh Wtr<br><br>8.3-10 | Vertical<br><1° |                                                           |
| Surveys every<br>30' through<br>the curve                                                                                                                                                    | Mud logger<br>onsite | KOP<br><br>Mancos Silt<br><br>Gallup Fn.<br><br>7" Csg                                                                                                                        | 1,500<br><br>5,153<br><br>5,389<br>5,610                                                      | 1,500<br><br>6,456' |  | 6 1/8  | 200' overlap at liner top<br><br>7458' Drilled Lateral                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |                 | Horz Inc/TVD<br>90.5 degdeg/5644ft<br><br>TD = 13914.8 MD |
| Surveys every<br>stand to TD<br>unless<br>directed<br>otherwise by<br>Geologist                                                                                                              | No OH Logs           | Horizontal Target<br>TD<br><br>Base Gallup                                                                                                                                    | 5,644<br>5,544<br>5,752                                                                       | 13,915              |  |        | 4 1/2" 11.6ppf SB80 LTC<br><br>Running external swellable csg packers for<br>isolation of prod string                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | WBM<br>8.3-10           |                 |                                                           |
| MWD<br>Gamma<br>Directional                                                                                                                                                                  |                      |                                                                                                                                                                               |                                                                                               |                     |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                 |                                                           |

# NOTES:

- 1) Drill with 30" bit to 60', set 20" 94# 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 1500', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 6456' MD
- 7) R&C 7" csg, circ cmt to surface, switch to WBM
- 8) Land at 90 deg, drill lateral to 13915' run 4 1/2 inch liner with external swellable csg packers



# Planning Report

|                  |                             |                                     |                       |
|------------------|-----------------------------|-------------------------------------|-----------------------|
| <b>Database:</b> | USA EDM 5000 Multi Users DB | <b>Local Co-ordinate Reference:</b> | Well GCU O15-2306 02H |
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc  | <b>TVD Reference:</b>               | HZ @ 6990.0ft         |
| <b>Project:</b>  | Rio Arriba County, NM       | <b>MD Reference:</b>                | HZ @ 6990.0ft         |
| <b>Site:</b>     | S15-T23N-R6W                | <b>North Reference:</b>             | True                  |
| <b>Well:</b>     | GCU O15-2306 02H            | <b>Survey Calculation Method:</b>   | Minimum Curvature     |
| <b>Wellbore:</b> | HZ                          |                                     |                       |
| <b>Design:</b>   | Plan #1                     |                                     |                       |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Rio Arriba 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                  |          | S15-T23N-R6W |                 |                   |             |
| Site Position:        |          | Northing:    | 1,900,961.44 ft | Latitude:         | 36.218280   |
| From:                 | Lat/Long | Easting:     | 1,282,659.90 ft | Longitude:        | -107.462859 |
| Position Uncertainty: | 0.0 ft   | Slot Radius: | 13.200 in       | Grid Convergence: | -0.72 °     |

|                      |                  |        |                     |                 |               |             |
|----------------------|------------------|--------|---------------------|-----------------|---------------|-------------|
| Well                 | GCU O15-2306 02H |        |                     |                 |               |             |
| Well Position        | +N/-S            | 0.0 ft | Northing:           | 1,901,260.75 ft | Latitude:     | 36.219194   |
|                      | +E/-W            | 0.0 ft | Easting:            | 1,285,345.75 ft | Longitude:    | -107.453768 |
| Position Uncertainty |                  | 0.0 ft | Wellhead Elevation: | 0.0 ft          | Ground Level: | 6,974.0 ft  |

|                  |                   |                    |                    |                  |                       |
|------------------|-------------------|--------------------|--------------------|------------------|-----------------------|
| <b>Wellbore</b>  | HZ                |                    |                    |                  |                       |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination</b> | <b>Dip Angle</b> | <b>Field Strength</b> |
|                  |                   |                    | (°)                | (°)              | (nT)                  |
|                  | IGRF2010          | 6/24/2014          | 9.33               | 63.00            | 50,174                |

|                          |                         |              |                      |                  |
|--------------------------|-------------------------|--------------|----------------------|------------------|
| <b>Design</b>            | Plan #1                 |              |                      |                  |
| <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                  | 135.17           |

| <b>Plan Sections</b> |                 |             |                     |            |            |                       |                      |                     |         |                   |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-------------------|
| 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    |                   |
| 1,500.0              | 0.00            | 0.00        | 1,500.0             | 0.0        | 0.0        | 0.00                  | 0.00                 | 0.00                | 0.00    |                   |
| 3,007.7              | 30.15           | 104.49      | 2,939.0             | -97.0      | 375.3      | 2.00                  | 2.00                 | 0.00                | 104.49  |                   |
| 5,645.4              | 30.15           | 104.49      | 5,219.8             | -428.4     | 1,658.1    | 0.00                  | 0.00                 | 0.00                | 0.00    |                   |
| 6,456.4              | 90.50           | 135.17      | 5,609.5             | -808.5     | 2,200.5    | 8.00                  | 7.44                 | 3.78                | 34.30   | O15-2306 02H POE  |
| 13,914.8             | 90.50           | 135.17      | 5,544.4             | -6,097.8   | 7,458.4    | 0.00                  | 0.00                 | 0.00                | 0.00    | O15-2306 02H PBHL |

