

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 L17-2409 2H

API# 30-045-35488, Section 17, Township 24 NS, Range 9 EW

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

Chad Perin
NMOCD Approved by Signature

12-3-2013 CA
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

CONFIDENTIAL
RECEIVED

JUL 19 2013

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

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM 16760 NMNM 36473	
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 L17-2409 02H	
3b. Phone No. (include area code) 720-876-3989		9. API Well No. 3004535488	
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 1705' FSL and 292' FWL Section 17, T24N, R9W At proposed prod. zone 880' FSL and 330' FWL Section 18, T24N, R9W		10. Field and Pool, or Exploratory Bisti Lower-Gallup	
14. Distance in miles and direction from nearest town or post office* +/- 33.9 miles southeast of the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM		11. Sec., T. R. M. or Blk. and Survey or Area Section 17, T24N, R9W NMPM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) BHL is 330' from west lease line		12. County or Parish San Juan	
16. No. of acres in lease NMNM 16760 - 1280 acres NMNM 36473 - 320 acres		13. State NM	
17. Spacing Unit dedicated to this well 160.0 acres - S/2 S/2 Section 18 159.83			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. MF 1 is +/-889' north of wellbore		20. BLM/BIA Bond No. on file COB-000235 RCVD NOV 25 '13 OIL CONS. DIV.	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6792' GL, 6808' KB		22. Approximate date work will start* 01/15/2014	
		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
Title Regulatory Analyst		
Approved by (Signature) <i>D. Mankie</i>	Name (Printed/Typed)	Date 11/18/13
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.

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT 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.

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)

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

NMOCD

PV

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

RECEIVED

DISTRICT I
1826 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
611 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1268 Fax: (505) 748-0780

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV
1820 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3480 Fax: (505) 478-8488

State of New Mexico
Energy, Minerals & Natural Resources Department

JUL 19 2013

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505
Farmington Field Office
Bureau of Land Management

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35488		*Pool Code 5890	*Pool Name BISTI LOWER-GALLUP
*Property Code 40267	*Property Name ESCRITO L17-2409		*Well Number 02H
*OGRD No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6791.8'

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	17	24N	9W		1705'	SOUTH	292'	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	18	24N	9W	4	880'	SOUTH	330'	WEST	SAN JUAN

*Dedicated Acres 159.83 460.00-ACRES S/2 S/2 SEC. 18	PROJECT AREA	*Joint or Infill	*Consolidation Code	*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

1 LAT. 36.314047° N (NAD83)
LONG. 107.839253° W (NAD83)
LAT. 36.314036° N (NAD27)
LONG. 107.838636° W (NAD27)

2 LAT. 36.306791° N (NAD83)
LONG. 107.839226° W (NAD83)
LAT. 36.306780° N (NAD27)
LONG. 107.838609° W (NAD27)

3 LAT. 36.321239° N (NAD83)
LONG. 107.821448° W (NAD83)
LAT. 36.321228° N (NAD27)
LONG. 107.820832° W (NAD27)

4 LAT. 36.306797° N (NAD83)
LONG. 107.821390° W (NAD83)
LAT. 36.306855° N (NAD27)
LONG. 107.820774° W (NAD27)

5 LAT. 36.306799° N (NAD83)
LONG. 107.803508° W (NAD83)
LAT. 36.306787° N (NAD27)
LONG. 107.802893° 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 7/18/13
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.

APRIL 25, 2013
Date of Survey

David Russell
Signature and Seal of Professional Surveyor

REGISTERED PROFESSIONAL LAND SURVEYOR
NEW MEXICO
10201

DAVID RUSSELL
Certificate Number 10201

BOTTOM HOLE
LAT. 36.309207° N (NAD83)
LONG. 107.838115° W (NAD83)
LAT. 36.309196° N (NAD27)
LONG. 107.837498° W (NAD27)

ENTRY POINT
LAT. 36.309213° N (NAD83)
LONG. 107.822519° W (NAD83)
LAT. 36.309202° N (NAD27)
LONG. 107.821903° W (NAD27)

WELL FLAG
LAT. 36.311480° N (NAD83)
LONG. 107.820420° W (NAD83)
LAT. 36.311469° N (NAD27)
LONG. 107.819804° W (NAD27)

ENCANA OIL & GAS (USA) INC.
ESCRITO L17-2409 #02H
1705' FSL & 292' FWL
LOCATED IN THE NW/4 SW/4 OF SECTION 17,
T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF US HWY 550 & US HWY 64, TRAVEL SOUTH FOR 30.9 MILES TO MP 120.7.
- 2) TURN RIGHT AND GO 2.0 MILES "Y" INTERSECTION.
- 3) TURN LEFT AND GO 0.2 MILES TO "Y" INTERSECTION.
- 4) TURN LEFT AND GO 0.6 MILES TO GATE.
- 5) CONTINUE PAST GATE 0.2 MILES WHERE ACCESS IS STAKED ON RIGHT SIDE OF ROAD.

