

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 3160-3 APD form.

Operator Signature Date: 7/18/13

Well information;

Operator Encana, Well Name and Number Escrito L18-24091H

API# 30-045-35486, Section 18, Township 24 N/S, Range 9 E/W

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☐ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☐ 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

Chuck Ferrin
NMOCD Approved by Signature

4-3-2014
Date AV

CONFIDENTIAL
RECEIVED

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JUL 19 2013

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM 16760	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ 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. Escrito L18-2409 01H	
3b. Phone No. (include area code) 720-876-3989		9. API Well No. 3004535486	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface V1482' FSL and 440' FWL Section 18, T24N, R9W At proposed prod. zone V2240' FSL and 330' FWL Section 13, T24N, R10W		10. Field and Pool, or Exploratory Bisti Lower-Gallup	
14. Distance in miles and direction from nearest town or post office* +/- 32.4 miles southeast of the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM		12. County or Parish San Juan	13. State NM
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 NMNM 16760 - 1280 acres 1279.83	17. Spacing Unit dedicated to this well 160.0 acres - N/2 S/2 Section 13	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. MF 1 is +/-373' northeast of wellbore	19. Proposed Depth 5,482' TVD/10,953' MD	20. BLM/BIA Bond No. on file COB-000235 RCVD MAR 28 '14 DIT COMS BLM	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,977' GL, 6,993' KB	22. Approximate date work will start* 03/22/2014	23. Estimated duration 25 days DIST. 3	

24. Attachments

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature <i>Holly Hill</i>	Name (Printed/Typed) Holly Hill	Date 7/18/13
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Title
Regulatory Analyst

Approved by (Signature) <i>Troy Salyers</i>	Name (Printed/Typed) Troy Salyers	Date 3/27/2014
Title Petroleum Engineer (Acting 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"**

**THIS APPROVAL 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

NMOCDA

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

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
RECEIVED

JUL 19 2013

WELL LOCATION AND ACREAGE DEDICATION PLAT

Farmington Field Office

*API Number 30-045-35486	*Pool Code 5890	*Pool Name BISTI LOWER GALLUP
*Property Code	*Property Name ESCRITO L18-2409	*Well Number 01H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 6977'

¹⁰ Surface Location

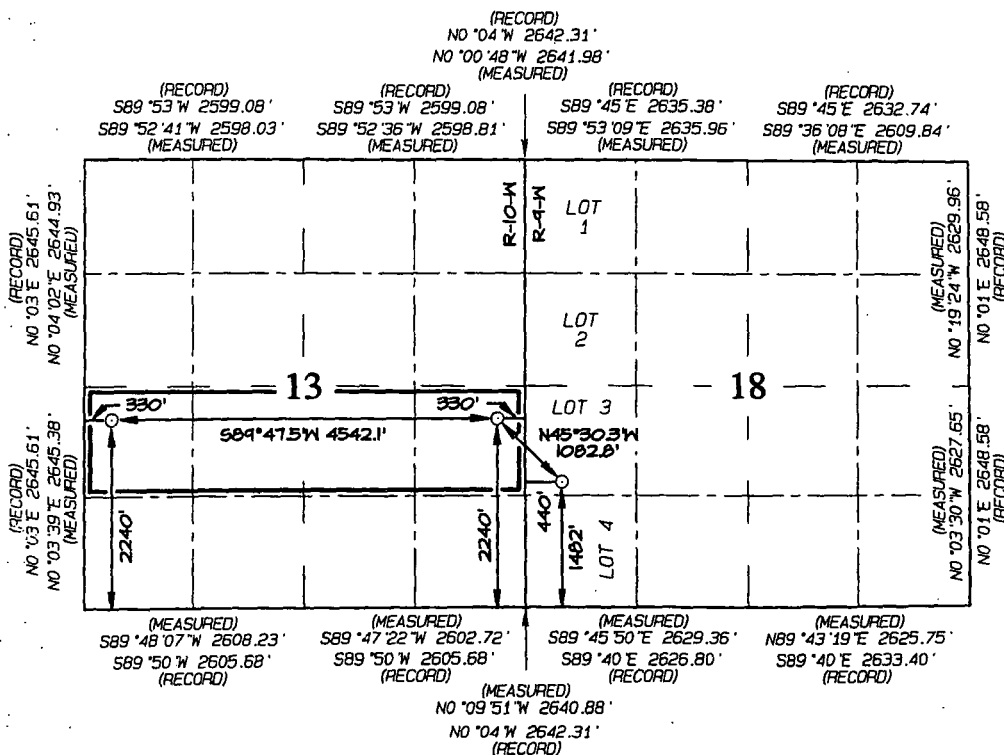
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	18	24N	9W	3	1482	SOUTH	440	WEST	SAN JUAN

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	13	24N	10W		2240	SOUTH	330	WEST	SAN JUAN

¹² Dedicated Acres 160.00 Acres N/2 S/2 - Section 13	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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



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 7/18/13
Signature Date

Holly Hill
Printed Name

holly.hill@encana.com
E-mail Address

E-mail Address

¹⁸ 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.

Date of Survey: APRIL 24, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Encana Oil & Gas (USA) Inc. Escrito L18-2409 01H

1482' FSL & 440' FWL, Section 18, T24N, R9W, N.M.P.M., San Juan County, NM

Latitude: 36.31086°N Longitude: 107.83775°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 27.9 miles to State Hwy #57 @ Mile Marker 123.4;

Go right (South-westerly) on State Hwy #57 for 3.1 miles to fork in road;

Go left (Southerly) exiting State Hwy #57 for 1.1 miles to fork in road;