# Planning Report

Database: USA EDM 5000 Multi Users DB  
 Company: EnCana Oil & Gas (USA) Inc  
 Project: Rio Arriba County, NM  
 Site: S15-T23N-R6W  
 Well: GCU O15-2306 02H  
 Wellbore: HZ  
 Design: Plan #1

Local Co-ordinate Reference: Well GCU O15-2306 02H  
 TVD Reference: HZ @ 6990.0ft  
 MD Reference: HZ @ 6990.0ft  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

## 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                       |                          |
| 100.0                     | 0.00               | 0.00           | 100.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 200.0                     | 0.00               | 0.00           | 200.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 300.0                     | 0.00               | 0.00           | 300.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 400.0                     | 0.00               | 0.00           | 400.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 500.0                     | 0.00               | 0.00           | 500.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       | 9 5/8"                   |
| 600.0                     | 0.00               | 0.00           | 600.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 700.0                     | 0.00               | 0.00           | 700.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 800.0                     | 0.00               | 0.00           | 800.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 900.0                     | 0.00               | 0.00           | 900.0                     | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 1,000.0                   | 0.00               | 0.00           | 1,000.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 1,100.0                   | 0.00               | 0.00           | 1,100.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 1,200.0                   | 0.00               | 0.00           | 1,200.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 1,300.0                   | 0.00               | 0.00           | 1,300.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 1,400.0                   | 0.00               | 0.00           | 1,400.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       |                          |
| 1,500.0                   | 0.00               | 0.00           | 1,500.0                   | 0.0           | 0.0           | 0.0                         | 0.00                        | 0.00                       | KOP @ 1500'              |
| 1,503.0                   | 0.06               | 104.49         | 1,503.0                   | 0.0           | 0.0           | 0.0                         | 2.00                        | 2.00                       | Ojo Alamo                |
| 1,600.0                   | 2.00               | 104.49         | 1,600.0                   | -0.4          | 1.7           | 1.5                         | 2.00                        | 2.00                       |                          |
| 1,694.1                   | 3.88               | 104.49         | 1,694.0                   | -1.6          | 6.4           | 5.7                         | 2.00                        | 2.00                       | Kirtland Shale           |
| 1,700.0                   | 4.00               | 104.49         | 1,699.8                   | -1.7          | 6.8           | 6.0                         | 2.00                        | 2.00                       |                          |
| 1,800.0                   | 6.00               | 104.49         | 1,799.5                   | -3.9          | 15.2          | 13.5                        | 2.00                        | 2.00                       |                          |
| 1,869.8                   | 7.40               | 104.49         | 1,868.8                   | -6.0          | 23.1          | 20.5                        | 2.00                        | 2.00                       | Fruitland Coal           |
| 1,900.0                   | 8.00               | 104.49         | 1,898.7                   | -7.0          | 27.0          | 24.0                        | 2.00                        | 2.00                       |                          |
| 2,000.0                   | 10.00              | 104.49         | 1,997.5                   | -10.9         | 42.1          | 37.4                        | 2.00                        | 2.00                       |                          |
| 2,100.0                   | 12.00              | 104.49         | 2,095.6                   | -15.7         | 60.6          | 53.8                        | 2.00                        | 2.00                       |                          |
| 2,117.3                   | 12.35              | 104.49         | 2,112.5                   | -16.6         | 64.1          | 57.0                        | 2.00                        | 2.00                       | Pictured Cliffs Ss.      |
| 2,200.0                   | 14.00              | 104.49         | 2,193.1                   | -21.3         | 82.4          | 73.2                        | 2.00                        | 2.00                       |                          |
| 2,217.8                   | 14.36              | 104.49         | 2,210.3                   | -22.4         | 86.6          | 76.9                        | 2.00                        | 2.00                       | Lewis Shale              |
| 2,300.0                   | 16.00              | 104.49         | 2,289.6                   | -27.8         | 107.4         | 95.4                        | 2.00                        | 2.00                       |                          |
| 2,400.0                   | 18.00              | 104.49         | 2,385.3                   | -35.1         | 135.8         | 120.6                       | 2.00                        | 2.00                       |                          |
| 2,500.0                   | 20.00              | 104.49         | 2,479.8                   | -43.2         | 167.3         | 148.6                       | 2.00                        | 2.00                       |                          |
| 2,600.0                   | 22.00              | 104.49         | 2,573.2                   | -52.2         | 202.0         | 179.4                       | 2.00                        | 2.00                       |                          |
| 2,700.0                   | 24.00              | 104.49         | 2,665.2                   | -62.0         | 239.8         | 213.0                       | 2.00                        | 2.00                       |                          |
| 2,800.0                   | 26.00              | 104.49         | 2,755.8                   | -72.5         | 280.7         | 249.3                       | 2.00                        | 2.00                       |                          |
| 2,900.0                   | 28.00              | 104.49         | 2,844.9                   | -83.9         | 324.7         | 288.4                       | 2.00                        | 2.00                       |                          |
| 2,964.2                   | 29.28              | 104.49         | 2,901.3                   | -91.6         | 354.4         | 314.8                       | 2.00                        | 2.00                       | Cliffhouse Ss.           |
| 3,000.0                   | 30.00              | 104.49         | 2,932.4                   | -96.0         | 371.6         | 330.1                       | 2.00                        | 2.00                       |                          |
| 3,007.7                   | 30.15              | 104.49         | 2,939.0                   | -97.0         | 375.3         | 333.4                       | 2.00                        | 2.00                       | EOB; Inc=30°             |
| 3,100.0                   | 30.15              | 104.49         | 3,018.9                   | -108.6        | 420.2         | 373.3                       | 0.00                        | 0.00                       |                          |
| 3,200.0                   | 30.15              | 104.49         | 3,105.3                   | -121.1        | 468.9         | 416.5                       | 0.00                        | 0.00                       |                          |
| 3,300.0                   | 30.15              | 104.49         | 3,191.8                   | -133.7        | 517.5         | 459.7                       | 0.00                        | 0.00                       |                          |
| 3,400.0                   | 30.15              | 104.49         | 3,278.3                   | -146.3        | 566.1         | 502.9                       | 0.00                        | 0.00                       |                          |
| 3,500.0                   | 30.15              | 104.49         | 3,364.7                   | -158.8        | 614.8         | 546.1                       | 0.00                        | 0.00                       |                          |
| 3,600.0                   | 30.15              | 104.49         | 3,451.2                   | -171.4        | 663.4         | 589.3                       | 0.00                        | 0.00                       |                          |
| 3,700.0                   | 30.15              | 104.49         | 3,537.7                   | -184.0        | 712.0         | 632.5                       | 0.00                        | 0.00                       |                          |
| 3,789.6                   | 30.15              | 104.49         | 3,615.1                   | -195.2        | 755.6         | 671.2                       | 0.00                        | 0.00                       | Menefee Fn.              |
| 3,800.0                   | 30.15              | 104.49         | 3,624.1                   | -196.5        | 760.7         | 675.7                       | 0.00                        | 0.00                       |                          |
| 3,900.0                   | 30.15              | 104.49         | 3,710.6                   | -209.1        | 809.3         | 718.9                       | 0.00                        | 0.00                       |                          |
| 4,000.0                   | 30.15              | 104.49         | 3,797.1                   | -221.7        | 857.9         | 762.1                       | 0.00                        | 0.00                       |                          |
| 4,100.0                   | 30.15              | 104.49         | 3,883.6                   | -234.2        | 906.6         | 805.3                       | 0.00                        | 0.00                       |                          |
| 4,200.0                   | 30.15              | 104.49         | 3,970.0                   | -246.8        | 955.2         | 848.5                       | 0.00                        | 0.00                       |                          |
| 4,300.0                   | 30.15              | 104.49         | 4,056.5                   | -259.4        | 1,003.8       | 891.7                       | 0.00                        | 0.00                       |                          |