WELL FLAG LOCATED AT LAT. 36.311480° N, LONG. 107.820420° W (NAD 83).



natural gas

 Abandoned
 Basin Mancos Gas Pool

 Abandoned Gas

 Abandoned Oil

 Dry Hole

 GAS

 Injection

 OIL

1 inch = 2.167 feet

1 inch = 2.167 feet



Escrito L17-2409 02H
SHL: NWSW Section 17, T24N, R9W
1705 FSL and 292 FWL
BHL: SWSW Section 18, T24N, R9W
880 FSL and 330 FWL
San Juan County, New Mexico
Lease Number: NMNM 16760 NMNM 36473

**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.	803'
Kirtland	988'
Fruitland Coal	1228'
Pictured Cliffs	1613'
Lewis	1778'
Cliffhouse	2413'
Menefee	3173'
Point Lookout	4063'
Mancos Shale	4263'
Mancos Silt	4808'
Gallup	5043'

The referenced surface elevation is 6792', KB 6808'

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	1228'
Gas	Pictured Cliffs	1613'
Gas	Cliffhouse	2413'
Gas	Point Lookout	4063'
Oil/Gas	Mancos	4263'

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 L17-2409 02H

**SHL: NWSW Section 17, T24N, R9W
1705 FSL and 292 FWL**

**BHL: SWSW Section 18, T24N, R9W
880 FSL and 330 FWL**

San Juan County, New Mexico

Lease Number: NMNM 16760 NMNM 36473

- 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'-6045'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	5845'-10731'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 L17-2409 02H

SHL: NWSW Section 17, T24N, R9W
1705 FSL and 292 FWL

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880 FSL and 330 FWL

San Juan County, New Mexico

Lease Number: NMNM 16760 NMNM 36473

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	6045'MD	30% open hole excess Stage 1 Lead: 281sks Stage 1 Tail: 192sks Stage 2 Lead: 146sks	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*	5845'-10731'	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 4623'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5307'/10731'	Gallup

Escrito L17-2409 02H

**SHL: NWSW Section 17, T24N, R9W
1705 FSL and 292 FWL**

**BHL: SWSW Section 18, T24N, R9W
880 FSL and 330 FWL**

San Juan County, New Mexico

Lease Number: NMNM 16760 NMNM 36473

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- 5337'TVD/6045'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"	6045'-10731'	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 +/- 2499 psi based on a 9.0 ppg at 5339' 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 L17-2409 02H

**SHL: NWSW Section 17, T24N, R9W
1705 FSL and 292 FWL**

**BHL: SWSW Section 18, T24N, R9W
880 FSL and 330 FWL**

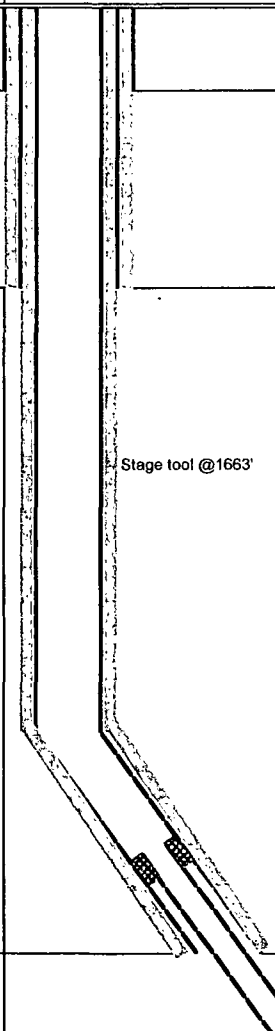
San Juan County, New Mexico

Lease Number: NMNM 16760 NMNM 36473

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on January 15, 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 17-T24N-R9W County: San Juan WELL: Escrito L17-2409 02H			Encana Natural Gas WELL SUMMARY					ENG: 7/16/13 RIG: GLE: 6792 RKBE: 6808	
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°
Surveys every 500'	No OH logs Mud logger onsite	Ojo Alamo Kirtland	803 988			8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 619 sksTotal. Stage 1 Lead: 281sks Stage 1 Tail: 192sks. Stage 2 Lead: 146sks	Fresh Wtr 8.5-8.8	Vertical <1°
		Fruitland Coal	1228						
		Pictured Cliffs Ss Lewis Shale	1613 1778						
		Cliffhouse Ss Menefee Fn	2413 3173						
		Point Lookout Ss Mancos Sh	4063 4263						
KICK OFF PT	4623	Stage tool @1663'		6 1/8	200' overlap at liner top	4595' Lateral	8.6-9.0 OBM	.25deg updip 5307' TVD TD = 10731' MD	
Mancos Silt	4808								
Gallup Top	5043								
		7" csg	5337	6045					
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target	5339	6136			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	
		Base Gallup	5368						

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 4623', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 6045' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 4595' lateral to 10731', 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

