

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

5. Lease Serial No.
NMNM 12374 ✓

MAY 15 2017

6. If Indian, Allottee or Tribe Name

N/A

Farmington Field Office
Bureau of Land Management

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Encana Oil & Gas (USA) Inc.

3a. Address

370 17th Street, Suite 1700
Denver, CO 80202

3b. Phone No. (include area code)

(720) 876-3533

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: 232' FNL and 2387' FEL Section 33, T24N R9W
BHL: 2340' FSL and 1890' FEL Section 3, T23N R9W

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

NMNM 132981A

8. Well Name and No.

Nageezi Unit 325H

9. API Well No.

30-045-35785

10. Field and Pool or Exploratory Area

Nageezi Unit HZ (OIL)

11. Country or Parish, State

San Juan County, NM

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

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

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

Encana Oil & Gas (USA) Inc. (Encana) is submitting this sundry to notify the BLM that the surface hole location was shifted 60'. Please note, the footprint of the pad will not change.

An updated C-102, Directional Drilling Plan, Drilling Plan and Wellbore Diagram are attached, which reflect this change.

OIL CONS. DIV DIST. 3

MAY 22 2017

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

Katie Wegner

Title Senior Regulatory Analyst

Signature

Date

05/01/2017

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Supv NPS

Date

5/16/17

Office

FFO

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

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

(Instructions on page 2)

ADHERE TO PREVIOUS NMOC
NMOC CONDITIONS OF APPROVAL

MAY 31 2017

Submit one copy to appropriate
District Office

11393

DISTRICT I

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

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

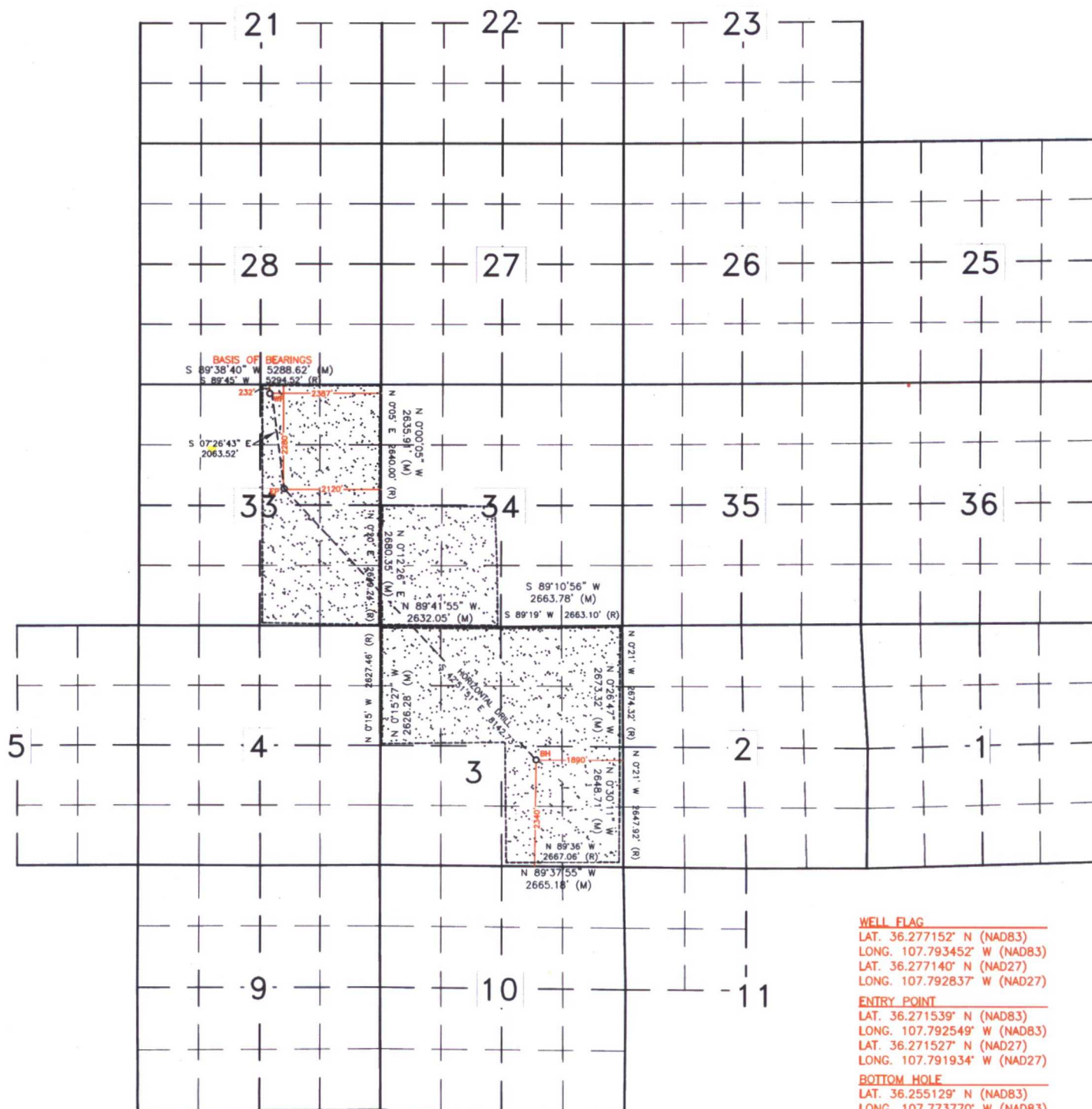
OIL CONSERVATION DIVISION

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

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
NAGEEZI UNIT #325H



PENETRATED SPACING UNIT; E/2 SEC. 33 (320 ACRES), SW/4
SEC. 34 (160 ACRES), N/2 & SE/4 SEC. 3 (483.42 ACRES)
TOTAL 10,415.12 ACRES: SEC. 21-23 (S/2); 25-28, 33-36,
1-4, 9-10 (ALL); 5 (W/2); 11 (NW/4) - UNDIVIDED UNIT

WELL FLAG
LAT. 36.277152° N (NAD83)
LONG. 107.793452° W (NAD83)
LAT. 36.277140° N (NAD27)
LONG. 107.792837° W (NAD27)

ENTRY POINT
LAT. 36.271539° N (NAD83)
LONG. 107.792549° W (NAD83)
LAT. 36.271527° N (NAD27)
LONG. 107.791934° W (NAD27)

BOTTOM HOLE
LAT. 36.255129° N (NAD83)
LONG. 107.773770° W (NAD83)
LAT. 36.255117° N (NAD27)
LONG. 107.773156° W (NAD27)

Nageezi Unit 325H
 SHL: NWNE Sec 33, T24N R9W
 232' FNL, 2387' FEL
 BHL: NWSE Sec 3, T23N, R9W
 2340' FSL, 1890' FEL
 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	839
Kirtland Shale	1,016
Fruitland Coal	1,325
Pictured Cliffs Ss.	1,605
Lewis Shale	1,699
Cliffhouse Ss.	2,350
Menefee Fn.	3,103
Point Lookout Ss.	4,065
Mancos Shale	4,208
Mancos Silt	4,737
Gallup Fn.	4,997

The referenced surface elevation is 6954', KB 6970'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,325
Water/Gas	Pictured Cliffs Ss.	1,605
Water/Gas	Cliffhouse Ss.	2,350
Water/Gas	Menefee Fn.	3,103
Water/Gas	Point Lookout Ss.	4,065
Oil/Gas	Mancos Shale	4,208
Oil/Gas	Mancos Silt	4,737
Oil/Gas	Gallup Fn.	4,997

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.

Nageezi Unit 325H

SHL: NWNE Sec 33, T24N R9W

232' FNL, 2387' FEL

BHL: NWSE Sec 3, T23N, R9W

2340' FSL, 1890' FEL

San Juan, New Mexico

- 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 higher grade of casing may be run at the Operator's discretion, but a lower grade will not be substituted without prior approval of the BLM.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Surface	0'-320'	12 1/4"	9 5/8"	32.3	H40, STC New
Intermediate	0'-5700'	8 3/4"	7"	26	J55, LTC New
Production Liner	5500'-14091'	6 1/8"	4 1/2"	11.6	B80*, BTC 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"	32.3	H40	STC	1370	2270	365	1.0	1.1	1.5
7"	26	J55	LTC	4330	4980	367	1.0	1.1	1.5
4.5"	11.6	B80	BTC	6350	7780	267	1.0	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.

Nageezi Unit 325H**SHL: NWNE Sec 33, T24N R9W****232' FNL, 2387' FEL****BHL: NWSE Sec 3, T23N, R9W****2340' FSL, 1890' FEL****San Juan, New Mexico**

b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Surface	0'-320'	116 sks	Class V cement w/ 2% CaCl Weight 15.6ppg Yield: 1.21 ft ³ /sk	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5700'	100% open hole excess Stage 1 Lead: 703 sks Stage 1 Tail: 237 sks	Lead: Extended Class G w/ 6% BWOC bentonite + 5 lb/sk Kol-Seal + 0.125 lb/sk Poly-flake + 0.3% BWOC HR-5 Weight: 12.3ppg Yield: 1.952 ft ³ /sk Tail: Extended Class G w/ 1% BWOC bentonite + 0.3% BWOC Halad-567 + 0.2% BWOC Versaset + 0.05% SA-1015 Weight: 13.5ppg Yield: 1.305 ft ³ /sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5500'- 14091'	30% open hole excess Cement Vol: 812 sks	Extended Class G w/ 2.5 lb/sk Kol-seal + 0.7% BWOC Halad-567 + 0.20% BWOC Halad-9 + 0.05% SA-1015 Weight: 13.5ppg Yield: 1.302 ft ³ /sk	Top of Liner	N/A

Nageezi Unit 325H**SHL: NWNE Sec 33, T24N R9W****232' FNL, 2387' FEL****BHL: NWSE Sec 3, T23N, R9W****2340' FSL, 1890' FEL****San Juan, New Mexico**

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 4822'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5151'/14091'	Gallup

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)
12 1/4"	0'-320'/320'	Fresh Water	0	60-70	NC
8 3/4"	320'/320'-5209'/5700'	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"	5209'/5700'- 5151'/14091'	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) Mud Logging - Top Mancos to TD
- d) Logging - See below

Nageezi Unit 325H

SHL: NWNE Sec 33, T24N R9W

232' FNL, 2387' FEL

BHL: NWSE Sec 3, T23N, R9W

2340' FSL, 1890' FEL

San Juan, New Mexico

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 +/- 2467 psi based on a 9.0 ppg at 5271' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

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

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on April 1st, 2017. 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 10 days.

