

RECEIVED

Form 3160-3
(August 2007)

NOV 03 2011

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Farmington Field
Bureau of Land Management

Case Serial No.
NM-16507 and NM-76870

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		6. If Indian, Allottee or Tribe Name
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator Encana Oil & Gas (USA) Inc.		8. Lease Name and Well No. Meadows 108-2314 01H
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202	3b. Phone No. (include area code) 720-876-3989	9. API Well No. 30-045-35320
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1599' FSL and 292' FEL Section 8 T30N, R14W I At proposed prod. zone 1599' FSL and 330' FWL Section 8, T30N, R14W L		10. Field and Pool, or Exploratory Wildcat (Gallup) Clock Gallup
14. Distance in miles and direction from nearest town or post office* +/- 15.1 miles northwest of Farmington, NM		11. Sec., T. R. M. or Blk. and Survey or Area Section 8, T30N, R14W NMPM
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) BHL is 330' from west lease line	16. No. of acres in lease NM-16057 800 acres NM-76870 320 acres	12. County or Parish San Juan
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Poles Paradise 1 is 149' south of wellbore	19. Proposed Depth 6086' TVD/ 9519' MD	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5540' GL, 5554' KB	22. Approximate date work will start* 02/01/2012	17. Spacing Unit dedicated to this well 320 acres 160 S12 N12 S2 Section 8 T30N, R14W
23. Estimated duration 45 days		20. BLM/BIA Bond No. on file 60-1481 COB000235 NW300

24. Attachments

OIL CONS. DIV.
DIST. 3

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 Forenda R Linster	Name (Printed/Typed) Brenda R. Linster	Date 11.01.11
Title Regulatory Advisor		
Approved by (Signature) [Signature]	Name (Printed/Typed) AFM	Date 3/5/12
Title AFM	Office FEO	

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 on page 2)

CONFIDENTIAL

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

APR 03 2012 ca

NMOCD

Hold C104
for Directional Survey
and "As Drilled" plat

Hold C104
for Directional Survey
and "As Drilled" plat
Review of follow
19.15.161062
C102 collected Ack'd NSL
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

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

Hold C104
for Directional Survey
and "As Drilled" plat

RECEIVED

NOV 03 2011

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

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

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department
Bureau of Land Management
Form C-102
Revised August 1, 2011
Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35320	*Pool Code 96219	*Pool Name WILDCAT 30N14W01, GALLUP (0)
*Property Code 39121	*Property Name MEADOWS 108-3014	*Well Number 01H
*OGRIID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 5544'

10 Surface Location

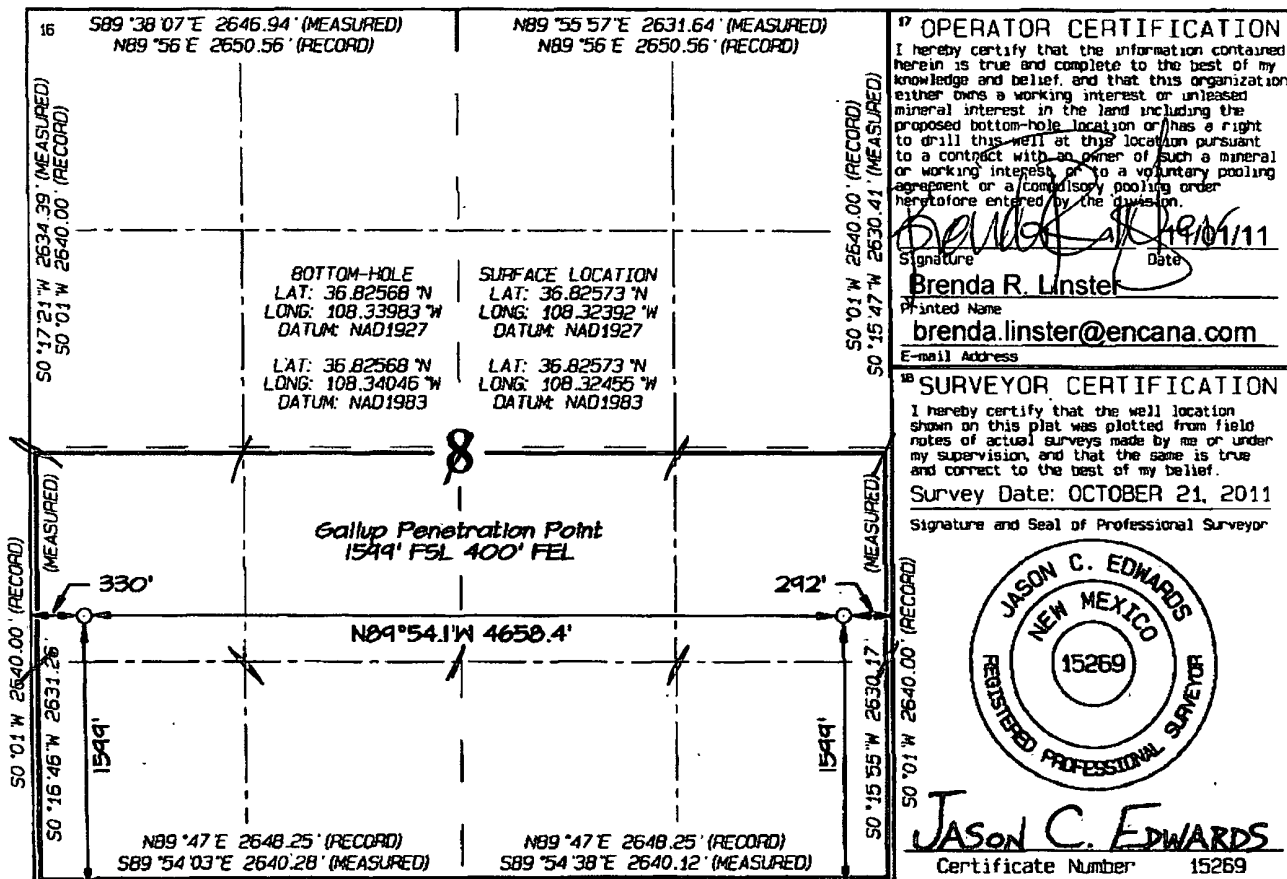
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	8	30N	14W		1599	SOUTH	292	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	8	30N	14W		1599	SOUTH	330	WEST	SAN JUAN