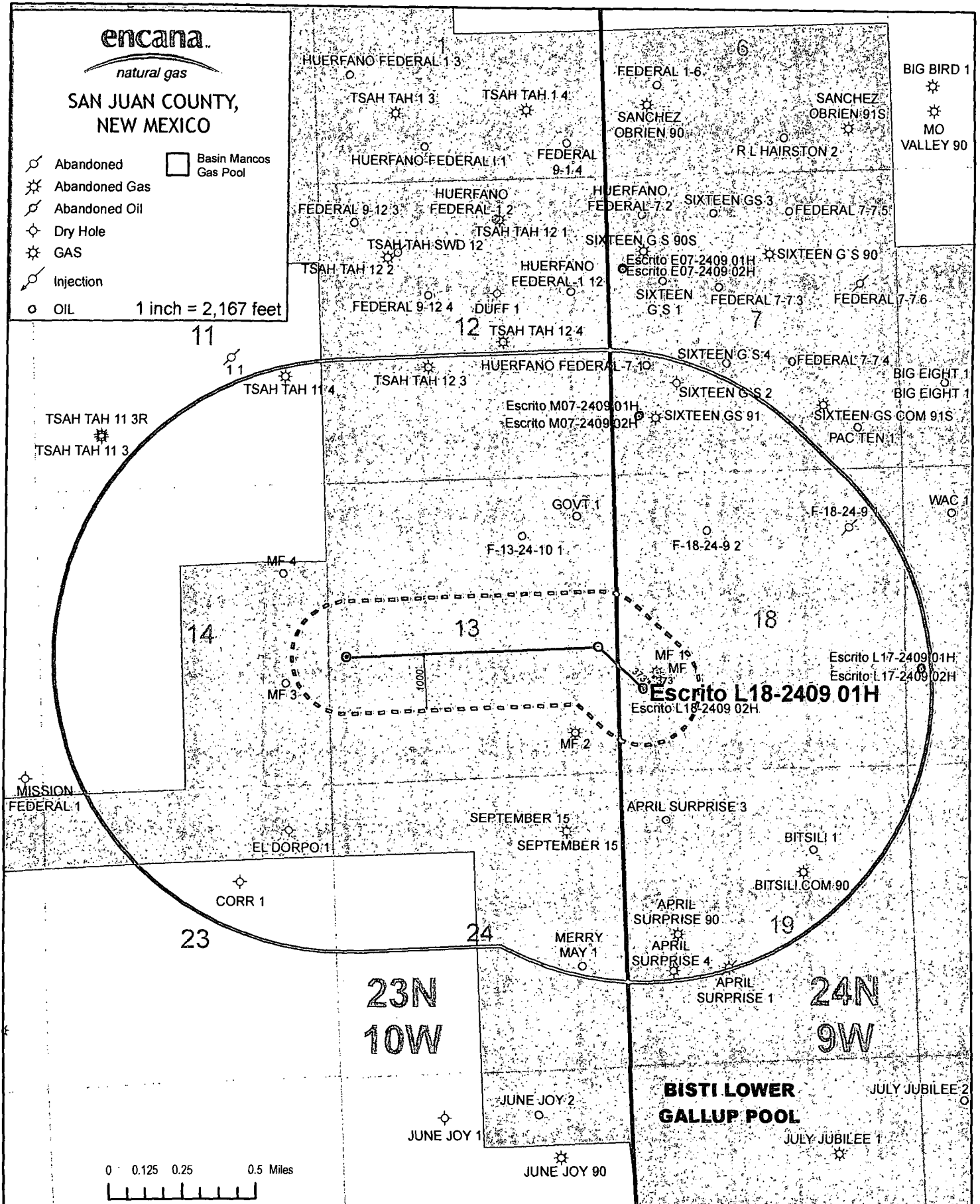
Go left (Easterly) for 0.3 miles to new access on right-hand side of existing roadway which continues for 349' to staked Escrito L18-2409 01H location.



SAN JUAN COUNTY,
NEW MEXICO

- Abandoned
 - Abandoned Gas
 - Abandoned Oil
 - Dry Hole
 - GAS
 - Injection
 - OIL
- 1 inch = 2,167 feet

Basin Mancos
Gas Pool



0 0.125 0.25 0.5 Miles

Escrito L18-2409 01H
SHL: NWSW Section 18, T24N, R9W
1482 FSL and 440 FWL
BHL: NWSW Section 13, T24N, R10W
2240 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NMNM 16760

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>
Ojo Alamo Ss.	953'
Kirtland	1103'
Fruitland Coal	1373'
Pictured Cliffs	1763'
Lewis	1923'
Cliffhouse	2533'
Menefee	3288'
Point Lookout	4183'
Mancos Shale	4408'
Mancos Silt	4983'
Gallup	5223'

The referenced surface elevation is 6977', KB 6993'

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	1373'
Gas	Pictured Cliffs	1763'
Gas	Cliffhouse	2533'
Gas	Point Lookout	4183'
Oil/Gas	Mancos	4408'

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.

Escrito L18-2409 01H

SHL: NWSW Section 18, T24N, R9W

1482 FSL and 440 FWL

BHL: NWSW Section 13, T24N, R10W

2240 FSL and 330 FWL

San Juan County, New Mexico

Lease Number: NMNM 16760

- 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'-6315'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	6115'-10953'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

*B80 pipe specifications are attached

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

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

- b) The proposed cementing program is as follows:

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

Escrito L18-2409 01H

SHL: NWSW Section 18, T24N, R9W
1482 FSL and 440 FWL

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2240 FSL and 330 FWL

San Juan County, New Mexico

Lease Number: NMNM 16760

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	6315'MD	30% open hole excess Stage 1 Lead: 289sks Stage 1 Tail: 197sks Stage 2 Lead: 160sks	Lead (Stages 1 and 2): PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuf/sk Tail (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuf/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	6115'-10953'	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 4936'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD.	5482'/10953'	Gallup

Escrito L18-2409 01H

SHL: NWSW Section 18, T24N, R9W
1482 FSL and 440 FWL

BHL: NWSW Section 13, T24N, R10W
2240 FSL and 330 FWL

San Juan County, New Mexico

Lease Number: NMNM 16760

6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60' TVD	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0-500' TVD	Fresh Water	8.4-8.6	60-70	NC
8 3/4"	500'TVD- 5522'TVD/6315'MD	Fresh Water LSND	8.5-8.8	40-50	8-10

b) Intermediate Casing Point to TD:

Hole Size (in)	MD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	6315'-10953'	Synthetic Oil Based Mud	8.6-9.0	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, 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 – None anticipated.
- c) Mud 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 +/- 2584 psi based on a 9.0 ppg at 5521' TVD of the landing point of the horizontal lateral. 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.

Escrito L18-2409 01H

**SHL: NWSW Section 18, T24N, R9W
1482 FSL and 440 FWL**

**BHL: NWSW Section 13, T24N, R10W
2240 FSL and 330 FWL**

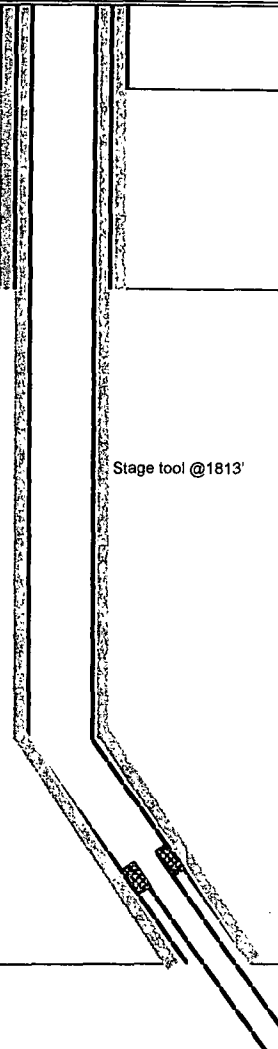
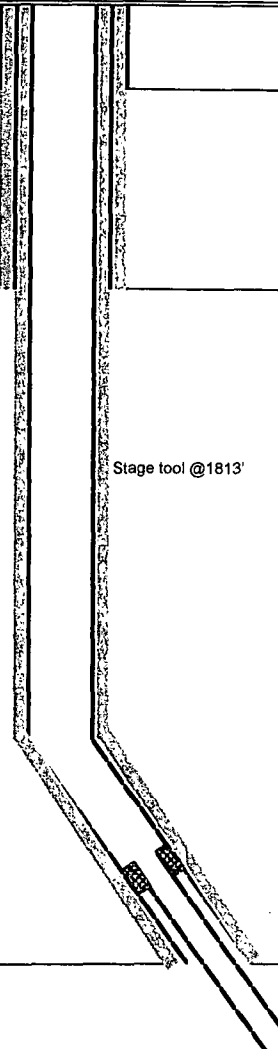
San Juan County, New Mexico

Lease Number: NMNM 16760

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on March 22, 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.

