

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Tony Delfin
Acting 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: 11-13-14

Well information;

Operator Encana, Well Name and Number Hutton Canyon Unit #308

API# 30-045-35024, Section 11, Township 23N, Range 8E 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
- ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ 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.

Charlene
NMOCD Approved by Signature

10-11-2016
Date

APD was held for unit approval - This unit
Never approved see next sundy for Name
Change

DEC 11 2014

Form 3160-3
(August 2007)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

RECEIVED


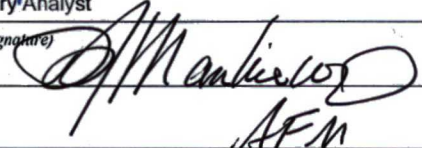
NOV 14 2014

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 118132 & NMNM 76842
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Encana Oil & Gas (USA) Inc.		7. If Unit or CA Agreement, Name and No. PENDING
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202		8. Lease Name and Well No. Hutton Canyon Unit M11-2308 03H
3b. Phone No. (include area code) 720-876-3533		9. API Well No. 30-045-35624
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 383' FSL and 225' FWL Section 11, T23N, R8W SWSW At proposed prod. zone 330' FSL and 400' FWL Section 13, T23N, R8W SWSW		10. Field and Pool, or Exploratory PENDING
11. Sec., T. R. M. or Blk. and Survey or Area Section 11, T23N, R8W NMPM BHL: Sec 13, T23N, R8W		12. County or Parish San Juan
13. State NM		
14. Distance in miles and direction from nearest town or post office* +/- 46.1 miles southwest of the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) BHL is 330' FSL Sec 13, T23N, R8W	16. No. of acres in lease NMNM 118132 - 2,320 ac. NMNM 76842 - 2,560 ac.	17. Spacing Unit dedicated to this well 2,560 acres- Sec 11,13,14 T23N, R8W and Sec 18 T23N R7W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. +/- 30' S of Hutton Canyon Unit M11-2308 02H	19. Proposed Depth 5,183' TVD/13,885' MD	20. BLM/BIA Bond No. on file COB-000235
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,905' GL, 6,920' KB	22. Approximate date work will start* 05/12/2015	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 	Name (Printed/Typed) Rosalie Thim	Date 11/13/14
Title Regulatory Analyst		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 11/28/14
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 on page 2)

**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**

10-12-16
NMOCDF

DEC 11 2014

DISTRICT I1625 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720**DISTRICT II**811 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1225 Fax: (505) 748-9720**DISTRICT III**1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170**DISTRICT IV**1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3482State of New Mexico
Energy, Minerals & Natural Resources DepartmentForm C-102
Revised August 1, 2011Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code PENDING	³ Pool Name PENDING
⁴ Property Code	⁵ Property Name HUTTON CANYON UNIT M11-2308	⁶ Well Number 03H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6905.3'

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
M	11	23N	8W		383'	SOUTH	225'	WEST	SAN JUAN

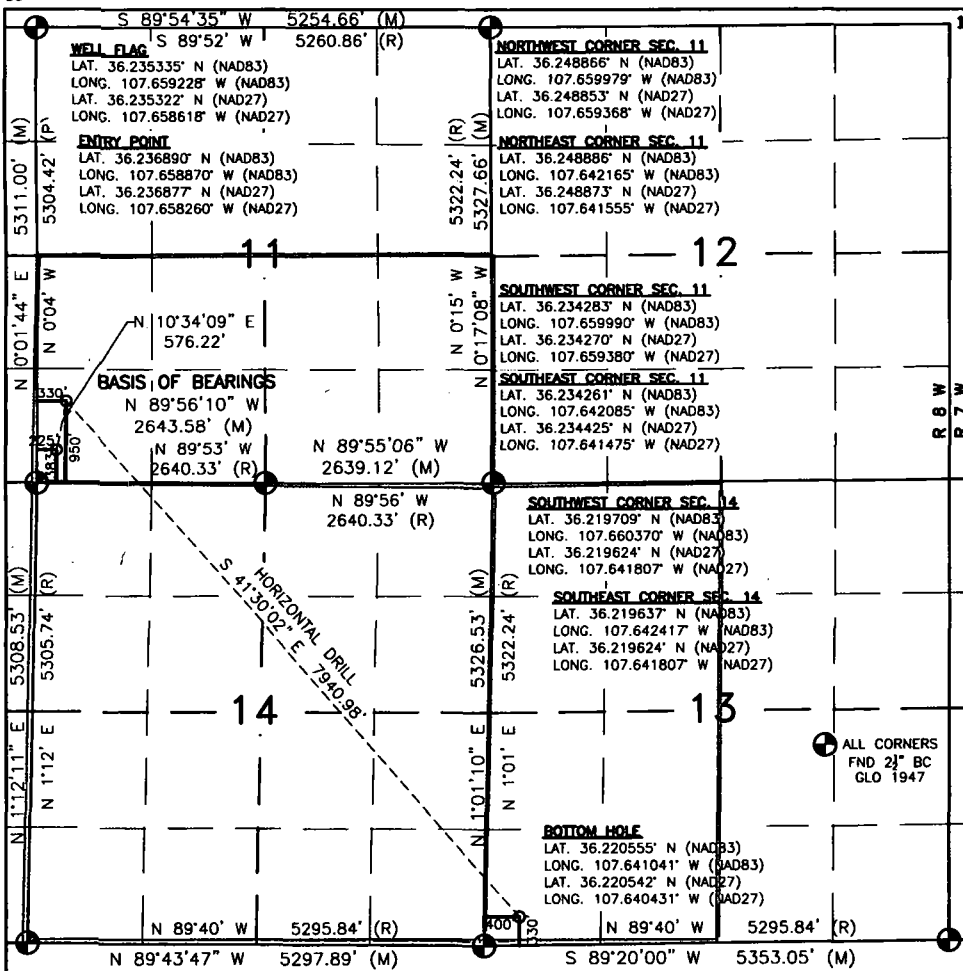
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	13	23N	8W		330'	SOUTH	400'	WEST	SAN JUAN

¹² Dedicated Acres UNDIVIDED UNIT: 2560 ACERS SEC. 11, 13, 14 (T23N, R8W) AND SEC. 16 (T23N, R7W) PENETRATED SPACING UNIT: 1200 ACERS ALL OF SEC. 14, S2 SEC. 11, W2 SEC. 13	¹³ Project Area PROJECT AREA	¹⁴ Joint or Infill	¹⁵ Consolidation Code	¹⁶ Order No. PENDING
--	--	-------------------------------	----------------------------------	------------------------------------

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

16



17 OPERATOR CERTIFICATION

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

Rosalie Thim 1/13/14
Signature Date

Rosalie Thim

Printed Name

rosalie.thim@encana.com

E-mail Address

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.

