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JAN 27 2017

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT **Farmington Field Office**
Bureau of Land Management

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

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: 163' FNL and 2486' FEL Section 33, T24N, R9W
BHL: 1000' FNL and 2600' FWL Section 3, T23N, R9W

5. Lease Serial No.

NMNM 12374

6. If Indian, Allottee or Tribe Name

N/A

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

NMNM 132981A

8. Well Name and No.

Nageezi Unit 327H

9. API Well No.

30-045-35783

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 requesting authorization to modify the Nageezi Unit 327H survey plats, Drilling Plan and Wellbore Diagram to reflect the following changes:

1. Update SHL from 205' FNL, 2412' FEL to 163' FNL, 2486' FEL
2. Update BHL from 770' FNL, 1110' FEL to 1000' FNL, 2600' FWL
3. Update POE from 1240' FNL, 290' FEL to 1670' FNL, 1690' FEL
4. Eliminate the 16" conductor pipe, as this will no longer be necessary
5. Update the surface casing depth from 500' to 320'
6. Changed surface casing weight/grade from J55 to H40
7. Adjusted production liner overlap from 100' to 200'
8. Updated cement details to reflect the above changes
9. Added the following sentence to "Section 4: Casing & Cementing Program": "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."

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

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

OIL CONS. DIV DIST. 3

FEB 02 2017

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

Katie Wegner

Title Senior Regulatory Analyst

Signature

Date

01/26/2017

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekou

Title

Petroleum Engineer

Date

1/30/2017

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

Office

FFO

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

(Instructions on page 2)

NMOCDV

**ADHERE TO PREVIOUS NMOCD
CONDITIONS OF APPROVAL**

27

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

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

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

OIL CONSERVATION DIVISION

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

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35783		² Pool Code 98080	³ Pool Name NAGEEZI UNIT HZ (oil) <i>Manco</i>
⁴ Property Code 315244	⁵ Property Name NAGEEZI UNIT		⁶ Well Number 327H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.		⁹ Elevation 6954.2'

¹⁰ Surface Location

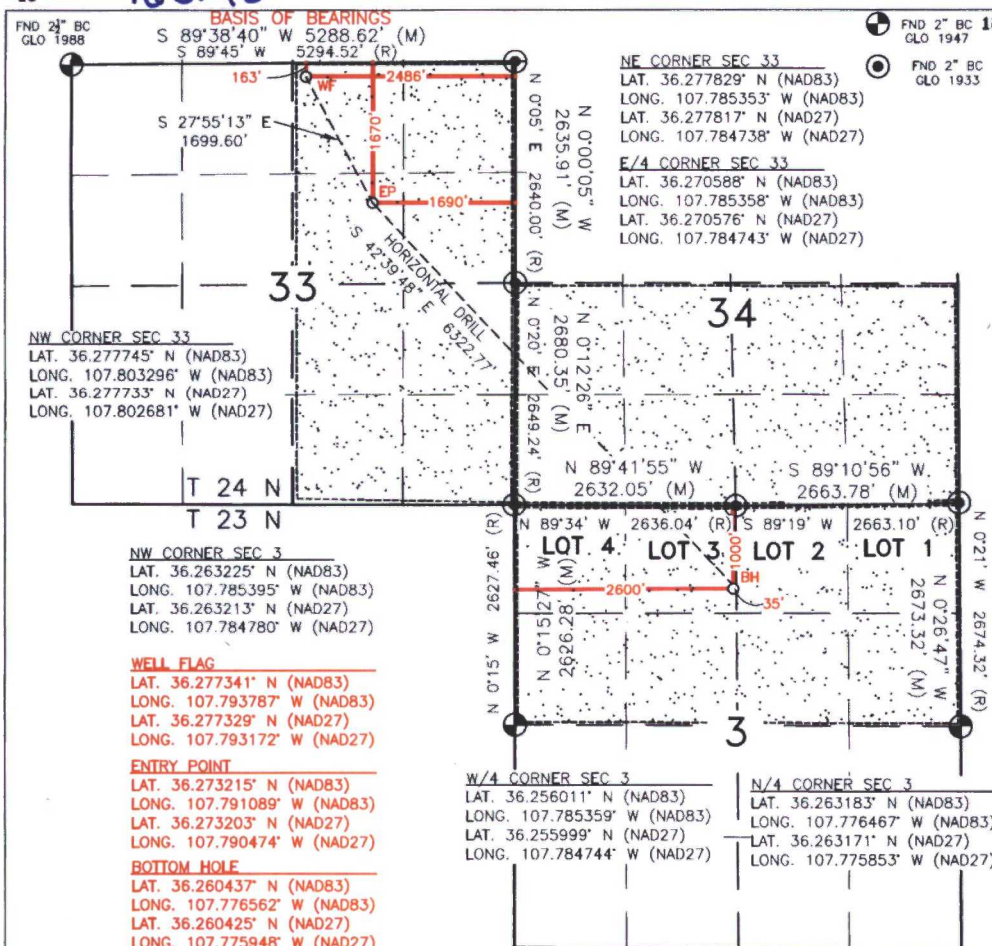
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	24N	9W		163'	NORTH	2486'	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	3	23N	9W	3	1000'	NORTH	2600'	WEST	SAN JUAN