LOC: Sec 18-T24N-R9W County: San Juan WELL: Escrito L18-2409 01H			Encana Natural Gas WELL SUMMARY					ENG: 7/16/13 RIG: GLE: 6977 RKBE: 6993		
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION	
			TVD	MD						
			60	60'		30	20" 94# 100sx Type I Neat 48.8ppg cmt	Fresh wtr 8.3-9.2		
Surveys After csg is run	None					12 1/4	9 5/8" 36ppf J55 STC TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°	
			500	500						
Surveys every 500'	No OH logs	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn	953 1103 1373 1763 1923 2533 3288			8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 646 sksTotal. Stage 1 Lead: 289sks Stage 1 Tail: 197sks. Stage 2 Lead: 160sks	Fresh Wtr 8.5-8.8	Vertical <1°	
	Mud logger onsite	Point Lookout Ss Mancos Sh KICK OFF PT Mancos Silt Gallup Top 7" csg	4183 4408 4936 4983 5223 5522	6315		Stage tool @1813'			KOP 4936 10 deg/100'	
		horz target	5521	6405		6 1/8	200' overlap at liner top		.25deg updip 5482' TVD TD = 10953' MD	
		Base Gallup	5538				4548' Lateral	8.6-9.0 OBM		
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs						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	Switch to OBM 8.6-9.0		

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 4936', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 6315' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 4548' lateral to 10953', run 4 1/2" liner with external swellable csg packers



Boomerang Tube LLC

CASING (OR) TUBING DESCRIPTION AND PERFORMANCE PROPERTIES

Pipe Outside Diameter (ins)	_____	4.500
Pipe Wall Thickness (ins)	_____	0.250
Nominal Weight Per Foot (lbs)	_____	11.60
Thread Name	_____	Long Thread CSG
Grade Name	_____	SB-80
Pipe Minimum Yield (psi)	_____	80,000
Pipe Minimum Ultimate (psi)	_____	90,000
Coupling Minimum Yield (psi)	_____	80,000
Coupling Minimum Ultimate (psi)	_____	100,000
Coupling or Joint Outside Diameter (ins)	_____	5.000
Drift Diameter (ins)	_____	3.875
Plain End Weight per Foot (lbs)	_____	11.36
Joint Strength (lbs)	_____	201,000
Internal Yield (psi)	_____	7,780
Collapse Rating (psi)	_____	6,350

MAXIMUM DEPTH/LENGTH BASED ON MUD WTS & SAFETY FACTORS

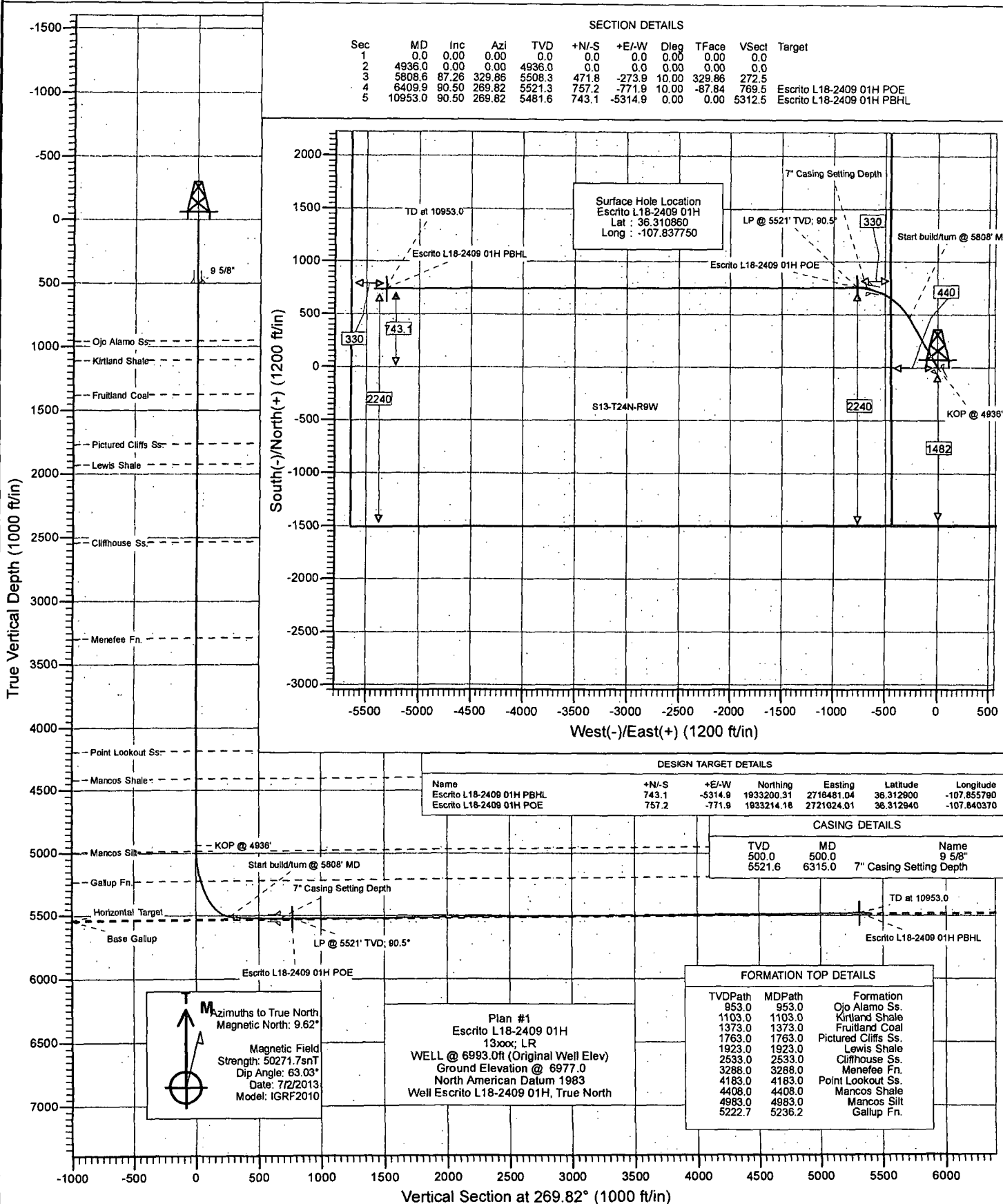
Drilling Mud Weight (ppg)	_____	9.625
Tension Safety Factor	_____	1.80
Maximum Tension Length (ft)	_____	9,630
Internal Yield Safety Factor	_____	1.10
Maximum Depth for Internal Yield (ft)	_____	14,150
Collapse Safety Factor	_____	1.125
Maximum Collapse Depth (ft)	_____	11,290