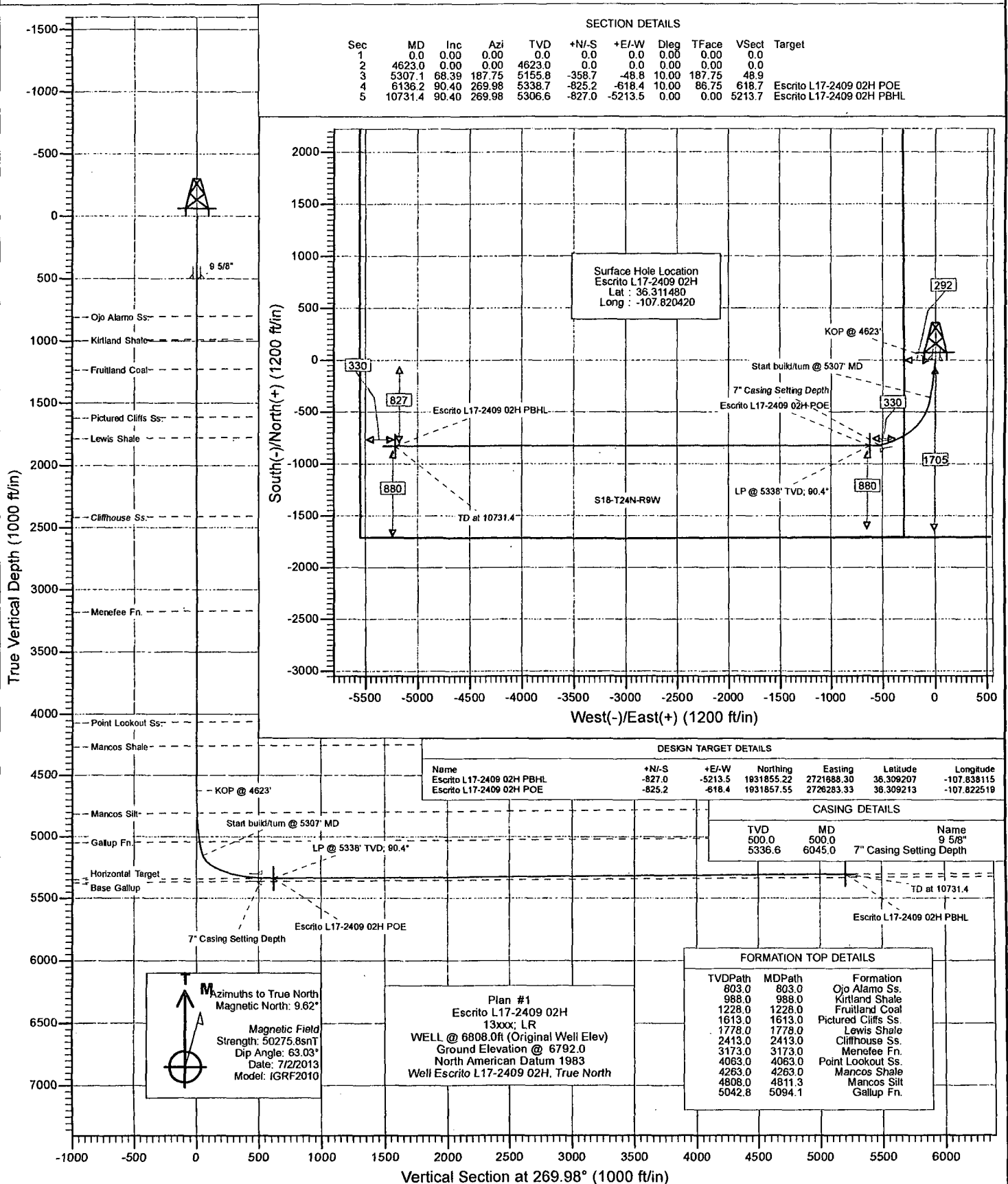
Drilling Mud Weight (ppg)	_____	9.625
Tension Safety Factor	_____	1.80
Maximum Tension Length (ft)	_____	9,630
Internal Yield Safety Factor	_____	1.10
Maximum Depth for Internal Yield (ft)	_____	14,150
Collapse Safety Factor	_____	1.125
Maximum Collapse Depth (ft)	_____	11,290

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: S17-T24N-R9W (Escrito)
 Well: Escrito L17-2409 02H
 Wellbore: Hz
 Design: Plan #1



Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S17-T24N-R9W (Escrito)
 Well: Escrito L17-2409 02H
 Wellbore: Hz
 Design: Plan #1

Local Co-ordinate Reference: Well Escrito L17-2409 02H
 TVD Reference: WELL @ 6808.0ft (Original Well Elev)
 MD Reference: WELL @ 6808.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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

Site: S17-T24N-R9W (Escrito)
 Site Position: Northing: 1,932,707.27 ft Latitude: 36.311547
 From: Lat/Long Easting: 2,726,920.20 ft Longitude: -107.820357
 Position Uncertainty: 0.0 ft Slot Radius: 13.200 in Grid Convergence: 0.01 °