# Planning Report

Database: USA EDM 5000 Multi Users DB  
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 Project: Rio Arriba County, NM  
 Site: S15-T23N-R6W  
 Well: GCU O15-2306 02H  
 Wellbore: HZ  
 Design: Plan #1

Local Co-ordinate Reference: Well GCU O15-2306 02H  
 TVD Reference: HZ @ 6990.0ft  
 MD Reference: HZ @ 6990.0ft  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

## 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       |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|--------------------------------|
| 4,400.0                   | 30.15              | 104.49         | 4,143.0                   | -271.9        | 1,052.5       | 934.9                       | 0.00                        | 0.00                       |                                |
| 4,500.0                   | 30.15              | 104.49         | 4,229.4                   | -284.5        | 1,101.1       | 978.1                       | 0.00                        | 0.00                       |                                |
| 4,599.1                   | 30.15              | 104.49         | 4,315.1                   | -297.0        | 1,149.3       | 1,020.9                     | 0.00                        | 0.00                       | Point Lookout Ss.              |
| 4,600.0                   | 30.15              | 104.49         | 4,315.9                   | -297.1        | 1,149.7       | 1,021.3                     | 0.00                        | 0.00                       |                                |
| 4,700.0                   | 30.15              | 104.49         | 4,402.4                   | -309.6        | 1,198.4       | 1,064.5                     | 0.00                        | 0.00                       |                                |
| 4,800.0                   | 30.15              | 104.49         | 4,488.8                   | -322.2        | 1,247.0       | 1,107.7                     | 0.00                        | 0.00                       |                                |
| 4,839.7                   | 30.15              | 104.49         | 4,523.2                   | -327.2        | 1,266.3       | 1,124.8                     | 0.00                        | 0.00                       | Mancos Shale                   |
| 4,900.0                   | 30.15              | 104.49         | 4,575.3                   | -334.8        | 1,295.6       | 1,150.9                     | 0.00                        | 0.00                       |                                |
| 5,000.0                   | 30.15              | 104.49         | 4,661.8                   | -347.3        | 1,344.3       | 1,194.1                     | 0.00                        | 0.00                       |                                |
| 5,100.0                   | 30.15              | 104.49         | 4,748.2                   | -359.9        | 1,392.9       | 1,237.3                     | 0.00                        | 0.00                       |                                |
| 5,200.0                   | 30.15              | 104.49         | 4,834.7                   | -372.5        | 1,441.5       | 1,280.5                     | 0.00                        | 0.00                       |                                |
| 5,300.0                   | 30.15              | 104.49         | 4,921.2                   | -385.0        | 1,490.2       | 1,323.6                     | 0.00                        | 0.00                       |                                |
| 5,400.0                   | 30.15              | 104.49         | 5,007.6                   | -397.6        | 1,538.8       | 1,366.8                     | 0.00                        | 0.00                       |                                |
| 5,500.0                   | 30.15              | 104.49         | 5,094.1                   | -410.2        | 1,587.4       | 1,410.0                     | 0.00                        | 0.00                       |                                |
| 5,549.0                   | 30.15              | 104.49         | 5,136.5                   | -416.3        | 1,611.3       | 1,431.2                     | 0.00                        | 0.00                       | Mancos Silt                    |
| 5,600.0                   | 30.15              | 104.49         | 5,180.6                   | -422.7        | 1,636.1       | 1,453.2                     | 0.00                        | 0.00                       |                                |
| 5,645.4                   | 30.15              | 104.49         | 5,219.8                   | -428.4        | 1,658.1       | 1,472.8                     | 0.00                        | 0.00                       | Start build/turn @ 5645' MD    |
| 5,700.0                   | 33.84              | 108.91         | 5,266.1                   | -436.8        | 1,685.8       | 1,498.3                     | 8.00                        | 6.76                       |                                |
| 5,800.0                   | 40.91              | 115.11         | 5,345.6                   | -459.8        | 1,741.9       | 1,554.1                     | 8.00                        | 7.07                       |                                |
| 5,829.2                   | 43.03              | 116.59         | 5,367.3                   | -468.3        | 1,759.5       | 1,572.5                     | 8.00                        | 7.25                       | Gallup Fn.                     |
| 5,900.0                   | 48.23              | 119.74         | 5,416.8                   | -492.2        | 1,804.1       | 1,620.9                     | 8.00                        | 7.34                       |                                |
| 6,000.0                   | 55.69              | 123.40         | 5,478.4                   | -533.5        | 1,871.0       | 1,697.4                     | 8.00                        | 7.46                       |                                |
| 6,100.0                   | 63.25              | 126.47         | 5,529.2                   | -582.9        | 1,941.5       | 1,782.1                     | 8.00                        | 7.55                       |                                |
| 6,200.0                   | 70.86              | 129.14         | 5,568.1                   | -639.3        | 2,014.2       | 1,873.4                     | 8.00                        | 7.61                       |                                |
| 6,300.0                   | 78.50              | 131.58         | 5,594.5                   | -701.7        | 2,087.6       | 1,969.4                     | 8.00                        | 7.65                       |                                |