MAY 21, 2014

Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell
DAVID R. RUSSELL
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
10201

DAVID RUSSELL
Certificate Number 10201

Hutton Canyon Unit M11-2308 03H
 SHL: 383' FSL, 225' FWL Sec 11 23N 08W
 BHL: 330' FSL, 400' FWL Sec 13 23N 08W
 San Juan, New Mexico

Encana Oil & Gas (USA) Inc.
Drilling Plan

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

Formation	Depth (TVD) units = feet
San Jose Fn.	n/a
Nacimiento Fn.	surface
Ojo Alamo Ss.	991
Kirtland Shale	1,081
Fruitland Coal	1,354
Pictured Cliffs Ss.	1,587
Lewis Shale	1,686
Cliffhouse Ss.	2,387
Menefee Fn.	3,140
Point Lookout Ss.	3,995
Mancos Shale	4,191
Mancos Silt	4,726
Gallup Fn.	4,984
Base Gallup	5,339

The referenced surface elevation is 6905', KB 6920'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,354
Oil/Gas	Pictured Cliffs Ss.	1,587
Oil/Gas	Cliffhouse Ss.	2,387
Gas	Menefee Fn.	3,140
Oil/Gas	Point Lookout Ss.	3,995
Oil/Gas	Mancos Shale	4,191
Oil/Gas	Mancos Silt	4,726
Oil/Gas	Gallup Fn.	4,984

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

Hutton Canyon Unit M11-2308 03H
 SHL: 383' FSL, 225' FWL Sec 11 23N 08W
 BHL: 330' FSL, 400' FWL Sec 13 23N 08W
 San Juan, New Mexico

3. PRESSURE CONTROL

- a) Pressure control equipment and configuration will be designed to meet 2M standards.
- b) Working pressure on rams and BOPE will be 3,000 psi.
- c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.
- d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
- e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
- f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.
- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times.
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

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

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Conductor	0'-60'	26"	16"	42.09#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5500'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5400'-13885'	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.

Hutton Canyon Unit M11-2308 03H
SHL: 383' FSL, 225' FWL Sec 11 23N 08W
BHL: 330' FSL, 400' FWL Sec 13 23N 08W
San Juan, New Mexico

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

b) The proposed cementing program is as follows:

Casing	Depth (MD)	Cement Volume (sks)	Cement Type & Yield	Designed TOC	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	228 sks	Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5500'	100% open hole excess Stage 1 Lead: 512 sks Stage 1 Tail: 391 sks	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail: Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5400'-13885'	50% OH excess Stage 1 Blend Total: 471sks	Blend: Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwow Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL-52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk	Liner Hanger	N/A

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

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

5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed horizontal well will have a kick off point of 1800'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5183'/13885'	Gallup

Hutton Canyon Unit M11-2308 03H
SHL: 383' FSL, 225' FWL Sec 11 23N 08W
BHL: 330' FSL, 400' FWL Sec 13 23N 08W
San Juan, 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'-5136'/5500'	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"	5136'/5500'- 5183'/13885'	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 +/- 2463 psi based on a 9.0 ppg at 5262' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

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

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on May 12, 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: 383' FSL, 225' FWL Sec 11 23N 08W County: San Juan WELL: Hutton Canyon Unit M11-2308 03H			Encana Natural Gas WELL SUMMARY						ENG: Sydney Kuyke 11/12/14 RIG: Aztec 920 GLE: 6905.3 RKBE: 6919.8	
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH				HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD						
			60 0	60'			26	16" 42.09# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2	
Multi-Well pad take survey every stand and run anti-collision report prior to spud	None	San Jose Fn. Nacimiento Fn. 9 5/8" Csg	surface 500	500.00			12 1/4	9 5/8" 36ppf J55 STC TOC Surface with 100% OH Excess: 228 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water.	Fresh wtr 8.3-10	Vertical <1°
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Ss.	991			8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 903sks Stage 1 Lead: 512 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk. Stage 1 Tail: 391 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°	
		Kirtland Shale	1,081							
		Fruitland Coal	1,354							
		Pictured Cliffs Ss.	1,587							
		Lewis Shale	1,686							
Surveys every 30' through the curve	Mud logger onsite	Cliffhouse Ss.	2,387			6 1/8	100' overlap at liner top 8385' Drilled Lateral	WBM 8.3-10	Horz Inc/TVD 90.8deg/5261.8ft TD = 13885.1 MD	
		Menefee Fn.	3,140							
		Point Lookout Ss.	3,895							
		Mancos Shale	4,191							
		KOP	1,800							1,800
		Mancos Silt	4,726							
		Gallup Fn.	4,984							
		7" Csg	5,136							5,500'
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD	5,262 5,183	13,885						
		Base Gallup	5,339							
MWD Gamma Directional							4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 471sks Stage 1 Blend: 471 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL-52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk.			

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 1800', 8 3/4 inch holedsize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 5500' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~90 deg, drill lateral to 13885' run 4 1/2 inch cemented liner