API RELATED VALUES and INTERMEDIATE CALCULATION RESULTS

Coupling Thread Fracture Strength	_____	464,000
Pipe Thread Fracture Strength (lbs)	_____	201,000
Pipe Body Plain End Yield (lbs)	_____	267,000
Round Thread Pull-Out (lbs)	_____	219,000
Minimum Make-up Torque (ft-lbs)	_____	1,640
Nominal Make-up Torque (ft-lbs)	_____	2,190
Maximum Make-up Torque (ft-lbs)	_____	2,740
Coupling Internal Yield (psi)	_____	10,660
Pipe Body Internal Yield (psi)	_____	7,780
Leak @ E1 or E7 plane (psi)	_____	17,920
Pipe Hydrostatic Test Pressure @ 80 % SMYS	_____	7,100



Project: San Juan County, NM
 Site: S18-T24N-R9W (Escrito)
 Well: Escrito L18-2409 01H
 Wellbore: Hz
 Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito L18-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6993.0ft (Original Well Elev)
Project:	San Juan County, NM	MD Reference:	WELL @ 6993.0ft (Original Well Elev)
Site:	S18-T24N-R9W (Escrito)	North Reference:	True
Well:	Escrito L18-2409 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Project:	San Juan County, NM	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site:	S18-T24N-R9W (Escrito)		
Site Position:		Northing:	1,932,456.95 ft
From:	Lat/Long	Easting:	2,721,795.86 ft
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in
		Grid Convergence:	0.00 °

Well:	Escrito L18-2409 01H				
Well Position	+N-S	0.0 ft	Northing:	1,932,456.95 ft	Latitude: 36.310860
	+E-W	0.0 ft	Easting:	2,721,795.86 ft	Longitude: -107.837750
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level: 6,977.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/2/2013	9.63	63.03	50,272

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	N-S	E-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	269.82

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N-S	+E-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,936.0	0.00	0.00	4,936.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,808.6	87.26	329.86	5,508.3	471.8	-273.9	10.00	10.00	0.00	329.86	
6,409.9	90.50	269.82	5,521.3	757.2	-771.9	10.00	0.54	-9.98	-87.84	Escrito L18-2409 01H
10,953.0	90.50	269.82	5,481.6	743.1	-5,314.9	0.00	0.00	0.00	0.00	Escrito L18-2409 01H

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito L18-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6993.0ft (Original Well Elev)
Project:	San Juan County, NM	MD Reference:	WELL @ 6993.0ft (Original Well Elev)
Site:	S18-T24N-R9W (Escrito)	North Reference:	True
Well:	Escrito L18-2409 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Bulld 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	
953.0	0.00	0.00	953.0	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	
1,103.0	0.00	0.00	1,103.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,373.0	0.00	0.00	1,373.0	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	
1,600.0	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	
1,763.0	0.00	0.00	1,763.0	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	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
1,923.0	0.00	0.00	1,923.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
2,533.0	0.00	0.00	2,533.0	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	
3,288.0	0.00	0.00	3,288.0	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	
4,183.0	0.00	0.00	4,183.0	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	

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S18-T24N-R9W(Escrito)
Well: Escrito L18-2409 01H
Wellbore: Hz
Design: Plan #1

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

Well Escrito L18-2409 01H
 WELL @ 6993.0ft (Original Well Elev)
 WELL @ 6993.0ft (Original Well Elev)
 True
 Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments/ Formations
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,408.0	0.00	0.00	4,408.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
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	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	
4,936.0	0.00	0.00	4,936.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4936'
4,983.0	4.70	329.86	4,983.0	1.7	-1.0	1.0	10.00	10.00	Mancos Silt
5,000.0	6.40	329.86	4,999.9	3.1	-1.8	1.8	10.00	10.00	
5,100.0	16.40	329.86	5,097.8	20.2	-11.7	11.6	10.00	10.00	
5,200.0	26.40	329.86	5,190.8	51.7	-30.0	29.8	10.00	10.00	
5,236.2	30.02	329.86	5,222.7	66.5	-38.6	38.4	10.00	10.00	Gallup Fn.
5,300.0	36.40	329.86	5,276.0	96.7	-56.1	55.8	10.00	10.00	
5,400.0	46.40	329.86	5,350.9	153.8	-89.3	88.8	10.00	10.00	
5,500.0	56.40	329.86	5,413.2	221.3	-128.5	127.8	10.00	10.00	
5,600.0	66.40	329.86	5,461.0	297.1	-172.5	171.6	10.00	10.00	
5,700.0	76.40	329.86	5,492.9	379.0	-220.1	218.9	10.00	10.00	
5,800.0	86.40	329.86	5,507.8	464.4	-269.6	268.2	10.00	10.00	
5,808.6	87.26	329.86	5,508.3	471.8	-273.9	272.5	10.00	10.00	Start build/turn @ 5808' MD
5,900.0	87.63	320.72	5,512.4	546.8	-325.9	324.2	10.00	0.41	
6,000.0	88.11	310.73	5,516.1	618.2	-395.6	393.6	10.00	0.48	
6,100.0	88.65	300.74	5,518.9	676.5	-476.6	474.5	10.00	0.54	
6,200.0	89.23	290.76	5,520.8	719.9	-566.6	564.3	10.00	0.58	
6,300.0	89.83	280.78	5,521.6	747.1	-662.7	660.3	10.00	0.60	
6,315.0	89.92	279.29	5,521.6	749.7	-677.4	675.1	10.00	0.61	7" Casing Setting Depth
6,400.0	90.44	270.81	5,521.4	757.1	-762.0	759.7	10.00	0.61	
6,409.9	90.50	269.82	5,521.3	757.2	-771.9	769.5	10.00	0.60	LP @ 5521' TVD; 90.5° - Escrito L18-2409 01H
6,500.0	90.50	269.82	5,520.5	756.9	-862.0	859.7	0.00	0.00	
6,600.0	90.50	269.82	5,519.6	756.6	-962.0	959.6	0.00	0.00	
6,700.0	90.50	269.82	5,518.7	756.3	-1,062.0	1,059.6	0.00	0.00	
6,800.0	90.50	269.82	5,517.9	756.0	-1,162.0	1,159.6	0.00	0.00	
6,900.0	90.50	269.82	5,517.0	755.7	-1,262.0	1,259.6	0.00	0.00	
7,000.0	90.50	269.82	5,516.1	755.4	-1,362.0	1,359.6	0.00	0.00	
7,100.0	90.50	269.82	5,515.3	755.0	-1,462.0	1,459.6	0.00	0.00	
7,200.0	90.50	269.82	5,514.4	754.7	-1,562.0	1,559.6	0.00	0.00	
7,300.0	90.50	269.82	5,513.5	754.4	-1,662.0	1,659.6	0.00	0.00	
7,400.0	90.50	269.82	5,512.6	754.1	-1,762.0	1,759.6	0.00	0.00	
7,500.0	90.50	269.82	5,511.8	753.8	-1,862.0	1,859.6	0.00	0.00	
7,600.0	90.50	269.82	5,510.9	753.5	-1,962.0	1,959.6	0.00	0.00	
7,700.0	90.50	269.82	5,510.0	753.2	-2,062.0	2,059.6	0.00	0.00	
7,800.0	90.50	269.82	5,509.1	752.9	-2,162.0	2,159.6	0.00	0.00	
7,900.0	90.50	269.82	5,508.3	752.6	-2,262.0	2,259.6	0.00	0.00	
8,000.0	90.50	269.82	5,507.4	752.3	-2,362.0	2,359.6	0.00	0.00	
8,100.0	90.50	269.82	5,506.5	752.0	-2,462.0	2,459.6	0.00	0.00	
8,200.0	90.50	269.82	5,505.6	751.6	-2,562.0	2,559.6	0.00	0.00	
8,300.0	90.50	269.82	5,504.8	751.3	-2,662.0	2,659.6	0.00	0.00	
8,400.0	90.50	269.82	5,503.9	751.0	-2,762.0	2,759.6	0.00	0.00	
8,500.0	90.50	269.82	5,503.0	750.7	-2,861.9	2,859.6	0.00	0.00	
8,600.0	90.50	269.82	5,502.2	750.4	-2,961.9	2,959.6	0.00	0.00	
8,700.0	90.50	269.82	5,501.3	750.1	-3,061.9	3,059.6	0.00	0.00	
8,800.0	90.50	269.82	5,500.4	749.8	-3,161.9	3,159.6	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito L18-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6993.0ft (Original Well Elev)
Project:	San Juan County, NM	MD Reference:	WELL @ 6993.0ft (Original Well Elev)
Site:	S18-T24N-R9W (Escrito)	North Reference:	True
Well:	Escrito L18-2409 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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	90.50	269.82	5,499.5	749.5	-3,261.9	3,259.6	0.00	0.00	
9,000.0	90.50	269.82	5,498.7	749.2	-3,361.9	3,359.6	0.00	0.00	
9,100.0	90.50	269.82	5,497.8	748.9	-3,461.9	3,459.6	0.00	0.00	
9,200.0	90.50	269.82	5,496.9	748.5	-3,561.9	3,559.6	0.00	0.00	
9,300.0	90.50	269.82	5,496.0	748.2	-3,661.9	3,659.5	0.00	0.00	
9,400.0	90.50	269.82	5,495.2	747.9	-3,761.9	3,759.5	0.00	0.00	
9,500.0	90.50	269.82	5,494.3	747.6	-3,861.9	3,859.5	0.00	0.00	
9,600.0	90.50	269.82	5,493.4	747.3	-3,961.9	3,959.5	0.00	0.00	
9,700.0	90.50	269.82	5,492.5	747.0	-4,061.9	4,059.5	0.00	0.00	
9,800.0	90.50	269.82	5,491.7	746.7	-4,161.9	4,159.5	0.00	0.00	
9,900.0	90.50	269.82	5,490.8	746.4	-4,261.9	4,259.5	0.00	0.00	
10,000.0	90.50	269.82	5,489.9	746.1	-4,361.9	4,359.5	0.00	0.00	
10,100.0	90.50	269.82	5,489.1	745.8	-4,461.9	4,459.5	0.00	0.00	
10,200.0	90.50	269.82	5,488.2	745.4	-4,561.9	4,559.5	0.00	0.00	
10,300.0	90.50	269.82	5,487.3	745.1	-4,661.9	4,659.5	0.00	0.00	
10,400.0	90.50	269.82	5,486.4	744.8	-4,761.9	4,759.5	0.00	0.00	
10,500.0	90.50	269.82	5,485.6	744.5	-4,861.9	4,859.5	0.00	0.00	
10,600.0	90.50	269.82	5,484.7	744.2	-4,961.9	4,959.5	0.00	0.00	
10,700.0	90.50	269.82	5,483.8	743.9	-5,061.9	5,059.5	0.00	0.00	
10,800.0	90.50	269.82	5,482.9	743.6	-5,161.9	5,159.5	0.00	0.00	
10,900.0	90.50	269.82	5,482.1	743.3	-5,261.8	5,259.5	0.00	0.00	
10,953.0	90.50	269.82	5,481.6	743.1	-5,314.9	5,312.5	0.00	0.00	TD at 10953.0 - Escrito L18-2409 01H PBHL

Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
Escrito L18-2409 01H PI	- plan hits target center	0.00	0.00	5,481.6	743.1	-5,314.9	1,933,200.31	2,716,481.04	36.312900 -107.855790
Escrito L18-2409 01H PI	- plan hits target center	0.00	0.00	5,521.3	757.2	-771.9	1,933,214.18	2,721,024.01	36.312940 -107.840370
	- Point								

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
500.0	500.0	9 5/8"	0.000	0.000
6,315.0	5,521.6	7" Casing Setting Depth	0.000	0.000

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S18-T24N-R9W (Escrito)
Well: Escrito L18-2409 01H
Wellbore: Hz
Design: Plan #1

Local Co-ordinate Reference: Well Escrito L18-2409 01H
TVD Reference: WELL @ 6993.0ft (Original Well Elev)
MD Reference: WELL @ 6993.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
953.0	953.0	Ojo Alamo Ss.		-0.50	269.82	
1,103.0	1,103.0	Kirtland Shale		-0.50	269.82	
1,373.0	1,373.0	Fruitland Coal		-0.50	269.82	
1,763.0	1,763.0	Pictured Cliffs Ss.		-0.50	269.82	
1,923.0	1,923.0	Lewis Shale		-0.50	269.82	
2,533.0	2,533.0	Cliffhouse Ss.		-0.50	269.82	
3,288.0	3,288.0	Menefee Fn.		-0.50	269.82	
4,183.0	4,183.0	Point Lookout Ss.		-0.50	269.82	
4,408.0	4,408.0	Mancos Shale		-0.50	269.82	
4,983.0	4,983.0	Mancos Silt		-0.50	269.82	
5,236.2	5,223.0	Gallup Fn.		-0.50	269.82	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		N-S (ft)	E-W (ft)	Comment	
4,936.0	4,936.0	0.0	0.0	KOP @ 4936'	
5,808.6	5,508.3	471.8	-273.9	Start build/turn @ 5808' MD	
6,409.9	5,521.3	757.2	-771.9	LP @ 5521' TVD; 90.5°	
10,953.0	5,481.6	743.1	-5,314.9	TD at 10953.0	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L18-2409 01H
Project:	San Juan County, NM	TVD Reference:	WELL @ 6993.0ft (Original Well Elev)
Reference Site:	S18-T24N-R9W (Escrito)	MD Reference:	WELL @ 6993.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Escrito L18-2409 01H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,295.4ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/2/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,953.0	Plan #1 (Hz)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S17-T24N-R9W (Escrito)						
Escrito L17-2409 01H - Hz - Plan #1	5,900.0	10,499.5	275.2	170.4	2.626 CC, ES	
Escrito L17-2409 01H - Hz - Plan #1	6,000.0	10,499.5	301.6	180.8	2.497 SF	
Escrito L17-2409 02H - Hz - Plan #1	5,100.0	10,637.9	736.4	604.9	5.601 SF	
Escrito L17-2409 02H - Hz - Plan #1	5,200.0	10,655.6	719.5	594.2	5.743 ES	
Escrito L17-2409 02H - Hz - Plan #1	5,209.2	10,657.6	719.4	594.8	5.775 CC	
S18-T24N-R9W (Escrito)						
Escrito L18-2409 02H - Hz - Plan #1	4,864.9	4,864.9	29.7	12.8	1.755 CC	
Escrito L18-2409 02H - Hz - Plan #1	4,900.0	4,899.9	29.7	12.7	1.744 ES, SF	