12 Dedicated Acres 160 320.8 Acres - (S/2)/N/2	13 Joint or Infill	14 Consolidation Code	15 Order No.
--	--------------------	-----------------------	--------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



SHEET A
CONFIDENTIAL

6

Directions from the Intersection of State Hwy 170 & Twin Peaks Blvd
in Farmington, NM to Encana Oil & Gas (USA) Inc. Meadows 108-3014 01H
1599' FSL & 292' FEL, Section 8, T30N, R14W, N.M.P.M., San Juan County, NM
Latitude : 36.82573°N Longitude : 108.32455°W Datum : NAD1983

From the intersection of State Hwy 170 & Twin Peaks Blvd in Farmington, NM, travel Westerly on Twin Peaks Blvd for 6.8 miles to Kirtland Transfer Station;

Go right (Northerly) for 200' to fork in road;

Go left (Westerly) for 0.6 miles to fork in road;

Go right (Northerly) for 4.9 miles to fork in road;

Go right (North-easterly) for 0.7 miles to fork in road;

Go left (South-easterly) for 1.2 miles to fork in road;

Go right (South-easterly) for 0.3 miles to fork in road;

Go right (South-easterly) for 0.1 miles to fork in road;

Go right (South-westerly) for 0.3 miles to new access on right-hand side of existing roadway which continues for 610' to staked location.

Meadows I08-3014 01H
SHL: SENESE Section 8, T30N, R14W
1599 FSL and 292 FEL
BHL: SWNWSW Section 8, T30N, R14W
1599 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NM-16507 and NM-76870

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

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

<u>Formation</u>	<u>Depth (TVD)</u>
Kirtland	Surface
Fruitland Coal	656'
Pictured Cliffs	1089'
Lewis	1271'
Cliffhouse	2634'
Menefee	2774'
Point Lookout	3529'
Mancos	3894'
Gallup	4872'
Upper Carlile	5289'
Juana Lopez	5309'
Lower Carlile	5392'
Greenhorn	5640'
Graneros	5692'
Dakota	5739'
Morrison	5986'

The referenced surface elevation is 5540', KB 5554'

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

<u>Substance</u>	<u>Formation</u>	<u>Depth (TVD)</u>
Gas	Fruitland Coal	656'
Gas	Pictured Cliffs	1089'
Gas	Cliffhouse	2634'
Gas	Point Lookout	3529'
Oil/Gas	Mancos	3894'
Oil/Gas	Dakota	5739'

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 either 70 percent of the casings internal yield pressure or 100 percent of rated working pressure.

Meadows I08-3014 01H
SHL: SENESE Section 8, T30N, R14W
1599 FSL and 292 FEL
BHL: SWNWSW Section 8, T30N, R14W
1599 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NM-16507 and NM-76870

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

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

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

- a) The proposed casing design is as follows:

Casing	Depth	Hole Size	Csg Size	Weight	Grade
Conductor	0-60'	26"	20"	94#	H40, STC New
Surface	0'-500'	17 1/2"	13 3/8"	48#	H40, STC New
Intermediate	0'-4400'	12 1/4"	9 5/8"	40#	J55, STC New
Production Liner	4200'-9519'	8 1/2"	5 1/2"	17#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (lb/ft)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lb)	Collapse	Burst	Tension
13 3/8"	48	H40	STC	740	1730	322	1.125	1.1	1.5
9 5/8"	40	J55	STC	2570	3950	452	1.125	1.1	1.5
5 1/2"	17	B80	LTC	6290	7740	320	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.

Meadows 108-3014 01H
SHL: SENESE Section 8, T30N, R14W
1599 FSL and 292 FEL
BHL: SWNWSW Section 8, T30N, R14W
1599 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NM-16507 and NM-76870

b) The proposed cementing program is as follows:

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

Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	80sk	Redi-mix Construction Grade Cement	Surface	None
Surface	500'	Lead: 130sk Tail: 100sk	Lead: Varicem Poz Cmt 1% Cal-Seal 12.7ppg, 1.78cuft/sk Tail: Type III Prem Plus 6% Salt 13.5ppg 1.77cuft/sk	Surface	1 per joint on bottom 3 joints
Intermediate	4400'	50% open hole excess Lead: 1276sk Tail: 176sk	Lead: Fillseal Poz Cmt 1% foam 13ppg, 1.43cuft/sk Tail: HalCem Class H 1% foam 13ppg 1.43cuft/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	4200'-9519'	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 adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

Review 19.15.16.10.G2

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

Directional plans are attached.