| 6,400.0                   | 86.17              | 133.89         | 5,607.9                   | -769.0        | 2,160.3       | 2,068.4                     | 8.00                        | 7.67                       |                                |
| 6,448.5                   | 89.89              | 134.99         | 5,609.5                   | -802.9        | 2,194.9       | 2,116.8                     | 8.00                        | 7.67                       | Horizontal Target              |
| 6,456.4                   | 90.50              | 135.17         | 5,609.5                   | -808.5        | 2,200.5       | 2,124.7                     | 8.00                        | 7.67                       | LP @ 5609' TVD; 90.5° - 7" ICP |
| 6,500.0                   | 90.50              | 135.17         | 5,609.1                   | -839.4        | 2,231.2       | 2,168.3                     | 0.01                        | 0.01                       |                                |
| 6,600.0                   | 90.50              | 135.17         | 5,608.2                   | -910.3        | 2,301.7       | 2,268.3                     | 0.00                        | 0.00                       |                                |
| 6,700.0                   | 90.50              | 135.17         | 5,607.4                   | -981.2        | 2,372.2       | 2,368.3                     | 0.00                        | 0.00                       |                                |
| 6,800.0                   | 90.50              | 135.17         | 5,606.5                   | -1,052.2      | 2,442.7       | 2,468.3                     | 0.00                        | 0.00                       |                                |
| 6,900.0                   | 90.50              | 135.17         | 5,605.6                   | -1,123.1      | 2,513.2       | 2,568.3                     | 0.00                        | 0.00                       |                                |
| 7,000.0                   | 90.50              | 135.17         | 5,604.8                   | -1,194.0      | 2,583.7       | 2,668.3                     | 0.00                        | 0.00                       |                                |
| 7,100.0                   | 90.50              | 135.17         | 5,603.9                   | -1,264.9      | 2,654.2       | 2,768.3                     | 0.00                        | 0.00                       |                                |
| 7,200.0                   | 90.50              | 135.17         | 5,603.0                   | -1,335.8      | 2,724.7       | 2,868.3                     | 0.00                        | 0.00                       |                                |
| 7,300.0                   | 90.50              | 135.17         | 5,602.1                   | -1,406.7      | 2,795.2       | 2,968.3                     | 0.00                        | 0.00                       |                                |
| 7,400.0                   | 90.50              | 135.17         | 5,601.3                   | -1,477.7      | 2,865.7       | 3,068.3                     | 0.00                        | 0.00                       |                                |
| 7,500.0                   | 90.50              | 135.17         | 5,600.4                   | -1,548.6      | 2,936.2       | 3,168.3                     | 0.00                        | 0.00                       |                                |
| 7,600.0                   | 90.50              | 135.17         | 5,599.5                   | -1,619.5      | 3,006.7       | 3,268.3                     | 0.00                        | 0.00                       |                                |
| 7,700.0                   | 90.50              | 135.17         | 5,598.6                   | -1,690.4      | 3,077.2       | 3,368.3                     | 0.00                        | 0.00                       |                                |
| 7,800.0                   | 90.50              | 135.17         | 5,597.8                   | -1,761.3      | 3,147.7       | 3,468.3                     | 0.00                        | 0.00                       |                                |
| 7,900.0                   | 90.50              | 135.17         | 5,596.9                   | -1,832.3      | 3,218.2       | 3,568.3                     | 0.00                        | 0.00                       |                                |
| 8,000.0                   | 90.50              | 135.17         | 5,596.0                   | -1,903.2      | 3,288.7       | 3,668.3                     | 0.00                        | 0.00                       |                                |
| 8,100.0                   | 90.50              | 135.17         | 5,595.2                   | -1,974.1      | 3,359.2       | 3,768.3                     | 0.00                        | 0.00                       |                                |
| 8,200.0                   | 90.50              | 135.17         | 5,594.3                   | -2,045.0      | 3,429.7       | 3,868.3                     | 0.00                        | 0.00                       |                                |
| 8,300.0                   | 90.50              | 135.17         | 5,593.4                   | -2,115.9      | 3,500.2       | 3,968.3                     | 0.00                        | 0.00                       |                                |
| 8,400.0                   | 90.50              | 135.17         | 5,592.5                   | -2,186.8      | 3,570.7       | 4,068.3                     | 0.00                        | 0.00                       |                                |
| 8,500.0                   | 90.50              | 135.17         | 5,591.7                   | -2,257.8      | 3,641.2       | 4,168.2                     | 0.00                        | 0.00                       |                                |
| 8,600.0                   | 90.50              | 135.17         | 5,590.8                   | -2,328.7      | 3,711.7       | 4,268.2                     | 0.00                        | 0.00                       |                                |
| 8,700.0                   | 90.50              | 135.17         | 5,589.9                   | -2,399.6      | 3,782.1       | 4,368.2                     | 0.00                        | 0.00                       |                                |
| 8,800.0                   | 90.50              | 135.17         | 5,589.0                   | -2,470.5      | 3,852.6       | 4,468.2                     | 0.00                        | 0.00                       |                                |

