State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

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

Jami Bailey, 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 3160-4 or 3160-5 form.

Operator Signature Date: 10/18/13

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC

☐ Location Change ☒ Other: Change project area

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-045-35451-00-00	ESCRITO L32 2408	001H	ENCANA OIL & GAS (USA) INC.	G	N	San Juan	F	L	32	24	N	8	W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations.
Hold C-104 for Directional survey, as drilled plat, and NSL

NOV 07 2013

NMOCD Approved by Signature

Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIDENTIAL

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

RECEIVED

5. Lease Serial No.
NMNM 118133

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

RCVD NOV 4'13
OIL CONS. DIV.

SUBMIT IN TRIPLICATE – Other instructions on page 2.

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

DIST. 3

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

OCT 22 2013

8. Well Name and No.
Escrito L32-2408 01H

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

Farmington Field Office
Bureau of Land Management

9. API Well No.
30-045-35451

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

3b. Phone No. *(include area code)*
720-876-3567

10. Field and Pool or Exploratory Area
Basin Mancos

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
SHL: 1899' FSL and 226' FWL Section 32, T24N, R8W
BHL: 1900' FSL and 330' FWL Section 31, T24N, R8W

11. Country or Parish, State
San Juan, New Mexico

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other Revising BHL and project area
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) wishes to revise the bottom hole location approved by the BLM 3/21/2013 and to re-adjust the project area dedicated to the Escrito L32-2408 01H.

On December 31, 2012, Encana submitted an Application for Permit to Drill the Escrito L32-2408 01H well, with a 320 acre project area dedicated to the well. The original location permitted was NWSW Section 31 T24N R8W 2100' FSL and 330' FWL with a proposed submitted depth of 5,375' TVD/10,379' MD.

The New Mexico Oil Conservation Division (OCD) has informed Encana of the applicability and intrepretation of the Basin Mancos Gas Pool (Order Number 12984, Pool Code 97232), which applies to the Escrito L32-2408 01H well. Therefore, Encana wishes to increase the project area for this well to 640 acres by stringing two (2) stand-up 320 acre spacing units.

Encana also wishes to revise the bottom hole location to the NWSW Section 31 T24N R8W 1900' FSL and 330' FWL with a new proposed depth of 5,375' TVD/10,351' MD.

Please see attached C-102, wellbore diagram, 10-point drilling plan and directional survey for details. Estimated spud date is June 26, 2014.

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations.

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

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

Title Regulatory Analyst

Signature Catherine Anadu

Date 10/18/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by
William Tambekou

Title Petroleum Engineer

Date 10/29/2013

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

Office FFO

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

(Instructions on page 2)

NMOCD

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 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) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

RECEIVED

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

OIL CONSERVATION DIVISION

OCT 22 2013

1220 South St. Francis Dr.
Santa Fe, NM 87505

Farmington Field Office
Bureau of Land Management

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-35451	97232	BASIN MANCOS GAS

[4] Property Code	[5] Property Name	[6] Well Number
39788	ESCRITO L32-2408	01H

[7] OGRID No.	[8] Operator Name	[9] Elevation
282327	ENCANA OIL & GAS (USA) INC.	6937.3'

[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
L	32	24N	8W		1899'	SOUTH	226'	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
L	31	24N	8W	3	1900'	SOUTH	330'	WEST	SAN JUAN

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
PROJECT AREA ~~640.00~~ 642.00 ACRES - ALL SEC. 31			