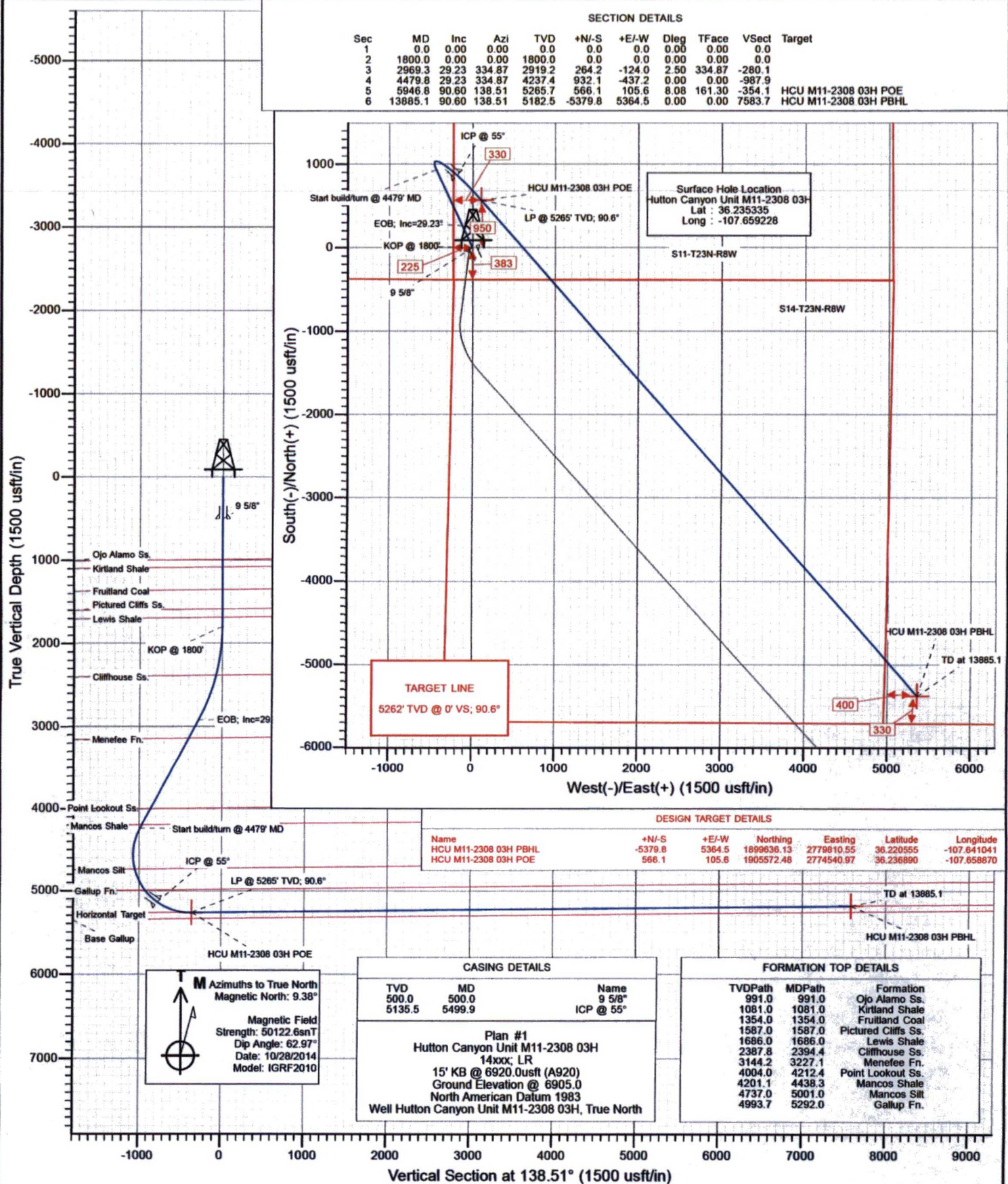


Project: San Juan County, NM
 Site: S11-T23N-R8W
 Well: Hutton Canyon Unit M11-2308 03H
 Wellbore: HZ
 Design: Plan #1

DEC 11 2014



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2969.3	29.23	334.87	2919.2	264.2	-124.0	2.50	334.87	-280.1	
4	4479.8	29.23	334.87	4237.4	932.1	-437.2	0.00	0.00	-987.9	
5	5946.8	90.60	138.51	5265.7	566.1	105.6	8.08	161.30	-354.1	HCU M11-2308 03H POE
6	13885.1	90.60	138.51	5182.5	-5379.8	5364.5	0.00	0.00	7583.7	HCU M11-2308 03H PBHL



Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S11-T23N-R8W
 Well: Hutton Canyon Unit M11-2308 03H
 Wellbore: HZ
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well Hutton Canyon Unit M11-2308 03H
 15' KB @ 6920.0usft (A920)
 15' KB @ 6920.0usft (A920)
 True
 Minimum Curvature

Project San Juan County, NM

Map System: US State Plane 1983 System Datum: Mean Sea Level
 Geo Datum: North American Datum 1983
 Map Zone: New Mexico Western Zone

Site S11-T23N-R8W

Site Position: Northing: 1,904,986.18 usft Latitude: 36.235280
 From: Lat/Long Easting: 2,774,415.21 usft Longitude: -107.659300
 Position Uncertainty: 0.0 usft Slot Radius: 13-3/16" Grid Convergence: 0.10 °

Well Hutton Canyon Unit M11-2308 03H

Well Position +N/-S 0.0 usft Northing: 1,905,006.24 usft Latitude: 36.235335
 +E/-W 0.0 usft Easting: 2,774,436.41 usft Longitude: -107.659228
 Position Uncertainty 0.0 usft Wellhead Elevation: 0.0 usft Ground Level: 6,905.0 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/28/2014	9.38	62.97	50,123

Design Plan #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	138.51

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,969.3	29.23	334.87	2,919.2	264.2	-124.0	2.50	2.50	0.00	334.87	
4,479.8	29.23	334.87	4,237.4	932.1	-437.2	0.00	0.00	0.00	0.00	
5,946.8	90.60	138.51	5,265.7	566.1	105.6	8.08	4.18	11.15	161.30	HCU M11-2308 03H F
13,885.1	90.60	138.51	5,182.5	-5,379.8	5,364.5	0.00	0.00	0.00	0.00	HCU M11-2308 03H F