Meadows I08-3014 01H
SHL: SENESE Section 8, T30N, R14W
1599 FSL and 292 FEL
BHL: SWNWSW Section 8, T30N, R14W
1599 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NM-16507 and NM-76870

Well Phase	Description	Proposed Depth (TVD/MD)	Formation
1	Vertical Pilot Hole	6086'/6086'	Morrison
2	Horizontal Lateral	5144'/9519'	Gallup

Proposed Plug Back Procedure:

TOPS: TVD
KOP 4571'
Graneros Shale 5692'
Dakota 5739'

Set 2 cement plugs in 8 1/2" hole
Plug A: Bottom plug over Dakota
Plug B: Kick plug at KOP

Plug A

1. TIH to TD of vertical pilot hole at 6086'
2. Spot 400' cement plug from 5686' - 6086'
 - a. 135sx of Class A cement (1.18ft³/sk yield)
 - b. Spot tuned spacer
3. Pull uphole and reverse out
4. TIH and tag plug, proceed when cement is solid
5. Fill hole and move uphole to spot kick plug

Plug B

1. Spot 300' kick plug from 4471' - 4771'
 - a. 91sx of Class A cement with salt (1.3ft³/sk yield)
 - b. Spot tuned spacer
2. Pull uphole and reverse out
3. Pump bottoms up 2 times, pull uphole
4. Tag plug, drill ahead to KOP when cement is solid

6. DRILLING FLUIDS PROGRAM

a) Phase 1, Vertical Pilot Hole:

Hole Size (in)	TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
26"	0-60'	Fresh Water	8.3-9.2	38-100	4-28
17 1/2"	0-500'	Fresh Water	8.4-8.6	60-70	NC
12 1/4"	500-4400'	Fresh Water LSND	8.5-8.8	40-50	8-10
8 1/2"	4400-6086'	Fresh Water LSND	8.5-8.8	40-50	8-10

b) Phase 2, Kick off to Horizontal Lateral:

Hole Size (in)	TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
8 1/2"	4571' (KOP)- 9519'	Synthetic Oil Based Mud	8.6-9.0	15-25	<15

Meadows I08-3014 01H
SHL: SENESE Section 8, T30N, R14W
1599 FSL and 292 FEL
BHL: SWNWSW Section 8, T30N, R14W
1599 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NM-16507 and NM-76870

- 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, including fresh water and oil-based operations. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystems, Inc. The location will be lined in accordance with the Surface Use Plan of Operations.

7. TESTING, CORING and LOGGING

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

Open Hole:

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

Cased Hole:

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

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

The anticipated bottom hole pressure is +/- 2,848 psi based on a 9.0 ppg at 6086' TVD of the vertical pilot hole. No abnormal pressure or temperatures are anticipated.

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

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on March 1, 2012. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

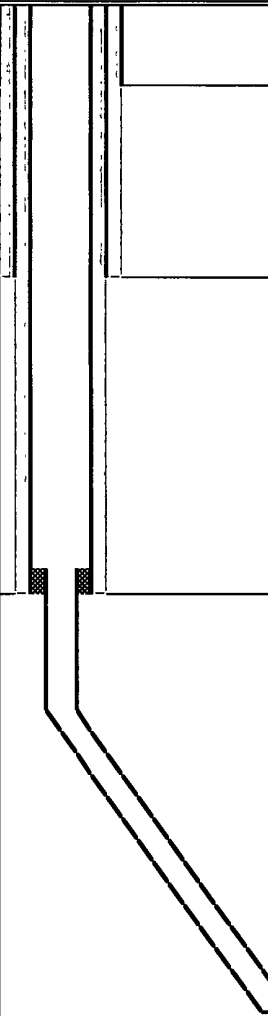
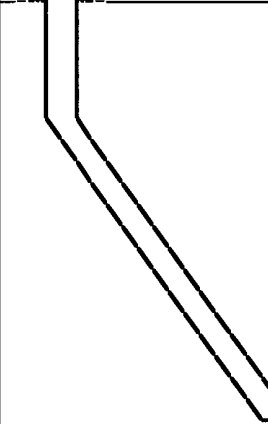
It is anticipated that the drilling of this well will take approximately 45 days.

10. NOTIFICATION REQUIREMENTS & OTHER ITEMS

- a) The spud date will be reported orally to the Authorized Officer within 24 hours prior to spudding. Written notification via a Sundry Notice (Form 3160-5) will be submitted to the Authorized Officer within 5 days of spudding.
- b) The Authorized Officer will be notified at least 24 hours in advance of BOP pressure tests.

Meadows I08-3014 01H
SHL: SENESE Section 8, T30N, R14W
1599 FSL and 292 FEL
BHL: SWNWSW Section 8, T30N, R14W
1599 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NM-16507 and NM-76870

- c) The Authorized Officer will be notified at least 24 hours in advance of running and cementing casing strings.
- d) A Sundry Notice (Form 3160-5) will be submitted to the Authorized Officer within 30 days of setting each string of casing. Information will include the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated to the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date the work was done.
- e) Should the well be successfully completed for production, the Authorized Officer will be notified orally within 24 hours of placing the well on production. Written notification via a Sundry Notice (Form 3160-5) will be submitted to the Authorized Officer within 5 days of placing on production.
- f) Whether the well is completed as a dry hole or as a producer, a Well Completion and Recompletion Report and Log (Form 3160-4) will be submitted no later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3160. One copy of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the Authorized Officer.
- g) Starting with the month in which operations commence and continuing each month until the well is physically plugged and abandoned, this well will be reported on Form 3160-6, Monthly Report of Operations. Reports will be filed by the 10th day of the second month following the operation month.
- h) All off-lease storage, off-lease measurement, commingling on-lease or off-lease will have prior written approval from the Authorized Officer.
- i) Oil and gas measurement facilities will be installed on the well location. Oil and gas meters will be calibrated in place prior to any deliveries. The Authorized Officer will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the Authorized Officer. All meter measurement facilities will conform to the API standards for liquid hydrocarbons and to AGA standards for natural gas measurement.
- j) A site facility diagram as required by 43 CFR 3162.7-5(d) will be submitted within 60 days after measurement facilities are installed. Any venting or flaring of gas will be done in accordance with Notice to Lessees (NTL-4A) and may need prior approval from the Authorized Officer.
- k) Minor Events will be reported on the Monthly Report of Operations and Production (Form 3160-6). All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in Notice to Lessee (NTL-3A) will be reported to the Authorized Officer. Major events will be reported verbally within 24 hours, followed by a written report within 15 days. Other than Major Events will be reported in writing within 15 days.