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

1 LAT. 36.27607° N (NAD83)
LONG. 107.53671° W (NAD83)
LAT. 36.27606° N (NAD27)
LONG. 107.53810° W (NAD27)

2 LAT. 36.26355° N (NAD83)
LONG. 107.73221° W (NAD83)
LAT. 36.26354° N (NAD27)
LONG. 107.73160° W (NAD27)

3 LAT. 36.27084° N (NAD83)
LONG. 107.71416° W (NAD83)
LAT. 36.27083° N (NAD27)
LONG. 107.71355° W (NAD27)

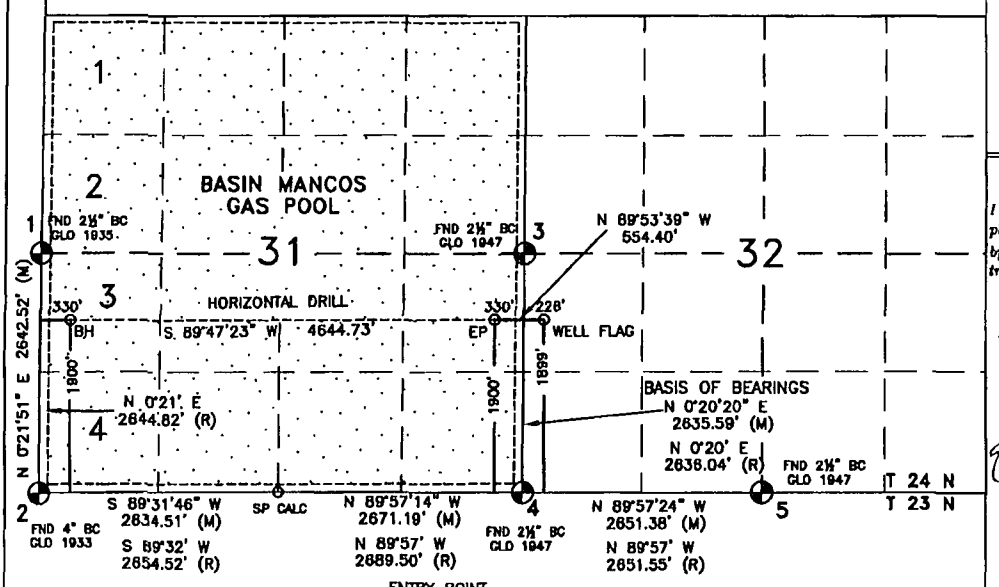
4 LAT. 36.26361° N (NAD83)
LONG. 107.71422° W (NAD83)
LAT. 36.26360° N (NAD27)
LONG. 107.71361° W (NAD27)

5 LAT. 36.26360° N (NAD83)
LONG. 107.70523° W (NAD83)
LAT. 36.26359° N (NAD27)
LONG. 107.70462° W (NAD27)

18

R 8 W R 9 W

REVISED - JULY, 16, 2013



BOTTOM HOLE
LAT. 36.268776° N (NAD83)
LONG. 107.731042° W (NAD83)
LAT. 36.268763° N (NAD27)
LONG. 107.730429 W (NAD27)

ENTRY POINT
LAT. 36.268824° N (NAD83)
LONG. 107.715283° W (NAD83)
LAT. 36.268812° N (NAD27)
LONG. 107.714681° W (NAD27)

WELL FLAG
LAT. 36.26882° N (NAD83)
LONG. 107.71341° W (NAD83)
LAT. 36.26881° N (NAD27)
LONG. 107.71280° W (NAD27)

[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.

Holly Hill 10/21/13
Signature Date

Holly Hill
Printed Name

holly.hill@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.

OCTOBER 24, 2012
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID R. RUSSELL NEW MEXICO 10201 REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201

LOC: Sec 32-T24N-R8W
County: San Juan
WELL: Escrito L32-2408 01H

Encana Natural Gas

WELL SUMMARY

encana

ENG: 10/21/13
RIG:
GLE: 6937
RKBE: 6953

MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVD	DEPTH MD	HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			60	60'	30	**20" 94#** 100sx Type I Neat 16ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run	None		**500**	**500**	12 1/4	**9 5/8" 36ppf J55 STC** TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°
Surveys every 500'	No OH logs Mud logger onsite	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss Mancos Sh **KICK OFF PT** Mancos Silt Gallup Top 7" csg	991 1243 1435 1723 1878 2533 3248 4118 4311 4826 4848 5111 **5387**	**5608**	**8 3/4**	**7" 26ppf J55 LTC** Stage tool @1773' TOC @ surface 30% OH excess: 571 sksTotal. **Stage 1 Lead** : 246sks 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**: 169sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk. **Stage 2**: 156 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.	Fresh Wtr 8.5-8.8	Vertical <1° KOP 4826 10 deg/100'
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	Base Gallup horz target	5428 **5729**	**5399**	**6 1/8**	200' overlap at liner top 4952' Lateral **4 1/2" 11.6ppf SB80 LTC** Running external swellable csg packers for isolation of prod string Plan on setting top packer within 100' of intermediate casing shoe	8.6-9.0 OBM Switch to OBM 8.6-9.0	.25deg updip 5375'TVD TD = 10351' MD