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S11-T23N-R8W
Well: Hutton Canyon Unit M11-2308 03H
Wellbore: HZ
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Hutton Canyon Unit M11-2308 03H
15' KB @ 6920.0usft (A920)
15' KB @ 6920.0usft (A920)
True
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
991.0	0.00	0.00	991.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,081.0	0.00	0.00	1,081.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,354.0	0.00	0.00	1,354.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,587.0	0.00	0.00	1,587.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,686.0	0.00	0.00	1,686.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1800'
1,900.0	2.50	334.87	1,900.0	2.0	-0.9	-2.1	2.50	2.50	
2,000.0	5.00	334.87	1,999.7	7.9	-3.7	-8.4	2.50	2.50	
2,100.0	7.50	334.87	2,099.1	17.8	-8.3	-18.8	2.50	2.50	
2,200.0	10.00	334.87	2,198.0	31.5	-14.8	-33.4	2.50	2.50	
2,300.0	12.50	334.87	2,296.0	49.2	-23.1	-52.1	2.50	2.50	
2,394.4	14.86	334.87	2,387.8	69.4	-32.6	-73.5	2.50	2.50	Cliffhouse Ss.
2,400.0	15.00	334.87	2,393.2	70.7	-33.2	-74.9	2.50	2.50	
2,500.0	17.50	334.87	2,489.2	96.0	-45.0	-101.8	2.50	2.50	
2,600.0	20.00	334.87	2,583.8	125.1	-58.7	-132.6	2.50	2.50	
2,700.0	22.50	334.87	2,677.0	157.9	-74.1	-167.4	2.50	2.50	
2,800.0	25.00	334.87	2,768.6	194.4	-91.2	-206.0	2.50	2.50	
2,900.0	27.50	334.87	2,858.2	234.4	-110.0	-248.5	2.50	2.50	
2,969.3	29.23	334.87	2,919.2	264.2	-124.0	-280.1	2.50	2.50	EOB; Inc=29.23°
3,000.0	29.23	334.87	2,946.0	277.8	-130.3	-294.4	0.00	0.00	
3,100.0	29.23	334.87	3,033.3	322.0	-151.1	-341.3	0.00	0.00	
3,200.0	29.23	334.87	3,120.5	366.2	-171.8	-388.2	0.00	0.00	
3,227.1	29.23	334.87	3,144.2	378.2	-177.4	-400.9	0.00	0.00	Menefee Fn.
3,300.0	29.23	334.87	3,207.8	410.5	-192.5	-435.0	0.00	0.00	
3,400.0	29.23	334.87	3,295.1	454.7	-213.3	-481.9	0.00	0.00	
3,500.0	29.23	334.87	3,382.3	498.9	-234.0	-528.7	0.00	0.00	
3,600.0	29.23	334.87	3,469.6	543.1	-254.8	-575.6	0.00	0.00	
3,700.0	29.23	334.87	3,556.9	587.3	-275.5	-622.4	0.00	0.00	
3,800.0	29.23	334.87	3,644.1	631.5	-296.2	-669.3	0.00	0.00	
3,900.0	29.23	334.87	3,731.4	675.7	-317.0	-716.2	0.00	0.00	
4,000.0	29.23	334.87	3,818.7	719.9	-337.7	-763.0	0.00	0.00	
4,100.0	29.23	334.87	3,905.9	764.2	-358.4	-809.9	0.00	0.00	
4,200.0	29.23	334.87	3,993.2	808.4	-379.2	-856.7	0.00	0.00	
4,212.4	29.23	334.87	4,004.0	813.9	-381.8	-862.6	0.00	0.00	Point Lookout Ss.

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S11-T23N-R8W
Well: Hutton Canyon Unit M11-2308 03H
Wellbore: HZ
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Hutton Canyon Unit M11-2308 03H
15' KB @ 6920.0usft (A920)
15' KB @ 6920.0usft (A920)
True
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,300.0	29.23	334.87	4,080.5	852.6	-399.9	-903.6	0.00	0.00	
4,400.0	29.23	334.87	4,167.7	896.8	-420.7	-950.4	0.00	0.00	
4,438.3	29.23	334.87	4,201.1	913.7	-428.6	-968.4	0.00	0.00	Mancos Shale
4,479.8	29.23	334.87	4,237.4	932.1	-437.2	-987.9	0.00	0.00	Start build/turn @ 4479' MD
4,500.0	27.69	335.99	4,255.1	940.8	-441.2	-997.1	8.08	-7.63	
4,600.0	20.25	343.86	4,346.4	978.7	-455.5	-1,034.9	8.08	-7.44	
4,700.0	13.53	359.63	4,442.1	1,007.1	-460.4	-1,059.4	8.08	-6.72	
4,800.0	9.24	35.50	4,540.2	1,025.4	-455.8	-1,070.1	8.08	-4.29	
4,900.0	10.82	82.39	4,638.9	1,033.2	-441.8	-1,066.6	8.08	1.58	
5,000.0	16.69	106.48	4,736.0	1,030.3	-418.7	-1,049.2	8.08	5.86	
5,001.0	16.75	106.63	4,737.0	1,030.3	-418.4	-1,048.9	8.08	6.78	Mancos Silt
5,100.0	23.86	117.41	4,829.8	1,016.9	-386.9	-1,018.1	8.08	7.18	
5,200.0	31.45	123.39	4,918.3	993.2	-347.1	-974.0	8.08	7.60	
5,292.0	38.60	126.96	4,993.7	962.7	-304.1	-922.6	8.08	7.77	Gallup Fn.
5,300.0	39.23	127.22	4,999.9	959.7	-300.1	-917.7	8.08	7.82	
5,400.0	47.09	129.94	5,072.8	917.0	-246.7	-850.3	8.08	7.86	
5,499.9	55.00	132.04	5,135.5	866.0	-188.2	-773.4	8.08	7.91	ICP @ 55°
5,500.0	55.01	132.04	5,135.6	866.0	-188.1	-773.3	8.08	7.93	
5,600.0	62.95	133.77	5,187.1	807.6	-125.5	-688.1	8.08	7.94	
5,700.0	70.91	135.27	5,226.2	743.1	-59.9	-596.4	8.08	7.96	
5,800.0	78.88	136.63	5,252.3	673.8	7.1	-500.0	8.08	7.97	
5,900.0	86.86	137.92	5,264.7	601.0	74.4	-400.9	8.08	7.98	
5,946.8	90.60	138.51	5,265.7	566.1	105.6	-354.1	8.08	7.98	LP @ 5265' TVD; 90.6°
6,000.0	90.60	138.51	5,265.1	526.2	140.8	-300.9	0.00	0.00	
6,100.0	90.60	138.51	5,264.1	451.3	207.0	-200.9	0.00	0.00	
6,200.0	90.60	138.51	5,263.0	376.4	273.3	-100.9	0.00	0.00	
6,300.0	90.60	138.51	5,262.0	301.5	339.5	-0.9	0.00	0.00	
6,400.0	90.60	138.51	5,261.0	226.6	405.8	99.1	0.00	0.00	
6,500.0	90.60	138.51	5,259.9	151.7	472.0	199.1	0.00	0.00	
6,600.0	90.60	138.51	5,258.9	76.8	538.3	299.0	0.00	0.00	
6,700.0	90.60	138.51	5,257.8	1.9	604.5	399.0	0.00	0.00	
6,800.0	90.60	138.51	5,256.8	-73.0	670.8	499.0	0.00	0.00	
6,900.0	90.60	138.51	5,255.7	-147.9	737.0	599.0	0.00	0.00	
7,000.0	90.60	138.51	5,254.7	-222.8	803.3	699.0	0.00	0.00	
7,100.0	90.60	138.51	5,253.6	-297.7	869.5	799.0	0.00	0.00	
7,200.0	90.60	138.51	5,252.6	-372.6	935.8	899.0	0.00	0.00	
7,300.0	90.60	138.51	5,251.5	-447.5	1,002.0	999.0	0.00	0.00	
7,400.0	90.60	138.51	5,250.5	-522.4	1,068.3	1,099.0	0.00	0.00	
7,500.0	90.60	138.51	5,249.4	-597.3	1,134.5	1,199.0	0.00	0.00	
7,600.0	90.60	138.51	5,248.4	-672.2	1,200.8	1,299.0	0.00	0.00	
7,700.0	90.60	138.51	5,247.3	-747.1	1,267.0	1,399.0	0.00	0.00	
7,800.0	90.60	138.51	5,246.3	-822.0	1,333.2	1,499.0	0.00	0.00	
7,900.0	90.60	138.51	5,245.2	-896.9	1,399.5	1,599.0	0.00	0.00	
8,000.0	90.60	138.51	5,244.2	-971.8	1,465.7	1,699.0	0.00	0.00	
8,100.0	90.60	138.51	5,243.1	-1,046.7	1,532.0	1,799.0	0.00	0.00	
8,200.0	90.60	138.51	5,242.1	-1,121.6	1,598.2	1,899.0	0.00	0.00	
8,300.0	90.60	138.51	5,241.0	-1,196.5	1,664.5	1,999.0	0.00	0.00	
8,400.0	90.60	138.51	5,240.0	-1,271.4	1,730.7	2,098.9	0.00	0.00	
8,500.0	90.60	138.51	5,238.9	-1,346.3	1,797.0	2,198.9	0.00	0.00	
8,600.0	90.60	138.51	5,237.9	-1,421.2	1,863.2	2,298.9	0.00	0.00	
8,700.0	90.60	138.51	5,236.8	-1,496.1	1,929.5	2,398.9	0.00	0.00	
8,800.0	90.60	138.51	5,235.8	-1,571.0	1,995.7	2,498.9	0.00	0.00	