LOC: Sec 36-T30N-R14W County: San Juan WELL: Meadows I08-3014 01H			Encana Natural Gas WELL SUMMARY			encana natural gas		ENG: J. Fox/ A. RIG: GLE: 5540 RKBE: 5598		11/2/11
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVDMD			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION	
			60	60'		26	20" 94# 80sx Type I Neat 48 8ppg cmt	Fresh wtr 8 3-9 2		
Surveys After csg is run	None Mud logger onsite at spud	Kirtland Shale	500	500		17 1/2	13 3/8" 48ppf H40 STC TOC @ surface	Fresh wtr 8 4-8 6	Vertical <1°	
Surveys every 500'		Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss Mancos Sh	656 1089 1271 2634 2774 3529 3894 4400	4400		12 1/4	9 5/8" 40ppf J55 STC TOC @ surface	Fresh Wtr 8 5-8 8	Vertical <1°	
Surveys every 500' Gyro at CP MWD Gamma Directional	Triple Combo	KICK OFF PT	4571	5476		8 1/2	5 1/2" 17ppf I/L80 LTC Running external swellable csg packers for isolation of prod string	Fresh Wtr LSND-in pilot 8 5-8 8 Switch to OBM at K/O 8 6-9 0	KOP 4571 10 deg/100'	
		Gallup Top horz target Prodelta Gallup Upper Carlile Shale Juana Lopez Sh Lower Carlile Sh Greenhorn LS Graneros Sh Dakota Grp Morrison Pilot Hole TD	4872 5144 5214 5289 5309 5392 5640 5692 5739 5986 6086			4043' Lateral	8 6-9 0 OBM	7deg updip 5108'TVD TD = 9,519' MD		

NOTES:

- 1) Drill with 26" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 13 3/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to 4400' , 12 1/4" hole size
- 5) Run OH logs, R&C 9 5/8" casing, circ cmt 50' into sur csg shoe
- 6) Drill 8 1/2" hole to core point, core Gallup/Niobrara & possibly Dakota, confirm coring details
- 7) RIH with 8 1/2" bit to drill 100' rathole, run OH logs
- 8) Plugback to 4400' with cmt
- 9) PU directional tools and K/O cmt plug and start curve at 10deg/100' build rate
- 10) Drill curve to 20-30deg then switch over to OBM system
- 11) Land at 90deg, drill 4043' lateral to 9,519', run 5 1/2" liner with external swellable csg packers

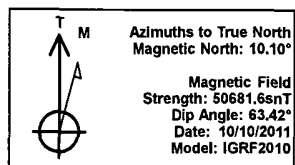
CONFIDENTIAL



Encana Oil & Gas
 Project: San Juan Co., NM (NAD83)
 Site: Sec.8-T30N-R14W
 Well: Meadows I08-3014 01H
 Wellbore: Wellbore #1
 Design: Design #1
 Lat: 36.825860
 Long: -108.324680
 Pad GL: 5540.00
 KB: WELL @ 5554.00usft

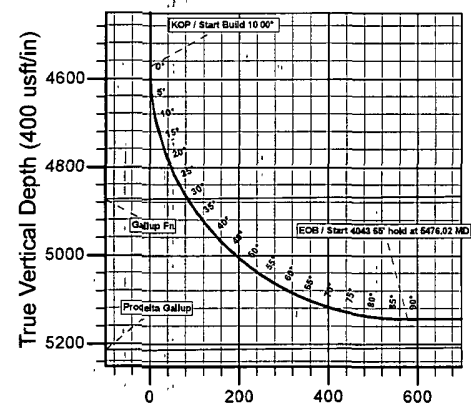


PROJECT DETAILS: San Juan Co., NM (NAD83)	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Western Zone
System Datum:	Mean Sea Level



