

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: 5.30.14

Well information;

Operator Encina, Well Name and Number Escribo A28-2409 #2H

API# 30-045-35557, Section 28, Township 24 N, 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. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

Chris Herlihy
NMOCD Approved by Signature

7-28-2014
Date

RECEIVED

JUN 03 2014

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM 12374
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 A28-2409 02H
3b. Phone No. (include area code) 720-876-3926		9. API Well No. 30-045-35557
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1234' FNL and 318' FEL Section 28, T24N, R9W At proposed prod. zone 1400' FNL and 330' FWL Section 28 T24N R9W		10. Field and Pool, or Exploratory Bisti Lower-Gallup/Basin Mancos
14. Distance in miles and direction from nearest town or post office* +/- 33.6 miles south from intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM		11. Sec., T. R. M. or Blk. and Survey or Area Section 28, 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' FWL Section 28, T24N, R9W	16. No. of acres in lease NMNM 12374 - 2,240 acres	17. Spacing Unit dedicated to this well 160.0 acres - S2N2 Section 28, T24N, R9W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL is +/- 30' E of Escrito A28-2409 01H	19. Proposed Depth 5267' TVD/ 9667' MD	20. BLM/BIA Bond No. on file COB-000235
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6861' GL: 6877' KB	22. Approximate date work will start* 11/25/2014	23. Estimated duration JUL 14 2014 12 days

24. Attachments

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

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

25. Signature <i>Jessica Gregg</i>	Name (Printed/Typed) Jessica Gregg	Date 05/30/2014
Title Regulatory Analyst		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 7/16/14
Title AFM	Office FFO	

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

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

(Continued on page 2)

*(Instructions on page 2)

OIL CONS. DIV DIST. 3

JUL 14 2014

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

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

NMOC

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

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

JUN 03 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35587	*Pool Code 5890 / 97232	*Pool Name BISTI LOWER - GALLUP
*Property Code 313512	*Property Name ESCRITO A28-2409	*Well Number 02H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 6861'

10 Surface Location

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	28	24N	9W		1234	NORTH	318	EAST	SAN JUAN

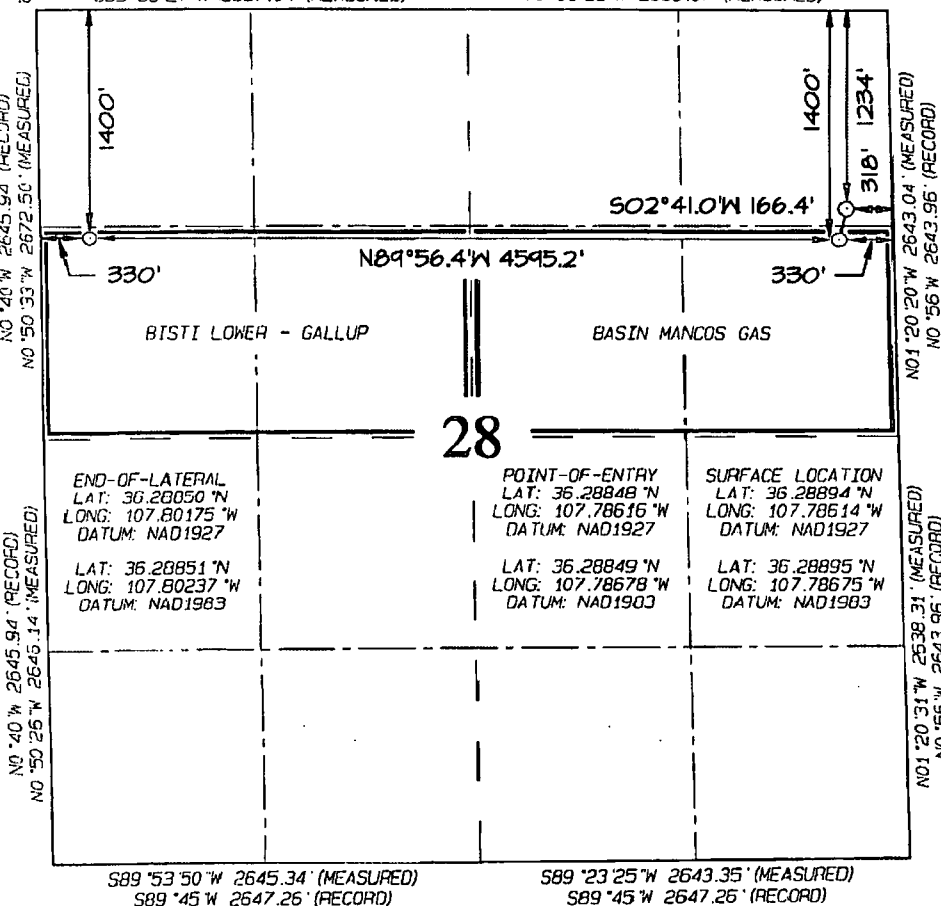
11 Bottom Hole Location If Different From Surface

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	28	24N	9W		1400	NORTH	330	WEST	SAN JUAN

*Dedicated Acreage Dist L. Gallup 5/2 NW 80 ac.	*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

Basin Mancos 5/2 NE 80 ac



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.

Signature: Holly Hill Date: 6/2/14
Printed Name: Holly Hill
E-mail Address: Holly.Hill@encana.com

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 Revised: MAY 15, 2014
Survey Date: AUGUST 22, 2013

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

Escrito A28-2409 02H
SHL: NENE 28 24N 9W
1234 FNL 318 FEL
BHL: SWNW 28 24N 9
1400 FNL 330 FWL
San Juan, New Mexico

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

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

Formation	Depth (TVD) units = feet
Ojo Alamo Ss.	839
Kirtland Shale	1,022
Fruitland Coal	1,222
Pictured Cliffs Ss.	1,599
Lewis Shale	1,727
Cliffhouse Ss.	2,392
Menefee Fn.	3,152
Point Lookout Ss.	4,049
Mancos Shale	4,217
Mancos Silt	4,787
Gallup Fn.	5,037

The referenced surface elevation is 6861', KB 6877'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,222
Oil/Gas	Pictured Cliffs Ss.	1,599
Oil/Gas	Cliffhouse Ss.	2,392
Gas	Menefee Fn.	3,152
Oil/Gas	Point Lookout Ss.	4,049
Oil/Gas	Mancos Shale	4,217
Oil/Gas	Mancos Silt	4,787
Oil/Gas	Gallup Fn.	5,037

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.

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 SHL: NENE 28 24N 9W
 1234 FNL 318 FEL
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 1400 FNL 330 FWL
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- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

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

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Conductor	0'-60'	30"	20"	94#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5456'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5256'-9667'	6 1/8"	4 1/2"	11.6#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (ppf)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lbs)	Collapse	Burst	Tension
9 5/8"	36	J55	STC	2020	3520	394	1.125	1.1	1.5
7"	26	J55	LTC	4320	4980	367	1.125	1.1	1.5
4.5"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

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.

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b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	314 sks	HALCEM™ SYSTEM + 2% CaCl2 + 0.125lbm/sk Poly-E-Flake. 15.8 ppg, 1.174 cuft/sk	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5456'	30% open hole excess Stage 1 Lead: 346 sks Stage 1 Tail: 359 sks Stage 2 Lead: 171 sks	Stage 1 Lead: HALCEM™ SYSTEM + 0.2% HR-5 + 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-E-Flake. 12.3 ppg, 1.948 cuft/sk Stage 1 Tail: VARICEM™ CEMENT + .15% CFR-3 + 5lbm/sk Kol-Seal + 0.125% Poly-E-Flake. 13.5 ppg, 1.308 cuft/sk. Stage 2 Contingency: HALCEM™ SYSTEM + 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-E-Flake. 12.3 ppg,	Surface	1 every 3 joints through water bearing zones
Production Liner	5256'-9667'	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 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 3100'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5267'/9667'	Gallup

Escrito A28-2409 02H
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 1234 FNL 318 FEL
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 1400 FNL 330 FWL
 San Juan, New Mexico

6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60'/60'	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0'-500'/500'	Fresh Water	8.3-10	60-70	NC
8 3/4"	500'/500'-5275'/5456'	Fresh Water LSND	8.3-10	40-50	8-10

b) Intermediate Casing Point to TD:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	5275'/5456'- 5267'/9667'	Fresh Water LSND	8.3-10	15-25	<15

c) There will be sufficient mud on location to control a blowout should one occur. Mud flow and volume will be monitored both visually and with electronic pit volume totalizers. Mud tests shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

✓ d) A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystems, Inc. The location will be lined in accordance with the Surface Use Plan of Operations.