Well: Escrito L17-2409 02H
 Well Position: +N-S 0.0 ft Northing: 1,932,682.87 ft Latitude: 36.311480
 +E-W 0.0 ft Easting: 2,726,901.64 ft Longitude: -107.820420
 Position Uncertainty: 0.0 ft Wellhead Elevation: ft Ground Level: 6,792.0 ft

Wellbore: Hz
 Magnetics: Model Name Sample Date Declination Dip Angle Field Strength
 (°) (°) (nT)
 IGRF2010 7/2/2013 9.62 63.03 50,276

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 0.0 269.98

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	
4,623.0	0.00	0.00	4,623.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,307.1	68.39	187.75	5,155.8	-358.7	-48.8	10.00	10.00	0.00	187.75	
6,136.2	90.40	269.98	5,338.7	-825.2	-618.4	10.00	2.65	9.92	86.75	Escrito L17-2409 02H
10,731.4	90.40	269.98	5,306.6	-827.0	-5,213.5	0.00	0.00	0.00	0.00	Escrito L17-2409 02H

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 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
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	
803.0	0.00	0.00	803.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
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	Kirtland Shale
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	
1,228.0	0.00	0.00	1,228.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,613.0	0.00	0.00	1,613.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,778.0	0.00	0.00	1,778.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
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	
2,413.0	0.00	0.00	2,413.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
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	
3,173.0	0.00	0.00	3,173.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
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	
4,063.0	0.00	0.00	4,063.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,263.0	0.00	0.00	4,263.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale

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 MD Reference: WELL @ 6808.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
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	
4,623.0	0.00	0.00	4,623.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4623'
4,700.0	7.70	187.75	4,699.8	-5.1	-0.7	0.7	10.00	10.00	
4,800.0	17.70	187.75	4,797.2	-26.9	-3.7	3.7	10.00	10.00	
4,811.3	18.83	187.75	4,808.0	-30.4	-4.1	4.1	10.00	10.00	Mancos Silt
4,900.0	27.69	187.75	4,889.3	-65.1	-8.9	8.9	10.00	10.00	
5,000.0	37.69	187.75	4,973.4	-118.5	-16.1	16.2	10.00	10.00	
5,094.1	47.10	187.75	5,042.8	-181.3	-24.7	24.7	10.00	10.00	Gallup Fn.
5,100.0	47.69	187.75	5,046.8	-185.6	-25.3	25.3	10.00	10.00	
5,200.0	57.69	187.75	5,107.3	-264.3	-36.0	36.1	10.00	10.00	
5,300.0	67.69	187.75	5,153.2	-352.2	-47.9	48.0	10.00	10.00	
5,307.1	68.39	187.75	5,155.8	-358.7	-48.8	48.9	10.00	10.00	Start build/turn @ 5307' MD
5,400.0	69.21	197.68	5,189.5	-443.1	-67.9	68.0	10.00	0.88	
5,500.0	70.72	208.21	5,223.8	-529.5	-104.5	104.6	10.00	1.51	
5,600.0	72.82	218.50	5,255.2	-608.6	-156.6	156.9	10.00	2.10	
5,700.0	75.43	228.54	5,282.6	-678.2	-222.8	223.1	10.00	2.61	
5,800.0	78.45	238.33	5,305.2	-736.1	-301.0	301.2	10.00	3.02	
5,900.0	81.80	247.90	5,322.4	-780.6	-388.8	389.0	10.00	3.34	
6,000.0	85.36	257.31	5,333.6	-810.2	-483.5	483.7	10.00	3.57	
6,045.0	87.01	261.50	5,336.6	-818.5	-527.6	527.9	10.00	3.67	7" Casing Setting Depth
6,100.0	89.05	266.62	5,338.5	-824.2	-582.2	582.5	10.00	3.71	
6,136.2	90.40	269.98	5,338.7	-825.2	-618.4	618.7	10.00	3.72	LP @ 5338' TVD; 90.4° - Escrito L 17-2409 02H
6,200.0	90.40	269.98	5,338.2	-825.3	-682.2	682.5	0.00	0.00	
6,300.0	90.40	269.98	5,337.5	-825.3	-782.2	782.5	0.00	0.00	
6,400.0	90.40	269.98	5,336.8	-825.3	-882.2	882.5	0.00	0.00	
6,500.0	90.40	269.98	5,336.1	-825.4	-982.2	982.5	0.00	0.00	
6,600.0	90.40	269.98	5,335.4	-825.4	-1,082.2	1,082.5	0.00	0.00	
6,700.0	90.40	269.98	5,334.7	-825.5	-1,182.2	1,182.5	0.00	0.00	
6,800.0	90.40	269.98	5,334.0	-825.5	-1,282.2	1,282.5	0.00	0.00	
6,900.0	90.40	269.98	5,333.3	-825.5	-1,382.2	1,382.5	0.00	0.00	
7,000.0	90.40	269.98	5,332.6	-825.6	-1,482.2	1,482.5	0.00	0.00	
7,100.0	90.40	269.98	5,332.0	-825.6	-1,582.2	1,582.5	0.00	0.00	
7,200.0	90.40	269.98	5,331.3	-825.6	-1,682.2	1,682.5	0.00	0.00	
7,300.0	90.40	269.98	5,330.6	-825.7	-1,782.2	1,782.5	0.00	0.00	
7,400.0	90.40	269.98	5,329.9	-825.7	-1,882.2	1,882.5	0.00	0.00	
7,500.0	90.40	269.98	5,329.2	-825.8	-1,982.2	1,982.5	0.00	0.00	
7,600.0	90.40	269.98	5,328.5	-825.8	-2,082.2	2,082.5	0.00	0.00	
7,700.0	90.40	269.98	5,327.8	-825.8	-2,182.2	2,182.5	0.00	0.00	
7,800.0	90.40	269.98	5,327.1	-825.9	-2,282.2	2,282.5	0.00	0.00	
7,900.0	90.40	269.98	5,326.4	-825.9	-2,382.2	2,382.5	0.00	0.00	
8,000.0	90.40	269.98	5,325.7	-825.9	-2,482.2	2,482.5	0.00	0.00	
8,100.0	90.40	269.98	5,325.0	-826.0	-2,582.2	2,582.5	0.00	0.00	
8,200.0	90.40	269.98	5,324.3	-826.0	-2,682.2	2,682.5	0.00	0.00	
8,300.0	90.40	269.98	5,323.6	-826.1	-2,782.2	2,782.5	0.00	0.00	
8,400.0	90.40	269.98	5,322.9	-826.1	-2,882.2	2,882.4	0.00	0.00	
8,500.0	90.40	269.98	5,322.2	-826.1	-2,982.2	2,982.4	0.00	0.00	
8,600.0	90.40	269.98	5,321.5	-826.2	-3,082.2	3,082.4	0.00	0.00	
8,700.0	90.40	269.98	5,320.8	-826.2	-3,182.2	3,182.4	0.00	0.00	
8,800.0	90.40	269.98	5,320.1	-826.2	-3,282.2	3,282.4	0.00	0.00	