# Planning Report

**Database:** USA EDM 5000 Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** Rio Arriba County, NM  
**Site:** S15-T23N-R6W  
**Well:** GCU O15-2306 02H  
**Wellbore:** HZ  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well GCU O15-2306 02H  
**TVD Reference:** HZ @ 6990.0ft  
**MD Reference:** HZ @ 6990.0ft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

## 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 |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|--------------------------|
| 8,900.0                   | 90.50              | 135.17         | 5,588.2                   | -2,541.4      | 3,923.1       | 4,568.2                     | 0.00                        | 0.00                       |                          |
| 9,000.0                   | 90.50              | 135.17         | 5,587.3                   | -2,612.4      | 3,993.6       | 4,668.2                     | 0.00                        | 0.00                       |                          |
| 9,100.0                   | 90.50              | 135.17         | 5,586.4                   | -2,683.3      | 4,064.1       | 4,768.2                     | 0.00                        | 0.00                       |                          |
| 9,200.0                   | 90.50              | 135.17         | 5,585.6                   | -2,754.2      | 4,134.6       | 4,868.2                     | 0.00                        | 0.00                       |                          |
| 9,300.0                   | 90.50              | 135.17         | 5,584.7                   | -2,825.1      | 4,205.1       | 4,968.2                     | 0.00                        | 0.00                       |                          |
| 9,400.0                   | 90.50              | 135.17         | 5,583.8                   | -2,896.0      | 4,275.6       | 5,068.2                     | 0.00                        | 0.00                       |                          |
| 9,500.0                   | 90.50              | 135.17         | 5,582.9                   | -2,966.9      | 4,346.1       | 5,168.2                     | 0.00                        | 0.00                       |                          |
| 9,600.0                   | 90.50              | 135.17         | 5,582.1                   | -3,037.9      | 4,416.6       | 5,268.2                     | 0.00                        | 0.00                       |                          |
| 9,700.0                   | 90.50              | 135.17         | 5,581.2                   | -3,108.8      | 4,487.1       | 5,368.2                     | 0.00                        | 0.00                       |                          |
| 9,800.0                   | 90.50              | 135.17         | 5,580.3                   | -3,179.7      | 4,557.6       | 5,468.2                     | 0.00                        | 0.00                       |                          |
| 9,900.0                   | 90.50              | 135.17         | 5,579.4                   | -3,250.6      | 4,628.1       | 5,568.2                     | 0.00                        | 0.00                       |                          |
| 10,000.0                  | 90.50              | 135.17         | 5,578.6                   | -3,321.5      | 4,698.6       | 5,668.2                     | 0.00                        | 0.00                       |                          |
| 10,100.0                  | 90.50              | 135.17         | 5,577.7                   | -3,392.5      | 4,769.1       | 5,768.2                     | 0.00                        | 0.00                       |                          |
| 10,200.0                  | 90.50              | 135.17         | 5,576.8                   | -3,463.4      | 4,839.6       | 5,868.2                     | 0.00                        | 0.00                       |                          |
| 10,300.0                  | 90.50              | 135.17         | 5,576.0                   | -3,534.3      | 4,910.1       | 5,968.2                     | 0.00                        | 0.00                       |                          |
| 10,400.0                  | 90.50              | 135.17         | 5,575.1                   | -3,605.2      | 4,980.6       | 6,068.2                     | 0.00                        | 0.00                       |                          |
| 10,500.0                  | 90.50              | 135.17         | 5,574.2                   | -3,676.1      | 5,051.1       | 6,168.2                     | 0.00                        | 0.00                       |                          |
| 10,600.0                  | 90.50              | 135.17         | 5,573.3                   | -3,747.1      | 5,121.6       | 6,268.2                     | 0.00                        | 0.00                       |                          |
| 10,700.0                  | 90.50              | 135.17         | 5,572.5                   | -3,818.0      | 5,192.1       | 6,368.2                     | 0.00                        | 0.00                       |                          |
| 10,800.0                  | 90.50              | 135.17         | 5,571.6                   | -3,888.9      | 5,262.6       | 6,468.2                     | 0.00                        | 0.00                       |                          |
| 10,900.0                  | 90.50              | 135.17         | 5,570.7                   | -3,959.8      | 5,333.1       | 6,568.2                     | 0.00                        | 0.00                       |                          |
| 11,000.0                  | 90.50              | 135.17         | 5,569.8                   | -4,030.7      | 5,403.6       | 6,668.2                     | 0.00                        | 0.00                       |                          |
| 11,100.0                  | 90.50              | 135.17         | 5,569.0                   | -4,101.6      | 5,474.1       | 6,768.1                     | 0.00                        | 0.00                       |                          |
| 11,200.0                  | 90.50              | 135.17         | 5,568.1                   | -4,172.6      | 5,544.6       | 6,868.1                     | 0.00                        | 0.00                       |                          |
| 11,300.0                  | 90.50              | 135.17         | 5,567.2                   | -4,243.5      | 5,615.1       | 6,968.1                     | 0.00                        | 0.00                       |                          |