¹³ Dedicated Acres SEC. 33 (320 ACRES), S/2 SEC. 34 (320 ACRES), N/2 SEC. 35 (320 ACRES) = TOTAL 10,415.12 ACRES; SEC. 21-23 (5/2); 25-28, 33-36, 1-4, 9-10 (ALL); 5 (W/2); 11 (NW/4) = UNDIVIDED UNIT	¹⁵ Joint or Infill	¹⁶ Consolidation Code	¹⁸ Order No. R-13856-A (10,415.12 acres)
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
 910342 OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest, or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature [Signature] Date 01/26/17

Katie Wegner

Printed Name _____

katie.wegner@encana.com

E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

APRIL 28, 2016

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393

DISTRICT I

1626 N. French Dr., Hobbs, N.M. 86240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 86210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Artesia, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV

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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

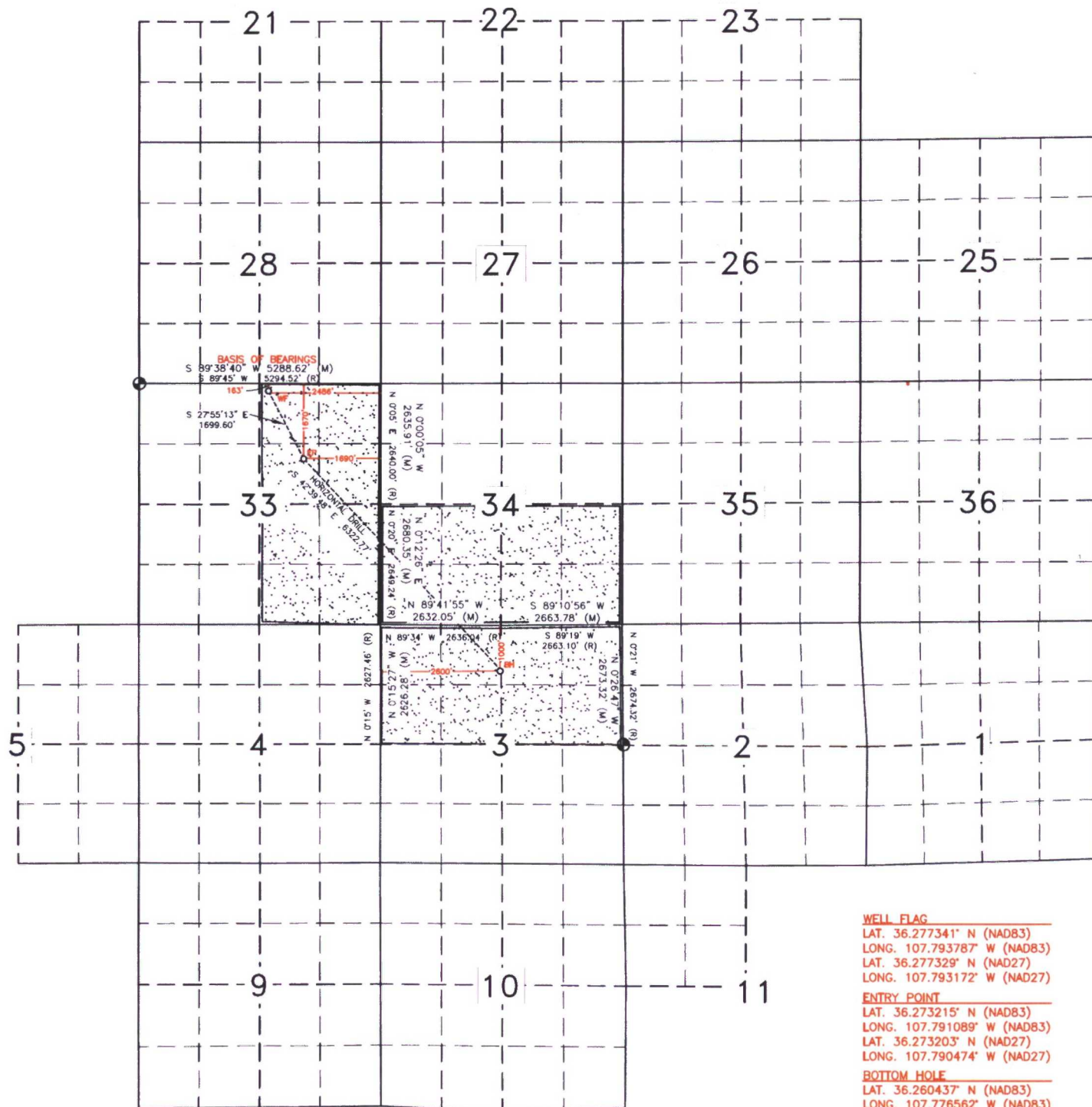
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
NAGEEZI UNIT #327H