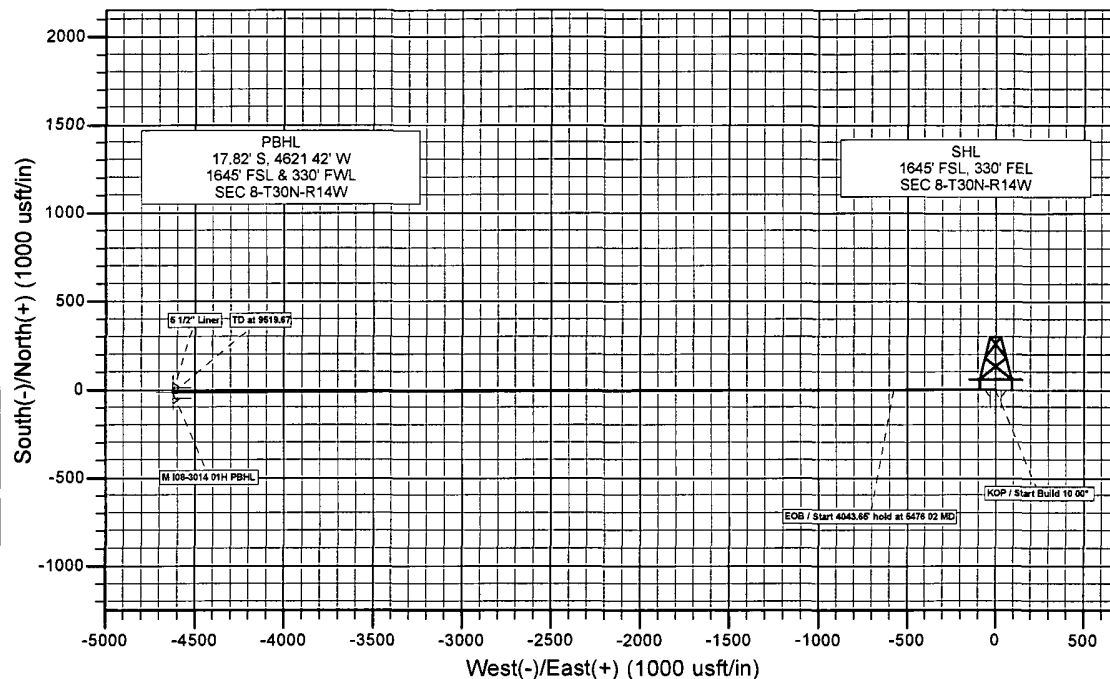
WELL DETAILS: Meadows I08-3014 01H					
+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
0.00	0.00	2120304.445	2579287.415	36.825860	-108.324680

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
M I08-3014 01H PBHL	5108.67	-17.82	-4621.42	36.825810	-108.340470	Point



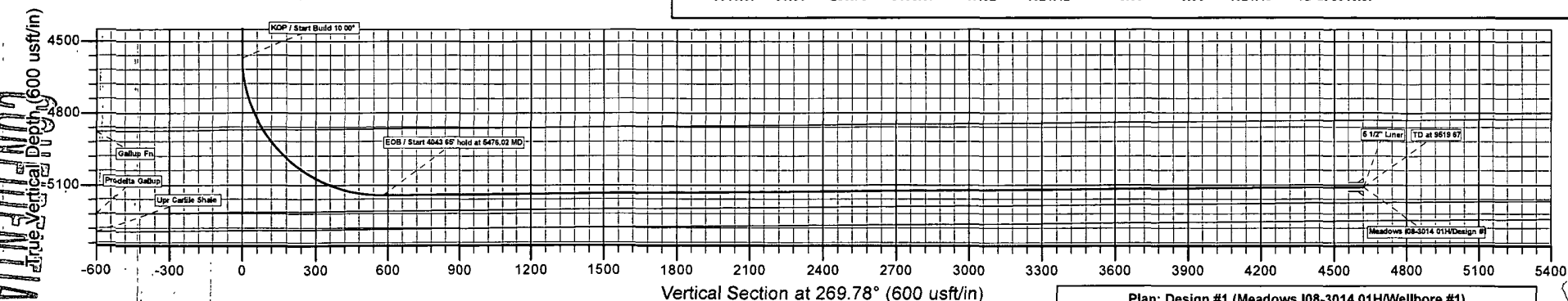
CASING DETAILS				
TVD	MD	Name	Size	
500.00	500.00	13 3/8" Csg.	13-3/8	
4400.00	4400.00	9 5/8" Csg.	9-5/8	
5108.67	9519.67	5 1/2" Liner	5-1/2	

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation		
656.00	656.00	Fruitland Coal		
1089.00	1089.00	Pictured Cliffs Ss.		
1271.00	1271.00	Lewis Shale		
2634.00	2634.00	Cliffhouse Ss.		
2774.00	2774.00	Menefee Fm.		
3529.00	3529.00	Point Lookout Ss.		
3894.00	3894.00	Mancos Shale		
4871.26	4887.04	Gallup Fm.		



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP / Start Build 10.00°
4571.02	0.00	0.00	4571.02	0.00	0.00	0.00	0.00	0.00	EOB / Start 4043.65° hold at 5476.02 MD
5476.02	90.50	269.78	5143.96	-2.23	-577.95	10.00	269.78	577.96	TD at 9519.67
9519.67	90.50	269.78	5108.67	-17.82	-4621.42	0.00	0.00	4621.45	

CONFIDENTIAL



Plan: Design #1 (Meadows I08-3014 01H/Wellbore #1)	
Created By: Bret Wolford	Date: 21:42, October 10 2011

Database:	EDMDBBW	Local Co-ordinate Reference:	Well Meadows I08-3014 01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 5554.00usft
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 5554.00usft
Site:	Sec.8-T30N-R14W	North Reference:	True
Well:	Meadows I08-3014 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	San Juan Co., NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Sec.8-T30N-R14W		
Site Position:		Northing:	2,120,304.449 usft
From:	Lat/Long	Easting:	2,579,287.415 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	36.825860
		Longitude:	-108.324680
		Grid Convergence:	-0.29 °

Well	Meadows I08-3014 01H		
Well Position	+N/-S	0.00 usft	Northing: 2,120,304.449 usft
	+E/-W	0.00 usft	Easting: 2,579,287.415 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	36.825860
		Longitude:	-108.324680
		Ground Level:	5,540.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	10/10/11	10 10
			Dip Angle (°) 63.42
			Field Strength (nT) 50,682

Design	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	5,108.67	0.00	0.00
			Direction (°) 269.78