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S11-T23N-R8W
 Well: Hutton Canyon Unit M11-2308 03H
 Wellbore: HZ
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well Hutton Canyon Unit M11-2308 03H
 15' KB @ 6920.0usft (A920)
 15' KB @ 6920.0usft (A920)
 True
 Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,900.0	90.60	138.51	5,234.7	-1,645.9	2,062.0	2,598.9	0.00	0.00	
9,000.0	90.60	138.51	5,233.7	-1,720.8	2,128.2	2,698.9	0.00	0.00	
9,100.0	90.60	138.51	5,232.7	-1,795.7	2,194.5	2,798.9	0.00	0.00	
9,200.0	90.60	138.51	5,231.6	-1,870.6	2,260.7	2,898.9	0.00	0.00	
9,300.0	90.60	138.51	5,230.6	-1,945.5	2,327.0	2,998.9	0.00	0.00	
9,400.0	90.60	138.51	5,229.5	-2,020.4	2,393.2	3,098.9	0.00	0.00	
9,500.0	90.60	138.51	5,228.5	-2,095.3	2,459.5	3,198.9	0.00	0.00	
9,600.0	90.60	138.51	5,227.4	-2,170.2	2,525.7	3,298.9	0.00	0.00	
9,700.0	90.60	138.51	5,226.4	-2,245.1	2,592.0	3,398.9	0.00	0.00	
9,800.0	90.60	138.51	5,225.3	-2,320.0	2,658.2	3,498.9	0.00	0.00	
9,900.0	90.60	138.51	5,224.3	-2,394.9	2,724.4	3,598.9	0.00	0.00	
10,000.0	90.60	138.51	5,223.2	-2,469.8	2,790.7	3,698.9	0.00	0.00	
10,100.0	90.60	138.51	5,222.2	-2,544.7	2,856.9	3,798.9	0.00	0.00	
10,200.0	90.60	138.51	5,221.1	-2,619.6	2,923.2	3,898.8	0.00	0.00	
10,300.0	90.60	138.51	5,220.1	-2,694.5	2,989.4	3,998.8	0.00	0.00	
10,400.0	90.60	138.51	5,219.0	-2,769.4	3,055.7	4,098.8	0.00	0.00	
10,500.0	90.60	138.51	5,218.0	-2,844.3	3,121.9	4,198.8	0.00	0.00	
10,600.0	90.60	138.51	5,216.9	-2,919.2	3,188.2	4,298.8	0.00	0.00	
10,700.0	90.60	138.51	5,215.9	-2,994.1	3,254.4	4,398.8	0.00	0.00	
10,800.0	90.60	138.51	5,214.8	-3,069.0	3,320.7	4,498.8	0.00	0.00	
10,900.0	90.60	138.51	5,213.8	-3,143.9	3,386.9	4,598.8	0.00	0.00	
11,000.0	90.60	138.51	5,212.7	-3,218.8	3,453.2	4,698.8	0.00	0.00	
11,100.0	90.60	138.51	5,211.7	-3,293.7	3,519.4	4,798.8	0.00	0.00	
11,200.0	90.60	138.51	5,210.6	-3,368.6	3,585.7	4,898.8	0.00	0.00	
11,300.0	90.60	138.51	5,209.6	-3,443.5	3,651.9	4,998.8	0.00	0.00	
11,400.0	90.60	138.51	5,208.5	-3,518.4	3,718.2	5,098.8	0.00	0.00	
11,500.0	90.60	138.51	5,207.5	-3,593.3	3,784.4	5,198.8	0.00	0.00	
11,600.0	90.60	138.51	5,206.4	-3,668.2	3,850.7	5,298.8	0.00	0.00	
11,700.0	90.60	138.51	5,205.4	-3,743.1	3,916.9	5,398.8	0.00	0.00	
11,800.0	90.60	138.51	5,204.4	-3,818.0	3,983.2	5,498.8	0.00	0.00	
11,900.0	90.60	138.51	5,203.3	-3,892.9	4,049.4	5,598.7	0.00	0.00	
12,000.0	90.60	138.51	5,202.3	-3,967.8	4,115.6	5,698.7	0.00	0.00	
12,100.0	90.60	138.51	5,201.2	-4,042.7	4,181.9	5,798.7	0.00	0.00	
12,200.0	90.60	138.51	5,200.2	-4,117.6	4,248.1	5,898.7	0.00	0.00	
12,300.0	90.60	138.51	5,199.1	-4,192.5	4,314.4	5,998.7	0.00	0.00	
12,400.0	90.60	138.51	5,198.1	-4,267.4	4,380.6	6,098.7	0.00	0.00	
12,500.0	90.60	138.51	5,197.0	-4,342.3	4,446.9	6,198.7	0.00	0.00	
12,600.0	90.60	138.51	5,196.0	-4,417.2	4,513.1	6,298.7	0.00	0.00	
12,700.0	90.60	138.51	5,194.9	-4,492.1	4,579.4	6,398.7	0.00	0.00	
12,800.0	90.60	138.51	5,193.9	-4,567.0	4,645.6	6,498.7	0.00	0.00	
12,900.0	90.60	138.51	5,192.8	-4,641.9	4,711.9	6,598.7	0.00	0.00	
13,000.0	90.60	138.51	5,191.8	-4,716.8	4,778.1	6,698.7	0.00	0.00	
13,100.0	90.60	138.51	5,190.7	-4,791.7	4,844.4	6,798.7	0.00	0.00	
13,200.0	90.60	138.51	5,189.7	-4,866.6	4,910.6	6,898.7	0.00	0.00	
13,300.0	90.60	138.51	5,188.6	-4,941.5	4,976.9	6,998.7	0.00	0.00	
13,400.0	90.60	138.51	5,187.6	-5,016.4	5,043.1	7,098.7	0.00	0.00	
13,500.0	90.60	138.51	5,186.5	-5,091.3	5,109.4	7,198.7	0.00	0.00	
13,600.0	90.60	138.51	5,185.5	-5,166.2	5,175.6	7,298.7	0.00	0.00	
13,700.0	90.60	138.51	5,184.4	-5,241.1	5,241.9	7,398.6	0.00	0.00	
13,800.0	90.60	138.51	5,183.4	-5,316.0	5,308.1	7,498.6	0.00	0.00	
13,885.1	90.60	138.51	5,182.5	-5,379.8	5,364.5	7,583.7	0.00	0.00	TD at 13885.1