**WELL FLAG**

LAT. 36.277341° N (NAD83)
LONG. 107.793787° W (NAD83)
LAT. 36.277329° N (NAD27)
LONG. 107.793172° W (NAD27)

ENTRY POINT

LAT. 36.273215° N (NAD83)
LONG. 107.791089° W (NAD83)
LAT. 36.273203° N (NAD27)
LONG. 107.790474° W (NAD27)

BOTTOM HOLE

LAT. 36.260437° N (NAD83)
LONG. 107.776562° W (NAD83)
LAT. 36.260425° N (NAD27)
LONG. 107.775948° W (NAD27)

PENETRATED SPACING UNIT; E/2 SEC. 33 (320 ACRES), S/2 SEC.
34 (320 ACRES), N/2 SEC. 3 (320 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

Nageezi Unit 327H
SHL: NWNE Sec 33, T24N, R9W
163' FNL, 2486' FEL
BHL: NENW Sec 3, T23N, R9W
1000' FNL, 2600' 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	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	4,760
Gallup Fn.	5,020

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	4,760
Oil/Gas	Gallup Fn.	5,020

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 327H**SHL: NWNE Sec 33, T24N, R9W****163' FNL, 2486' FEL****BHL: NENW Sec 3, T23N, R9W****1000' FNL, 2600' FWL****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'-5400'	8 3/4"	7"	26	J55, LTC New
Production Liner	5200'-11924'	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 327H**SHL: NWN Sec 33, T24N, R9W****163' FNL, 2486' FEL****BHL: NENW Sec 3, T23N, R9W****1000' FNL, 2600' FWL****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	Type 1-2 construction cement w/ 20% fly ash Weight 14.5ppg	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5400'	100% open hole excess Stage 1 Lead: 614 sks Stage 1 Tail: 292 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: 12.1ppg Yield: 2.038 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: 14.6ppg Yield: 1.059 ft ³ /sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5200'-11924'	30% open hole excess Cement Vol: 636 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 327H**SHL: NWNE Sec 33, T24N, R9W****163' FNL, 2486' FEL****BHL: NENW Sec 3, T23N, R9W****1000' FNL, 2600' FWL****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 4640'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	4982'/11924'	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'-5042'/5400'	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"	5042'/5400'- 4982'/11924'	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 327H

SHL: NWN Sec 33, T24N, R9W

163' FNL, 2486' FEL

BHL: NENW Sec 3, T23N, R9W

1000' FNL, 2600' FWL

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 +/- 2384 psi based on a 9.0 ppg at 5093' 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 March 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, 163' FNL, 2486' FEL County: San Juan WELL: Nageezi Unit 327H			Encana Natural Gas WELL SUMMARY						ENG: L. Hubbard RIG: Unassigned GLE: 6954 RKBE: 6970	1-26-17
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVDMD			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION	
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 14.5ppg type 1-2 cement w/ 20% fly ash	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: 907sks	Fresh Wtr 8.3-10	Directional 17°	
Surveys every 30' through the curve	MWD GR Mud Log	KOP Mancos Silt Gallup Fn. 7" Csg	4,640 4,760 5,020 5,042	4,800 5,400'						
Surveys every to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD Base Gallup	5,093 4,982 5,344	11,924		6 1/8	200' overlap at liner top 6524' Drilled Lateral TOC @ Top of Liner (30% open hole excess)	WBM 8.3-10	Horz Inc/TVD 90.8deg/5093' TD = 11923.82' MD	