7. TESTING, CORING, & LOGGING

- a) Drill Stem Testing - None anticipated.
- b) Coring - None anticipated.
- c) Mudd Logging - Mud loggers will be on location from kick off point to TD.
- d) Logging - See below

Cased Hole:

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

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

The anticipated bottom hole pressure is +/- 2485 psi based on a 9.0 ppg at 5309' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

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

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1400 FNL 330 FWL
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9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on November 25, 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 12 days.

LOC: SE/4 NE/4 28 24N 9W 1400 FNL 330			Encana Natural Gas						ENG: Erik Graven RIG: Aztec 960 GLE: 6861 RKBE: 6877		5/30/14
County: San Juan			WELL SUMMARY								
WELL: Escrito A28-2409 02H											
MWD	OPEN HOLE	FORM	DEPTH			HOLE	CASING	MW	DEVIATION		
LWD	LOGGING		TVD	MD			SPECS	MUD TYPE	INFORMATION		
			60	60'		30	20" 94# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2			
Multi-Well pad take survey every stand and run anti-collision report prior to spud	None	Nacimiento 9 5/8" Csg	0 500	500.00		12 1/4	9 5/8" 36ppf J55 STC TOC Surface with 100% OH Excess: 314 sks of HALCEM™ SYSTEM + 2% CaCl2 + 0.125lbm/sk Poly-E-Flake. Mixed at 15.8 ppg. Yield 1.174 cuft/sk.	Fresh wtr 8.3-10	Vertical <1°		
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Ss.	839	3,100		8 3/4	7" 26ppf J55 LTC TOC @ surface (30% OH excess) Stage 1 Total: 705sks If necessary, Stage 2 Total: 171sks Stage 1 Lead: 346 sks HALCEM™ SYSTEM + 0.2% HR-5 + 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-E-Flake. Mixed at 12.3 ppg. Yield 1.948 cuft/sk. Stage 1 Tail: 359 sks VARCEM™ CEMENT + .15% CFR-3 + 5lbm/sk Kol-Seal + 0.125% Poly-E-Flake. Mixed at 13.5 ppg. Yield 1.308 cuft/sk. Stage 2: 171 sks HALCEM™ SYSTEM + 5lbm/sk Kol-Seal + 0.125lbm/sk Poly-E-Flake. Mixed at 12.3 ppg. Yield 1.946 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°		
		Kirtland Shale	1,022								
		Fruitland Coal	1,222								
		Pictured Cliffs Ss.	1,599								
		Lewis Shale	1,727								
Surveys every 30' through the curve	Mud logger onsite	Cliffhouse Ss.	2,382	5,456'	6 1/8	200' overlap at liner top 4211' Drilled Lateral	WBM 8.3-10	TD = 9666.6 MD			
		Menefee Fn.	3,152								
		Point Lookout Ss.	4,049								
		Mancos Shale	4,217								
		KOP	3,100								
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Mancos Silt	4,787	9,667		4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string					
		Gallup Fn.	5,037								
		7" Csg	5,275								
		Horizontal Target TD	5,309 5,287								
MWD Gamma Directional		Base Gallup	5,387								

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 3100', 8 3/4 inch holesize
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to csg point of 5456' MD
- 7) R&C 7" csg, circ cmt to surface, switch to WBM
- 8) Land at 90 deg, drill lateral to 9667' run 4 1/2 inch 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
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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

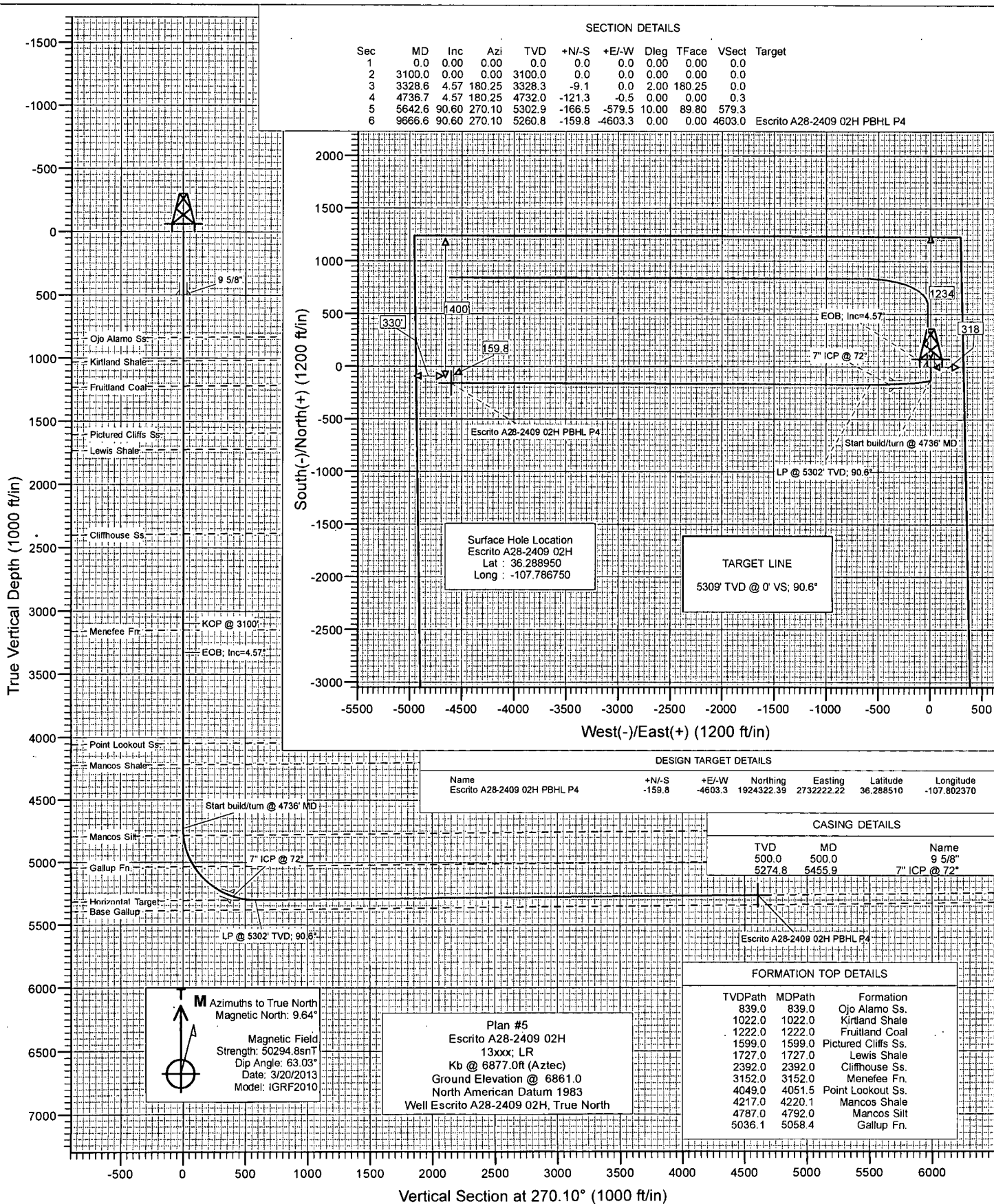
Minimum Make-up Torque (ft-lbs)	_____	1,640
Nominal Make-up Torque (ft-lbs)	_____	2,190
Maximum Make-up Torque (ft-lbs)	_____	2,740