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 4826' , 8 3/4" hole size,
5) PU directional tools and start curve at 10deg/100' build rate
6) Drill to casing point of 5608' MD
7) R&C 7" casing, circ cmt to surface, switch to OBM
8) Land at 90deg, drill 4952' lateral to 10351', run 4 1/2" liner with external swellable csg packers

Escrito L32-2408 01H
SHL: NWSW Section 32, T24N, R8W
1899 FSL and 226 FWL
BHL: NWSW Section 31, T24N, R8W
1900 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NMNM 11813

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
Ojo Alamo Ss.	991
Kirtland Sh.	1,243
Fruitland Coal	1,435
Pictured Cliffs Ss.	1,723
Lewis Sh.	1,878
Cliffhouse Ss.	2,533
Menefee Fn.	3,248
Point Lookout Ss.	4,118
Mancos Sh.	4,311
Mancos Silt	4,848
Gallup Fn.	5,111

The referenced surface elevation is 6937', KB 6953'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,435
Oil/Gas	Pictured Cliffs Ss.	1,723
Oil/Gas	Cliffhouse Ss.	2,533
Gas	Menefee Fn.	3,248
Oil/Gas	Point Lookout Ss.	4,118
Oil/Gas	Mancos Sh.	4,311
Oil/Gas	Mancos Silt	4,848
Oil/Gas	Gallup Fn.	5,111

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

3. PRESSURE CONTROL

a) Pressure control equipment and configuration will be designed to meet 2M standards.
b) Working pressure on rams and BOPE will be 3,000 psi
c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.

d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.
g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
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'	30"	20"	94#	H40, STC New
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5608'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	5408'-10351'MD	6 1/8"	4 1/2"	11.6#	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
9 5/8"	36	J55	STC	2020	3520	394	1.125	1.1	1.5
7"	26	J55	LTC	4320	4980	367	1.125	1.1	1.5
4 1/2"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

Casing design is subject to revision based on geologic conditions encountered.

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

b) The proposed cementing program is as follows:

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

Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	100sk	Type I Neat 14.8 ppg	Surface	None
Surface	500'	178sk	Type III Cement + 1% CaCl + 0.25lb/sk Cello Flake + 0.2% FL, 14.6ppg, 1.38cuf/sk	Surface	1 per joint on bottom 3 joints
Intermediate	5608'MD	30% open hole excess Stage 1 Lead: 246sks Stage 1 Tail: 169sks Stage 2 Lead: 156sks	**Lead** (Stages 1 and 2): PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk **Tail** (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	5408'-10351'	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 a 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 4862'. Directional plans are attached.

No hydrogen sulfide gas is anticipated, however, if H_2S 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 June 26, 2014. 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 25 days.