LOC: Sec 33 T24N R9W, 232' FNL, 2387' FEL			Encana Natural Gas						ENG: L. Hubbard RIG: Unassigned GLE: 6954 RKBE: 6970		4/3/17
County: San Juan			WELL SUMMARY								
WELL: Nageezi Unit 325H											
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH				HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION	
			TVD	MD							
Run survey tool at TD and update anticollision scan	None	Nacimiento 9 5/8" Csg	0 320	320			12 1/4	9 5/8" 32.3ppf H40 STC TOC to Surface 15.6ppg Class V cement w/ 2% CaCl	Fresh wtr 8.3-9.2	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 Kirtland Shale Fruitland Coal Pictured Cliffs Ss. Lewis Shale Cliffhouse Ss. Menefee Fn Point Lookout Ss. Mancos Shale	839 1,016 1,325 1,605 1,699 2,350 3,103 4,065 4,208				8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess) Stage 1 Total: 941sks	Fresh Wtr 8.3-10	Directional 25°	
Surveys every 30' through the curve	MWD GR Mud Log	KOP Mancos Silt Gallup Fn. 7" Csg	4,822 4,737 4,997 5,209	5,128 5,700'							
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD Base Gallup	5,271 5,151 5,321	14,091			6 1/8	200' overlap at liner top 8391' Drilled Lateral TOC @ Top of Liner (30% open hole excess)		Horz Inc/TVD 90.7deg/5271' TD = 14090.56' MD	
MWD Gamma Directional									WBM 8.3-10		



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	2119.81	24.40	181.95	2083.28	-255.65	-8.70	2.00	181.95	181.57	
4	5127.51	24.40	181.95	4822.43	-1497.24	-50.97	0.00	0.00	1063.39	
5	5945.49	90.70	137.17	5250.48	-2043.27	266.18	9.00	-47.23	1679.43	NAGEEZI UNIT 325H POE
6	14090.56	90.70	137.17	5150.97	-8016.31	5802.88	0.00	0.00	9823.90	NAGEEZI UNIT 325H PBHL

Project: San Juan County, NM
Site: S33-T24N-R9W
Well: NAGEEZI UNIT 325H
Wellbore: OH
Design: PLAN #3
Rig: AZTEC 920

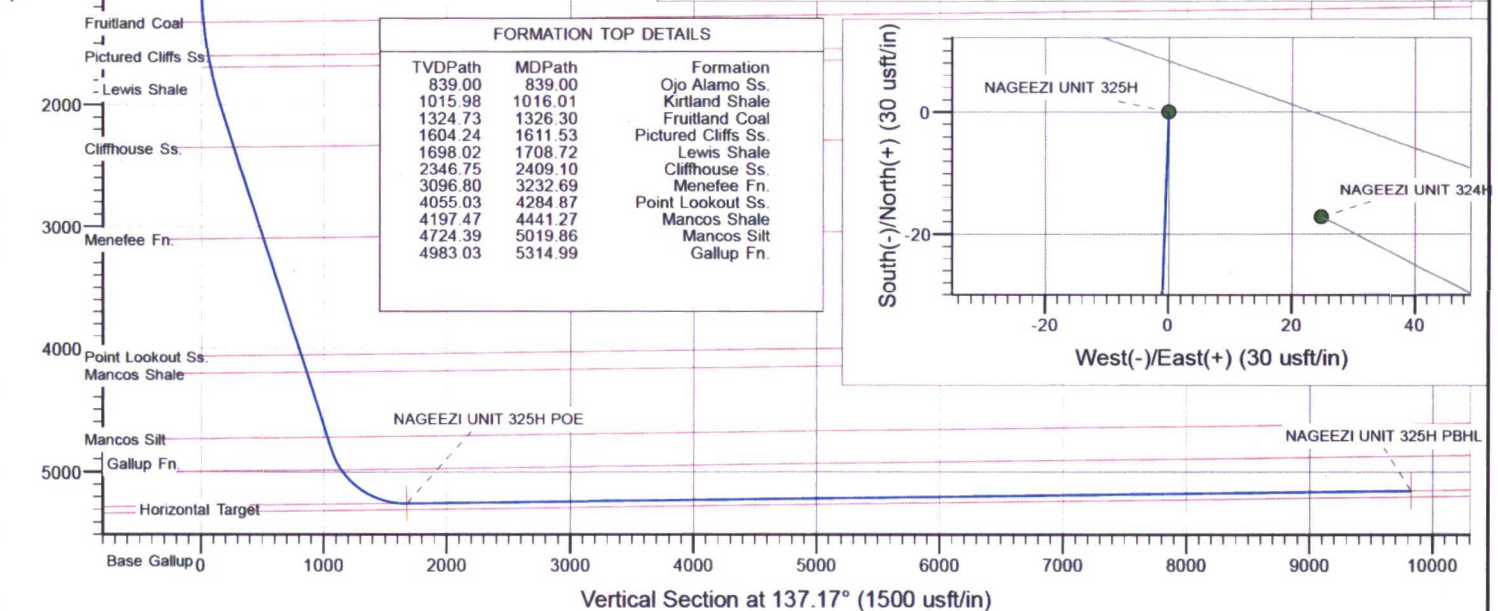
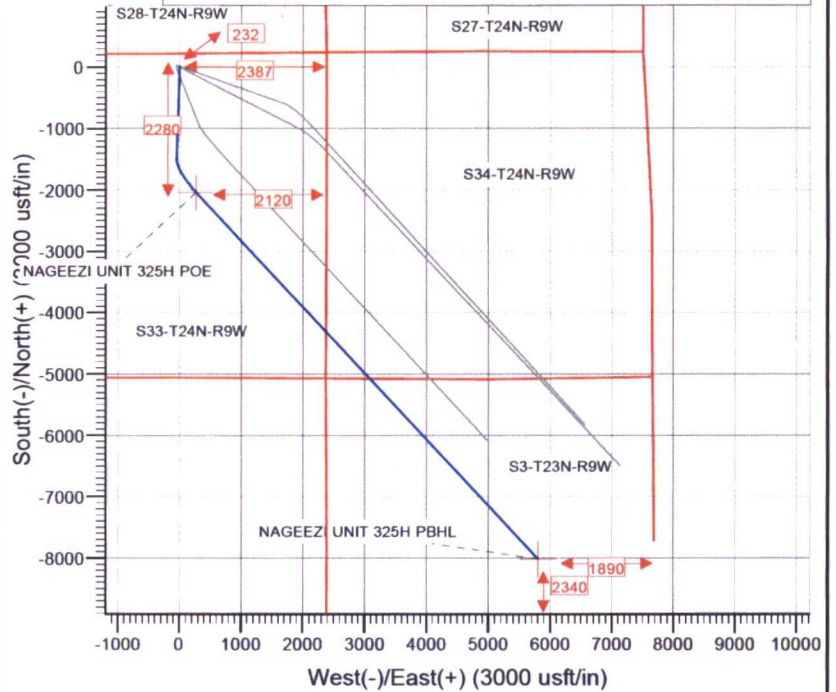
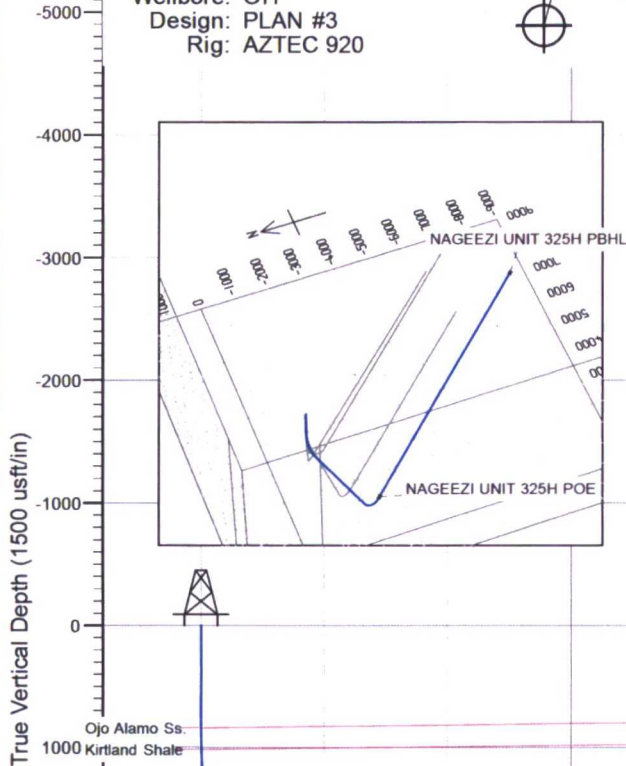


Azimuths to True North
Magnetic North: 9.05°

Magnetic Field
Strength: 49735.2snT
Dip Angle: 62.90°
Date: 3/31/2017
Model: HDGM

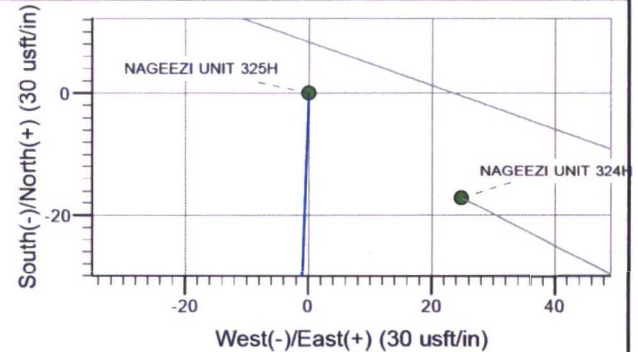
PLAN #3
NAGEEZI UNIT 325H
16500.118
16' KB @ 6970.00usft (AZTEC 920)
Ground Level @ 6954.00
North American Datum 1983
Well NAGEEZI UNIT 325H, True North

Type	User	Target	No. Target (if no hand)	Azimuth	Origin	Type	N/S	E/W	From TVD
				137.17	16500.118	16'	N	0.00	0.00
Name	NAGEEZI UNIT 325H PBHL			TVD	5150.97	N/S	8016.31	E/W	5802.88
	NAGEEZI UNIT 325H POE				5250.48		-2043.27		266.18
									Latitude 36.256129
									Longitude 107.773770
									107.792549



FORMATION TOP DETAILS

TVDPth	MDPth	Formation
839.00	839.00	Ojo Alamo Ss.
1015.98	1016.01	Kirtland Shale
1324.73	1326.30	Fruitland Coal
1604.24	1611.53	Pictured Cliffs Ss.
1698.02	1708.72	Lewis Shale
2346.75	2409.10	Cliffhouse Ss.
3096.80	3232.69	Menefee Fn.
4055.03	4284.87	Point Lookout Ss.
4197.47	4441.27	Mancos Shale
4724.39	5019.86	Mancos Silt
4983.03	5314.99	Gallup Fn.