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
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Project: San Juan County, NM
Site: S28-T24N-R9W
Well: Escrito A28-2409 02H
Wellbore: Hz
Design: Plan #5



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Kb @ 6877.0usft (Aztec)
Project:	San Juan County, NM	MD Reference:	Kb @ 6877.0usft (Aztec)
Site:	S28-T24N-R9W	North Reference:	True
Well:	Escrito A28-2409 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #5		

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

Site	S28-T24N-R9W		
Site Position:		Northing:	1,924,425.96 usft
From:	Lat/Long	Easting:	2,736,837.70 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	36.288800
		Longitude:	-107.786690
		Grid Convergence:	0.03 °

Well	Escrito A28-2409 02H		
Well Position	+N/-S	0.0 usft	Northing: 1,924,480.55 usft
	+E/-W	0.0 usft	Easting: 2,736,819.99 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	36.288950
		Longitude:	-107.786750
		Ground Level:	6,861.0 usft

Wellbore	Hz		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	3/20/2013	9.64
			Dip Angle
			(°)
			63.03
			Field Strength
			(nT)
			50,295

Design	Plan #5		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			270.10

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,328.5	4.57	180.25	3,328.3	-9.1	0.0	2.00	2.00	0.00	180.25	
4,736.7	4.57	180.25	4,732.0	-121.3	-0.5	0.00	0.00	0.00	0.00	
5,642.5	90.60	270.10	5,302.9	-166.5	-579.5	10.00	9.50	9.92	89.80	
9,666.5	90.60	270.10	5,260.8	-159.8	-4,603.3	0.00	0.00	0.00	0.00	Escrito A28-2409 02H

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Kb @ 6877.0usft (Aztec)
Project:	San Juan County, NM	MD Reference:	Kb @ 6877.0usft (Aztec)
Site:	S28-T24N-R9W	North Reference:	True
Well:	Escrito A28-2409 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
Design:	Plan #5		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
839.0	0.00	0.00	839.0	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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,022.0	0.00	0.00	1,022.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,222.0	0.00	0.00	1,222.0	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	
1,599.0	0.00	0.00	1,599.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,727.0	0.00	0.00	1,727.0	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	
2,392.0	0.00	0.00	2,392.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
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	
2,600.0	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	KOP @ 3100'
3,152.0	1.04	180.25	3,152.0	-0.5	0.0	0.0	2.00	2.00	Menefee Fn.
3,200.0	2.00	180.25	3,200.0	-1.7	0.0	0.0	2.00	2.00	
3,300.0	4.00	180.25	3,299.8	-7.0	0.0	0.0	2.00	2.00	
3,328.5	4.57	180.25	3,328.3	-9.1	0.0	0.0	2.00	2.00	EOB; Inc=4.57°
3,400.0	4.57	180.25	3,399.5	-14.8	-0.1	0.0	0.00	0.00	
3,500.0	4.57	180.25	3,499.2	-22.8	-0.1	0.1	0.00	0.00	
3,600.0	4.57	180.25	3,598.9	-30.7	-0.1	0.1	0.00	0.00	
3,700.0	4.57	180.25	3,698.6	-38.7	-0.2	0.1	0.00	0.00	
3,800.0	4.57	180.25	3,798.3	-46.7	-0.2	0.1	0.00	0.00	
3,900.0	4.57	180.25	3,897.9	-54.7	-0.2	0.1	0.00	0.00	
4,000.0	4.57	180.25	3,997.6	-62.6	-0.3	0.2	0.00	0.00	
4,051.5	4.57	180.25	4,049.0	-66.7	-0.3	0.2	0.00	0.00	Point Lookout Ss.
4,100.0	4.57	180.25	4,097.3	-70.6	-0.3	0.2	0.00	0.00	
4,200.0	4.57	180.25	4,197.0	-78.6	-0.3	0.2	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Kb @ 6877.0usft (Aztec)
Project:	San Juan County, NM	MD Reference:	Kb @ 6877.0usft (Aztec)
Site:	S28-T24N-R9W	North Reference:	True
Well:	Escrito A28-2409 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,220.1	4.57	180.25	4,217.0	-80.2	-0.4	0.2	0.00	0.00	Mancos Shale
4,300.0	4.57	180.25	4,296.7	-86.5	-0.4	0.2	0.00	0.00	
4,400.0	4.57	180.25	4,396.3	-94.5	-0.4	0.3	0.00	0.00	
4,500.0	4.57	180.25	4,496.0	-102.5	-0.5	0.3	0.00	0.00	
4,600.0	4.57	180.25	4,595.7	-110.4	-0.5	0.3	0.00	0.00	
4,700.0	4.57	180.25	4,695.4	-118.4	-0.5	0.3	0.00	0.00	
4,736.7	4.57	180.25	4,732.0	-121.3	-0.5	0.3	0.00	0.00	Start build/turn @ 4736' MD
4,791.9	7.18	230.64	4,787.0	-125.7	-3.2	3.0	10.00	4.72	Mancos Silt
4,800.0	7.82	234.42	4,794.9	-126.4	-4.0	3.8	10.00	7.91	
4,900.0	16.96	254.85	4,892.5	-134.2	-23.7	23.5	10.00	9.14	
5,000.0	26.71	260.91	4,985.3	-141.5	-60.1	59.8	10.00	9.76	
5,058.4	32.48	262.83	5,036.1	-145.6	-88.6	88.4	10.00	9.87	Gallup Fn.
5,100.0	36.59	263.87	5,070.3	-148.3	-112.0	111.8	10.00	9.90	
5,200.0	46.52	265.70	5,145.0	-154.2	-178.0	177.7	10.00	9.93	
5,300.0	56.47	267.01	5,207.2	-159.1	-256.0	255.7	10.00	9.95	
5,400.0	66.43	268.05	5,255.0	-162.9	-343.6	343.4	10.00	9.96	
5,455.9	72.00	268.56	5,274.8	-164.4	-395.9	395.6	10.00	9.96	7" ICP @ 72°
5,500.0	76.39	268.94	5,286.8	-165.3	-438.3	438.0	10.00	9.97	
5,600.0	86.36	269.76	5,301.8	-166.4	-537.0	536.7	10.00	9.97	
5,642.5	90.60	270.10	5,302.9	-166.5	-579.5	579.3	10.00	9.97	LP @ 5302' TVD; 90.6°
5,700.0	90.60	270.10	5,302.3	-166.4	-637.0	636.7	0.00	0.00	
5,800.0	90.60	270.10	5,301.3	-166.2	-737.0	736.7	0.00	0.00	
5,900.0	90.60	270.10	5,300.2	-166.1	-837.0	836.7	0.00	0.00	
6,000.0	90.60	270.10	5,299.2	-165.9	-937.0	936.7	0.00	0.00	
6,100.0	90.60	270.10	5,298.1	-165.7	-1,037.0	1,036.7	0.00	0.00	
6,200.0	90.60	270.10	5,297.1	-165.6	-1,137.0	1,136.7	0.00	0.00	
6,300.0	90.60	270.10	5,296.0	-165.4	-1,236.9	1,236.7	0.00	0.00	
6,400.0	90.60	270.10	5,295.0	-165.2	-1,336.9	1,336.7	0.00	0.00	
6,500.0	90.60	270.10	5,293.9	-165.1	-1,436.9	1,436.6	0.00	0.00	
6,600.0	90.60	270.10	5,292.9	-164.9	-1,536.9	1,536.6	0.00	0.00	
6,700.0	90.60	270.10	5,291.8	-164.7	-1,636.9	1,636.6	0.00	0.00	
6,800.0	90.60	270.10	5,290.8	-164.6	-1,736.9	1,736.6	0.00	0.00	
6,900.0	90.60	270.10	5,289.7	-164.4	-1,836.9	1,836.6	0.00	0.00	
7,000.0	90.60	270.10	5,288.7	-164.2	-1,936.9	1,936.6	0.00	0.00	
7,100.0	90.60	270.10	5,287.7	-164.1	-2,036.9	2,036.6	0.00	0.00	
7,200.0	90.60	270.10	5,286.6	-163.9	-2,136.9	2,136.6	0.00	0.00	
7,300.0	90.60	270.10	5,285.6	-163.7	-2,236.9	2,236.6	0.00	0.00	
7,400.0	90.60	270.10	5,284.5	-163.6	-2,336.9	2,336.6	0.00	0.00	
7,500.0	90.60	270.10	5,283.5	-163.4	-2,436.9	2,436.6	0.00	0.00	
7,600.0	90.60	270.10	5,282.4	-163.2	-2,536.9	2,536.6	0.00	0.00	
7,700.0	90.60	270.10	5,281.4	-163.1	-2,636.9	2,636.6	0.00	0.00	
7,800.0	90.60	270.10	5,280.3	-162.9	-2,736.9	2,736.6	0.00	0.00	
7,900.0	90.60	270.10	5,279.3	-162.7	-2,836.9	2,836.6	0.00	0.00	
8,000.0	90.60	270.10	5,278.2	-162.6	-2,936.8	2,936.6	0.00	0.00	
8,100.0	90.60	270.10	5,277.2	-162.4	-3,036.8	3,036.6	0.00	0.00	
8,200.0	90.60	270.10	5,276.1	-162.2	-3,136.8	3,136.6	0.00	0.00	
8,300.0	90.60	270.10	5,275.1	-162.1	-3,236.8	3,236.5	0.00	0.00	
8,400.0	90.60	270.10	5,274.0	-161.9	-3,336.8	3,336.5	0.00	0.00	
8,500.0	90.60	270.10	5,273.0	-161.7	-3,436.8	3,436.5	0.00	0.00	
8,600.0	90.60	270.10	5,271.9	-161.6	-3,536.8	3,536.5	0.00	0.00	
8,700.0	90.60	270.10	5,270.9	-161.4	-3,636.8	3,636.5	0.00	0.00	
8,800.0	90.60	270.10	5,269.9	-161.2	-3,736.8	3,736.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Kb @ 6877.0usft (Aztec)
Project:	San Juan County, NM	MD Reference:	Kb @ 6877.0usft (Aztec)
Site:	S28-T24N-R9W	North Reference:	True
Well:	Escrito A28-2409 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #5		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,900.0	90.60	270.10	5,268.8	-161.1	-3,836.8	3,836.5	0.00	0.00	
9,000.0	90.60	270.10	5,267.8	-160.9	-3,936.8	3,936.5	0.00	0.00	
9,100.0	90.60	270.10	5,266.7	-160.7	-4,036.8	4,036.5	0.00	0.00	
9,200.0	90.60	270.10	5,265.7	-160.6	-4,136.8	4,136.5	0.00	0.00	
9,300.0	90.60	270.10	5,264.6	-160.4	-4,236.8	4,236.5	0.00	0.00	
9,400.0	90.60	270.10	5,263.6	-160.2	-4,336.8	4,336.5	0.00	0.00	
9,500.0	90.60	270.10	5,262.5	-160.1	-4,436.8	4,436.5	0.00	0.00	
9,600.0	90.60	270.10	5,261.5	-159.9	-4,536.8	4,536.5	0.00	0.00	
9,666.5	90.60	270.10	5,260.8	-159.8	-4,603.3	4,603.0	0.00	0.00	TD at 9666.6