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,571.02	0.00	0.00	4,571.02	0.00	0.00	0.00	0.00	0.00	0.00	
5,476.02	90.50	269.78	5,143.96	-2.23	-577.95	10.00	10.00	0.00	269.78	M I08-3014 01H PBH
9,519.67	90.50	269.78	5,108.67	-17.82	-4,621.42	0.00	0.00	0.00	0.00	M I08-3014 01H PBH

Database:	EDMDBBW	Local Co-ordinate Reference:	Well Meadows I08-3014 01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 5554.00usft
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 5554.00usft
Site:	Sec.8-T30N-R14W	North Reference:	True
Well:	Meadows I08-3014 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8" Csg.									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland Coal									
656.00	0.00	0.00	656.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Pictured Cliffs Ss.									
1,089.00	0.00	0.00	1,089.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Lewis Shale									
1,271.00	0.00	0.00	1,271.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
Cliffhouse Ss.									
2,634.00	0.00	0.00	2,634.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
Menefee Fr.									
2,774.00	0.00	0.00	2,774.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Point Lookout Ss.									
3,529.00	0.00	0.00	3,529.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
Mancos Shale									

Database:	EDMDBBW	Local Co-ordinate Reference:	Well Meadows 108-3014 01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 5554.00usft
Project:	San Juan Co , NM (NAD83)	MD Reference:	WELL @ 5554.00usft
Site:	Sec.8-T30N-R14W	North Reference:	True
Well:	Meadows 108-3014 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,894.00	0.00	0.00	3,894.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8" Csg.									
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP / Start Build 10.00°									
4,571.02	0.00	0.00	4,571.02	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	2.90	269.78	4,599.99	0.00	-0.73	0.73	10.00	10.00	0.00
4,650.00	7.90	269.78	4,649.75	-0.02	-5.43	5.43	10.00	10.00	0.00
4,700.00	12.90	269.78	4,698.91	-0.06	-14.46	14.46	10.00	10.00	0.00
4,750.00	17.90	269.78	4,747.10	-0.11	-27.73	27.73	10.00	10.00	0.00
4,800.00	22.90	269.78	4,793.95	-0.17	-45.15	45.15	10.00	10.00	0.00
4,850.00	27.90	269.78	4,839.11	-0.26	-66.59	66.59	10.00	10.00	0.00
Gallup Fn.									
4,887.04	31.60	269.78	4,871.26	-0.33	-84.96	84.96	10.00	10.00	0.00
4,900.00	32.90	269.78	4,882.22	-0.35	-91.88	91.88	10.00	10.00	0.00
4,950.00	37.90	269.78	4,922.96	-0.47	-120.83	120.83	10.00	10.00	0.00
5,000.00	42.90	269.78	4,961.03	-0.59	-153.23	153.23	10.00	10.00	0.00
5,050.00	47.90	269.78	4,996.13	-0.73	-188.82	188.82	10.00	10.00	0.00
5,100.00	52.90	269.78	5,027.99	-0.88	-227.33	227.33	10.00	10.00	0.00
5,150.00	57.90	269.78	5,056.37	-1.04	-268.47	268.47	10.00	10.00	0.00
5,200.00	62.90	269.78	5,081.07	-1.20	-311.93	311.93	10.00	10.00	0.00
5,250.00	67.90	269.78	5,101.87	-1.38	-357.38	357.38	10.00	10.00	0.00
5,300.00	72.90	269.78	5,118.64	-1.56	-404.46	404.47	10.00	10.00	0.00
5,350.00	77.90	269.78	5,131.24	-1.75	-452.83	452.84	10.00	10.00	0.00
5,400.00	82.90	269.78	5,139.58	-1.94	-502.12	502.12	10.00	10.00	0.00
5,450.00	87.90	269.78	5,143.59	-2.13	-551.94	551.94	10.00	10.00	0.00
EOB / Start 4043.65° hold at 5476.02 MD									
5,476.02	90.50	269.78	5,143.96	-2.23	-577.95	577.96	10.00	10.00	0.00
5,500.00	90.50	269.78	5,143.75	-2.32	-601.93	601.94	0.00	0.00	0.00
5,600.00	90.50	269.78	5,142.87	-2.71	-701.93	701.93	0.00	0.00	0.00
5,700.00	90.50	269.78	5,142.00	-3.09	-801.92	801.93	0.00	0.00	0.00
5,800.00	90.50	269.78	5,141.13	-3.48	-901.92	901.93	0.00	0.00	0.00
5,900.00	90.50	269.78	5,140.26	-3.86	-1,001.91	1,001.92	0.00	0.00	0.00
6,000.00	90.50	269.78	5,139.38	-4.25	-1,101.91	1,101.92	0.00	0.00	0.00
6,100.00	90.50	269.78	5,138.51	-4.64	-1,201.91	1,201.91	0.00	0.00	0.00
6,200.00	90.50	269.78	5,137.64	-5.02	-1,301.90	1,301.91	0.00	0.00	0.00
6,300.00	90.50	269.78	5,136.77	-5.41	-1,401.90	1,401.91	0.00	0.00	0.00
6,400.00	90.50	269.78	5,135.89	-5.79	-1,501.89	1,501.90	0.00	0.00	0.00
6,500.00	90.50	269.78	5,135.02	-6.18	-1,601.89	1,601.90	0.00	0.00	0.00
6,600.00	90.50	269.78	5,134.15	-6.56	-1,701.88	1,701.89	0.00	0.00	0.00
6,700.00	90.50	269.78	5,133.27	-6.95	-1,801.88	1,801.89	0.00	0.00	0.00
6,800.00	90.50	269.78	5,132.40	-7.33	-1,901.87	1,901.89	0.00	0.00	0.00
6,900.00	90.50	269.78	5,131.53	-7.72	-2,001.87	2,001.88	0.00	0.00	0.00
7,000.00	90.50	269.78	5,130.66	-8.11	-2,101.86	2,101.88	0.00	0.00	0.00
7,100.00	90.50	269.78	5,129.78	-8.49	-2,201.86	2,201.88	0.00	0.00	0.00
7,200.00	90.50	269.78	5,128.91	-8.88	-2,301.85	2,301.87	0.00	0.00	0.00
7,300.00	90.50	269.78	5,128.04	-9.26	-2,401.85	2,401.87	0.00	0.00	0.00
7,400.00	90.50	269.78	5,127.17	-9.65	-2,501.85	2,501.86	0.00	0.00	0.00
7,500.00	90.50	269.78	5,126.29	-10.03	-2,601.84	2,601.86	0.00	0.00	0.00