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S18-T24N-R9W (Escrito)
Site Error: 0.0ft
Reference Well: Escrito L18-2409 01H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L18-2409 01H
TVD Reference: WELL @ 6993.0ft (Original Well Elev)
MD Reference: WELL @ 6993.0ft (Original Well Elev)
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 S17-T24N-R9W (Escrito) - Escrito L17-2409 01H - Hz - Plan #1											Offset Site Error: 0.0 ft		
Survey Program: 0-Geolink MWD											Offset Well Error: 0.0 ft		
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre N-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis		Separation Factor
4,500.0	4,500.0	10,395.4	5,352.1	7.8	126.8	-0.61	717.9	-7.6	1,261.4	1,138.9	122.46	10.301	
4,600.0	4,600.0	10,394.7	5,352.1	8.0	126.8	-0.55	717.9	-6.9	1,180.5	1,058.0	122.56	9.632	
4,700.0	4,700.0	10,394.0	5,352.1	8.2	126.7	-0.50	717.9	-6.2	1,102.8	980.2	122.67	8.990	
4,800.0	4,800.0	10,393.3	5,352.1	8.3	126.7	-0.44	717.9	-5.5	1,029.0	906.2	122.78	8.381	
4,900.0	4,900.0	10,392.6	5,352.1	8.5	126.7	-0.39	717.9	-4.9	959.9	837.0	122.89	7.811	
5,000.0	4,999.9	10,393.7	5,352.1	8.7	126.7	32.56	717.9	-5.9	894.2	759.4	134.83	6.633	
5,100.0	5,097.8	10,403.0	5,352.1	8.9	127.0	37.27	717.9	-15.2	824.5	692.4	132.17	6.239	
5,200.0	5,180.8	10,420.6	5,352.0	9.1	127.4	42.43	717.9	-32.8	750.8	623.9	126.87	5.918	
5,300.0	5,276.0	10,446.1	5,351.8	9.5	128.0	48.07	717.9	-58.3	673.7	554.1	119.61	5.633	
5,400.0	5,350.9	10,478.7	5,351.5	10.0	128.8	54.30	717.9	-90.9	593.8	482.5	111.32	5.335	
5,500.0	5,413.2	10,499.5	5,351.4	10.8	129.3	63.71	717.9	-111.7	511.9	409.8	102.09	5.014	
5,600.0	5,461.0	10,499.5	5,351.4	11.9	129.3	76.29	717.9	-111.7	431.8	338.6	93.15	4.635	
5,700.0	5,492.9	10,499.5	5,351.4	13.1	129.3	87.00	717.9	-111.7	358.5	270.4	88.05	4.071	
5,800.0	5,507.8	10,499.5	5,351.4	14.6	129.3	94.28	717.9	-111.7	300.1	212.3	87.71	3.421	
5,898.5	5,513.0	10,499.5	5,351.4	16.2	129.3	94.88	717.9	-111.7	275.8	171.2	104.61	2.637	
5,900.0	5,512.4	10,499.5	5,351.4	16.2	129.3	95.03	717.9	-111.7	275.2	170.4	104.82	2.626 CC, ES	
6,000.0	5,516.1	10,499.5	5,351.4	17.9	129.3	95.53	717.9	-111.7	301.6	180.8	120.77	2.497 SF	
6,100.0	5,518.9	10,499.5	5,351.4	19.7	129.3	96.26	717.9	-111.7	367.7	234.3	133.40	2.756	
6,200.0	5,520.8	10,499.5	5,351.4	21.5	129.3	97.63	717.9	-111.7	455.2	313.1	142.10	3.203	
6,300.0	5,521.6	10,499.5	5,351.4	23.3	129.3	102.42	717.9	-111.7	552.0	406.9	145.06	3.805	
6,400.0	5,521.4	10,499.5	5,351.4	25.0	129.3	-108.41	717.9	-111.7	651.7	509.5	142.21	4.583	
6,500.0	5,520.5	10,499.5	5,351.4	26.7	129.3	-102.74	717.9	-111.7	751.6	603.8	147.74	5.087	
6,600.0	5,519.6	10,499.5	5,351.4	28.6	129.3	-102.74	717.9	-111.7	851.4	701.5	149.90	5.680	
6,700.0	5,518.7	10,499.5	5,351.4	30.5	129.3	-102.74	717.9	-111.7	951.3	799.2	152.09	6.255	
6,800.0	5,517.9	10,499.5	5,351.4	32.5	129.3	-102.74	717.9	-111.7	1,051.2	898.9	154.33	6.812	
6,900.0	5,517.0	10,499.5	5,351.4	34.6	129.3	-102.74	717.9	-111.7	1,151.1	994.6	156.59	7.351	
7,000.0	5,516.1	10,499.5	5,351.4	36.7	129.3	-102.74	717.9	-111.7	1,251.1	1,092.2	158.87	7.875	

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S18-T24N-R9W (Escrito)
 Site Error: 0.0ft
 Reference Well: Escrito L18-2409 01H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L18-2409 01H
 TVD Reference: WELL @ 6993.0ft (Original Well Elev)
 MD Reference: WELL @ 6993.0ft (Original Well Elev)
 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: S17-T24N-R9W (Escrito) - Escrito L17-2409 02H - Hz - Plan #1													Offset Site Error	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)				
4,400.0	4,400.0	10,631.1	5,307.3	7.7	127.0	-179.31	-601.7	-7.3	1,247.1	1,137.8	109.31	11.409		
4,500.0	4,500.0	10,630.4	5,307.3	7.8	126.9	-179.37	-601.7	-6.6	1,180.5	1,050.9	109.55	10.593		
4,600.0	4,600.0	10,629.7	5,307.3	8.0	126.9	-179.44	-601.7	-5.9	1,076.2	966.4	109.80	9.802		
4,700.0	4,700.0	10,629.0	5,307.3	8.2	126.9	-179.50	-601.7	-5.2	994.9	884.8	110.05	9.041		
4,800.0	4,800.0	10,628.3	5,307.3	8.3	126.9	-179.57	-601.7	-4.5	917.2	807.0	110.29	8.317		
4,900.0	4,900.0	10,627.6	5,307.3	8.5	126.9	-179.64	-601.7	-3.8	844.3	733.8	110.54	7.638		
5,000.0	4,999.9	10,628.7	5,307.3	8.7	126.9	-151.87	-601.7	-4.9	779.9	645.3	134.57	5.796		
5,100.0	5,097.8	10,637.9	5,307.3	8.9	127.1	-153.34	-601.7	-14.1	736.4	604.9	131.49	5.601 SF		
5,200.0	5,190.8	10,655.6	5,307.1	9.1	127.6	-152.73	-601.7	-31.7	719.5	594.2	125.28	5.743 ES		
5,209.2	5,199.0	10,657.6	5,307.1	9.2	127.6	-152.57	-601.7	-33.8	719.4	594.8	124.57	5.775 CC		
5,300.0	5,276.0	10,661.1	5,307.0	9.5	128.2	-150.19	-601.7	-57.3	731.0	614.5	116.48	6.276		
5,400.0	5,350.9	10,713.7	5,306.7	10.0	129.0	-145.46	-601.7	-89.9	768.5	662.8	105.70	7.271		
5,500.0	5,413.2	10,731.4	5,306.6	10.8	129.4	-139.64	-601.7	-107.5	827.0	733.4	93.63	8.832		
5,600.0	5,461.0	10,731.4	5,306.6	11.9	129.4	-131.72	-601.7	-107.5	901.7	819.9	81.84	11.018		
5,700.0	5,492.9	10,731.4	5,306.6	13.1	129.4	-118.15	-601.7	-107.5	987.1	914.1	73.06	13.511		
5,800.0	5,507.8	10,731.4	5,306.6	14.6	129.4	-96.75	-601.7	-107.5	1,078.5	1,008.7	69.80	15.451		
5,900.0	5,512.4	10,731.4	5,306.6	16.2	129.4	-92.22	-601.7	-107.5	1,169.3	1,081.0	88.29	13.243		
6,000.0	5,516.1	10,731.4	5,306.6	17.9	129.4	-90.69	-601.7	-107.5	1,253.7	1,147.0	106.73	11.746		