WELL DETAILS: NAGEEZI UNIT 325H

+N/-S	+E/-W	Northing	Ground Level:	6954.00	Latitude	Longitude
0.00	0.00	1920184.91	Easting	2734846.65	36.277152	-107.793452



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 325H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6970.00usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6970.00usft
Site:	S33-T24N-R9W	North Reference:	True
Well:	NAGEEZI UNIT 325H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #3		

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	S33-T24N-R9W		
Site Position:		Northing:	1,920,253.67 usft
From:	Lat/Long	Easting:	2,734,747.88 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	36.277341
		Longitude:	-107.793787
		Grid Convergence:	0.02 °

Well	NAGEEZI UNIT 325H		
Well Position	+N/-S	0.00 usft	Northing: 1,920,184.91 usft
	+E/-W	0.00 usft	Easting: 2,734,846.65 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	36.277152
		Longitude:	-107.793452
		Ground Level:	6,954.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	3/31/2017	9.05
			Dip Angle
			(°)
			62.90
			Field Strength
			(nT)
			49,735

Design	PLAN #3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			137.17

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)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,119.81	24.40	181.95	2,083.28	-255.65	-8.70	2.00	2.00	0.00	181.95	
5,127.51	24.40	181.95	4,822.43	-1,497.24	-50.97	0.00	0.00	0.00	0.00	
5,945.49	90.70	137.17	5,250.48	-2,043.27	266.18	9.00	8.11	-5.47	-47.23	NAGEEZI UNIT 325H
14,090.56	90.70	137.17	5,150.97	-8,016.31	5,802.88	0.00	0.00	0.00	0.00	NAGEEZI UNIT 325H

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 325H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	16' KB @ 6970.00usft
Project:	San Juan County, NM	MD Reference:	16' KB @ 6970.00usft
Site:	S33-T24N-R9W	North Reference:	True
Well:	NAGEEZI UNIT 325H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #3		

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
839.00	0.00	0.00	839.00	0.00	0.00	0.00	0.00	0.00	Ojo Alamo Ss.
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	KOP @ 900'
1,000.00	2.00	181.95	999.98	-1.74	-0.06	1.24	2.00	2.00	
1,016.01	2.32	181.95	1,015.98	-2.35	-0.08	1.67	2.00	2.00	Kirtland Shale
1,100.00	4.00	181.95	1,099.84	-6.97	-0.24	4.95	2.00	2.00	
1,200.00	6.00	181.95	1,199.45	-15.68	-0.53	11.14	2.00	2.00	
1,300.00	8.00	181.95	1,298.70	-27.86	-0.95	19.79	2.00	2.00	
1,326.30	8.53	181.95	1,324.73	-31.64	-1.08	22.47	2.00	2.00	Fruitland Coal
1,400.00	10.00	181.95	1,397.47	-43.50	-1.48	30.89	2.00	2.00	
1,500.00	12.00	181.95	1,495.62	-62.57	-2.13	44.44	2.00	2.00	
1,600.00	14.00	181.95	1,593.06	-85.05	-2.90	60.40	2.00	2.00	
1,611.53	14.23	181.95	1,604.24	-87.86	-2.99	62.40	2.00	2.00	Pictured Cliffs Ss.
1,700.00	16.00	181.95	1,689.64	-110.91	-3.78	78.77	2.00	2.00	
1,708.72	16.17	181.95	1,698.02	-113.33	-3.86	80.49	2.00	2.00	Lewis Shale
1,800.00	18.00	181.95	1,785.27	-140.13	-4.77	99.53	2.00	2.00	
1,900.00	20.00	181.95	1,879.82	-172.67	-5.88	122.63	2.00	2.00	
2,000.00	22.00	181.95	1,973.17	-208.48	-7.10	148.07	2.00	2.00	
2,100.00	24.00	181.95	2,065.21	-247.53	-8.43	175.80	2.00	2.00	
2,119.81	24.40	181.95	2,083.28	-255.65	-8.70	181.57	2.00	2.00	EOB; INC=24.4°
2,200.00	24.40	181.95	2,156.31	-288.75	-9.83	205.08	0.00	0.00	
2,300.00	24.40	181.95	2,247.38	-330.03	-11.24	234.40	0.00	0.00	
2,400.00	24.40	181.95	2,338.46	-371.31	-12.64	263.72	0.00	0.00	
2,409.10	24.40	181.95	2,346.75	-375.07	-12.77	266.38	0.00	0.00	Cliffhouse Ss.
2,500.00	24.40	181.95	2,429.53	-412.59	-14.05	293.03	0.00	0.00	
2,600.00	24.40	181.95	2,520.60	-453.87	-15.45	322.35	0.00	0.00	
2,700.00	24.40	181.95	2,611.67	-495.15	-16.86	351.67	0.00	0.00	
2,800.00	24.40	181.95	2,702.74	-536.43	-18.26	380.99	0.00	0.00	
2,900.00	24.40	181.95	2,793.81	-577.71	-19.67	410.31	0.00	0.00	
3,000.00	24.40	181.95	2,884.88	-618.99	-21.07	439.63	0.00	0.00	
3,100.00	24.40	181.95	2,975.95	-660.27	-22.48	468.95	0.00	0.00	
3,200.00	24.40	181.95	3,067.02	-701.55	-23.88	498.27	0.00	0.00	
3,232.69	24.40	181.95	3,096.80	-715.05	-24.34	507.85	0.00	0.00	Menefee Fn.
3,300.00	24.40	181.95	3,158.10	-742.83	-25.29	527.58	0.00	0.00	
3,400.00	24.40	181.95	3,249.17	-784.11	-26.69	556.90	0.00	0.00	
3,500.00	24.40	181.95	3,340.24	-825.40	-28.10	586.22	0.00	0.00	
3,600.00	24.40	181.95	3,431.31	-866.68	-29.50	615.54	0.00	0.00	
3,700.00	24.40	181.95	3,522.38	-907.96	-30.91	644.86	0.00	0.00	
3,800.00	24.40	181.95	3,613.45	-949.24	-32.31	674.18	0.00	0.00	
3,900.00	24.40	181.95	3,704.52	-990.52	-33.72	703.50	0.00	0.00	
4,000.00	24.40	181.95	3,795.59	-1,031.80	-35.13	732.81	0.00	0.00	
4,100.00	24.40	181.95	3,886.66	-1,073.08	-36.53	762.13	0.00	0.00	
4,200.00	24.40	181.95	3,977.74	-1,114.36	-37.94	791.45	0.00	0.00	
4,284.87	24.40	181.95	4,055.03	-1,149.39	-39.13	816.33	0.00	0.00	Point Lookout Ss.

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S33-T24N-R9W
Well: NAGEEZI UNIT 325H
Wellbore: OH
Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,300.00	24.40	181.95	4,068.81	-1,155.64	-39.34	820.77	0.00	0.00	
4,400.00	24.40	181.95	4,159.88	-1,196.92	-40.75	850.09	0.00	0.00	
4,441.27	24.40	181.95	4,197.47	-1,213.96	-41.33	862.19	0.00	0.00	Mancos Shale
4,500.00	24.40	181.95	4,250.95	-1,238.20	-42.15	879.41	0.00	0.00	
4,600.00	24.40	181.95	4,342.02	-1,279.48	-43.56	908.73	0.00	0.00	
4,700.00	24.40	181.95	4,433.09	-1,320.76	-44.96	938.05	0.00	0.00	
4,800.00	24.40	181.95	4,524.16	-1,362.04	-46.37	967.36	0.00	0.00	
4,900.00	24.40	181.95	4,615.23	-1,403.32	-47.77	996.68	0.00	0.00	
5,000.00	24.40	181.95	4,706.30	-1,444.60	-49.18	1,026.00	0.00	0.00	
5,019.86	24.40	181.95	4,724.39	-1,452.80	-49.46	1,031.83	0.00	0.00	Mancos Silt
5,100.00	24.40	181.95	4,797.38	-1,485.88	-50.58	1,055.32	0.00	0.00	
5,127.51	24.40	181.95	4,822.43	-1,497.24	-50.97	1,063.39	0.00	0.00	START BUILD/TURN
5,200.00	29.20	172.10	4,887.15	-1,529.75	-49.05	1,088.53	9.00	6.62	
5,300.00	36.64	162.73	4,971.09	-1,582.51	-36.81	1,135.55	9.00	7.44	
5,314.99	37.81	161.61	4,983.03	-1,591.14	-34.04	1,143.76	9.00	7.79	Gallup Fn.
5,400.00	44.59	156.23	5,046.97	-1,643.25	-13.76	1,195.77	9.00	7.98	
5,500.00	52.82	151.36	5,112.93	-1,710.47	19.56	1,267.71	9.00	8.23	
5,600.00	61.21	147.47	5,167.34	-1,782.53	62.31	1,349.62	9.00	8.39	
5,700.00	69.69	144.16	5,208.86	-1,857.64	113.44	1,439.46	9.00	8.48	
5,800.00	78.23	141.20	5,236.47	-1,933.95	171.69	1,535.03	9.00	8.54	
5,900.00	86.80	138.41	5,249.49	-2,009.59	235.63	1,633.97	9.00	8.57	
5,945.49	90.70	137.17	5,250.48	-2,043.27	266.18	1,679.43	9.00	8.58	LP @ 5250' TVD; 90.7°
6,000.00	90.70	137.17	5,249.81	-2,083.24	303.23	1,733.94	0.00	0.00	
6,100.00	90.70	137.17	5,248.59	-2,156.58	371.21	1,833.93	0.00	0.00	
6,200.00	90.70	137.17	5,247.37	-2,229.91	439.18	1,933.93	0.00	0.00	
6,300.00	90.70	137.17	5,246.15	-2,303.24	507.16	2,033.92	0.00	0.00	
6,400.00	90.70	137.17	5,244.93	-2,376.58	575.14	2,133.91	0.00	0.00	
6,500.00	90.70	137.17	5,243.71	-2,449.91	643.11	2,233.90	0.00	0.00	
6,600.00	90.70	137.17	5,242.48	-2,523.24	711.09	2,333.90	0.00	0.00	
6,700.00	90.70	137.17	5,241.26	-2,596.58	779.07	2,433.89	0.00	0.00	
6,800.00	90.70	137.17	5,240.04	-2,669.91	847.04	2,533.88	0.00	0.00	
6,900.00	90.70	137.17	5,238.82	-2,743.24	915.02	2,633.87	0.00	0.00	
7,000.00	90.70	137.17	5,237.60	-2,816.58	982.99	2,733.87	0.00	0.00	
7,100.00	90.70	137.17	5,236.38	-2,889.91	1,050.97	2,833.86	0.00	0.00	
7,200.00	90.70	137.17	5,235.15	-2,963.24	1,118.95	2,933.85	0.00	0.00	
7,300.00	90.70	137.17	5,233.93	-3,036.58	1,186.92	3,033.84	0.00	0.00	
7,400.00	90.70	137.17	5,232.71	-3,109.91	1,254.90	3,133.84	0.00	0.00	
7,500.00	90.70	137.17	5,231.49	-3,183.24	1,322.87	3,233.83	0.00	0.00	
7,600.00	90.70	137.17	5,230.27	-3,256.57	1,390.85	3,333.82	0.00	0.00	
7,700.00	90.70	137.17	5,229.04	-3,329.91	1,458.83	3,433.81	0.00	0.00	
7,800.00	90.70	137.17	5,227.82	-3,403.24	1,526.80	3,533.81	0.00	0.00	
7,900.00	90.70	137.17	5,226.60	-3,476.57	1,594.78	3,633.80	0.00	0.00	
8,000.00	90.70	137.17	5,225.38	-3,549.91	1,662.75	3,733.79	0.00	0.00	
8,100.00	90.70	137.17	5,224.16	-3,623.24	1,730.73	3,833.79	0.00	0.00	
8,200.00	90.70	137.17	5,222.94	-3,696.57	1,798.71	3,933.78	0.00	0.00	
8,300.00	90.70	137.17	5,221.71	-3,769.91	1,866.68	4,033.77	0.00	0.00	
8,400.00	90.70	137.17	5,220.49	-3,843.24	1,934.66	4,133.76	0.00	0.00	
8,500.00	90.70	137.17	5,219.27	-3,916.57	2,002.63	4,233.76	0.00	0.00	
8,600.00	90.70	137.17	5,218.05	-3,989.91	2,070.61	4,333.75	0.00	0.00	
8,700.00	90.70	137.17	5,216.83	-4,063.24	2,138.59	4,433.74	0.00	0.00	
8,800.00	90.70	137.17	5,215.61	-4,136.57	2,206.56	4,533.73	0.00	0.00	
8,900.00	90.70	137.17	5,214.38	-4,209.91	2,274.54	4,633.73	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S33-T24N-R9W
Well: NAGEEZI UNIT 325H
Wellbore: OH
Design: PLAN #3