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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	90.40	269.98	5,319.4	-826.3	-3,382.1	3,382.4	0.00	0.00	
9,000.0	90.40	269.98	5,318.7	-826.3	-3,482.1	3,482.4	0.00	0.00	
9,100.0	90.40	269.98	5,318.0	-826.3	-3,582.1	3,582.4	0.00	0.00	
9,200.0	90.40	269.98	5,317.3	-826.4	-3,682.1	3,682.4	0.00	0.00	
9,300.0	90.40	269.98	5,316.6	-826.4	-3,782.1	3,782.4	0.00	0.00	
9,400.0	90.40	269.98	5,315.9	-826.5	-3,882.1	3,882.4	0.00	0.00	
9,500.0	90.40	269.98	5,315.2	-826.5	-3,982.1	3,982.4	0.00	0.00	
9,600.0	90.40	269.98	5,314.5	-826.5	-4,082.1	4,082.4	0.00	0.00	
9,700.0	90.40	269.98	5,313.8	-826.6	-4,182.1	4,182.4	0.00	0.00	
9,800.0	90.40	269.98	5,313.1	-826.6	-4,282.1	4,282.4	0.00	0.00	
9,900.0	90.40	269.98	5,312.4	-826.6	-4,382.1	4,382.4	0.00	0.00	
10,000.0	90.40	269.98	5,311.7	-826.7	-4,482.1	4,482.4	0.00	0.00	
10,100.0	90.40	269.98	5,311.0	-826.7	-4,582.1	4,582.4	0.00	0.00	
10,200.0	90.40	269.98	5,310.3	-826.8	-4,682.1	4,682.4	0.00	0.00	
10,300.0	90.40	269.98	5,309.6	-826.8	-4,782.1	4,782.4	0.00	0.00	
10,400.0	90.40	269.98	5,308.9	-826.8	-4,882.1	4,882.4	0.00	0.00	
10,500.0	90.40	269.98	5,308.2	-826.9	-4,982.1	4,982.4	0.00	0.00	
10,600.0	90.40	269.98	5,307.5	-826.9	-5,082.1	5,082.4	0.00	0.00	
10,700.0	90.40	269.98	5,306.8	-826.9	-5,182.1	5,182.4	0.00	0.00	
10,731.4	90.40	269.98	5,306.6	-827.0	-5,213.5	5,213.7	0.00	0.00	TD at 10731.4 - Escrito L17-2409 02H PBHL