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S11-T23N-R8W
 Well: Hutton Canyon Unit M11-2308 03H
 Wellbore: HZ
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well Hutton Canyon Unit M11-2308 03H
 15' KB @ 6920.0usft (A920)
 15' KB @ 6920.0usft (A920)
 True
 Minimum Curvature

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
HCU M11-2308 03H PBI - plan hits target center - Point	0.00	0.00	5,182.5	-5,379.8	5,364.5	1,899,636.13	2,779,810.55	36.220555	-107.641041
HCU M11-2308 03H PO - plan hits target center - Point	0.00	0.00	5,265.7	566.1	105.6	1,905,572.48	2,774,540.97	36.236890	-107.658870

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
500.0	500.0	9 5/8"	0	0
5,499.9	5,135.5	ICP @ 55°	0	0

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
991.0	991.0	Ojo Alamo Ss.		-0.60	138.51
1,081.0	1,081.0	Kirtland Shale		-0.60	138.51
1,354.0	1,354.0	Fruitland Coal		-0.60	138.51
1,587.0	1,587.0	Pictured Cliffs Ss.		-0.60	138.51
1,686.0	1,686.0	Lewis Shale		-0.60	138.51
2,394.4	2,387.0	Cliffhouse Ss.		-0.60	138.51
3,227.1	3,140.0	Menefee Fn.		-0.60	138.51
4,212.4	3,995.0	Point Lookout Ss.		-0.60	138.51
4,438.3	4,191.0	Mancos Shale		-0.60	138.51
5,001.0	4,726.0	Mancos Silt		-0.60	138.51
5,292.0	4,984.0	Gallup Fn.		-0.60	138.51

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,800.0	1,800.0	0.0	0.0	KOP @ 1800'
2,969.3	2,919.2	264.2	-124.0	EOB; Inc=29.23°
4,479.8	4,237.4	932.1	-437.2	Start build/turn @ 4479' MD
5,946.8	5,265.7	566.1	105.6	LP @ 5265' TVD; 90.6°
13,885.1	5,182.5	-5,379.8	5,364.5	TD at 13885.1



EnCana Oil & Gas (USA) Inc

San Juan County, NM

S11-T23N-R8W

Hutton Canyon Unit M11-2308 03H

HZ

Plan #1

Anticollision Report

28 October, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Hutton Canyon Unit M11-2308 03H
Project:	San Juan County, NM	TVD Reference:	15' KB @ 6920.0usft (A920)
Reference Site:	S11-T23N-R8W	MD Reference:	15' KB @ 6920.0usft (A920)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Hutton Canyon Unit M11-2308 03H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	10/28/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,885.1	Plan #1 (HZ)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S11-T23N-R8W						
Hutton Canyon Unit M11-2308 02H - Hz - Plan #2	1,800.0	1,800.0	60.1	53.8	9.638	CC, ES
Hutton Canyon Unit M11-2308 02H - Hz - Plan #2	2,000.0	1,999.7	63.4	56.5	9.153	SF

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S11-T23N-R8W
 Site Error: 0.0usft
 Reference Well: Hutton Canyon Unit M11-2308 03H
 Well Error: 0.0usft
 Reference Wellbore: HZ
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Hutton Canyon Unit M11-2308 03H
 TVD Reference: 15' KB @ 6920.0usft (A920)
 MD Reference: 15' KB @ 6920.0usft (A920)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: USA EDM 5000 Multi Users DB
 Offset TVD Reference: Offset Datum