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Escrito A28-2409 02H P1 - plan misses target center by 235.9usft at 5200.0usft MD (5145.0 TVD, -154.2 N, -178.0 E) - Point	0.00	0.00	5,308.9	-167.5	-8.8	1,924,313.10	2,736,811.23	36.288490	-107.786780
Escrito A28-2409 02H P1 - plan misses target center by 87.0usft at 9666.5usft MD (5260.8 TVD, -159.8 N, -4603.3 E) - Point	0.00	0.00	5,173.8	-159.8	-4,603.3	1,924,318.54	2,732,216.75	36.288510	-107.802370
Escrito A28-2409 02H P1 - plan hits target center - Point	0.00	0.00	5,260.8	-159.8	-4,603.3	1,924,318.54	2,732,216.75	36.288510	-107.802370

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
500.0	500.0	9 5/8"	0	0
5,455.9	5,274.8	7" ICP @ 72°	0	0

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	Kb @ 6877.0usft (Aztec)
Project:	San Juan County, NM	MD Reference:	Kb @ 6877.0usft (Aztec)
Site:	S28-T24N-R9W	North Reference:	True
Well:	Escrito A28-2409 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #5		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
839.0	839.0	Ojo Alamo Ss.		-0.60	270.10
1,022.0	1,022.0	Kirtland Shale		-0.60	270.10
1,222.0	1,222.0	Fruitland Coal		-0.60	270.10
1,599.0	1,599.0	Pictured Cliffs Ss.		-0.60	270.10
1,727.0	1,727.0	Lewis Shale		-0.60	270.10
2,392.0	2,392.0	Cliffhouse Ss.		-0.60	270.10
3,152.0	3,152.0	Menefee Fn.		-0.60	270.10
4,051.5	4,049.0	Point Lookout Ss.		-0.60	270.10
4,220.1	4,217.0	Mancos Shale		-0.60	270.10
4,791.9	4,787.0	Mancos Silt		-0.60	270.10
5,058.4	5,037.0	Gallup Fn.		-0.60	270.10
3,653.0	5,309.0	Horizontal Target		-0.60	270.10
3,653.0	5,387.0	Base Gallup		-0.60	270.10

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,100.0	3,100.0	0.0	0.0	KOP @ 3100'
3,328.5	3,328.3	-9.1	0.0	EOB; Inc=4.57°
4,736.7	4,732.0	-121.3	-0.5	Start build/turn @ 4736' MD
5,642.5	5,302.9	-166.5	-579.5	LP @ 5302' TVD; 90.6°
9,666.5	5,260.8	-159.8	-4,603.3	TD at 9666.6

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S28-T24N-R9W

Escrito A28-2409 02H

Hz

Plan #5

Anticollision Report

11 April, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Project:	San Juan County, NM	TVD Reference:	Kb @ 6877.0ft (Aztec)
Reference Site:	S28-T24N-R9W	MD Reference:	Kb @ 6877.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Escrito A28-2409 02H	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 #5	Offset TVD Reference:	Offset Datum

Reference	Plan #5		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
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 1,243.2ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	4/11/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	9,666.4	Plan #5 (Hz)	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						
S28-T24N-R9W						
Escrito A28-2409 01H - Hz - Plan #7	2,900.0	2,900.0	31.4	21.4	3.122 CC, ES	
Escrito A28-2409 01H - Hz - Plan #7	3,000.0	2,999.6	32.1	21.7	3.080 SF	
Escrito A28-2409 01H - Pilot Hole - Pilot Hole	3,100.0	3,100.0	31.4	20.7	2.919 CC, ES	
Escrito A28-2409 01H - Pilot Hole - Pilot Hole	3,200.0	3,200.0	32.1	21.0	2.886 SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Project:	San Juan County, NM	TVD Reference:	Kb @ 6877.0ft (Aztec)
Reference Site:	S28-T24N-R9W	MD Reference:	Kb @ 6877.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Escrito A28-2409 02H	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 #5	Offset TVD Reference:	Offset Datum