Targets									
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Escrito L17-2409 02H PI - plan hits target center - Point	0.00	0.00	5,338.7	-825.2	-618.4	1,931,857.55	2,726,283.33	36.309213	-107.822519
Escrito L17-2409 02H PI - plan hits target center - Point	0.00	0.00	5,306.6	-827.0	-5,213.5	1,931,855.22	2,721,688.30	36.309207	-107.838115

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,045.0	5,336.6	7" Casing Setting Depth	0.000	0.000	
500.0	500.0	9 5/8"	0.000	0.000	

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 Design: Plan #1

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 MD Reference: WELL @ 6808.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
803.0	803.0	Ojo Alamo Ss.		-0.40	269.98	
988.0	988.0	Kirtland Shale		-0.40	269.98	
1,228.0	1,228.0	Fruitland Coal		-0.40	269.98	
1,613.0	1,613.0	Pictured Cliffs Ss.		-0.40	269.98	
1,778.0	1,778.0	Lewis Shale		-0.40	269.98	
2,413.0	2,413.0	Cliffhouse Ss.		-0.40	269.98	
3,173.0	3,173.0	Menefee Fn.		-0.40	269.98	
4,063.0	4,063.0	Point Lookout Ss.		-0.40	269.98	
4,263.0	4,263.0	Mancos Shale		-0.40	269.98	
4,811.3	4,808.0	Mancos Silt		-0.40	269.98	
5,094.1	5,043.0	Gallup Fn.		-0.40	269.98	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
4,623.0	4,623.0	0.0	0.0	KOP @ 4623'	
5,307.1	5,155.8	-358.7	-48.8	Start build/turn @ 5307' MD	
6,136.2	5,338.7	-825.2	-618.4	LP @ 5338' TVD; 90.4°	
10,731.4	5,306.6	-827.0	-5,213.5	TD at 10731.4	

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S17-T24N-R9W (Escrito)

Escrito L17-2409 02H

Hz

Plan #1

Anticollision Report

02 July, 2013

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S17-T24N-R9W (Escrito)
Site Error: 0.0ft
Reference Well: Escrito L17-2409 02H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L17-2409 02H
TVD Reference: WELL @ 6808.0ft (Original Well Elev)
MD Reference: WELL @ 6808.0ft (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: Plan #1

Filter type: NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method: MD Interval 100.0ft
Depth Range: Unlimited
Results Limited by: Maximum center-center distance of 1,273.1ft
Warning Levels Evaluated at: 2.00 Sigma

Error Model: Systematic Ellipse
Scan Method: Closest Approach 3D
Error Surface: Elliptical Conic

Survey Tool Program Date 7/2/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,731.4	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	4,600.0	4,600.0	30.6	14.6	1.915	CC, ES, SF