Offset Design S11-T23N-R8W - Hutton Canyon Unit M11-2308 02H - Hz - Plan #2													Offset Site Error: 0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-134.19	-41.9	-43.1	60.1				
100.0	100.0	100.0	100.0	0.1	0.1	-134.19	-41.9	-43.1	60.1	59.8	0.30	202.431	
200.0	200.0	200.0	200.0	0.3	0.3	-134.19	-41.9	-43.1	60.1	59.4	0.65	93.001	
300.0	300.0	300.0	300.0	0.5	0.5	-134.19	-41.9	-43.1	60.1	59.1	0.99	60.367	
400.0	400.0	400.0	400.0	0.7	0.7	-134.19	-41.9	-43.1	60.1	58.7	1.34	44.687	
500.0	500.0	500.0	500.0	0.8	0.8	-134.19	-41.9	-43.1	60.1	58.4	1.69	35.473	
600.0	600.0	600.0	600.0	1.0	1.0	-134.19	-41.9	-43.1	60.1	58.0	2.04	29.409	
700.0	700.0	700.0	700.0	1.2	1.2	-134.19	-41.9	-43.1	60.1	57.7	2.39	25.116	
800.0	800.0	800.0	800.0	1.4	1.4	-134.19	-41.9	-43.1	60.1	57.3	2.74	21.916	
900.0	900.0	900.0	900.0	1.5	1.5	-134.19	-41.9	-43.1	60.1	57.0	3.09	19.440	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-134.19	-41.9	-43.1	60.1	56.6	3.44	17.466	
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-134.19	-41.9	-43.1	60.1	56.3	3.79	15.856	
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-134.19	-41.9	-43.1	60.1	55.9	4.14	14.518	
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-134.19	-41.9	-43.1	60.1	55.6	4.49	13.388	
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-134.19	-41.9	-43.1	60.1	55.2	4.83	12.422	
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-134.19	-41.9	-43.1	60.1	54.9	5.18	11.585	
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-134.19	-41.9	-43.1	60.1	54.5	5.53	10.854	
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-134.19	-41.9	-43.1	60.1	54.2	5.88	10.210	
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-134.19	-41.9	-43.1	60.1	53.8	6.23	9.638 CC, ES	
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-110.99	-41.9	-43.1	60.8	54.2	6.58	9.240	
2,000.0	1,999.7	1,999.7	1,999.7	3.5	3.5	-116.44	-41.9	-43.1	63.4	56.5	6.93	9.153 SF	
2,100.0	2,099.1	2,099.1	2,099.1	3.7	3.6	-124.42	-41.9	-43.1	69.0	61.7	7.28	9.473	
2,200.0	2,198.0	2,198.0	2,198.0	3.9	3.8	-133.36	-41.9	-43.1	78.6	71.0	7.63	10.307	
2,300.0	2,296.0	2,296.0	2,296.0	4.1	4.0	-141.82	-41.9	-43.1	93.2	85.3	7.96	11.709	
2,400.0	2,393.2	2,393.2	2,393.2	4.5	4.2	-148.98	-41.9	-43.1	113.0	104.7	8.27	13.661	
2,500.0	2,489.2	2,489.2	2,489.2	4.8	4.3	-154.66	-41.9	-43.1	137.9	129.3	8.56	16.108	
2,600.0	2,583.9	2,583.9	2,583.9	5.3	4.5	-159.06	-41.9	-43.1	167.7	158.9	8.83	18.990	
2,700.0	2,677.0	2,677.0	2,677.0	5.8	4.6	-162.43	-41.9	-43.1	202.2	193.1	9.09	22.255	
2,800.0	2,768.6	2,768.6	2,768.6	6.4	4.8	-165.04	-41.9	-43.1	241.1	231.8	9.32	25.864	
2,900.0	2,858.2	2,858.2	2,858.2	7.1	5.0	-167.06	-41.9	-43.1	284.3	274.7	9.54	29.788	
3,000.0	2,946.0	2,946.0	2,946.0	7.8	5.1	-168.73	-41.9	-43.1	331.4	321.6	9.78	33.868	
3,100.0	3,033.3	3,033.3	3,033.3	8.6	5.3	-170.17	-41.9	-43.1	379.6	369.5	10.10	37.581	
3,200.0	3,120.5	3,120.5	3,120.5	9.4	5.4	-171.28	-41.9	-43.1	427.9	417.5	10.42	41.077	
3,300.0	3,207.8	3,207.8	3,207.8	10.2	5.6	-172.17	-41.9	-43.1	476.4	465.6	10.74	44.372	
3,400.0	3,295.1	3,295.1	3,295.1	11.0	5.7	-172.90	-41.9	-43.1	524.9	513.8	11.05	47.481	
3,500.0	3,382.3	3,382.3	3,382.3	11.9	5.9	-173.50	-41.9	-43.1	573.5	562.1	11.37	50.419	
3,600.0	3,469.6	3,469.6	3,469.6	12.7	6.0	-174.01	-41.9	-43.1	622.1	610.4	11.69	53.199	
3,700.0	3,556.9	3,542.4	3,542.4	13.5	6.2	-174.35	-42.4	-43.1	671.3	659.4	11.99	55.976	
3,800.0	3,644.1	3,600.0	3,599.9	14.4	6.3	-174.51	-44.7	-43.4	723.3	711.0	12.27	58.925	
3,900.0	3,731.4	3,666.2	3,666.0	15.3	6.4	-174.58	-49.7	-44.0	777.8	765.3	12.57	61.869	
4,000.0	3,818.7	3,724.5	3,723.9	16.1	6.5	-174.55	-56.2	-44.9	834.9	822.1	12.86	64.916	
4,100.0	3,905.9	3,780.4	3,779.2	17.0	6.6	-174.45	-64.1	-45.9	894.3	881.2	13.15	68.007	
4,200.0	3,993.2	3,833.9	3,831.9	17.8	6.7	-174.31	-73.4	-47.1	956.0	942.6	13.44	71.125	

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

Anticollision Report

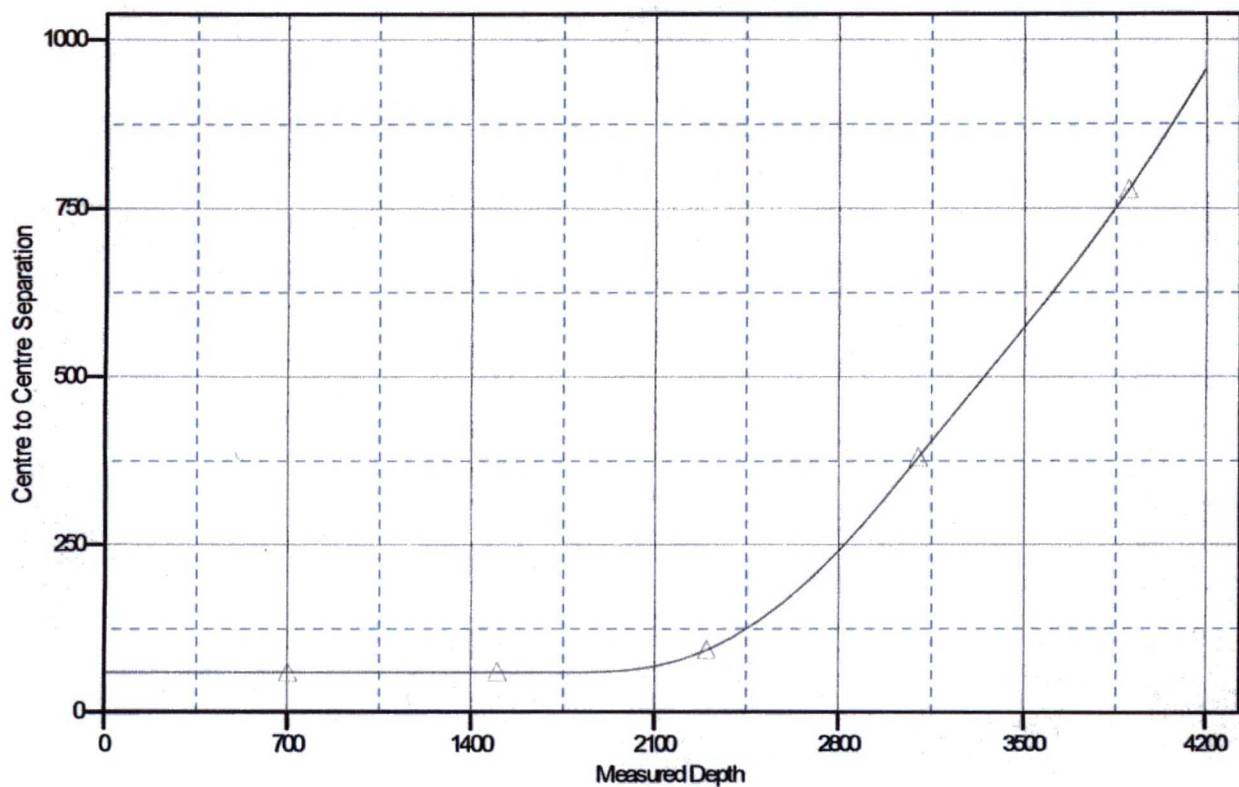
Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S11-T23N-R8W
 Site Error: 0.0usft
 Reference Well: Hutton Canyon Unit M11-2308 03H
 Well Error: 0.0usft
 Reference Wellbore: HZ
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Hutton Canyon Unit M11-2308 03H
 TVD Reference: 15' KB @ 6920.0usft (A920)
 MD Reference: 15' KB @ 6920.0usft (A920)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: USA EDM 5000 Multi Users DB
 Offset TVD Reference: Offset Datum