Offset Design S28-T24N-R9W - Escrito A28-2409 01H - Hz - Plan #7													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-69.67	10.9	-29.5	31.4					
100.0	100.0	100.0	100.0	0.1	0.1	-69.67	10.9	-29.5	31.4	31.1	0.29	107.187		
200.0	200.0	200.0	200.0	0.3	0.3	-69.67	10.9	-29.5	31.4	30.8	0.64	48.933		
300.0	300.0	300.0	300.0	0.5	0.5	-69.67	10.9	-29.5	31.4	30.4	0.99	31.703		
400.0	400.0	400.0	400.0	0.7	0.7	-69.67	10.9	-29.5	31.4	30.1	1.34	23.447		
500.0	500.0	500.0	500.0	0.8	0.8	-69.67	10.9	-29.5	31.4	29.7	1.69	18.603		
600.0	600.0	600.0	600.0	1.0	1.0	-69.67	10.9	-29.5	31.4	29.4	2.04	15.417		
700.0	700.0	700.0	700.0	1.2	1.2	-69.67	10.9	-29.5	31.4	29.0	2.39	13.163		
800.0	800.0	800.0	800.0	1.4	1.4	-69.67	10.9	-29.5	31.4	28.7	2.74	11.484		
900.0	900.0	900.0	900.0	1.5	1.5	-69.67	10.9	-29.5	31.4	28.3	3.09	10.185		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-69.67	10.9	-29.5	31.4	28.0	3.43	9.150		
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-69.67	10.9	-29.5	31.4	27.6	3.78	8.306		
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-69.67	10.9	-29.5	31.4	27.3	4.13	7.604		
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-69.67	10.9	-29.5	31.4	26.9	4.48	7.012		
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-69.67	10.9	-29.5	31.4	26.6	4.83	6.506		
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-69.67	10.9	-29.5	31.4	26.2	5.18	6.067		
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-69.67	10.9	-29.5	31.4	25.9	5.53	5.684		
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-69.67	10.9	-29.5	31.4	25.6	5.88	5.347		
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-69.67	10.9	-29.5	31.4	25.2	6.23	5.047		
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-69.67	10.9	-29.5	31.4	24.9	6.58	4.779		
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-69.67	10.9	-29.5	31.4	24.5	6.93	4.538		
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-69.67	10.9	-29.5	31.4	24.2	7.27	4.320		
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-69.67	10.9	-29.5	31.4	23.8	7.62	4.123		
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-69.67	10.9	-29.5	31.4	23.5	7.97	3.942		
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-69.67	10.9	-29.5	31.4	23.1	8.32	3.777		
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	-69.67	10.9	-29.5	31.4	22.8	8.67	3.625		
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	-69.67	10.9	-29.5	31.4	22.4	9.02	3.484		
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	-69.67	10.9	-29.5	31.4	22.1	9.37	3.355		
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	-69.67	10.9	-29.5	31.4	21.7	9.72	3.234		
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	-69.67	10.9	-29.5	31.4	21.4	10.07	3.122 CC, ES		
3,000.0	3,000.0	2,999.6	2,999.6	5.2	5.2	-66.77	12.7	-29.5	32.1	21.7	10.42	3.080 SF		
3,100.0	3,100.0	3,098.9	3,098.8	5.4	5.4	-58.84	17.8	-29.5	34.5	23.7	10.77	3.202		
3,200.0	3,200.0	3,197.6	3,197.0	5.6	5.6	133.26	26.4	-29.5	40.8	29.7	11.11	3.674		
3,300.0	3,299.8	3,294.8	3,293.6	5.7	5.8	146.24	38.1	-29.5	54.2	42.8	11.45	4.734		
3,400.0	3,399.5	3,390.2	3,387.8	5.9	6.0	155.83	52.8	-29.5	74.6	62.8	11.78	6.333		
3,500.0	3,499.2	3,484.0	3,480.0	6.1	6.2	161.85	70.2	-29.5	99.4	87.3	12.12	8.205		
3,600.0	3,598.9	3,576.0	3,569.8	6.3	6.4	165.78	90.3	-29.6	127.9	115.5	12.45	10.274		
3,700.0	3,698.6	3,666.2	3,657.1	6.5	6.7	168.48	112.8	-29.6	159.8	147.0	12.78	12.501		
3,800.0	3,798.3	3,754.3	3,741.7	6.7	7.0	170.41	137.4	-29.6	194.8	181.7	13.11	14.859		
3,900.0	3,897.9	3,840.3	3,823.5	6.9	7.3	171.84	163.9	-29.6	232.7	219.3	13.43	17.328		
4,000.0	3,997.6	3,924.2	3,902.5	7.0	7.7	172.93	192.0	-29.7	273.4	259.7	13.75	19.892		
4,100.0	4,097.3	4,005.8	3,978.5	7.2	8.0	173.78	221.7	-29.7	316.9	302.8	14.06	22.537		
4,200.0	4,197.0	4,085.1	4,051.6	7.4	8.4	174.46	252.6	-29.7	362.8	348.5	14.37	25.252		
4,300.0	4,296.7	4,167.6	4,126.8	7.6	8.9	175.05	286.5	-29.8	411.0	396.3	14.68	27.991		
4,400.0	4,396.3	4,255.0	4,206.3	7.8	9.4	175.54	322.7	-29.8	459.4	444.4	15.00	30.620		
4,500.0	4,496.0	4,342.4	4,285.9	8.0	9.9	175.94	359.0	-29.9	507.9	492.6	15.33	33.140		
4,600.0	4,595.7	4,429.9	4,365.4	8.2	10.5	176.27	395.2	-29.9	556.4	540.7	15.65	35.558		
4,700.0	4,695.4	4,517.3	4,445.0	8.4	11.0	176.55	431.4	-30.0	604.9	588.9	15.97	37.880		
4,800.0	4,794.9	4,604.6	4,524.5	8.7	11.6	179.75	467.6	-30.0	653.2	636.8	16.35	39.960		
4,900.0	4,892.6	4,690.2	4,602.4	8.9	12.1	96.37	503.1	-30.0	700.2	683.4	16.81	41.651		
5,000.0	4,985.3	4,771.5	4,676.4	9.1	12.6	88.57	536.8	-30.1	746.0	728.6	17.32	43.060		
5,100.0	5,070.3	4,846.1	4,744.3	9.5	13.1	84.52	567.7	-30.1	791.0	773.1	17.92	44.136		

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	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Project:	San Juan County, NM	TVD Reference:	Kb @ 6877.0ft (Aztec)
Reference Site:	S28-T24N-R9W	MD Reference:	Kb @ 6877.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Escrito A28-2409 02H	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 #5	Offset TVD Reference:	Offset Datum