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

Well NAGEEZI UNIT 325H
16' KB @ 6970.00usft
16' KB @ 6970.00usft
True
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,000.00	90.70	137.17	5,213.16	-4,283.24	2,342.52	4,733.72	0.00	0.00	
9,100.00	90.70	137.17	5,211.94	-4,356.57	2,410.49	4,833.71	0.00	0.00	
9,200.00	90.70	137.17	5,210.72	-4,429.91	2,478.47	4,933.70	0.00	0.00	
9,300.00	90.70	137.17	5,209.50	-4,503.24	2,546.44	5,033.70	0.00	0.00	
9,400.00	90.70	137.17	5,208.28	-4,576.57	2,614.42	5,133.69	0.00	0.00	
9,500.00	90.70	137.17	5,207.05	-4,649.91	2,682.40	5,233.68	0.00	0.00	
9,600.00	90.70	137.17	5,205.83	-4,723.24	2,750.37	5,333.67	0.00	0.00	
9,700.00	90.70	137.17	5,204.61	-4,796.57	2,818.35	5,433.67	0.00	0.00	
9,800.00	90.70	137.17	5,203.39	-4,869.91	2,886.32	5,533.66	0.00	0.00	
9,900.00	90.70	137.17	5,202.17	-4,943.24	2,954.30	5,633.65	0.00	0.00	
10,000.00	90.70	137.17	5,200.95	-5,016.57	3,022.28	5,733.64	0.00	0.00	
10,100.00	90.70	137.17	5,199.72	-5,089.91	3,090.25	5,833.64	0.00	0.00	
10,200.00	90.70	137.17	5,198.50	-5,163.24	3,158.23	5,933.63	0.00	0.00	
10,300.00	90.70	137.17	5,197.28	-5,236.57	3,226.20	6,033.62	0.00	0.00	
10,400.00	90.70	137.17	5,196.06	-5,309.90	3,294.18	6,133.61	0.00	0.00	
10,500.00	90.70	137.17	5,194.84	-5,383.24	3,362.16	6,233.61	0.00	0.00	
10,600.00	90.70	137.17	5,193.61	-5,456.57	3,430.13	6,333.60	0.00	0.00	
10,700.00	90.70	137.17	5,192.39	-5,529.90	3,498.11	6,433.59	0.00	0.00	
10,800.00	90.70	137.17	5,191.17	-5,603.24	3,566.08	6,533.58	0.00	0.00	
10,900.00	90.70	137.17	5,189.95	-5,676.57	3,634.06	6,633.58	0.00	0.00	
11,000.00	90.70	137.17	5,188.73	-5,749.90	3,702.04	6,733.57	0.00	0.00	
11,100.00	90.70	137.17	5,187.51	-5,823.24	3,770.01	6,833.56	0.00	0.00	
11,200.00	90.70	137.17	5,186.28	-5,896.57	3,837.99	6,933.55	0.00	0.00	
11,300.00	90.70	137.17	5,185.06	-5,969.90	3,905.96	7,033.55	0.00	0.00	
11,400.00	90.70	137.17	5,183.84	-6,043.24	3,973.94	7,133.54	0.00	0.00	
11,500.00	90.70	137.17	5,182.62	-6,116.57	4,041.92	7,233.53	0.00	0.00	
11,600.00	90.70	137.17	5,181.40	-6,189.90	4,109.89	7,333.52	0.00	0.00	
11,700.00	90.70	137.17	5,180.18	-6,263.24	4,177.87	7,433.52	0.00	0.00	
11,800.00	90.70	137.17	5,178.95	-6,336.57	4,245.85	7,533.51	0.00	0.00	
11,900.00	90.70	137.17	5,177.73	-6,409.90	4,313.82	7,633.50	0.00	0.00	
12,000.00	90.70	137.17	5,176.51	-6,483.24	4,381.80	7,733.49	0.00	0.00	
12,100.00	90.70	137.17	5,175.29	-6,556.57	4,449.77	7,833.49	0.00	0.00	
12,200.00	90.70	137.17	5,174.07	-6,629.90	4,517.75	7,933.48	0.00	0.00	
12,300.00	90.70	137.17	5,172.85	-6,703.24	4,585.73	8,033.47	0.00	0.00	
12,400.00	90.70	137.17	5,171.62	-6,776.57	4,653.70	8,133.46	0.00	0.00	
12,500.00	90.70	137.17	5,170.40	-6,849.90	4,721.68	8,233.46	0.00	0.00	
12,600.00	90.70	137.17	5,169.18	-6,923.24	4,789.65	8,333.45	0.00	0.00	
12,700.00	90.70	137.17	5,167.96	-6,996.57	4,857.63	8,433.44	0.00	0.00	
12,800.00	90.70	137.17	5,166.74	-7,069.90	4,925.61	8,533.43	0.00	0.00	
12,900.00	90.70	137.17	5,165.52	-7,143.23	4,993.58	8,633.43	0.00	0.00	
13,000.00	90.70	137.17	5,164.29	-7,216.57	5,061.56	8,733.42	0.00	0.00	
13,100.00	90.70	137.17	5,163.07	-7,289.90	5,129.53	8,833.41	0.00	0.00	
13,200.00	90.70	137.17	5,161.85	-7,363.23	5,197.51	8,933.40	0.00	0.00	
13,300.00	90.70	137.17	5,160.63	-7,436.57	5,265.49	9,033.40	0.00	0.00	
13,400.00	90.70	137.17	5,159.41	-7,509.90	5,333.46	9,133.39	0.00	0.00	
13,500.00	90.70	137.17	5,158.18	-7,583.23	5,401.44	9,233.38	0.00	0.00	
13,600.00	90.70	137.17	5,156.96	-7,656.57	5,469.41	9,333.37	0.00	0.00	
13,700.00	90.70	137.17	5,155.74	-7,729.90	5,537.39	9,433.37	0.00	0.00	
13,800.00	90.70	137.17	5,154.52	-7,803.23	5,605.37	9,533.36	0.00	0.00	
13,900.00	90.70	137.17	5,153.30	-7,876.57	5,673.34	9,633.35	0.00	0.00	
14,000.00	90.70	137.17	5,152.08	-7,949.90	5,741.32	9,733.34	0.00	0.00	
14,090.56	90.70	137.17	5,150.97	-8,016.31	5,802.88	9,823.90	0.00	0.00	TD at 14090.56

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S33-T24N-R9W
Well: NAGEEZI UNIT 325H
Wellbore: OH
Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
-----------------------	-----------------	-------------	-----------------------	--------------	--------------	-------------------------	-------------------------	---------------------	-----------------------

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
NAGEEZI UNIT 325H PI - plan hits target center - Point	0.00	0.00	5,250.48	-2,043.27	266.18	1,918,141.75	2,735,113.67	36.271539	-107.792549
NAGEEZI UNIT 325H PI - plan hits target center - Point	0.00	0.00	5,150.97	-8,016.31	5,802.88	1,912,170.99	2,740,652.83	36.255129	-107.773770

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
839.00	839.00	Ojo Alamo Ss.		-0.70	137.17
1,016.01	1,016.00	Kirtland Shale		-0.70	137.17
1,326.30	1,325.00	Fruitland Coal		-0.70	137.17
1,611.53	1,605.00	Pictured Cliffs Ss.		-0.70	137.17
1,708.72	1,699.00	Lewis Shale		-0.70	137.17
2,409.10	2,350.00	Cliffhouse Ss.		-0.70	137.17
3,232.69	3,103.00	Menefee Fn.		-0.70	137.17
4,284.87	4,065.00	Point Lookout Ss.		-0.70	137.17
4,441.27	4,208.00	Mancos Shale		-0.70	137.17
5,019.86	4,737.00	Mancos Silt		-0.70	137.17
5,314.99	4,997.00	Gallup Fn.		-0.70	137.17

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
900.00	900.00	0.00	0.00	KOP @ 900'
2,119.81	2,083.28	-255.65	-8.70	EOB; INC=24.4°
5,127.51	4,822.43	-1,497.24	-50.97	START BUILD/TURN
5,945.49	5,250.48	-2,043.27	266.18	LP @ 5250' TVD; 90.7°
14,090.56	5,150.97	-8,016.31	5,802.88	TD at 14090.56

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S33-T24N-R9W

NAGEEZI UNIT 325H

OH

PLAN #3

Anticollision Report

28 March, 2017

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 325H
Project:	San Juan County, NM	TVD Reference:	16' KB @ 6970.00usft
Reference Site:	S33-T24N-R9W	MD Reference:	16' KB @ 6970.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	NAGEEZI UNIT 325H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	Offset Datum

Reference PLAN #3

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program Date 3/28/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	14,089.87	PLAN #3 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S33-T24N-R9W						
NAGEEZI UNIT 324H - OH - PLAN #3	900.00	900.00	30.10	24.06	4.985	CC, ES
NAGEEZI UNIT 324H - OH - PLAN #3	1,100.00	1,097.67	33.85	26.42	4.559	SF
NAGEEZI UNIT 326H - OH - PLAN #3	1,070.73	1,072.51	14.24	7.02	1.971	CC, ES, SF
NAGEEZI UNIT 327H - OH - PLAN #3	1,893.37	1,892.46	37.22	23.70	2.753	CC
NAGEEZI UNIT 327H - OH - PLAN #3	1,900.00	1,899.02	37.22	23.64	2.740	ES
NAGEEZI UNIT 327H - OH - PLAN #3	12,115.97	11,909.97	735.16	383.62	2.091	SF