| 11,400.0                  | 90.50              | 135.17         | 5,566.4                   | -4,314.4      | 5,685.6       | 7,068.1                     | 0.00                        | 0.00                       |                          |
| 11,500.0                  | 90.50              | 135.17         | 5,565.5                   | -4,385.3      | 5,756.1       | 7,168.1                     | 0.00                        | 0.00                       |                          |
| 11,600.0                  | 90.50              | 135.17         | 5,564.6                   | -4,456.2      | 5,826.6       | 7,268.1                     | 0.00                        | 0.00                       |                          |
| 11,700.0                  | 90.50              | 135.17         | 5,563.7                   | -4,527.2      | 5,897.1       | 7,368.1                     | 0.00                        | 0.00                       |                          |
| 11,800.0                  | 90.50              | 135.17         | 5,562.9                   | -4,598.1      | 5,967.6       | 7,468.1                     | 0.00                        | 0.00                       |                          |
| 11,900.0                  | 90.50              | 135.17         | 5,562.0                   | -4,669.0      | 6,038.1       | 7,568.1                     | 0.00                        | 0.00                       |                          |
| 12,000.0                  | 90.50              | 135.17         | 5,561.1                   | -4,739.9      | 6,108.6       | 7,668.1                     | 0.00                        | 0.00                       |                          |
| 12,100.0                  | 90.50              | 135.17         | 5,560.2                   | -4,810.8      | 6,179.0       | 7,768.1                     | 0.00                        | 0.00                       |                          |
| 12,200.0                  | 90.50              | 135.17         | 5,559.4                   | -4,881.7      | 6,249.5       | 7,868.1                     | 0.00                        | 0.00                       |                          |
| 12,300.0                  | 90.50              | 135.17         | 5,558.5                   | -4,952.7      | 6,320.0       | 7,968.1                     | 0.00                        | 0.00                       |                          |
| 12,400.0                  | 90.50              | 135.17         | 5,557.6                   | -5,023.6      | 6,390.5       | 8,068.1                     | 0.00                        | 0.00                       |                          |
| 12,500.0                  | 90.50              | 135.17         | 5,556.7                   | -5,094.5      | 6,461.0       | 8,168.1                     | 0.00                        | 0.00                       |                          |
| 12,600.0                  | 90.50              | 135.17         | 5,555.9                   | -5,165.4      | 6,531.5       | 8,268.1                     | 0.00                        | 0.00                       |                          |
| 12,700.0                  | 90.50              | 135.17         | 5,555.0                   | -5,236.3      | 6,602.0       | 8,368.1                     | 0.00                        | 0.00                       |                          |
| 12,800.0                  | 90.50              | 135.17         | 5,554.1                   | -5,307.3      | 6,672.5       | 8,468.1                     | 0.00                        | 0.00                       |                          |
| 12,900.0                  | 90.50              | 135.17         | 5,553.3                   | -5,378.2      | 6,743.0       | 8,568.1                     | 0.00                        | 0.00                       |                          |
| 13,000.0                  | 90.50              | 135.17         | 5,552.4                   | -5,449.1      | 6,813.5       | 8,668.1                     | 0.00                        | 0.00                       |                          |
| 13,100.0                  | 90.50              | 135.17         | 5,551.5                   | -5,520.0      | 6,884.0       | 8,768.1                     | 0.00                        | 0.00                       |                          |
| 13,200.0                  | 90.50              | 135.17         | 5,550.6                   | -5,590.9      | 6,954.5       | 8,868.1                     | 0.00                        | 0.00                       |                          |
| 13,300.0                  | 90.50              | 135.17         | 5,549.8                   | -5,661.8      | 7,025.0       | 8,968.1                     | 0.00                        | 0.00                       |                          |
| 13,400.0                  | 90.50              | 135.17         | 5,548.9                   | -5,732.8      | 7,095.5       | 9,068.1                     | 0.00                        | 0.00                       |                          |
| 13,500.0                  | 90.50              | 135.17         | 5,548.0                   | -5,803.7      | 7,166.0       | 9,168.1                     | 0.00                        | 0.00                       |                          |
| 13,600.0                  | 90.50              | 135.17         | 5,547.1                   | -5,874.6      | 7,236.5       | 9,268.1                     | 0.00                        | 0.00                       |                          |
| 13,700.0                  | 90.50              | 135.17         | 5,546.3                   | -5,945.5      | 7,307.0       | 9,368.0                     | 0.00                        | 0.00                       |                          |
| 13,800.0                  | 90.50              | 135.17         | 5,545.4                   | -6,016.4      | 7,377.5       | 9,468.0                     | 0.00                        | 0.00                       |                          |
| 13,900.0                  | 90.50              | 135.17         | 5,544.5                   | -6,087.4      | 7,448.0       | 9,568.0                     | 0.00                        | 0.00                       |                          |
| 13,914.8                  | 90.50              | 135.17         | 5,544.4                   | -6,097.8      | 7,458.4       | 9,582.8                     | 0.00                        | 0.00                       | TD at 13914.8            |