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S18-T24N-R9W (Escrito)
 Site Error: 0.0ft
 Reference Well: Escrito L18-2409 01H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference: Well Escrito L18-2409 01H
 MD Reference: WELL @ 6993.0ft (Original Well Elev)
 North Reference: WELL @ 6993.0ft (Original Well Elev)
 Survey Calculation Method: True
 Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: USA EDM 5000 Multi Users DB
 Offset TVD Reference: Offset Datum

Offset Design: S18-T24N-R9W (Escrito) - Escrito L18-2409 02H - Hz - Plan #1														Offset Site Error	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Footcandle	Offset Wellbore Centre N/S (ft)	Offset Wellbore Centre E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	168.56	-29.1	5.9	29.7						
100.0	100.0	100.0	100.0	0.1	0.1	168.56	-29.1	5.9	29.7	29.4	0.29	101.333			
200.0	200.0	200.0	200.0	0.3	0.3	168.56	-29.1	5.9	29.7	29.1	0.64	46.261			
300.0	300.0	300.0	300.0	0.5	0.5	168.56	-29.1	5.9	29.7	28.7	0.99	29.972			
400.0	400.0	400.0	400.0	0.7	0.7	168.56	-29.1	5.9	29.7	28.4	1.34	22.167			
500.0	500.0	500.0	500.0	0.8	0.8	168.56	-29.1	5.9	29.7	28.0	1.69	17.587			
600.0	600.0	600.0	600.0	1.0	1.0	168.56	-29.1	5.9	29.7	27.7	2.04	14.575			
700.0	700.0	700.0	700.0	1.2	1.2	168.56	-29.1	5.9	29.7	27.3	2.39	12.444			
800.0	800.0	800.0	800.0	1.4	1.4	168.56	-29.1	5.9	29.7	27.0	2.74	10.857			
900.0	900.0	900.0	900.0	1.5	1.5	168.56	-29.1	5.9	29.7	26.6	3.09	9.629			
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	168.56	-29.1	5.9	29.7	26.3	3.43	8.650			
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	168.56	-29.1	5.9	29.7	25.9	3.78	7.852			
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	168.56	-29.1	5.9	29.7	25.6	4.13	7.189			
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	168.56	-29.1	5.9	29.7	25.2	4.48	6.629			
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	168.56	-29.1	5.9	29.7	24.9	4.83	6.150			
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	168.56	-29.1	5.9	29.7	24.5	5.18	5.736			
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	168.56	-29.1	5.9	29.7	24.2	5.53	5.374			
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	168.56	-29.1	5.9	29.7	23.8	5.88	5.055			
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	168.56	-29.1	5.9	29.7	23.5	6.23	4.771			
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	168.56	-29.1	5.9	29.7	23.1	6.58	4.518			
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	168.56	-29.1	5.9	29.7	22.8	6.93	4.280			
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	168.56	-29.1	5.9	29.7	22.4	7.27	4.084			
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	168.56	-29.1	5.9	29.7	22.1	7.62	3.897			
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	168.56	-29.1	5.9	29.7	21.7	7.97	3.727			
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	168.56	-29.1	5.9	29.7	21.4	8.32	3.570			
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	168.56	-29.1	5.9	29.7	21.0	8.67	3.427			
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	168.56	-29.1	5.9	29.7	20.7	9.02	3.294			
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	168.56	-29.1	5.9	29.7	20.3	9.37	3.171			
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	168.56	-29.1	5.9	29.7	20.0	9.72	3.057			
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	168.56	-29.1	5.9	29.7	19.6	10.07	2.951			
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	168.56	-29.1	5.9	29.7	19.3	10.42	2.853			
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	168.56	-29.1	5.9	29.7	18.9	10.77	2.760			
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	168.56	-29.1	5.9	29.7	18.6	11.11	2.673			
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	168.56	-29.1	5.9	29.7	18.2	11.46	2.592			
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	168.56	-29.1	5.9	29.7	17.9	11.81	2.515			
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	168.56	-29.1	5.9	29.7	17.6	12.16	2.443			
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	168.56	-29.1	5.9	29.7	17.2	12.51	2.375			
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	168.56	-29.1	5.9	29.7	16.9	12.86	2.311			
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	168.56	-29.1	5.9	29.7	16.5	13.21	2.249			
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	168.56	-29.1	5.9	29.7	16.2	13.56	2.192			
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	168.56	-29.1	5.9	29.7	15.8	13.91	2.137			
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	168.56	-29.1	5.9	29.7	15.5	14.26	2.084			
4,200.0	4,200.0	4,200.0	4,200.0	7.3	7.3	168.56	-29.1	5.9	29.7	15.1	14.60	2.034			
4,300.0	4,300.0	4,300.0	4,300.0	7.5	7.5	168.56	-29.1	5.9	29.7	14.8	14.95	1.987			
4,400.0	4,400.0	4,400.0	4,400.0	7.7	7.7	168.56	-29.1	5.9	29.7	14.4	15.30	1.942			
4,500.0	4,500.0	4,500.0	4,500.0	7.8	7.8	168.56	-29.1	5.9	29.7	14.1	15.65	1.898			
4,600.0	4,600.0	4,600.0	4,600.0	8.0	8.0	168.56	-29.1	5.9	29.7	13.7	16.00	1.857			
4,700.0	4,700.0	4,700.0	4,700.0	8.2	8.2	168.56	-29.1	5.9	29.7	13.4	16.35	1.817			
4,800.0	4,800.0	4,800.0	4,800.0	8.3	8.3	168.56	-29.1	5.9	29.7	13.0	16.70	1.779			
4,864.9	4,864.9	4,864.9	4,864.9	8.5	8.5	168.56	-29.1	5.9	29.7	12.8	16.93	1.755 CC			
4,900.0	4,900.0	4,899.9	4,899.9	8.5	8.5	168.59	-29.1	5.9	29.7	12.7	17.05	1.744 ES, SF			
5,000.0	4,999.9	4,995.8	4,995.3	8.7	8.7	-151.40	-35.3	-0.4	38.7	21.4	17.34	2.233			