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S33-T24N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 325H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
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 S33-T24N-R9W - NAGEEZI UNIT 324H - OH - PLAN #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	124.65	-17.11	24.76	30.10				
100.00	100.00	100.00	100.00	0.15	0.15	124.65	-17.11	24.76	30.10	29.79	0.30	99.946	
200.00	200.00	200.00	200.00	0.51	0.51	124.65	-17.11	24.76	30.10	29.08	1.02	29.561	
300.00	300.00	300.00	300.00	0.87	0.87	124.65	-17.11	24.76	30.10	28.36	1.74	17.346	
400.00	400.00	400.00	400.00	1.23	1.23	124.65	-17.11	24.76	30.10	27.64	2.45	12.274	
500.00	500.00	500.00	500.00	1.58	1.58	124.65	-17.11	24.76	30.10	26.93	3.17	9.497	
600.00	600.00	600.00	600.00	1.94	1.94	124.65	-17.11	24.76	30.10	26.21	3.89	7.745	
700.00	700.00	700.00	700.00	2.30	2.30	124.65	-17.11	24.76	30.10	25.49	4.60	6.539	
800.00	800.00	800.00	800.00	2.66	2.66	124.65	-17.11	24.76	30.10	24.78	5.32	5.657	
900.00	900.00	900.00	900.00	3.02	3.02	124.65	-17.11	24.76	30.10	24.06	6.04	4.985 CC, ES	
1,000.00	999.98	998.93	998.92	3.36	3.36	-60.39	-17.89	26.28	30.91	24.18	6.73	4.591	
1,100.00	1,099.84	1,097.67	1,097.51	3.69	3.70	-68.62	-20.23	30.82	33.85	26.42	7.42	4.559 SF	
1,200.00	1,199.45	1,196.00	1,195.47	4.03	4.03	-79.18	-24.11	38.34	39.97	31.85	8.13	4.918	
1,300.00	1,298.70	1,293.73	1,292.49	4.37	4.38	-89.07	-29.49	48.77	50.13	41.29	8.83	5.674	
1,400.00	1,397.47	1,390.67	1,388.27	4.73	4.74	-96.85	-36.33	62.01	64.55	55.01	9.54	6.764	
1,500.00	1,495.62	1,486.65	1,482.56	5.10	5.11	-102.47	-44.55	77.95	83.12	72.85	10.26	8.098	
1,600.00	1,593.06	1,581.50	1,575.09	5.50	5.49	-106.42	-54.10	96.46	105.60	94.60	11.00	9.599	
1,700.00	1,689.64	1,675.06	1,665.64	5.91	5.89	-109.18	-64.89	117.37	131.80	120.04	11.76	11.206	
1,800.00	1,785.27	1,767.19	1,754.01	6.36	6.31	-111.10	-76.83	140.52	161.53	148.98	12.55	12.873	
1,900.00	1,879.82	1,857.78	1,840.03	6.83	6.76	-112.44	-89.83	165.72	194.66	181.29	13.37	14.564	
2,000.00	1,973.17	1,946.70	1,923.57	7.34	7.24	-113.35	-103.81	192.81	231.04	216.83	14.22	16.252	
2,100.00	2,065.21	2,033.87	2,004.49	7.88	7.74	-113.94	-118.65	221.58	270.56	255.45	15.10	17.913	
2,119.81	2,083.28	2,050.92	2,020.21	7.99	7.84	-114.03	-121.69	227.47	278.75	263.46	15.29	18.235	
2,200.00	2,156.31	2,119.43	2,082.94	8.46	8.27	-114.78	-134.31	251.95	312.67	296.64	16.03	19.510	
2,300.00	2,247.38	2,203.79	2,159.24	9.05	8.83	-115.19	-150.80	283.90	356.37	339.40	16.97	20.998	
2,400.00	2,338.46	2,286.82	2,233.29	9.65	9.44	-115.19	-168.03	317.29	401.55	383.60	17.95	22.375	
2,500.00	2,429.53	2,368.43	2,304.97	10.26	10.09	-114.90	-185.91	351.96	448.17	429.23	18.94	23.659	
2,600.00	2,520.60	2,448.52	2,374.21	10.89	10.77	-114.42	-204.36	387.73	496.22	476.27	19.95	24.869	
2,700.00	2,611.67	2,527.02	2,440.96	11.52	11.48	-113.82	-223.31	424.44	545.70	524.73	20.97	26.021	
2,800.00	2,702.74	2,606.23	2,507.17	12.16	12.24	-113.11	-243.23	463.06	596.56	574.53	22.04	27.073	
2,900.00	2,793.81	2,691.81	2,578.38	12.80	13.10	-112.41	-264.99	505.25	647.88	624.64	23.24	27.881	
3,000.00	2,884.88	2,777.39	2,649.58	13.45	13.98	-111.81	-286.76	547.44	699.25	674.79	24.46	28.590	
3,100.00	2,975.95	2,862.97	2,720.79	14.10	14.88	-111.29	-308.53	589.63	750.68	724.98	25.69	29.215	
3,200.00	3,067.02	2,948.55	2,791.99	14.76	15.78	-110.84	-330.29	631.82	802.14	775.19	26.95	29.769	
3,300.00	3,158.10	3,034.13	2,863.20	15.42	16.70	-110.44	-352.06	674.01	853.64	825.43	28.21	30.263	
3,400.00	3,249.17	3,119.71	2,934.40	16.08	17.63	-110.09	-373.82	716.20	905.16	875.68	29.48	30.704	
3,500.00	3,340.24	3,205.29	3,005.61	16.75	18.56	-109.78	-395.59	758.39	956.70	925.94	30.76	31.101	
3,600.00	3,431.31	3,290.87	3,076.81	17.42	19.50	-109.49	-417.36	800.58	1,008.27	976.22	32.05	31.458	
3,700.00	3,522.38	3,376.45	3,148.02	18.09	20.45	-109.24	-439.12	842.77	1,059.85	1,026.50	33.35	31.781	
3,800.00	3,613.45	3,462.03	3,219.22	18.76	21.40	-109.01	-460.89	884.97	1,111.44	1,076.79	34.65	32.075	
3,900.00	3,704.52	3,547.61	3,290.43	19.43	22.35	-108.80	-482.65	927.16	1,163.05	1,127.09	35.96	32.343	
4,000.00	3,795.59	3,633.19	3,361.63	20.10	23.31	-108.60	-504.42	969.35	1,214.67	1,177.39	37.27	32.588	
4,100.00	3,886.66	3,718.77	3,432.84	20.78	24.27	-108.43	-526.19	1,011.54	1,266.29	1,227.70	38.59	32.814	
4,200.00	3,977.74	3,804.34	3,504.04	21.45	25.24	-108.26	-547.95	1,053.73	1,317.93	1,278.02	39.91	33.021	
4,300.00	4,068.81	3,889.92	3,575.24	22.13	26.21	-108.11	-569.72	1,095.92	1,369.57	1,328.33	41.24	33.212	
4,400.00	4,159.88	3,975.50	3,646.45	22.81	27.18	-107.97	-591.48	1,138.11	1,421.22	1,378.65	42.57	33.388	
4,500.00	4,250.95	4,061.08	3,717.65	23.49	28.15	-107.84	-613.25	1,180.30	1,472.87	1,428.97	43.90	33.552	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 325H
Project:	San Juan County, NM	TVD Reference:	16' KB @ 6970.00usft
Reference Site:	S33-T24N-R9W	MD Reference:	16' KB @ 6970.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	NAGEEZI UNIT 325H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #3	Offset TVD Reference:	Offset Datum