Reference Depths are relative to 15' KB @ 6920.0usft (A920)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: Hutton Canyon Unit M11-2308 03H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.10°

Ladder Plot



LEGEND

Hutton Canyon Unit M11-2308 02H, Hz, Plan #2 V0

Hutton Canyon Unit M11-2308 03H
SHL: SWSW Section 11, T23N, R8W
383' FSL and 225 FWL
BHL: SWSW Section 13, T23N, R8W
330 FSL and 400 FWL
San Juan, New Mexico
Lease Number: NMNM 118132 & NMNM 76842

Remaining brush will be brush-hogged or scalped at ground-level prior to ground disturbance.

2. After removal of vegetation, topsoil will be segregated and windrowed on the edge of the well pad in the construction zone. Topsoil will be defined as the top six (6) inches of soil. The stockpiled topsoil will be free of brush and tree limbs, trunks and root balls, but may include chipped or mulched material so long as it is incorporated into the topsoil stockpile.

Topsoil will be stockpiled separate from subsoil with a noticeable gap left between the stockpiles. Vehicle/equipment traffic will be prevented from crossing topsoil stockpiles.

Topsoil will not be stripped when soils are moisture-saturated or frozen below the stripping depth.

If the location becomes prone to wind or water erosion, Encana will take appropriate measures to prevent topsoil loss from wind. Such measures may include using tackifiers or water to wet the topsoil stockpile so that a crust is created across the exposed soil to prevent soil loss.

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 4.3 feet on the north corner (Corner 6) and the maximum fill will be approximately 6.3 feet on the southwest corner (Corner 5).

4. As determined during the onsite on November 7, 2013, the following best management practices will be implemented:
 - a. Corner 5 will be rounded to avoid the clay hills and paleontological concerns. Paleontological monitoring will be required.
 - b. Corner 2 will be rounded to avoid a drainage.
 - c. A drainage channel with a silt trap will be installed between Corner 6 and Midpoint 1 to divert water around Corner 6.
 - d. 24" culverts will be needed at low water crossings.
 - e. Archeological sites need to be avoided near Midpoint 1 and Corner 2.
 - f. Endangered Cacti will need to be transplanted.
 - g. Fencing will be required around Corner 5 to Midpoint 1 to protect another archeological site.
 - h. Construction fencing required near Corner 6 to avoid endangered cacti.

5. Construction equipment may include one (1) dozer and one (1) blade. Construction of the access road and well pad will take approximately 2 weeks.

C. Pipeline

See the Plan of Development submitted with the final Standard SF-299 Application for authorization to construct, operate, maintain and terminate a 1,606.05 foot, up to 6-inch outside diameter, buried steel well connect pipeline that was submitted to the BLM concurrently with the APD.

7. METHODS FOR HANDLING WASTE

A. Cuttings

Hutton Canyon Unit M11-2308 03H

**SHL: SWSW Section 11, T23N, R8W
383' FSL and 225 FWL**

**BHL: SWSW Section 13, T23N, R8W
330 FSL and 400 FWL**

San Juan, New Mexico

Lease Number: NMNM 118132 & NMNM 76842

- ✓ 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.
- C. Flowback Water
1. The water-based solution that flows back to the surface during and after completion operations will be placed in storage tanks on the location.
2. Flowback water will be confined to a storage tank for a period not to exceed 90 days after initial production and will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.
- D. Spills – any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.
- E. Sewage – self-contained, chemical toilets will be provided for human waste disposal. The toilet holding tanks will be pumped, as needed, and the contents thereof disposed of in an approved sewage disposal facility. The toilets will be onsite during all operations.
- F. Garbage and other waste material – garbage, trash and other waste materials will be collected in a portable, self-contained and fully-enclosed trash container during drilling and completion operations. The accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location.
- G. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash container will be cleaned up and removed from the well location.
- H. No chemicals subject to reporting under SARA Title III in an amount equal to or greater than

ENCANA OIL & GAS (USA) INC.

HUTTON CANYON UNIT M11-2308 #03H

383' FSL & 225' FWL

LOCATED IN THE SW/4 SW/4 OF SECTION 11, T23N, R8W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, GO SOUTH ON HWY 550, 39.0 MILES TO INDIAN ROUTE 7061 (M.P. 112.6).
- 2) TURN RIGHT AND GO 1.7 MILES TO A DIRT ROAD WITH CATTLE GUARD.
- 3) TURN LEFT AND GO 0.6 MILES TO "Y" INTERSECTION.
- 4) TURN LEFT AND GO 0.9 MILES TO "T" INTERSECTION.
- 5) TURN LEFT AND GO 1.1 MILES TO ABANDONED 2-TRACK TO BE UPGRADED.

WELL FLAG LOCATED AT LAT. 36.235335° N, LONG. 107.659228° W (NAD 83).



WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
Hutton Canyon Unit M11-2308 03H