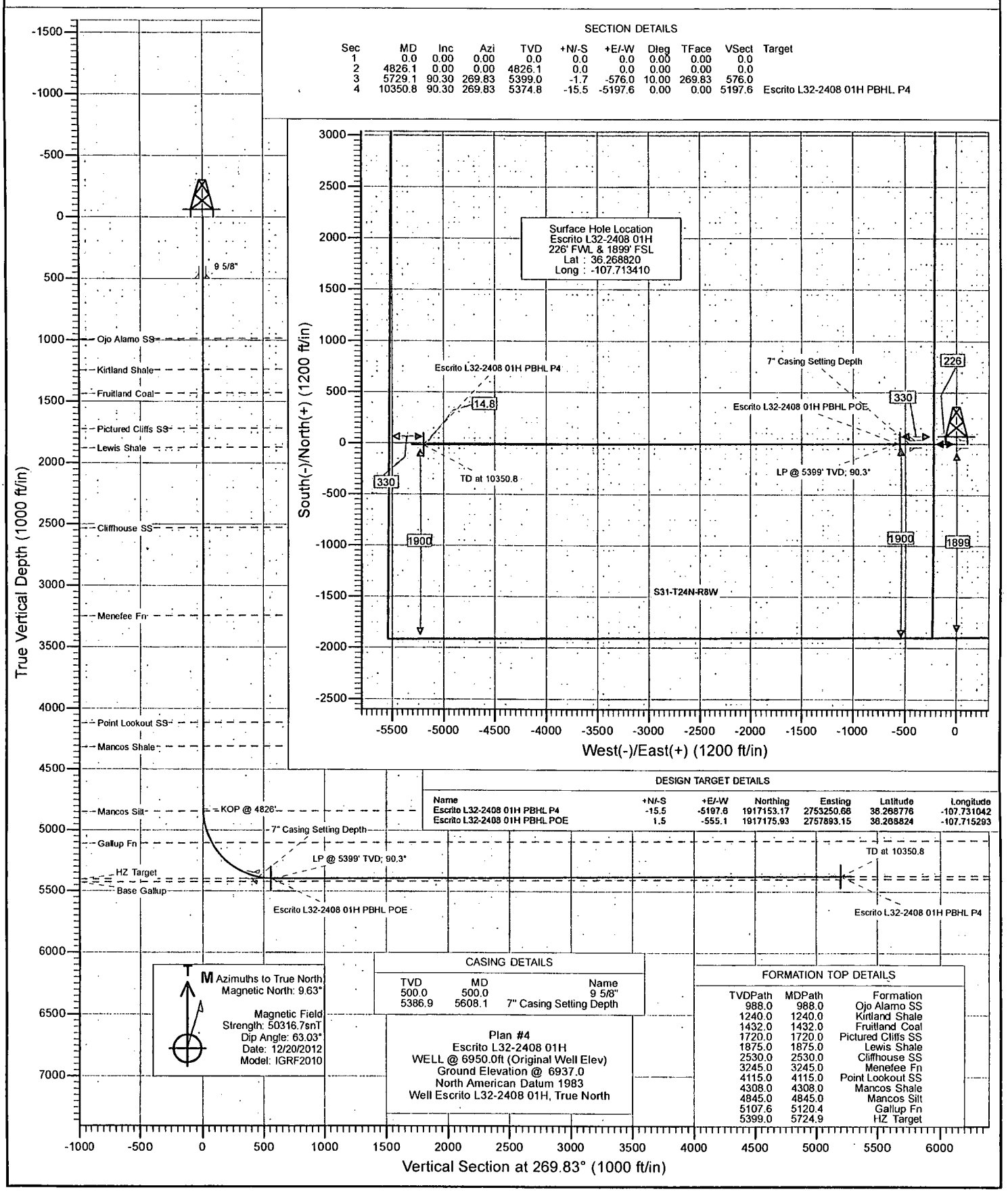
encana natural gas

Project: San Juan County, NM
Site: S32-T24N-R8W (Escrito)
Well: Escrito L32-2408 01H
Wellbore: HZ
Design: Plan #4

CATHEDRAL

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	4826.1	0.00	0.00	4826.1	0.0	0.0	0.00	0.00	0.0	
3	5729.1	90.30	269.83	5399.0	-1.7	-576.0	10.00	269.83	576.0	
4	10350.8	90.30	269.83	5374.8	-15.5	-5197.6	0.00	0.00	5197.6	Escrito L32-2408 01H PBHL P4



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Escrito L32-2408 01H PBHL P4	-15.5	-5197.6	1917153.17	2753250.68	36.268776	-107.731042
Escrito L32-2408 01H PBHL POE	1.5	-555.1	1917175.93	2757893.15	36.268824	-107.715293

Azimuths to True North
Magnetic North: 9.63°

Magnetic Field
Strength: 50316.7snT
Dip Angle: 63.03°
Date: 12/20/2012
Model: IGRF2010

CASING DETAILS

TVD	MD	Name
500.0	500.0	9 5/8"
5386.9	5608.1	7" Casing Setting Depth

Plan #4
Escrito L32-2408 01H
WELL @ 6950.0ft (Original Well Elev)
Ground Elevation @ 6937.0
North American Datum 1983
Well Escrito L32-2408 01H, True North

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
988.0	988.0	Ojo Alamo SS
1240.0	1240.0	Kirtland Shale
1432.0	1432.0	Fruitland Coal
1720.0	1720.0	Pictured Cliffs SS
1875.0	1875.0	Lewis Shale
2530.0	2530.0	Cliffhouse SS
3245.0	3245.0	Menefee Fn
4115.0	4115.0	Point Lookout SS
4308.0	4308.0	Mancos Shale
4845.0	4845.0	Mancos Silt
5107.6	5120.4	Gallup Fn
5399.0	5724.9	HZ Target