Offset Design S33-T24N-R9W - NAGEEZI UNIT 326H - OH - PLAN #3													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	-55.35	17.11	-24.76	30.10					
100.00	100.00	100.00	100.00	0.15	0.15	-55.35	17.11	-24.76	30.10	29.79	0.30	99.946		
200.00	200.00	200.00	200.00	0.51	0.51	-55.35	17.11	-24.76	30.10	29.08	1.02	29.561		
300.00	300.00	300.00	300.00	0.87	0.87	-55.35	17.11	-24.76	30.10	28.36	1.74	17.346		
400.00	400.00	400.00	400.00	1.23	1.23	-55.35	17.11	-24.76	30.10	27.64	2.45	12.274		
500.00	500.00	500.00	500.00	1.58	1.58	-55.35	17.11	-24.76	30.10	26.93	3.17	9.497		
600.00	600.00	600.00	600.00	1.94	1.94	-55.35	17.11	-24.76	30.10	26.21	3.89	7.745		
700.00	700.00	700.00	700.00	2.30	2.30	-55.35	17.11	-24.76	30.10	25.49	4.60	6.539		
800.00	800.00	800.98	800.96	2.66	2.65	-54.42	16.51	-23.08	28.40	23.07	5.33	5.327		
900.00	900.00	901.72	901.55	3.02	3.00	-50.80	14.74	-18.07	23.37	17.29	6.07	3.847		
1,000.00	999.98	1,001.99	1,001.43	3.36	3.35	-142.48	11.79	-9.77	16.72	9.94	6.79	2.464		
1,070.73	1,070.63	1,072.51	1,071.46	3.59	3.60	-170.82	9.02	-1.97	14.24	7.02	7.23	1.971	CC, ES, SF	
1,100.00	1,099.84	1,101.58	1,100.27	3.69	3.71	-174.34	7.71	1.72	14.83	7.42	7.40	2.003		
1,200.00	1,199.45	1,200.27	1,197.73	4.03	4.08	-138.79	2.54	16.30	24.87	16.74	8.14	3.057		
1,300.00	1,298.70	1,297.81	1,293.48	4.37	4.46	-125.72	-3.67	33.81	42.67	33.77	8.91	4.791		
1,400.00	1,397.47	1,393.99	1,387.22	4.73	4.86	-120.62	-10.86	54.08	65.24	55.58	9.67	6.748		
1,500.00	1,495.62	1,488.63	1,478.70	5.10	5.29	-118.31	-18.95	76.90	91.84	81.40	10.43	8.804		
1,600.00	1,593.06	1,581.54	1,567.69	5.50	5.73	-117.14	-27.88	102.06	122.18	110.97	11.21	10.903		
1,700.00	1,689.64	1,672.57	1,654.00	5.91	6.20	-116.47	-37.56	129.34	156.12	144.12	12.00	13.015		
1,800.00	1,785.27	1,761.59	1,737.46	6.36	6.70	-116.03	-47.90	158.51	193.52	180.72	12.81	15.112		
1,900.00	1,879.82	1,848.49	1,817.97	6.83	7.23	-115.69	-58.83	189.32	234.27	220.63	13.64	17.176		
2,000.00	1,973.17	1,933.17	1,895.44	7.34	7.79	-115.38	-70.27	221.54	278.25	263.75	14.50	19.189		
2,100.00	2,065.21	2,015.57	1,969.82	7.88	8.37	-115.05	-82.12	254.96	325.32	309.93	15.39	21.139		
2,119.81	2,083.28	2,031.62	1,984.18	7.99	8.49	-114.98	-84.51	261.70	335.00	319.43	15.57	21.512		
2,200.00	2,156.31	2,095.88	2,041.30	8.46	8.98	-115.37	-94.36	289.45	374.95	358.65	16.30	22.998		
2,300.00	2,247.38	2,179.47	2,114.84	9.05	9.67	-115.58	-107.64	326.91	425.87	408.57	17.29	24.626		
2,400.00	2,338.46	2,265.47	2,190.43	9.65	10.39	-115.73	-121.35	365.55	476.89	458.54	18.34	25.997		
2,500.00	2,429.53	2,351.47	2,266.02	10.26	11.13	-115.86	-135.07	404.20	527.91	508.49	19.42	27.185		
2,600.00	2,520.60	2,437.47	2,341.62	10.89	11.89	-115.96	-148.78	442.85	578.93	558.41	20.52	28.217		
2,700.00	2,611.67	2,523.47	2,417.21	11.52	12.65	-116.05	-162.49	481.50	629.95	608.32	21.63	29.121		
2,800.00	2,702.74	2,609.47	2,492.80	12.16	13.42	-116.12	-176.20	520.15	680.98	658.21	22.76	29.915		
2,900.00	2,793.81	2,695.47	2,568.40	12.80	14.20	-116.18	-189.91	558.80	732.00	708.09	23.91	30.616		
3,000.00	2,884.88	2,781.47	2,643.99	13.45	14.99	-116.24	-203.62	597.45	783.03	757.96	25.07	31.238		
3,100.00	2,975.95	2,867.47	2,719.58	14.10	15.78	-116.29	-217.33	636.10	834.05	807.82	26.23	31.793		
3,200.00	3,067.02	2,953.47	2,795.17	14.76	16.57	-116.33	-231.04	674.74	885.08	857.67	27.41	32.291		
3,300.00	3,158.10	3,039.47	2,870.77	15.42	17.37	-116.37	-244.75	713.39	936.11	907.51	28.59	32.739		
3,400.00	3,249.17	3,125.47	2,946.36	16.08	18.18	-116.40	-258.46	752.04	987.13	957.35	29.78	33.144		
3,500.00	3,340.24	3,211.47	3,021.95	16.75	18.98	-116.43	-272.17	790.69	1,038.16	1,007.18	30.98	33.512		
3,600.00	3,431.31	3,297.47	3,097.55	17.42	19.79	-116.46	-285.88	829.34	1,089.19	1,057.01	32.18	33.846		
3,700.00	3,522.38	3,383.47	3,173.14	18.09	20.60	-116.49	-299.59	867.99	1,140.22	1,106.83	33.39	34.151		
3,800.00	3,613.45	3,469.47	3,248.73	18.76	21.41	-116.51	-313.30	906.64	1,191.24	1,156.64	34.60	34.431		
3,900.00	3,704.52	3,555.47	3,324.33	19.43	22.23	-116.53	-327.01	945.28	1,242.27	1,206.46	35.81	34.688		
4,000.00	3,795.59	3,641.47	3,399.92	20.10	23.04	-116.55	-340.72	983.93	1,293.30	1,256.27	37.03	34.925		
4,100.00	3,886.66	3,727.47	3,475.51	20.78	23.86	-116.57	-354.44	1,022.58	1,344.33	1,306.08	38.25	35.144		
4,200.00	3,977.74	3,813.47	3,551.10	21.45	24.68	-116.58	-368.15	1,061.23	1,395.35	1,355.88	39.48	35.347		
4,300.00	4,068.81	3,899.47	3,626.70	22.13	25.50	-116.60	-381.86	1,099.88	1,446.38	1,405.68	40.70	35.536		
4,400.00	4,159.88	3,985.47	3,702.29	22.81	26.32	-116.61	-395.57	1,138.53	1,497.41	1,455.48	41.93	35.712		

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

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S33-T24N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 325H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
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 S33-T24N-R9W - NAGEEZI UNIT 327H - OH - PLAN #3														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)							
0.00	0.00	0.00	0.00	0.00	0.00	-55.19	34.22	-49.22	59.95						
100.00	100.00	100.00	100.00	0.15	0.15	-55.19	34.22	-49.22	59.95	59.65	0.30	199.087			
200.00	200.00	200.00	200.00	0.51	0.51	-55.19	34.22	-49.22	59.95	58.93	1.02	58.885			
300.00	300.00	300.00	300.00	0.87	0.87	-55.19	34.22	-49.22	59.95	58.21	1.74	34.552			
400.00	400.00	400.00	400.00	1.23	1.23	-55.19	34.22	-49.22	59.95	57.50	2.45	24.449			
500.00	500.00	500.00	500.00	1.58	1.58	-55.19	34.22	-49.22	59.95	56.78	3.17	18.918			
600.00	600.00	600.00	600.00	1.94	1.94	-55.19	34.22	-49.22	59.95	56.06	3.89	15.427			
700.00	700.00	701.23	701.21	2.30	2.29	-56.59	32.43	-49.16	58.91	54.31	4.60	12.811			
800.00	800.00	802.20	802.03	2.66	2.63	-61.05	27.09	-48.97	56.00	50.70	5.31	10.556			
900.00	900.00	902.68	902.11	3.02	2.97	-69.44	18.25	-48.67	52.02	46.01	6.01	8.659			
1,000.00	999.98	1,002.64	1,001.31	3.36	3.32	97.22	5.99	-48.24	48.81	42.12	6.69	7.299			
1,100.00	1,099.84	1,102.25	1,099.68	3.69	3.69	84.80	-9.67	-47.69	47.53	40.15	7.38	6.443			
1,200.00	1,199.45	1,202.74	1,198.40	4.03	4.08	72.38	-28.33	-45.73	46.94	38.83	8.11	5.791			
1,300.00	1,298.70	1,302.93	1,296.27	4.37	4.49	59.94	-49.25	-41.19	45.63	36.77	8.86	5.149			
1,400.00	1,397.47	1,402.68	1,393.04	4.73	4.92	46.28	-72.34	-34.11	43.78	34.13	9.65	4.536			
1,500.00	1,495.62	1,501.93	1,488.59	5.10	5.37	30.35	-97.49	-24.61	42.12	31.67	10.46	4.029			
1,600.00	1,593.06	1,601.24	1,583.93	5.50	5.84	14.34	-123.31	-14.35	40.97	29.75	11.22	3.651			
1,700.00	1,689.64	1,700.60	1,679.32	5.91	6.32	-1.44	-149.15	-4.08	39.60	27.66	11.95	3.315			
1,800.00	1,785.27	1,799.90	1,774.65	6.36	6.81	-18.61	-174.97	6.18	38.03	25.34	12.69	2.997			
1,893.37	1,873.58	1,892.46	1,863.51	6.80	7.28	-37.22	-199.03	15.75	37.22	23.70	13.52	2.753 CC			
1,900.00	1,879.82	1,899.02	1,869.81	6.83	7.31	-38.65	-200.74	16.43	37.22	23.64	13.59	2.740 ES			
2,000.00	1,973.17	1,997.83	1,964.68	7.34	7.81	-61.35	-226.43	26.64	39.15	24.39	14.76	2.652			
2,100.00	2,065.21	2,096.22	2,059.13	7.88	8.32	-83.50	-252.02	36.81	45.86	29.80	16.06	2.855			
2,119.81	2,083.28	2,115.65	2,077.78	7.99	8.42	-87.48	-257.07	38.81	47.85	31.55	16.31	2.935			
2,200.00	2,156.31	2,194.25	2,153.25	8.46	8.83	-100.77	-277.51	46.94	57.95	40.74	17.21	3.368			
2,300.00	2,247.38	2,292.27	2,247.35	9.05	9.34	-111.63	-303.00	57.07	73.46	55.25	18.21	4.035			
2,400.00	2,338.46	2,390.29	2,341.46	9.65	9.85	-118.59	-328.48	67.20	90.65	71.49	19.15	4.733			
2,500.00	2,429.53	2,488.32	2,435.57	10.26	10.36	-123.30	-353.97	77.33	108.73	88.63	20.10	5.411			
2,600.00	2,520.60	2,586.34	2,529.67	10.89	10.88	-126.66	-379.46	87.46	127.32	106.28	21.04	6.051			
2,700.00	2,611.67	2,684.36	2,623.78	11.52	11.40	-129.16	-404.95	97.59	146.22	124.23	21.99	6.649			
2,800.00	2,702.74	2,782.38	2,717.89	12.16	11.92	-131.08	-430.44	107.72	165.33	142.38	22.95	7.203			
2,900.00	2,793.81	2,880.40	2,811.99	12.80	12.44	-132.61	-455.93	117.85	184.59	160.67	23.92	7.717			
3,000.00	2,884.88	2,978.43	2,906.10	13.45	12.97	-133.85	-481.42	127.98	203.95	179.06	24.89	8.193			
3,100.00	2,975.95	3,076.45	3,000.21	14.10	13.49	-134.87	-506.90	138.11	223.38	197.51	25.87	8.634			
3,200.00	3,067.02	3,174.47	3,094.31	14.76	14.02	-135.73	-532.39	148.24	242.87	216.02	26.85	9.044			
3,300.00	3,158.10	3,272.49	3,188.42	15.42	14.54	-136.46	-557.88	158.37	262.41	234.57	27.84	9.425			
3,400.00	3,249.17	3,370.51	3,282.53	16.08	15.07	-137.09	-583.37	168.50	281.98	253.15	28.83	9.780			
3,500.00	3,340.24	3,468.54	3,376.63	16.75	15.60	-137.64	-608.86	178.63	301.58	271.75	29.83	10.111			
3,600.00	3,431.31	3,566.56	3,470.74	17.42	16.13	-138.12	-634.35	188.76	321.20	290.38	30.83	10.420			
3,700.00	3,522.38	3,664.58	3,564.84	18.09	16.65	-138.55	-659.84	198.90	340.85	309.02	31.83	10.710			
3,800.00	3,613.45	3,762.60	3,658.95	18.76	17.18	-138.93	-685.32	209.03	360.51	327.68	32.83	10.982			
3,900.00	3,704.52	3,860.62	3,753.06	19.43	17.71	-139.27	-710.81	219.16	380.18	346.35	33.83	11.237			
4,000.00	3,795.59	3,958.65	3,847.16	20.10	18.24	-139.58	-736.30	229.29	399.86	365.03	34.84	11.478			
4,100.00	3,886.66	4,056.67	3,941.27	20.78	18.77	-139.86	-761.79	239.42	419.56	383.71	35.85	11.704			
4,200.00	3,977.74	4,154.69	4,035.38	21.45	19.30	-140.11	-787.28	249.55	439.26	402.41	36.86	11.918			
4,300.00	4,068.81	4,252.71	4,129.48	22.13	19.84	-140.34	-812.77	259.68	458.97	421.11	37.87	12.120			
4,400.00	4,159.88	4,350.73	4,223.59	22.81	20.37	-140.55	-838.26	269.81	478.69	439.81	38.88	12.312			
4,500.00	4,250.95	4,448.76	4,317.70	23.49	20.90	-140.75	-863.74	279.94	498.41	458.52	39.89	12.494			
4,600.00	4,342.02	4,546.78	4,411.80	24.17	21.43	-140.93	-889.23	290.07	518.14	477.23	40.91	12.666			
4,700.00	4,433.09	4,644.80	4,505.91	24.85	21.96	-141.10	-914.72	300.20	537.87	495.95	41.92	12.830			
4,800.00	4,524.16	4,742.82	4,600.02	25.53	22.50	-141.25	-940.21	310.33	557.61	514.67	42.94	12.986			
4,900.00	4,615.23	4,852.66	4,702.68	26.21	23.18	-140.52	-974.79	327.61	576.36	532.05	44.31	13.007			