Offset Design S28-T24N-R9W - Escrito A28-2409 01H - Hz - Plan #7													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N-S (ft)	+E-W (ft)						
5,200.0	5,145.0	4,912.8	4,805.0	10.2	13.6	81.76	595.3	-30.2	836.3	817.6	18.69	44.753		
5,300.0	5,207.2	5,001.7	4,885.5	11.1	14.2	80.88	632.0	-37.7	881.5	861.8	19.70	44.739		
5,400.0	5,255.0	5,114.9	4,984.8	12.4	14.9	81.40	677.5	-67.0	925.0	903.9	21.11	43.818		
5,500.0	5,286.8	5,277.3	5,113.7	14.1	16.1	83.93	736.7	-144.9	964.2	940.9	23.26	41.456		
5,600.0	5,301.8	5,539.4	5,265.2	16.0	18.4	88.59	807.0	-343.9	993.0	965.4	27.66	35.898		
5,700.0	5,302.3	5,840.6	5,320.6	18.1	22.1	91.05	834.1	-635.4	1,000.7	965.4	35.26	28.378		
5,800.0	5,301.3	5,940.6	5,319.6	20.2	23.7	91.05	834.3	-735.4	1,000.7	961.1	39.58	25.281		
5,900.0	5,300.2	6,040.6	5,318.5	22.4	25.5	91.05	834.5	-835.4	1,000.7	956.7	44.03	22.727		
6,000.0	5,299.2	6,140.6	5,317.5	24.7	27.3	91.05	834.7	-935.4	1,000.7	952.2	48.58	20.600		
6,100.0	5,298.1	6,240.6	5,316.4	27.0	29.3	91.05	834.8	-1,035.4	1,000.7	947.5	53.20	18.812		
6,200.0	5,297.1	6,340.6	5,315.4	29.4	31.4	91.05	835.0	-1,135.4	1,000.8	942.9	57.87	17.293		
6,300.0	5,296.0	6,440.6	5,314.3	31.7	33.5	91.05	835.2	-1,235.3	1,000.8	938.2	62.59	15.990		
6,400.0	5,295.0	6,540.6	5,313.3	34.1	35.7	91.05	835.4	-1,335.3	1,000.8	933.4	67.34	14.863		
6,500.0	5,293.9	6,640.6	5,312.2	36.5	37.9	91.05	835.6	-1,435.3	1,000.8	928.7	72.11	13.878		
6,600.0	5,292.9	6,740.6	5,311.2	38.9	40.1	91.05	835.7	-1,535.3	1,000.8	923.9	76.91	13.013		
6,700.0	5,291.9	6,840.6	5,310.1	41.3	42.4	91.05	835.9	-1,635.3	1,000.8	919.1	81.72	12.246		
6,800.0	5,290.8	6,940.6	5,309.1	43.7	44.7	91.05	836.1	-1,735.3	1,000.8	914.3	86.55	11.563		
6,900.0	5,289.8	7,040.6	5,308.0	46.1	47.0	91.05	836.3	-1,835.3	1,000.8	909.5	91.40	10.950		
7,000.0	5,288.7	7,140.6	5,307.0	48.5	49.4	91.05	836.5	-1,935.3	1,000.9	904.6	96.25	10.398		
7,100.0	5,287.7	7,240.6	5,305.9	51.0	51.7	91.05	836.6	-2,035.3	1,000.9	899.8	101.11	9.898		
7,200.0	5,286.6	7,340.6	5,304.9	53.4	54.1	91.05	836.8	-2,135.3	1,000.9	894.9	105.98	9.444		
7,300.0	5,285.6	7,440.6	5,303.9	55.8	56.4	91.05	837.0	-2,235.3	1,000.9	890.0	110.86	9.028		
7,400.0	5,284.5	7,540.6	5,302.8	58.3	58.8	91.05	837.2	-2,335.3	1,000.9	885.2	115.75	8.648		
7,500.0	5,283.5	7,640.6	5,301.8	60.7	61.2	91.05	837.4	-2,435.3	1,000.9	880.3	120.63	8.297		
7,600.0	5,282.4	7,740.6	5,300.7	63.2	63.6	91.05	837.5	-2,535.3	1,000.9	875.4	125.53	7.974		
7,700.0	5,281.4	7,840.6	5,299.7	65.6	66.0	91.05	837.7	-2,635.3	1,001.0	870.5	130.42	7.675		
7,800.0	5,280.3	7,940.6	5,298.6	68.1	68.4	91.05	837.9	-2,735.3	1,001.0	865.6	135.33	7.397		
7,900.0	5,279.3	8,040.6	5,297.6	70.5	70.8	91.05	838.1	-2,835.3	1,001.0	860.8	140.23	7.138		
8,000.0	5,278.2	8,140.6	5,296.5	73.0	73.2	91.05	838.3	-2,935.2	1,001.0	855.9	145.14	6.897		
8,100.0	5,277.2	8,240.6	5,295.5	75.4	75.7	91.05	838.4	-3,035.2	1,001.0	851.0	150.05	6.671		
8,200.0	5,276.1	8,340.6	5,294.4	77.9	78.1	91.05	838.6	-3,135.2	1,001.0	846.1	154.96	6.460		
8,300.0	5,275.1	8,440.6	5,293.4	80.3	80.5	91.05	838.8	-3,235.2	1,001.0	841.2	159.87	6.261		
8,400.0	5,274.1	8,540.6	5,292.3	82.8	82.9	91.05	839.0	-3,335.2	1,001.0	836.3	164.79	6.075		
8,500.0	5,273.0	8,640.6	5,291.3	85.3	85.4	91.05	839.1	-3,435.2	1,001.1	831.4	169.71	5.899		
8,600.0	5,272.0	8,740.6	5,290.2	87.7	87.8	91.05	839.3	-3,535.2	1,001.1	826.4	174.63	5.733		
8,700.0	5,270.9	8,840.6	5,289.2	90.2	90.2	91.05	839.5	-3,635.2	1,001.1	821.5	179.55	5.576		
8,800.0	5,269.9	8,940.6	5,288.1	92.6	92.7	91.05	839.7	-3,735.2	1,001.1	816.6	184.47	5.427		
8,900.0	5,268.8	9,040.6	5,287.1	95.1	95.1	91.05	839.9	-3,835.2	1,001.1	811.7	189.40	5.286		
9,000.0	5,267.8	9,140.6	5,286.1	97.6	97.6	91.05	840.0	-3,935.2	1,001.1	806.8	194.32	5.152		
9,100.0	5,266.7	9,240.6	5,285.0	100.0	100.0	91.05	840.2	-4,035.2	1,001.1	801.9	199.25	5.025		
9,200.0	5,265.7	9,340.6	5,284.0	102.5	102.5	91.05	840.4	-4,135.2	1,001.2	797.0	204.18	4.903		
9,300.0	5,264.6	9,440.6	5,282.9	104.9	104.9	91.05	840.6	-4,235.2	1,001.2	792.1	209.10	4.788		
9,400.0	5,263.6	9,540.6	5,281.9	107.4	107.4	91.05	840.8	-4,335.2	1,001.2	787.1	214.03	4.678		
9,500.0	5,262.5	9,640.6	5,280.8	109.9	109.8	91.05	840.9	-4,435.2	1,001.2	782.2	218.96	4.572		
9,600.0	5,261.5	9,740.6	5,279.8	112.3	112.3	91.05	841.1	-4,535.2	1,001.2	777.3	223.90	4.472		
9,666.6	5,260.8	9,807.2	5,279.1	114.0	113.9	91.05	841.2	-4,601.7	1,001.2	774.0	227.18	4.407		

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S28-T24N-R9W
 Site Error: 0.0ft
 Reference Well: Escrito A28-2409 02H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #5