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito L32-2408 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Project:	San Juan County, NM	**MD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Site:	S32-T24N-R8W (Escrito)	**North Reference:**	True
Well:	Escrito L32-2408 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

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	S32-T24N-R8W (Escrito)				
Site Position:		**Northing:**	1,917,175.15 ft	**Latitude:**	36.268820
From:	Lat/Long	**Easting:**	2,758,448.22 ft	**Longitude:**	-107.713410
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.07 °

Well	Escrito L32-2408 01H					
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,917,175.15 ft	**Latitude:**	36.268820
	+E/-W	0.0 ft	**Easting:**	2,758,448.22 ft	**Longitude:**	-107.713410
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,937.0 ft

Wellbore	HZ					
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**	
	IGRF2010	12/20/2012	9.63	63.03	50,317	

Design	Plan #4				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.0	0.0	0.0	269.83	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,826.1	0.00	0.00	4,826.1	0.0	0.0	0.00	0.00	0.00	0.00	
5,729.1	90.30	269.83	5,399.0	-1.7	-576.0	10.00	10.00	0.00	269.83	
10,350.8	90.30	269.83	5,374.8	-15.5	-5,197.6	0.00	0.00	0.00	0.00	Escrito L32-2408 01H

BHL { Y → (1899 − 15.5)ft = 1883.5 ≈ 1884 ft/s (Sec. 31)
x → (226 + 2671.19 + 2634.51 − 5197.6)ft = 334.1 ≈ 334 ft/w (Sec. 31)