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S17-T24N-R9W (Escrito)
 Site Error: 0.0ft
 Reference Well: Escrito L17-2409 02H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L17-2409 02H
 TVD Reference: WELL @ 6808.0ft (Original Well Elev)
 MD Reference: WELL @ 6808.0ft (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: O-Geolink MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis	Distance										
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	Warning
0.0	0.0	0.0	0.0	0.0	0.0	37.27	24.4	18.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	37.27	24.4	18.6	30.6	30.4	0.29	104.528	
200.0	200.0	200.0	200.0	0.3	0.3	37.27	24.4	18.6	30.6	30.0	0.64	47.719	
300.0	300.0	300.0	300.0	0.5	0.5	37.27	24.4	18.6	30.6	29.7	0.99	30.917	
400.0	400.0	400.0	400.0	0.7	0.7	37.27	24.4	18.6	30.6	29.3	1.34	22.866	
500.0	500.0	500.0	500.0	0.8	0.8	37.27	24.4	18.6	30.6	29.0	1.69	18.141	
600.0	600.0	600.0	600.0	1.0	1.0	37.27	24.4	18.6	30.6	28.6	2.04	15.035	
700.0	700.0	700.0	700.0	1.2	1.2	37.27	24.4	18.6	30.6	28.3	2.39	12.837	
800.0	800.0	800.0	800.0	1.4	1.4	37.27	24.4	18.6	30.6	27.9	2.74	11.199	
900.0	900.0	900.0	900.0	1.5	1.5	37.27	24.4	18.6	30.6	27.6	3.09	9.933	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	37.27	24.4	18.6	30.6	27.2	3.43	8.923	
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	37.27	24.4	18.6	30.6	26.9	3.78	8.100	
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	37.27	24.4	18.6	30.6	26.5	4.13	7.416	
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	37.27	24.4	18.6	30.6	26.2	4.48	6.838	
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	37.27	24.4	18.6	30.6	25.8	4.83	6.344	
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	37.27	24.4	18.6	30.6	25.5	5.18	5.917	
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	37.27	24.4	18.6	30.6	25.1	5.53	5.543	
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	37.27	24.4	18.6	30.6	24.8	5.88	5.214	
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	37.27	24.4	18.6	30.6	24.4	6.23	4.922	
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	37.27	24.4	18.6	30.6	24.1	6.58	4.660	
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	37.27	24.4	18.6	30.6	23.7	6.93	4.426	
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	37.27	24.4	18.6	30.6	23.4	7.27	4.213	
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	37.27	24.4	18.6	30.6	23.0	7.62	4.020	
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	37.27	24.4	18.6	30.6	22.7	7.97	3.844	
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	37.27	24.4	18.6	30.6	22.3	8.32	3.683	
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	37.27	24.4	18.6	30.6	22.0	8.67	3.535	
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	37.27	24.4	18.6	30.6	21.6	9.02	3.398	
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	37.27	24.4	18.6	30.6	21.3	9.37	3.271	
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	37.27	24.4	18.6	30.6	20.9	9.72	3.154	
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	37.27	24.4	18.6	30.6	20.6	10.07	3.045	
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	37.27	24.4	18.6	30.6	20.2	10.42	2.942	
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	37.27	24.4	18.6	30.6	19.9	10.77	2.847	
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	37.27	24.4	18.6	30.6	19.5	11.11	2.758	
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	37.27	24.4	18.6	30.6	19.2	11.46	2.674	
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	37.27	24.4	18.6	30.6	18.8	11.81	2.595	
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	37.27	24.4	18.6	30.6	18.5	12.16	2.520	
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	37.27	24.4	18.6	30.6	18.1	12.51	2.450	
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	37.27	24.4	18.6	30.6	17.8	12.86	2.383	
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	37.27	24.4	18.6	30.6	17.4	13.21	2.320	
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	37.27	24.4	18.6	30.6	17.1	13.56	2.261	
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	37.27	24.4	18.6	30.6	16.7	13.91	2.204	
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	37.27	24.4	18.6	30.6	16.4	14.26	2.150	
4,200.0	4,200.0	4,200.0	4,200.0	7.3	7.3	37.27	24.4	18.6	30.6	16.0	14.60	2.099	
4,300.0	4,300.0	4,300.0	4,300.0	7.5	7.5	37.27	24.4	18.6	30.6	15.7	14.95	2.050	
4,400.0	4,400.0	4,400.0	4,400.0	7.7	7.7	37.27	24.4	18.6	30.6	15.3	15.30	2.003	
4,500.0	4,500.0	4,500.0	4,500.0	7.8	7.8	37.27	24.4	18.6	30.6	15.0	15.65	1.958	
4,600.0	4,600.0	4,600.0	4,600.0	8.0	8.0	37.27	24.4	18.6	30.6	14.6	16.00	1.915 CC, ES, SF	
4,700.0	4,699.8	4,699.7	4,699.7	8.2	8.2	-154.42	24.4	18.6	35.2	19.0	16.27	2.166	
4,800.0	4,797.2	4,790.7	4,790.3	8.4	8.3	-169.12	31.1	14.9	61.3	45.1	16.19	3.785	
4,900.0	4,889.3	4,864.7	4,862.3	8.6	8.5	-179.56	45.8	6.9	115.2	99.4	15.74	7.317	
5,000.0	4,973.4	4,917.7	4,912.3	9.0	8.6	174.68	61.2	-1.5	190.4	175.4	15.03	12.669	
5,100.0	5,046.8	4,950.0	4,941.9	9.6	8.7	169.70	72.6	-7.8	279.3	265.1	14.20	19.666	

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
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 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L17-2409 02H
 TVD Reference: WELL @ 6808.0ft (Original Well Elev)
 MD Reference: WELL @ 6808.0ft (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								
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	Warning		
5,200.0	5,107.3	4,968.5	4,958.4	10.4	8.7	159.00	79.8	-11.7	375.7	361.8	13.92	26.999			
5,300.0	5,153.2	4,973.2	4,962.7	11.4	8.8	64.68	81.7	-12.7	475.2	456.3	18.90	25.143			
5,400.0	5,189.5	4,973.0	4,962.5	12.5	8.8	74.88	81.6	-12.7	574.4	553.6	20.76	27.671			
5,500.0	5,223.8	4,974.8	4,964.0	13.8	8.8	75.75	82.3	-13.1	670.9	649.1	21.88	30.663			
5,600.0	5,255.2	4,976.2	4,967.0	15.2	8.8	74.42	83.7	-13.8	763.4	740.6	22.78	33.507			
5,700.0	5,262.6	4,983.0	4,971.3	16.6	8.8	72.77	85.8	-14.9	850.8	827.3	23.53	36.165			
5,800.0	5,305.2	5,000.0	4,986.1	18.1	8.8	72.34	93.1	-18.9	932.2	908.0	24.21	38.500			
5,900.0	5,322.4	5,000.0	4,986.1	19.6	8.8	70.52	93.1	-18.9	1,006.6	982.0	24.57	40.967			
6,000.0	5,333.6	5,000.0	4,986.1	21.1	8.8	69.34	93.1	-18.9	1,073.6	1,048.8	24.76	43.353			
6,100.0	5,338.5	5,016.1	4,999.9	22.6	8.9	69.74	100.4	-22.9	1,132.4	1,107.5	24.94	45.398			
6,200.0	5,338.2	5,028.1	5,010.0	24.1	9.0	70.33	106.1	-26.0	1,185.6	1,159.4	26.28	45.111			
6,300.0	5,337.5	5,050.0	5,028.1	25.8	9.0	71.53	116.9	-31.9	1,243.5	1,215.0	28.54	43.573			