Local Co-ordinate Reference: Well Escrito A28-2409 02H
 TVD Reference: Kb @ 6877.0ft (Aztec)
 MD Reference: Kb @ 6877.0ft (Aztec)
 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 S28-T24N-R9W - Escrito A28-2409 01H - Pilot Hole - Pilot Hole													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-69.67	10.9	-29.5	31.4				
100.0	100.0	100.0	100.0	0.1	0.1	-69.67	10.9	-29.5	31.4	31.1	0.29	107.187	
200.0	200.0	200.0	200.0	0.3	0.3	-69.67	10.9	-29.5	31.4	30.8	0.64	48.933	
300.0	300.0	300.0	300.0	0.5	0.5	-69.67	10.9	-29.5	31.4	30.4	0.99	31.703	
400.0	400.0	400.0	400.0	0.7	0.7	-69.67	10.9	-29.5	31.4	30.1	1.34	23.447	
500.0	500.0	500.0	500.0	0.8	0.8	-69.67	10.9	-29.5	31.4	29.7	1.69	18.603	
600.0	600.0	600.0	600.0	1.0	1.0	-69.67	10.9	-29.5	31.4	29.4	2.04	15.417	
700.0	700.0	700.0	700.0	1.2	1.2	-69.67	10.9	-29.5	31.4	29.0	2.39	13.163	
800.0	800.0	800.0	800.0	1.4	1.4	-69.67	10.9	-29.5	31.4	28.7	2.74	11.484	
900.0	900.0	900.0	900.0	1.5	1.5	-69.67	10.9	-29.5	31.4	28.3	3.09	10.185	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-69.67	10.9	-29.5	31.4	28.0	3.43	9.150	
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-69.67	10.9	-29.5	31.4	27.6	3.78	8.306	
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-69.67	10.9	-29.5	31.4	27.3	4.13	7.604	
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-69.67	10.9	-29.5	31.4	26.9	4.48	7.012	
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-69.67	10.9	-29.5	31.4	26.6	4.83	6.506	
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-69.67	10.9	-29.5	31.4	26.2	5.18	6.067	
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-69.67	10.9	-29.5	31.4	25.9	5.53	5.684	
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-69.67	10.9	-29.5	31.4	25.6	5.88	5.347	
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-69.67	10.9	-29.5	31.4	25.2	6.23	5.047	
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-69.67	10.9	-29.5	31.4	24.9	6.58	4.779	
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-69.67	10.9	-29.5	31.4	24.5	6.93	4.538	
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-69.67	10.9	-29.5	31.4	24.2	7.27	4.320	
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-69.67	10.9	-29.5	31.4	23.8	7.62	4.123	
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-69.67	10.9	-29.5	31.4	23.5	7.97	3.942	
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-69.67	10.9	-29.5	31.4	23.1	8.32	3.777	
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	-69.67	10.9	-29.5	31.4	22.8	8.67	3.625	
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	-69.67	10.9	-29.5	31.4	22.4	9.02	3.484	
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	-69.67	10.9	-29.5	31.4	22.1	9.37	3.355	
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	-69.67	10.9	-29.5	31.4	21.7	9.72	3.234	
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	-69.67	10.9	-29.5	31.4	21.4	10.07	3.122	
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	-69.67	10.9	-29.5	31.4	21.0	10.42	3.017	
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	-69.67	10.9	-29.5	31.4	20.7	10.77	2.919 CC, ES	
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	113.00	10.9	-29.5	32.1	21.0	11.11	2.886 SF	
3,300.0	3,299.8	3,299.8	3,299.8	5.7	5.7	120.99	10.9	-29.5	34.5	23.0	11.46	3.006	
3,400.0	3,399.5	3,399.5	3,399.5	5.9	5.9	130.84	10.9	-29.5	39.1	27.3	11.81	3.309	
3,500.0	3,499.2	3,499.2	3,499.2	6.1	6.1	138.58	10.9	-29.5	44.7	32.5	12.15	3.678	
3,600.0	3,598.9	3,598.9	3,598.9	6.3	6.3	144.51	10.9	-29.5	51.0	38.5	12.50	4.076	
3,700.0	3,698.6	3,698.6	3,698.6	6.5	6.4	149.11	10.9	-29.5	57.6	44.8	12.85	4.485	
3,800.0	3,798.3	3,798.3	3,798.3	6.7	6.6	152.74	10.9	-29.5	64.6	51.4	13.20	4.895	
3,900.0	3,897.9	3,897.9	3,897.9	6.9	6.8	155.65	10.9	-29.5	71.8	58.2	13.55	5.300	
4,000.0	3,897.6	3,897.6	3,897.6	7.0	6.9	158.03	10.9	-29.5	79.1	65.2	13.90	5.695	
4,100.0	4,097.3	4,097.3	4,097.3	7.2	7.1	160.01	10.9	-29.5	86.6	72.3	14.24	6.078	
4,200.0	4,197.0	4,197.0	4,197.0	7.4	7.3	161.66	10.9	-29.5	94.1	79.5	14.59	6.449	
4,300.0	4,296.7	4,296.7	4,296.7	7.6	7.5	163.08	10.9	-29.5	101.7	86.8	14.94	6.807	
4,400.0	4,396.3	4,396.3	4,396.3	7.8	7.6	164.29	10.9	-29.5	109.4	94.1	15.29	7.153	
4,500.0	4,496.0	4,496.0	4,496.0	8.0	7.8	165.35	10.9	-29.5	117.0	101.4	15.64	7.486	
4,600.0	4,595.7	4,595.7	4,595.7	8.2	8.0	166.27	10.9	-29.5	124.8	108.8	15.98	7.806	
4,700.0	4,695.4	4,695.4	4,695.4	8.4	8.2	167.09	10.9	-29.5	132.5	116.2	16.33	8.115	
4,800.0	4,794.9	4,794.9	4,794.9	8.7	8.3	114.88	10.9	-29.5	139.6	122.9	16.70	8.362	
4,900.0	4,892.6	4,892.6	4,892.6	8.9	8.5	102.34	10.9	-29.5	145.2	128.1	17.05	8.516	
5,000.0	4,885.3	4,885.3	4,885.3	9.1	8.7	108.41	10.9	-29.5	155.5	138.2	17.33	8.973	
5,100.0	5,070.3	5,070.3	5,070.3	9.5	8.8	118.02	10.9	-29.5	179.3	161.9	17.41	10.301	

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	Local Co-ordinate Reference:	Well Escrito A28-2409 02H
Project:	San Juan County, NM	TVD Reference:	Kb @ 6877.0ft (Aztec)
Reference Site:	S28-T24N-R9W	MD Reference:	Kb @ 6877.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Escrito A28-2409 02H	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 #5	Offset TVD Reference:	Offset Datum

Offset Design S28-T24N-R9W - Escrito A28-2409 01H - Pilot Hole - Pilot Hole												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Distance		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
5,200.0	5,145.0	5,145.0	5,145.0	10.2	9.0	125.73	10.9	-29.5	222.1	204.8	17.31	12.828	
5,300.0	5,207.2	5,207.2	5,207.2	11.1	9.1	129.42	10.9	-29.5	283.2	265.8	17.40	16.279	
5,400.0	5,255.0	5,255.0	5,255.0	12.4	9.1	128.13	10.9	-29.5	359.0	340.8	18.28	19.637	
5,500.0	5,286.8	5,286.8	5,286.8	14.1	9.2	119.89	10.9	-29.5	445.2	424.4	20.75	21.458	
5,600.0	5,301.8	5,301.8	5,301.8	16.0	9.2	100.44	10.9	-29.5	537.6	512.9	24.70	21.764	
5,700.0	5,302.3	5,302.3	5,302.3	18.1	9.2	87.96	10.9	-29.5	632.9	605.8	27.09	23.362	
5,800.0	5,301.3	5,301.3	5,301.3	20.2	9.2	87.62	10.9	-29.5	729.4	700.1	29.26	24.928	
5,900.0	5,300.2	5,300.2	5,300.2	22.4	9.2	87.29	10.9	-29.5	826.7	795.2	31.49	26.254	
6,000.0	5,299.2	5,299.2	5,299.2	24.7	9.2	86.95	10.9	-29.5	924.6	890.8	33.76	27.387	
6,100.0	5,298.1	5,298.1	5,298.1	27.0	9.2	86.62	10.9	-29.5	1,022.9	986.8	36.06	28.363	
6,200.0	5,297.1	5,297.1	5,297.1	29.4	9.2	86.28	10.9	-29.5	1,121.5	1,083.1	38.39	29.214	
6,300.0	5,296.0	5,296.0	5,296.0	31.7	9.2	85.95	10.9	-29.5	1,220.3	1,179.6	40.73	29.960	