William Tambekou
10/23/2013

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito L32-2408 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Project:	San Juan County, NM	**MD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Site:	S32-T24N-R8W (Escrito)	**North Reference:**	True
Well:	Escrito L32-2408 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
988.0	0.00	0.00	988.0	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	
1,100.0	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	
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,432.0	0.00	0.00	1,432.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs SS
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,875.0	0.00	0.00	1,875.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,530.0	0.00	0.00	2,530.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse SS
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,245.0	0.00	0.00	3,245.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,115.0	0.00	0.00	4,115.0	0.0	0.0	0.0	0.00	0.00	Point Lookout SS
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito L32-2408 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Project:	San Juan County, NM	**MD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Site:	S32-T24N-R8W (Escrito)	**North Reference:**	True
Well:	Escrito L32-2408 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,308.0	0.00	0.00	4,308.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	
4,826.1	0.00	0.00	4,826.1	0.0	0.0	0.0	0.00	0.00	KOP @ 4826'
4,845.0	1.90	269.83	4,845.0	0.0	-0.3	0.3	10.00	10.00	Mancos Silt
4,900.0	7.39	269.83	4,899.8	0.0	-4.8	4.8	10.00	10.00	
5,000.0	17.39	269.83	4,997.3	-0.1	-26.2	26.2	10.00	10.00	
5,100.0	27.39	269.83	5,089.7	-0.2	-64.2	64.2	10.00	10.00	
5,120.4	29.43	269.83	5,107.6	-0.2	-74.0	74.0	10.00	10.00	Gallup Fn
5,200.0	37.39	269.83	5,174.0	-0.4	-117.8	117.8	10.00	10.00	
5,300.0	47.39	269.83	5,247.8	-0.6	-185.1	185.1	10.00	10.00	
5,400.0	57.39	269.83	5,308.7	-0.8	-264.2	264.2	10.00	10.00	
5,500.0	67.39	269.83	5,355.0	-1.1	-352.7	352.7	10.00	10.00	
5,600.0	77.39	269.83	5,385.2	-1.3	-447.9	447.9	10.00	10.00	
5,608.1	78.20	269.83	5,386.9	-1.4	-455.8	455.8	10.00	10.00	7" Casing Setting Depth
5,700.0	87.39	269.83	5,398.4	-1.6	-546.9	546.9	10.00	10.00	
5,724.9	89.89	269.83	5,399.0	-1.7	-571.8	571.8	10.00	10.00	HZ Target
5,729.1	90.30	269.83	5,399.0	-1.7	-576.0	576.0	10.00	10.00	LP @ 5399' TVD; 90.3°
5,800.0	90.30	269.83	5,398.6	-1.9	-646.9	646.9	0.00	0.00	
5,900.0	90.30	269.83	5,398.1	-2.2	-746.9	746.9	0.00	0.00	
6,000.0	90.30	269.83	5,397.6	-2.5	-846.9	846.9	0.00	0.00	
6,100.0	90.30	269.83	5,397.1	-2.8	-946.9	946.9	0.00	0.00	
6,200.0	90.30	269.83	5,396.5	-3.1	-1,046.9	1,046.9	0.00	0.00	
6,300.0	90.30	269.83	5,396.0	-3.4	-1,146.9	1,146.9	0.00	0.00	
6,400.0	90.30	269.83	5,395.5	-3.7	-1,246.9	1,246.9	0.00	0.00	
6,500.0	90.30	269.83	5,395.0	-4.0	-1,346.9	1,346.9	0.00	0.00	
6,600.0	90.30	269.83	5,394.4	-4.3	-1,446.9	1,446.9	0.00	0.00	
6,700.0	90.30	269.83	5,393.9	-4.6	-1,546.9	1,546.9	0.00	0.00	
6,800.0	90.30	269.83	5,393.4	-4.9	-1,646.9	1,646.9	0.00	0.00	
6,900.0	90.30	269.83	5,392.9	-5.2	-1,746.9	1,746.9	0.00	0.00	
7,000.0	90.30	269.83	5,392.4	-5.5	-1,846.9	1,846.9	0.00	0.00	
7,100.0	90.30	269.83	5,391.8	-5.8	-1,946.9	1,946.9	0.00	0.00	
7,200.0	90.30	269.83	5,391.3	-6.1	-2,046.9	2,046.9	0.00	0.00	
7,300.0	90.30	269.83	5,390.8	-6.4	-2,146.9	2,146.9	0.00	0.00	
7,400.0	90.30	269.83	5,390.3	-6.7	-2,246.9	2,246.9	0.00	0.00	
7,500.0	90.30	269.83	5,389.7	-7.0	-2,346.9	2,346.9	0.00	0.00	
7,600.0	90.30	269.83	5,389.2	-7.3	-2,446.9	2,446.9	0.00	0.00	
7,700.0	90.30	269.83	5,388.7	-7.6	-2,546.9	2,546.9	0.00	0.00	
7,800.0	90.30	269.83	5,388.2	-7.9	-2,646.9	2,646.9	0.00	0.00	
7,900.0	90.30	269.83	5,387.6	-8.2	-2,746.9	2,746.9	0.00	0.00	
8,000.0	90.30	269.83	5,387.1	-8.5	-2,846.9	2,846.9	0.00	0.00	
8,100.0	90.30	269.83	5,386.6	-8.8	-2,946.9	2,946.9	0.00	0.00	
8,200.0	90.30	269.83	5,386.1	-9.1	-3,046.9	3,046.9	0.00	0.00	
8,300.0	90.30	269.83	5,385.5	-9.4	-3,146.8	3,146.9	0.00	0.00	
8,400.0	90.30	269.83	5,385.0	-9.7	-3,246.8	3,246.9	0.00	0.00	
8,500.0	90.30	269.83	5,384.5	-10.0	-3,346.8	3,346.9	0.00	0.00	
8,600.0	90.30	269.83	5,384.0	-10.3	-3,446.8	3,446.9	0.00	0.00	
8,700.0	90.30	269.83	5,383.5	-10.6	-3,546.8	3,546.9	0.00	0.00	
8,800.0	90.30	269.83	5,382.9	-10.9	-3,646.8	3,646.9	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito L32-2408 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Project:	San Juan County, NM	**MD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Site:	S32-T24N-R8W (Escrito)	**North Reference:**	True
Well:	Escrito L32-2408 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,900.0	90.30	269.83	5,382.4	-11.2	-3,746.8	3,746.9	0.00	0.00	
9,000.0	90.30	269.83	5,381.9	-11.5	-3,846.8	3,846.9	0.00	0.00	
9,100.0	90.30	269.83	5,381.4	-11.8	-3,946.8	3,946.9	0.00	0.00	
9,200.0	90.30	269.83	5,380.8	-12.1	-4,046.8	4,046.9	0.00	0.00	
9,300.0	90.30	269.83	5,380.3	-12.4	-4,146.8	4,146.8	0.00	0.00	
9,400.0	90.30	269.83	5,379.8	-12.7	-4,246.8	4,246.8	0.00	0.00	
9,500.0	90.30	269.83	5,379.3	-13.0	-4,346.8	4,346.8	0.00	0.00	
9,600.0	90.30	269.83	5,378.7	-13.3	-4,446.8	4,446.8	0.00	0.00	
9,700.0	90.30	269.83	5,378.2	-13.6	-4,546.8	4,546.8	0.00	0.00	
9,800.0	90.30	269.83	5,377.7	-13.9	-4,646.8	4,646.8	0.00	0.00	
9,900.0	90.30	269.83	5,377.2	-14.2	-4,746.8	4,746.8	0.00	0.00	
10,000.0	90.30	269.83	5,376.6	-14.5	-4,846.8	4,846.8	0.00	0.00	
10,100.0	90.30	269.83	5,376.1	-14.8	-4,946.8	4,946.8	0.00	0.00	
10,200.0	90.30	269.83	5,375.6	-15.1	-5,046.8	5,046.8	0.00	0.00	
10,300.0	90.30	269.83	5,375.1	-15.4	-5,146.8	5,146.8	0.00	0.00	
10,350.8	90.30	269.83	5,374.8	-15.5	-5,197.6	5,197.6	0.00	0.00	TD at 10350.8