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
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 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Escrito L17-2409 02H
 TVD Reference: WELL @ 6808.0ft (Original Well Elev)
 MD Reference: WELL @ 6808.0ft (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 @ 6808.0ft (Original Well Elev)

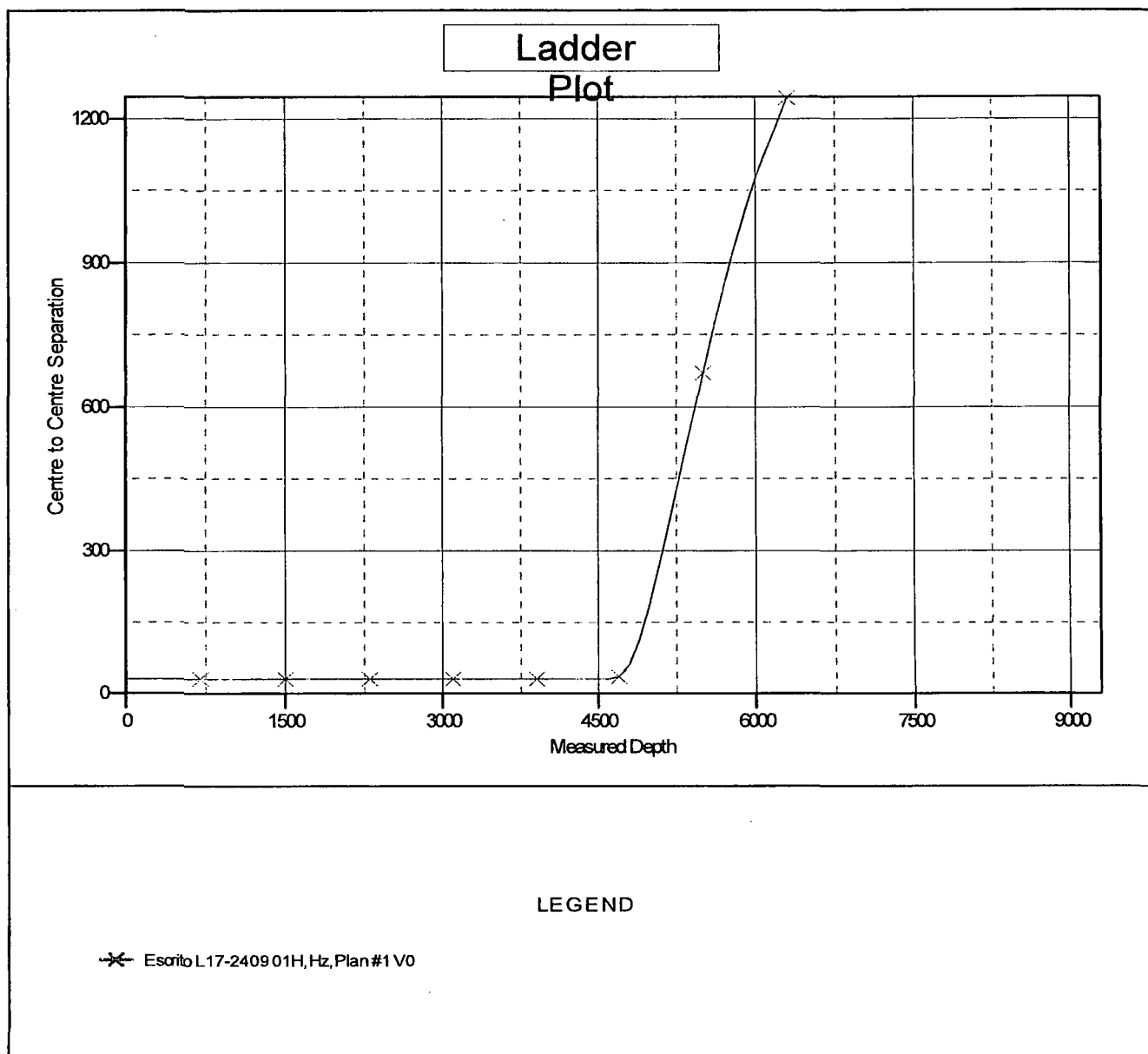
Offset Depths are relative to Offset Datum

Central Meridian is -107.833333 °

Coordinates are relative to: Escrito L17-2409 02H

Coordinate System is US State Plane 1983, New Mexico Western Zone

Grid Convergence at Surface is: 0.01°



WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well name and number:

Escrito L17 2409 02H