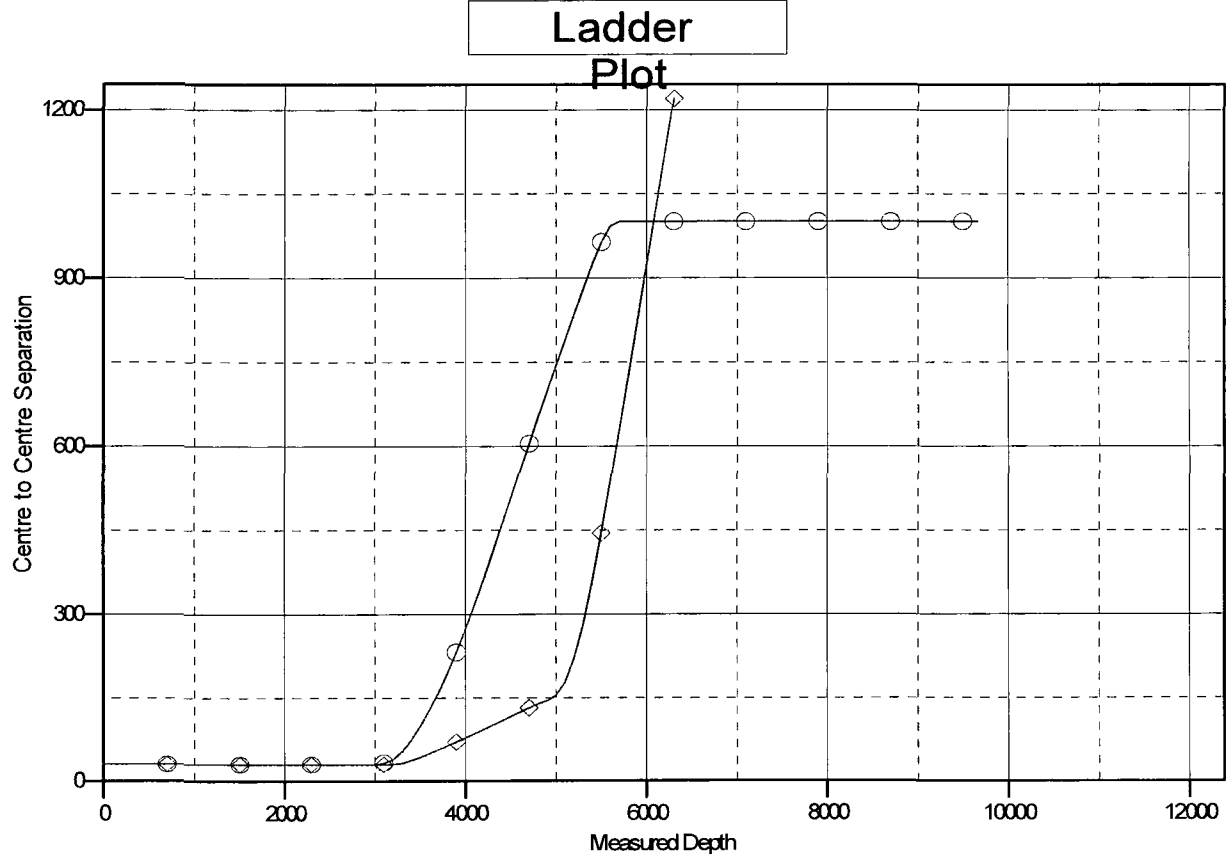
Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S28-T24N-R9W
Site Error: 0.0ft
Reference Well: Escrito A28-2409 02H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #5

Local Co-ordinate Reference: Well Escrito A28-2409 02H
TVD Reference: Kb @ 6877.0ft (Aztec)
MD Reference: Kb @ 6877.0ft (Aztec)
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 Kb @ 6877.0ft (Aztec)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: Escrito A28-2409 02H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.03°



LEGEND

○ Escrito A28-2409 01H, Hz, Plan #7 V0

◆ Escrito A28-2409 01H, Pilot Hole, Pilot Hole V0

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

in Bloomfield, NM to Encana Oil & Gas (USA) Inc. Escrito A28-2409 02H

1234' FNL & 318' FEL, Section 28, T24N, R9W, N.M.P.M., San Juan County, NM

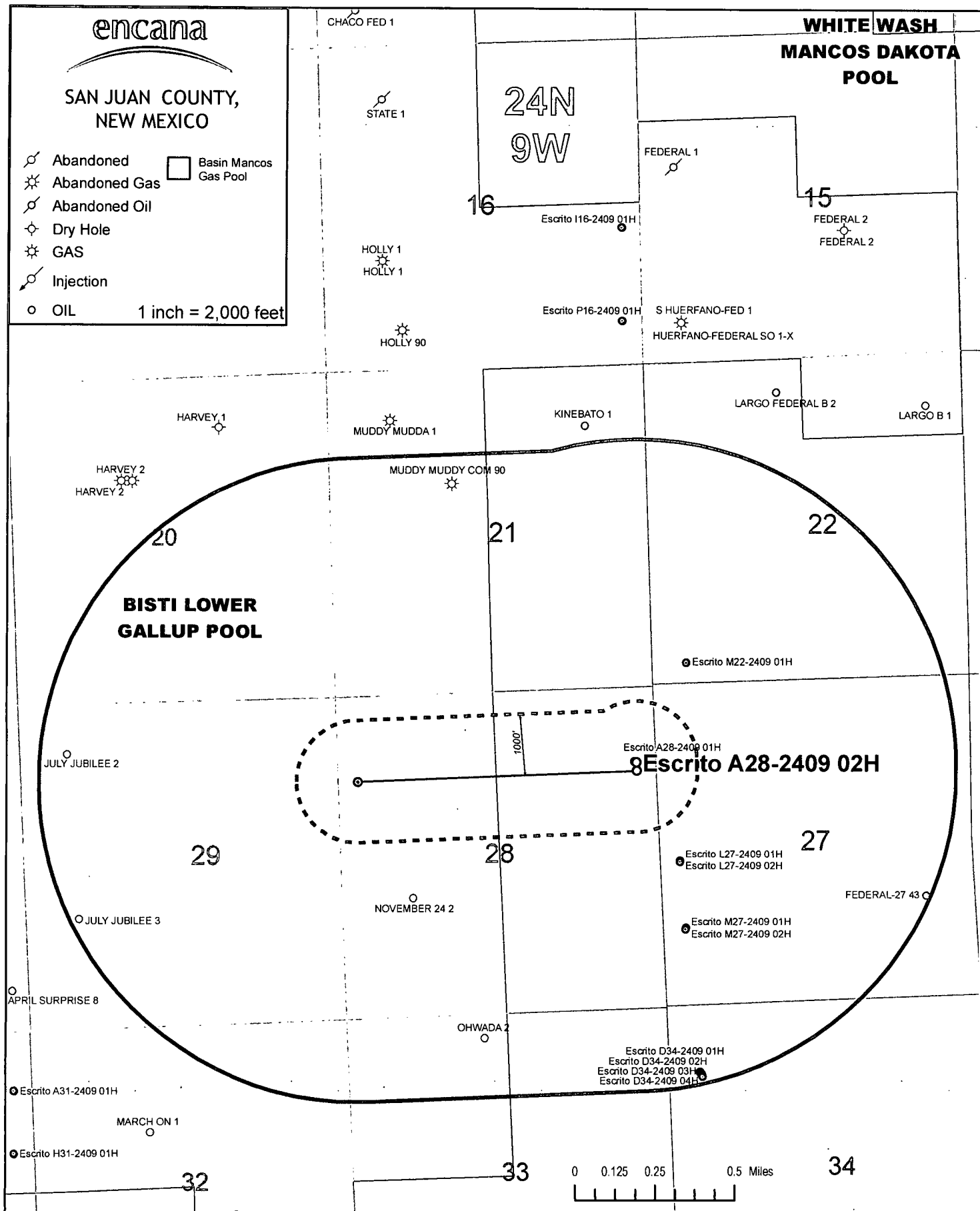
Latitude: 36.28895°N Longitude: 107.78675°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 31.7 miles to Mile Marker 119.5;

Go Right (South-westerly) for 0.4 miles to 4-way intersection;

Go Straight (South-westerly) @ 4-way intersection for 0.1 miles to Escrito D34-2409 01H proposed access on left-hand side of existing roadway which continues for 7597.3' to fork in proposed roadway;

Go Left (Easterly) for an additional 25' to staked Encana Escrito A28-2409 02H location.



encana