# Planning Report

Database: USA EDM 5000 Multi Users DB  
 Company: EnCana Oil & Gas (USA) Inc  
 Project: Rio Arriba County, NM  
 Site: S15-T23N-R6W  
 Well: GCU O15-2306 02H  
 Wellbore: HZ  
 Design: Plan #1

Local Co-ordinate Reference: Well GCU O15-2306 02H  
 TVD Reference: HZ @ 6990.0ft  
 MD Reference: HZ @ 6990.0ft  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|

## Targets

| Target Name<br>- hit/miss target<br>- Shape               | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude  | Longitude   |
|-----------------------------------------------------------|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| O15-2306 02H PBHL<br>- plan hits target center<br>- Point | 0.00          | 0.00         | 5,544.4  | -6,097.8   | 7,458.4    | 1,895,070.78  | 1,292,727.89 | 36.202442 | -107.428491 |
| O15-2306 02H POE<br>- plan hits target center<br>- Point  | 0.00          | 0.00         | 5,609.5  | -808.5     | 2,200.5    | 1,900,424.99  | 1,287,536.04 | 36.216973 | -107.446309 |

## Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name   | Casing Diameter (in) | Hole Diameter (in) |
|---------------------|---------------------|--------|----------------------|--------------------|
| 500.0               | 500.0               | 9 5/8" | 9.625                | 12.250             |
| 6,456.4             | 5,609.5             | 7" ICP | 5.500                | 6.000              |

## Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name                | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|---------------------|-----------|---------|-------------------|
| 1,503.0             | 1,503.0             | Ojo Alamo           |           | -0.50   | 135.17            |
| 1,694.1             | 1,694.0             | Kirtland Shale      |           | -0.50   | 135.17            |
| 1,869.8             | 1,869.0             | Fruitland Coal      |           | -0.50   | 135.17            |
| 2,117.3             | 2,113.0             | Pictured Cliffs Ss. |           | -0.50   | 135.17            |
| 2,217.8             | 2,211.0             | Lewis Shale         |           | -0.50   | 135.17            |
| 2,964.2             | 2,904.0             | Cliffhouse Ss.      |           | -0.50   | 135.17            |
| 3,789.6             | 3,621.0             | Menefee Fn.         |           | -0.50   | 135.17            |
| 4,599.1             | 4,324.0             | Point Lookout Ss.   |           | -0.50   | 135.17            |
| 4,839.7             | 4,533.0             | Mancos Shale        |           | -0.50   | 135.17            |
| 5,549.0             | 5,149.0             | Mancos Silt         |           | -0.50   | 135.17            |
| 5,829.2             | 5,381.0             | Gallup Fn.          |           | -0.50   | 135.17            |
| 6,448.5             | 5,628.0             | Horizontal Target   |           | -0.50   | 135.17            |

## Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Comment                     |
|---------------------|---------------------|------------|------------|-----------------------------|
| 1,500.0             | 1,500.0             | 0.0        | 0.0        | KOP @ 1500'                 |
| 3,007.7             | 2,939.0             | -97.0      | 375.3      | EOB; Inc=30°                |
| 5,645.4             | 5,219.8             | -428.4     | 1,658.1    | Start build/turn @ 5645' MD |
| 6,456.4             | 5,609.5             | -808.5     | 2,200.5    | LP @ 5609' TVD; 90.5°       |
| 13,914.8            | 5,544.4             | -6,097.8   | 7,458.4    | TD at 13914.8               |

**Gallo Canyon Unit O15-2306 02H**

**SHL: SWSE Section 15, T23N, R6W**

**516 FSL and 2029 FEL**

**BHL: NWNW Section 25, T23N, R6W**

**345 FNL and 115 FWL**

**Rio Arriba County, New Mexico**

**Lease Number: NMNM 17009**

3. All construction materials for the well pad will consist of native borrow and subsoil accumulated during well pad construction. If additional fill or surfacing material is required, it will be obtained from existing permitted or private sources and will be hauled in by trucks over existing access roads.

The maximum cut will be approximately 18.1 feet on the south corner (corner 3) and the maximum fill will be approximately 17.7 feet on the north corner (corner 6).

4. As determined during the onsite on March 11, 2014, the following best management practices will be implemented:

Water will be diverted around the well pad and silt traps will be installed as needed upon interim reclamation.

5. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, and dozer. Construction for the access road and well pad will take approximately 4 weeks.

**C. Pipeline**

See the Standard SF-299 Application for authorization to construct, operate, maintain and terminate a 990 foot, up to 6-inch outside diameter, buried steel well connect pipeline that was submitted to the BLM on February 11, 2013.

**7. METHODS FOR HANDLING WASTE**

**A. Cuttings**

1. A closed-loop system will be used. Cuttings will be moved through a shaker system on the drill rig that separates drilling fluids from the cuttings. Cuttings will be stored onsite in above-ground storage tanks. Cuttings will be pulled from the storage tanks, mixed with saw dust or similar absorbent material, and disposed of at the Envirotech, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.
2. The closed-loop system storage tanks will be adequately sized to ensure confinement of all fluids and will provide sufficient freeboard to prevent uncontrolled releases.
3. A 20-mil liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.

**B. Drilling Fluids**

1. A closed-loop system will be used. Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical. Residual fluids will be vacuumed from the storage tanks and disposed of at Basin Disposal, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.
2. The closed-loop system storage tanks will be adequately sized to ensure confinement of all fluids and will provide sufficient freeboard to prevent uncontrolled releases.
3. The closed-loop system storage tanks will be placed in bermed secondary containment sized to accommodate a minimum of 110 percent of the volume of the largest storage tank.
4. A 20-mil liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.

encana

**VIA OVERNIGHT PRIORITY MAIL**

August 14, 2014

Bureau of Land Management  
Farmington Field Office  
6251 College Blvd Suite A  
Farmington, New Mexico 87402

**Re: Application for Permit to Drill  
Gallo Canyon Unit O15-2306 02H**

RECEIVED

AUG 15 2014

Farmington Field Office  
Bureau of Land Management

To Whom It May Concern:

For your records, Encana Oil & Gas (USA) Inc. (Encana) submits an original and four copies of an Application for Permit to Drill the Gallo Canyon Unit O15-2306 02H oil well. Also enclosed is the processing fee for \$6,500.

Encana requests tight-hole status on this proposed well.

Please feel free to contact me directly at 720-876-3533 with any questions or concerns.

Encana Oil & Gas (USA) Inc.



Katie Wegner  
Regulatory Analyst

Enc. Lybrook E13-2306 02H APD Submittals

Encana Oil & Gas (USA) Inc.

370 17<sup>th</sup> Street, Suite 1700, Denver Colorado 80202 720.876.3533 (O) 303.482.6819 (C) [Katie.Wegner@encana.com](mailto:Katie.Wegner@encana.com)

Driving Directions:

1. From the intersection of US Hwy 64 and US Hwy 550 in Bloomfield N.M. travel south 53.6 miles on US Hwy 550.
2. Turn right at MP 197.7.
3. Turn Left at intersection of US Hwy 550 and Rio Arriba CO RD 379.
4. Travel north on Rio Arriba CO Road 379 for 0.89 miles.
5. Turn right and travel east 0.71 miles. Turn right and travel south along staked access road 0.3 miles to staked well pad.

WELLHEAD BLOWOUT CONTROL SYSTEM

**encana**

Well Name and Number:  
GCU O15-2306 02H