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

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S33-T24N-R9W
 Site Error: 0.00usft
 Reference Well: NAGEEZI UNIT 325H
 Well Error: 0.00usft
 Reference Wellbore: OH
 Reference Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
 TVD Reference: 16' KB @ 6970.00usft
 MD Reference: 16' KB @ 6970.00usft
 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 S33-T24N-R9W - NAGEEZI UNIT 327H - OH - PLAN #3												Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				
5,000.00	4,706.30	4,958.31	4,794.05	26.89	24.01	-138.15	-1,019.48	355.75	593.63	547.52	46.11	12.874
5,100.00	4,797.38	5,054.43	4,868.72	27.57	24.92	-134.74	-1,068.83	390.53	611.23	563.09	48.14	12.696
5,127.51	4,822.43	5,078.82	4,886.17	27.76	25.17	-133.70	-1,082.53	400.64	616.45	567.73	48.72	12.654
5,150.00	4,842.80	5,098.24	4,899.60	27.92	25.38	-129.36	-1,093.76	409.06	620.86	571.69	49.17	12.627
5,200.00	4,887.15	5,140.60	4,927.38	28.29	25.86	-120.94	-1,119.16	428.47	631.05	580.87	50.18	12.576
5,250.00	4,930.00	5,181.93	4,952.40	28.68	26.36	-113.92	-1,145.07	448.73	641.61	590.46	51.15	12.543
5,300.00	4,971.09	5,222.36	4,974.77	29.10	26.87	-107.97	-1,171.38	469.73	652.40	600.31	52.09	12.524
5,350.00	5,010.16	5,261.98	4,994.59	29.54	27.41	-102.87	-1,197.99	491.37	663.27	610.28	52.99	12.517
5,400.00	5,046.97	5,300.00	5,011.59	30.00	27.94	-98.48	-1,224.20	513.03	674.06	620.24	53.82	12.525
5,450.00	5,081.30	5,339.18	5,026.97	30.48	28.52	-94.59	-1,251.80	536.21	684.66	629.97	54.69	12.520
5,500.00	5,112.93	5,376.91	5,039.66	30.99	29.10	-91.20	-1,278.84	559.24	694.94	639.44	55.49	12.523
5,550.00	5,141.67	5,414.14	5,050.12	31.52	29.69	-88.22	-1,305.88	582.59	704.77	648.50	56.27	12.524
5,600.00	5,167.34	5,450.00	5,058.21	32.07	30.28	-85.63	-1,332.17	605.59	714.07	657.07	57.00	12.528
5,650.00	5,189.78	5,487.31	5,064.54	32.64	30.92	-83.33	-1,359.68	629.96	722.72	664.93	57.79	12.506
5,700.00	5,208.86	5,523.33	5,068.61	33.24	31.54	-81.34	-1,386.33	653.85	730.65	672.11	58.54	12.481
5,750.00	5,224.46	5,559.02	5,070.66	33.87	32.17	-79.63	-1,412.72	677.79	737.78	678.48	59.29	12.443
5,800.00	5,236.47	5,597.32	5,070.72	34.52	32.85	-78.14	-1,440.93	703.68	744.02	683.83	60.18	12.363
5,850.00	5,244.83	5,646.40	5,070.04	35.19	33.76	-76.92	-1,477.03	736.93	748.70	687.08	61.62	12.150
5,900.00	5,249.49	5,696.08	5,069.34	35.88	34.69	-76.21	-1,513.57	770.58	751.43	688.24	63.19	11.892
5,945.49	5,250.48	5,741.53	5,068.71	36.52	35.56	-76.02	-1,547.00	801.36	752.16	687.41	64.75	11.616
6,000.00	5,249.81	5,796.04	5,067.95	37.32	36.62	-76.01	-1,587.10	838.28	752.01	685.30	66.70	11.274
6,100.00	5,248.59	5,896.04	5,066.55	38.87	38.63	-75.99	-1,660.66	906.02	751.73	681.30	70.42	10.674
6,200.00	5,247.37	5,996.04	5,065.16	40.51	40.70	-75.97	-1,734.21	973.75	751.45	677.16	74.29	10.116
6,300.00	5,246.15	6,096.04	5,063.76	42.25	42.81	-75.95	-1,807.77	1,041.48	751.17	672.90	78.27	9.597
6,400.00	5,244.93	6,196.04	5,062.36	44.07	44.98	-75.93	-1,881.32	1,109.21	750.89	668.54	82.35	9.118
6,500.00	5,243.71	6,296.04	5,060.97	45.95	47.17	-75.91	-1,954.88	1,176.94	750.62	664.09	86.53	8.675
6,600.00	5,242.48	6,396.04	5,059.57	47.91	49.41	-75.89	-2,028.43	1,244.67	750.34	659.56	90.78	8.266
6,700.00	5,241.26	6,496.04	5,058.17	49.92	51.67	-75.87	-2,101.99	1,312.40	750.06	654.97	95.09	7.888
6,800.00	5,240.04	6,596.04	5,056.78	51.98	53.95	-75.85	-2,175.54	1,380.14	749.78	650.32	99.47	7.538
6,900.00	5,238.82	6,696.04	5,055.38	54.08	56.26	-75.83	-2,249.10	1,447.87	749.51	645.62	103.89	7.214
7,000.00	5,237.60	6,796.03	5,053.98	56.22	58.58	-75.82	-2,322.65	1,515.60	749.23	640.87	108.36	6.915
7,100.00	5,236.38	6,896.03	5,052.59	58.39	60.93	-75.80	-2,396.21	1,583.33	748.95	636.09	112.86	6.636
7,200.00	5,235.15	6,996.03	5,051.19	60.60	63.28	-75.78	-2,469.76	1,651.06	748.67	631.28	117.40	6.377
7,300.00	5,233.93	7,096.03	5,049.80	62.83	65.65	-75.76	-2,543.32	1,718.79	748.40	626.43	121.96	6.136
7,400.00	5,232.71	7,196.03	5,048.40	65.09	68.04	-75.74	-2,616.87	1,786.53	748.12	621.56	126.56	5.911
7,500.00	5,231.49	7,296.03	5,047.00	67.37	70.43	-75.72	-2,690.43	1,854.26	747.84	616.67	131.18	5.701
7,600.00	5,230.27	7,396.03	5,045.61	69.66	72.83	-75.70	-2,763.98	1,921.99	747.57	611.75	135.81	5.504
7,700.00	5,229.04	7,496.03	5,044.21	71.96	75.25	-75.68	-2,837.54	1,989.72	747.29	606.82	140.47	5.320
7,800.00	5,227.82	7,596.03	5,042.81	74.31	77.67	-75.66	-2,911.09	2,057.45	747.01	601.87	145.15	5.147
7,900.00	5,226.60	7,696.03	5,041.42	76.65	80.09	-75.64	-2,984.65	2,125.18	746.74	596.90	149.84	4.984
8,000.00	5,225.38	7,796.03	5,040.02	79.01	82.53	-75.62	-3,058.20	2,192.92	746.46	591.92	154.54	4.830
8,100.00	5,224.16	7,896.03	5,038.63	81.38	84.97	-75.60	-3,131.76	2,260.65	746.18	586.93	159.26	4.685
8,200.00	5,222.94	7,996.03	5,037.23	83.76	87.41	-75.58	-3,205.31	2,328.38	745.91	581.93	163.98	4.549
8,300.00	5,221.71	8,096.03	5,035.83	86.15	89.86	-75.57	-3,278.87	2,396.11	745.63	576.91	168.72	4.419
8,400.00	5,220.49	8,196.02	5,034.44	88.55	92.32	-75.55	-3,352.42	2,463.84	745.36	571.89	173.47	4.297
8,500.00	5,219.27	8,296.02	5,033.04	90.95	94.78	-75.53	-3,425.98	2,531.57	745.08	566.86	178.22	4.181
8,600.00	5,218.05	8,396.02	5,031.64	93.37	97.24	-75.51	-3,499.53	2,599.31	744.80	561.82	182.99	4.070
8,700.00	5,216.83	8,496.02	5,030.25	95.79	99.71	-75.49	-3,573.09	2,667.04	744.53	556.77	187.76	3.965
8,800.00	5,215.61	8,596.02	5,028.85	98.21	102.18	-75.47	-3,646.64	2,734.77	744.25	551.72	192.54	3.866
8,900.00	5,214.38	8,696.02	5,027.46	100.64	104.65	-75.45	-3,720.20	2,802.50	743.98	546.66	197.32	3.770
9,000.00	5,213.16	8,796.02	5,026.06	103.08	107.13	-75.43	-3,793.75	2,870.23	743.70	541.59	202.11	3.680
9,100.00	5,211.94	8,896.02	5,024.66	105.53	109.60	-75.41	-3,867.31	2,937.96	743.43	536.52	206.90	3.593