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Escrito L32-2408 01H LI	0.00	0.00	5,399.1	200.2	-554.2	1,917,374.69	2,757,893.79	36.269370	-107.715290
- plan misses target center by 201.9ft at 5706.7ft MD (5398.7 TVD, -1.7 N, -553.6 E)									
- Point									
Escrito L32-2408 01H PI	0.00	0.00	5,374.8	186.1	-5,197.0	1,917,354.85	2,753,251.04	36.269330	-107.731040
- plan misses target center by 201.7ft at 10349.5ft MD (5374.8 TVD, -15.5 N, -5196.4 E)									
- Point									
Escrito L32-2408 01H PI	0.00	0.00	5,374.8	-14.8	-5,197.6	1,917,153.90	2,753,250.66	36.268778	-107.731042
- plan misses target center by 0.7ft at 10350.8ft MD (5374.8 TVD, -15.5 N, -5197.6 E)									
- Point									
Escrito L32-2408 01H PI	0.00	0.00	5,374.8	-15.5	-5,197.6	1,917,153.17	2,753,250.66	36.268776	-107.731042
- plan hits target center									
- Point									
Escrito L32-2408 01H PI	0.00	0.00	5,398.8	1.5	-555.1	1,917,175.93	2,757,893.15	36.268824	-107.715293
- plan misses target center by 3.1ft at 5708.2ft MD (5398.7 TVD, -1.7 N, -555.1 E)									
- Point									

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
5,608.1	5,386.9	7" Casing Setting Depth	7.000	7.500

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito L32-2408 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Project:	San Juan County, NM	**MD Reference:**	WELL @ 6950.0ft (Original Well Elev)
Site:	S32-T24N-R8W (Escrito)	**North Reference:**	True
Well:	Escrito L32-2408 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
988.0	988.0	Ojo Alamo SS		-0.30	269.80
1,240.0	1,240.0	Kirtland Shale		-0.30	269.80
1,432.0	1,432.0	Fruitland Coal		-0.30	269.80
1,720.0	1,720.0	Pictured Cliffs SS		-0.30	269.80
1,875.0	1,875.0	Lewis Shale		-0.30	269.80
2,530.0	2,530.0	Cliffhouse SS		-0.30	269.80
3,245.0	3,245.0	Menefee Fn		-0.30	269.80
4,115.0	4,115.0	Point Lookout SS		-0.30	269.80
4,308.0	4,308.0	Mancos Shale		-0.30	269.80
4,845.0	4,845.0	Mancos Silt		-0.30	269.80
5,120.4	5,108.0	Gallup Fn		-0.30	269.80
5,724.9	5,402.0	HZ Target		-0.30	269.80

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,826.1	4,826.1	0.0	0.0	KOP @ 4826'
5,729.1	5,399.0	-1.7	-576.0	LP @ 5399' TVD; 90.3°
10,350.8	5,374.8	-15.5	-5,197.6	TD at 10350.8