Database:	EDMDBBW	Local Co-ordinate Reference:	Well Meadows I08-3014 01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 5554.00usft
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 5554.00usft
Site:	Sec.8-T30N-R14W	North Reference:	True
Well:	Meadows I08-3014 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,600.00	90.50	269.78	5,125.42	-10.42	-2,701.84	2,701.86	0.00	0.00	0.00
7,700.00	90.50	269.78	5,124.55	-10.81	-2,801.83	2,801.85	0.00	0.00	0.00
7,800.00	90.50	269.78	5,123.68	-11.19	-2,901.83	2,901.85	0.00	0.00	0.00
7,900.00	90.50	269.78	5,122.80	-11.58	-3,001.82	3,001.85	0.00	0.00	0.00
8,000.00	90.50	269.78	5,121.93	-11.96	-3,101.82	3,101.84	0.00	0.00	0.00
8,100.00	90.50	269.78	5,121.06	-12.35	-3,201.81	3,201.84	0.00	0.00	0.00
8,200.00	90.50	269.78	5,120.19	-12.73	-3,301.81	3,301.83	0.00	0.00	0.00
8,300.00	90.50	269.78	5,119.31	-13.12	-3,401.80	3,401.83	0.00	0.00	0.00
8,400.00	90.50	269.78	5,118.44	-13.51	-3,501.80	3,501.83	0.00	0.00	0.00
8,500.00	90.50	269.78	5,117.57	-13.89	-3,601.80	3,601.82	0.00	0.00	0.00
8,600.00	90.50	269.78	5,116.69	-14.28	-3,701.79	3,701.82	0.00	0.00	0.00
8,700.00	90.50	269.78	5,115.82	-14.66	-3,801.79	3,801.81	0.00	0.00	0.00
8,800.00	90.50	269.78	5,114.95	-15.05	-3,901.78	3,901.81	0.00	0.00	0.00
8,900.00	90.50	269.78	5,114.08	-15.43	-4,001.78	4,001.81	0.00	0.00	0.00
9,000.00	90.50	269.78	5,113.20	-15.82	-4,101.77	4,101.80	0.00	0.00	0.00
9,100.00	90.50	269.78	5,112.33	-16.20	-4,201.77	4,201.80	0.00	0.00	0.00
9,200.00	90.50	269.78	5,111.46	-16.59	-4,301.76	4,301.80	0.00	0.00	0.00
9,300.00	90.50	269.78	5,110.59	-16.98	-4,401.76	4,401.79	0.00	0.00	0.00
9,400.00	90.50	269.78	5,109.71	-17.36	-4,501.75	4,501.79	0.00	0.00	0.00
9,500.00	90.50	269.78	5,108.84	-17.75	-4,601.75	4,601.78	0.00	0.00	0.00
TD at 9519.67 - M I08-3014 01H PBHL									
9,519.67	90.50	269.78	5,108.67	-17.82	-4,621.42	4,621.45	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
M I08-3014 01H PBHL	0.00	0.00	5,108.67	-17.82	-4,621.42	2,120,310.383	2,574,665.967	36.825810	-108.340470
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
500.00	500.00	13 3/8" Csg.	13-3/8	17-1/2
9,519.67	5,108.67	5 1/2" Liner	5-1/2	6
4,400.00	4,400.00	9 5/8" Csg.	9-5/8	12-1/4

Database:	EDMDBBW	Local Co-ordinate Reference:	Well Meadows 108-3014 01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 5554.00usft
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 5554.00usft
Site:	Sec.8-T30N-R14W	North Reference:	True
Well:	Meadows 108-3014 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
656.00	656.00	Fruitland Coal		-0.50	269.78
1,089.00	1,089.00	Pictured Cliffs Ss.		-0.50	269.78
1,271.00	1,271.00	Lewis Shale		-0.50	269.78
2,634.00	2,634.00	Cliffhouse Ss.		-0.50	269.78
2,774.00	2,774.00	Menefee Fn.		-0.50	269.78
3,529.00	3,529.00	Point Lookout Ss.		-0.50	269.78
3,894.00	3,894.00	Mancos Shale		-0.50	269.78
4,887.04	4,872.00	Gallup Fn.		-0.50	269.78