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

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S33-T24N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 325H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
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 S33-T24N-R9W - NAGEEZI UNIT 327H - OH - PLAN #3													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
9,200.00	5,210.72	8,996.02	5,023.27	107.97	112.09	-75.39	-3,940.86	3,005.70	743.15	531.45	211.70	3.510		
9,300.00	5,209.50	9,096.02	5,021.87	110.43	114.57	-75.37	-4,014.42	3,073.43	742.88	526.37	216.50	3.431		
9,400.00	5,208.28	9,196.02	5,020.47	112.88	117.06	-75.35	-4,087.97	3,141.16	742.60	521.29	221.31	3.355		
9,500.00	5,207.05	9,296.02	5,019.08	115.34	119.54	-75.33	-4,161.53	3,208.89	742.32	516.20	226.12	3.283		
9,600.00	5,205.83	9,396.02	5,017.68	117.80	122.03	-75.31	-4,235.08	3,276.62	742.05	511.12	230.93	3.213		
9,700.00	5,204.61	9,496.02	5,016.29	120.27	124.53	-75.29	-4,308.64	3,344.35	741.77	506.02	235.75	3.146		
9,800.00	5,203.39	9,596.01	5,014.89	122.74	127.02	-75.27	-4,382.19	3,412.08	741.50	500.93	240.57	3.082		
9,900.00	5,202.17	9,696.01	5,013.49	125.21	129.51	-75.25	-4,455.75	3,479.82	741.22	495.83	245.39	3.021		
10,000.00	5,200.95	9,796.01	5,012.10	127.69	132.01	-75.23	-4,529.30	3,547.55	740.95	490.73	250.22	2.961		
10,100.00	5,199.72	9,896.01	5,010.70	130.17	134.51	-75.22	-4,602.86	3,615.28	740.68	485.63	255.05	2.904		
10,200.00	5,198.50	9,996.01	5,009.30	132.65	137.01	-75.20	-4,676.41	3,683.01	740.40	480.53	259.88	2.849		
10,300.00	5,197.28	10,096.01	5,007.91	135.13	139.51	-75.18	-4,749.97	3,750.74	740.13	475.42	264.71	2.796		
10,400.00	5,196.06	10,196.01	5,006.51	137.62	142.01	-75.16	-4,823.52	3,818.47	739.85	470.31	269.54	2.745		
10,500.00	5,194.84	10,296.01	5,005.12	140.10	144.52	-75.14	-4,897.08	3,886.21	739.58	465.20	274.38	2.695		
10,600.00	5,193.61	10,396.01	5,003.72	142.59	147.02	-75.12	-4,970.63	3,953.94	739.30	460.09	279.21	2.648		
10,700.00	5,192.39	10,496.01	5,002.32	145.08	149.53	-75.10	-5,044.19	4,021.67	739.03	454.98	284.05	2.602		
10,800.00	5,191.17	10,596.01	5,000.93	147.57	152.03	-75.08	-5,117.74	4,089.40	738.76	449.87	288.89	2.557		
10,900.00	5,189.95	10,696.01	4,999.53	150.07	154.54	-75.06	-5,191.30	4,157.13	738.48	444.75	293.73	2.514		
11,000.00	5,188.73	10,796.01	4,998.13	152.56	157.05	-75.04	-5,264.85	4,224.86	738.21	439.64	298.57	2.472		
11,100.00	5,187.51	10,896.01	4,996.74	155.06	159.56	-75.02	-5,338.41	4,292.60	737.93	434.52	303.41	2.432		
11,200.00	5,186.28	10,996.01	4,995.34	157.56	162.07	-75.00	-5,411.96	4,360.33	737.66	429.41	308.25	2.393		
11,300.00	5,185.06	11,096.00	4,993.95	160.06	164.58	-74.98	-5,485.52	4,428.06	737.39	424.29	313.10	2.355		
11,400.00	5,183.84	11,196.00	4,992.55	162.56	167.09	-74.96	-5,559.07	4,495.79	737.11	419.17	317.94	2.318		
11,500.00	5,182.62	11,296.00	4,991.15	165.06	169.60	-74.94	-5,632.63	4,563.52	736.84	414.05	322.79	2.283		
11,600.00	5,181.40	11,396.00	4,989.76	167.57	172.11	-74.92	-5,706.18	4,631.25	736.57	408.93	327.63	2.248		
11,700.00	5,180.18	11,496.00	4,988.36	170.07	174.63	-74.90	-5,779.74	4,698.99	736.29	403.81	332.48	2.215		
11,800.00	5,178.95	11,596.00	4,986.96	172.58	177.14	-74.88	-5,853.29	4,766.72	736.02	398.69	337.33	2.182		
11,900.00	5,177.73	11,696.00	4,985.57	175.08	179.66	-74.86	-5,926.85	4,834.45	735.75	393.57	342.17	2.150		
12,000.00	5,176.51	11,796.00	4,984.17	177.59	182.17	-74.84	-6,000.40	4,902.18	735.47	388.45	347.02	2.119		
12,100.00	5,175.29	11,896.00	4,982.78	180.10	184.79	-74.82	-6,073.96	4,969.91	735.20	384.20	351.00	2.095		
12,115.97	5,175.09	11,909.97	4,982.58	180.50	184.01	-74.82	-6,084.23	4,979.37	735.16	383.62	351.54	2.091 SF		
12,200.00	5,174.07	11,909.97	4,982.58	182.61	184.01	-74.82	-6,084.23	4,979.37	739.95	390.85	349.10	2.120		
12,300.00	5,172.85	11,909.97	4,982.58	185.12	184.01	-74.82	-6,084.23	4,979.37	757.84	417.08	340.76	2.224		
12,400.00	5,171.62	11,909.97	4,982.58	187.63	184.01	-74.82	-6,084.23	4,979.37	788.12	460.42	327.70	2.405		
12,500.00	5,170.40	11,909.97	4,982.58	190.14	184.01	-74.82	-6,084.23	4,979.37	829.42	517.91	311.51	2.663		
12,600.00	5,169.18	11,909.97	4,982.58	192.66	184.01	-74.82	-6,084.23	4,979.37	880.20	586.42	293.77	2.996		
12,700.00	5,167.96	11,909.97	4,982.58	195.17	184.01	-74.82	-6,084.23	4,979.37	938.91	663.19	275.72	3.405		
12,800.00	5,166.74	11,909.97	4,982.58	197.69	184.01	-74.82	-6,084.23	4,979.37	1,004.17	745.98	258.18	3.889		
12,900.00	5,165.52	11,909.97	4,982.58	200.20	184.01	-74.82	-6,084.23	4,979.37	1,074.78	833.12	241.67	4.447		
13,000.00	5,164.29	11,909.97	4,982.58	202.72	184.01	-74.82	-6,084.23	4,979.37	1,149.77	923.37	226.40	5.078		
13,100.00	5,163.07	11,909.97	4,982.58	205.23	184.01	-74.82	-6,084.23	4,979.37	1,228.32	1,015.86	212.46	5.781		
13,200.00	5,161.85	11,909.97	4,982.58	207.75	184.01	-74.82	-6,084.23	4,979.37	1,309.80	1,109.98	199.82	6.555		
13,300.00	5,160.63	11,909.97	4,982.58	210.27	184.01	-74.82	-6,084.23	4,979.37	1,393.69	1,205.29	188.40	7.398		
13,400.00	5,159.41	11,909.97	4,982.58	212.78	184.01	-74.82	-6,084.23	4,979.37	1,479.59	1,301.49	178.10	8.308		

Cathedral Energy Services

Anticollision Report

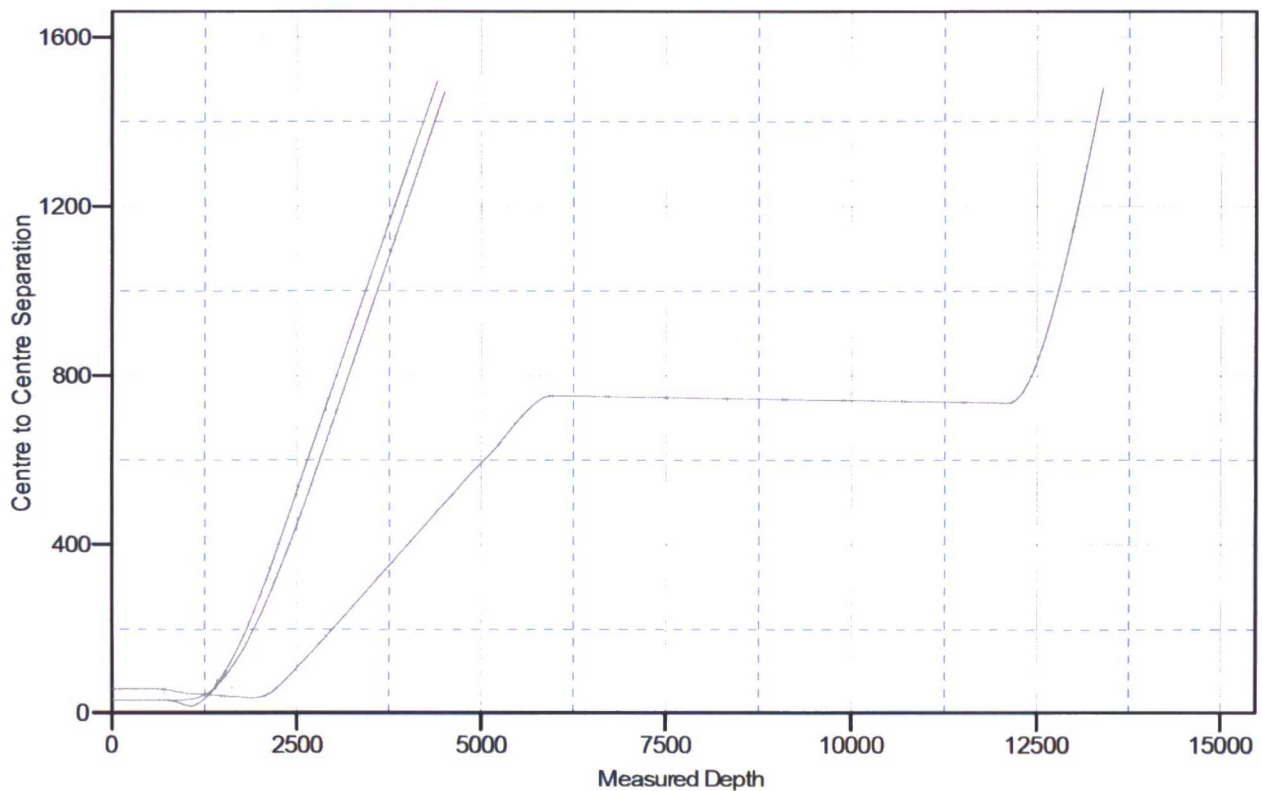
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S33-T24N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 325H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #3

Local Co-ordinate Reference: Well NAGEEZI UNIT 325H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
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 16' KB @ 6970.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: NAGEEZI UNIT 325H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.02°

Ladder Plot



LEGEND

▲ NAGEEZI UNIT 324H, OH, PLAN#3 V0 ◆ NAGEEZI UNIT 326H, OH, PLAN#3 V0 ✕ NAGEEZI UNIT 327H, OH, PLAN#3 V0