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: S18-T24N-R9W (Escrito)
 Site Error: 0.0ft
 Reference Well: Escrito L18-2409 01H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L18-2409 01H
 TVD Reference: WELL @ 6993.0ft (Original Well Elev)
 MD Reference: WELL @ 6993.0ft (Original Well Elev)
 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 S18-T24N-R9W (Escrito) - Escrito L18-2409 02H - Hz - Plan #1														Offset Site Error 0.0 ft	
Survey Program: 0-Geolink MWD														Offset Well Error 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Total	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N-S (ft)	+E-W (ft)	Centres (ft)	Ellipses (ft)	Uncertainty Axis	Factor			
5,100.0	5,097.8	5,083.2	5,079.8	8.9	8.9	-142.76	-50.8	-16.0	73.1	55.7	17.43	4.194			
5,200.0	5,190.8	5,155.9	5,147.0	9.1	9.1	-137.54	-70.0	-35.8	129.5	112.0	17.42	7.433			
5,300.0	5,278.0	5,212.0	5,196.1	9.5	9.2	-131.69	-89.0	-55.1	202.1	184.7	17.49	11.558			
5,400.0	5,350.9	5,250.0	5,227.7	10.0	9.4	-122.22	-103.7	-70.1	286.1	268.0	18.07	15.836			
5,500.0	5,413.2	5,279.6	5,251.4	10.8	9.5	-106.87	-116.2	-82.8	377.1	357.5	19.54	19.297			
5,600.0	5,461.0	5,300.0	5,267.1	11.9	9.6	-83.88	-125.3	-92.0	471.7	450.7	21.05	22.410			
5,700.0	5,492.9	5,300.0	5,267.1	13.1	9.6	-54.46	-125.3	-92.0	567.1	547.5	19.65	28.869			
5,800.0	5,507.8	5,300.0	5,267.1	14.6	9.6	-35.12	-125.3	-92.0	661.2	644.3	18.89	39.152			
5,900.0	5,512.4	5,300.0	5,267.1	16.2	9.6	-48.35	-125.3	-92.0	752.7	732.0	20.65	36.444			
6,000.0	5,516.1	5,300.0	5,267.1	17.9	9.6	-58.34	-125.3	-92.0	840.8	817.1	23.70	35.481			
6,100.0	5,518.9	5,300.0	5,267.1	19.7	9.6	-64.56	-125.3	-92.0	924.2	898.5	25.78	35.852			
6,200.0	5,520.8	5,317.4	5,280.2	21.5	9.7	-69.96	-133.3	-100.2	1,001.7	974.2	27.45	36.493			
6,300.0	5,521.6	5,339.1	5,298.0	23.3	9.9	-73.85	-143.8	-110.9	1,071.9	1,043.3	28.56	37.532			
6,400.0	5,521.4	5,369.1	5,316.8	25.0	10.1	-76.99	-158.8	-126.2	1,133.6	1,104.4	29.26	38.743			
6,500.0	5,520.5	5,400.0	5,337.1	26.7	10.3	-78.53	-175.2	-142.8	1,191.5	1,160.0	31.47	37.858			
6,600.0	5,519.6	5,450.0	5,387.2	28.6	10.8	-80.60	-203.2	-171.3	1,252.8	1,218.7	34.13	36.711			

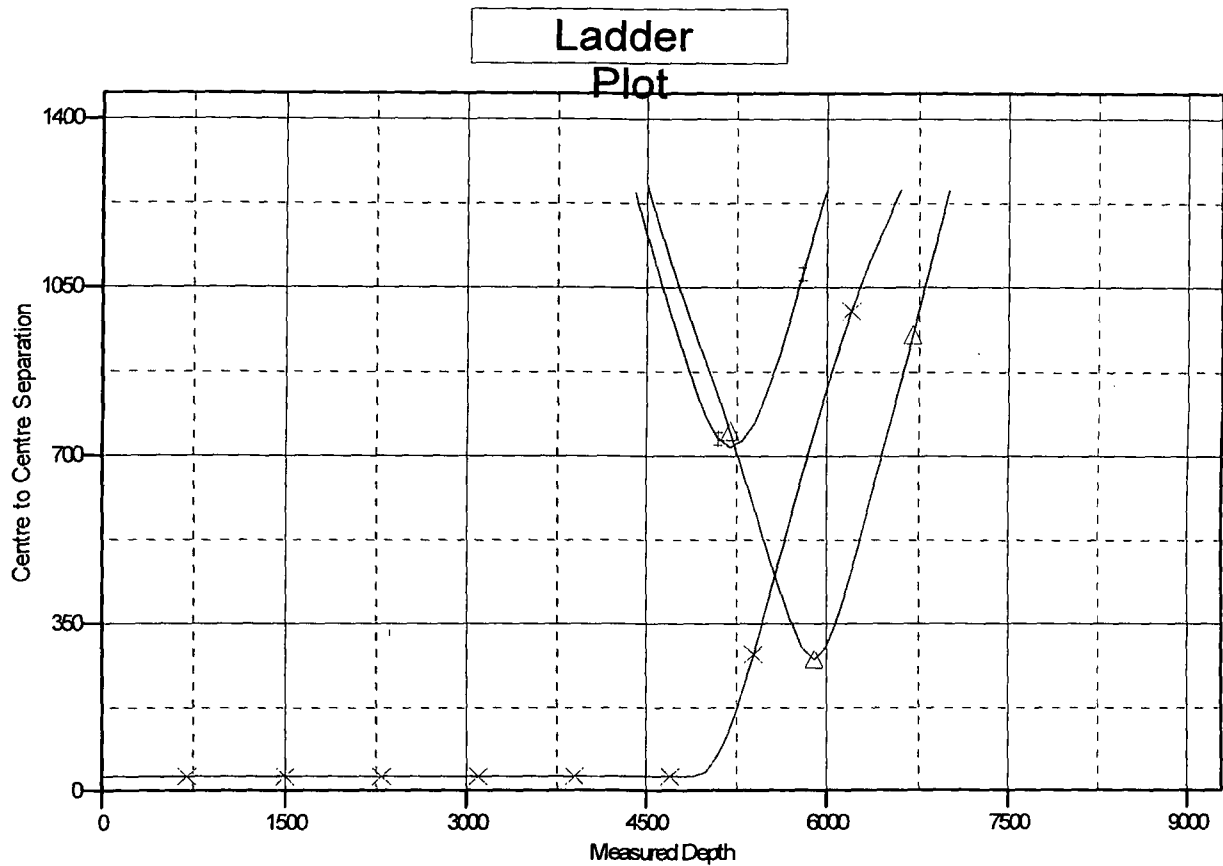
Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S18-T24N-R9W (Escrito)
Site Error: 0.0ft
Reference Well: Escrito L18-2409 01H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L18-2409 01H
TVD Reference: WELL @ 6993.0ft (Original Well Elev)
MD Reference: WELL @ 6993.0ft (Original Well Elev)
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 WELL @ 6993.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: Escrito L18-2409 01H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.00°



LEGEND

△ Escrito L17-2409 01H, Hz, Plan #1 V0
 □ Escrito L17-2409 02H, Hz, Plan #1 V0
 × Escrito L18-2409 02H, Hz, Plan #1 V0

WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well name and number:

Escrito L18-2409 01H