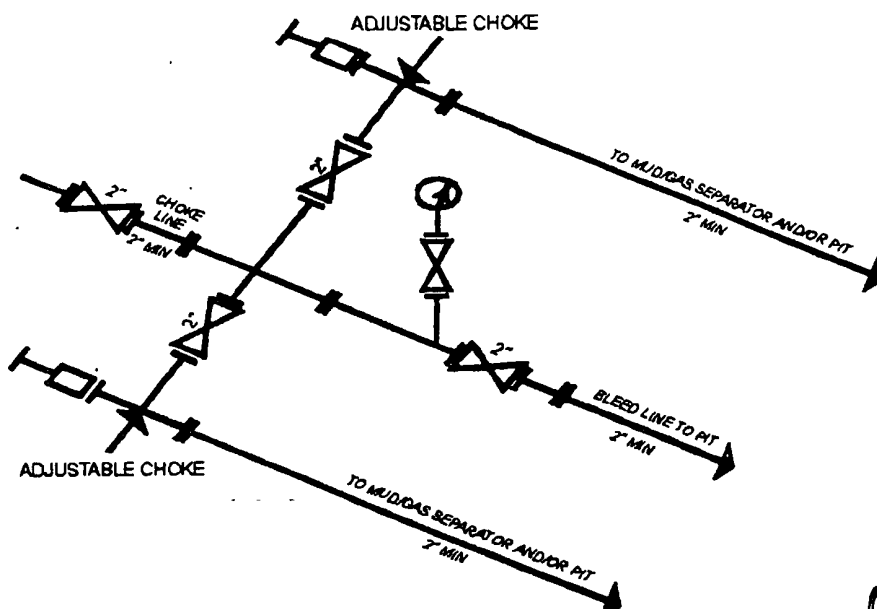
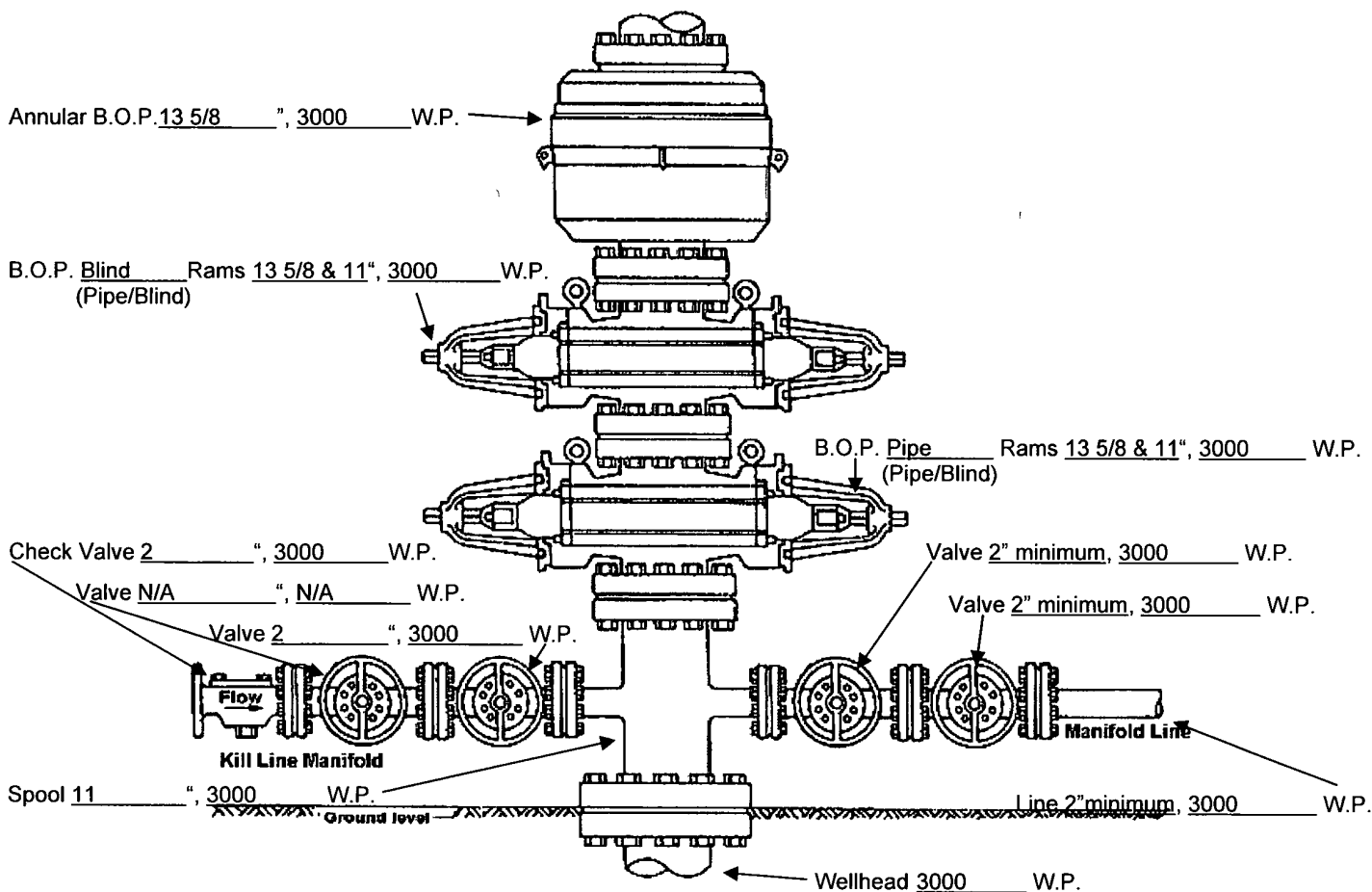
Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,571.02	4,571.02	0.00	0.00	KOP / Start Build 10.00°
5,476.02	5,143.96	-2.23	-577.95	EOB / Start 4043 65' hold at 5476.02 MD
9,519.67	5,108.67	-17.82	-4,621.42	TD at 9519.67

WELLHEAD BLOWOUT CONTROL SYSTEM



Well name and number:

Meadows I08-3014 01H



CONFIDENTIAL