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
3	1100.00	10.00	178.00	1097.47	-43.50	1.52	2.00	178.00	33.03	
4	1531.06	17.13	156.45	1516.48	-139.26	28.23	2.00	-46.18	121.57	
5	4771.29	17.13	156.45	4613.03	-1013.97	409.46	0.00	0.00	1023.27	
6	5600.60	90.80	137.36	5070.05	-1501.95	795.27	9.00	-19.83	1643.58	NAGEEZI UNIT 327H POE
7	11923.82	90.80	137.36	4981.76	-6153.01	5078.13	0.00	0.00	7966.18	NAGEEZI UNIT 327H PBHL

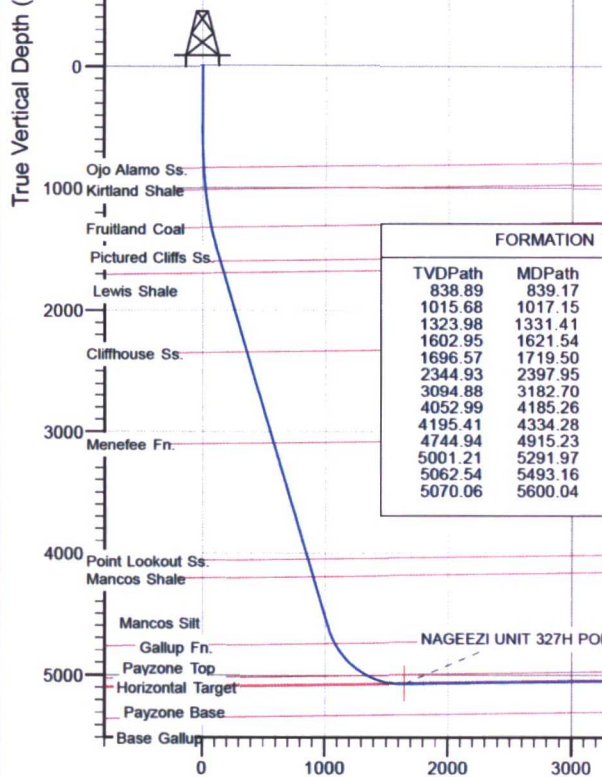
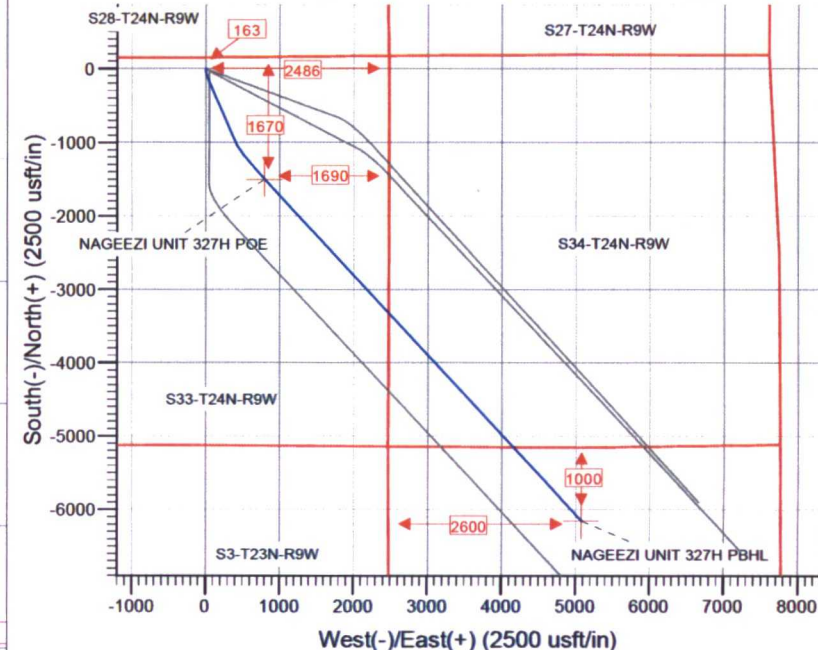
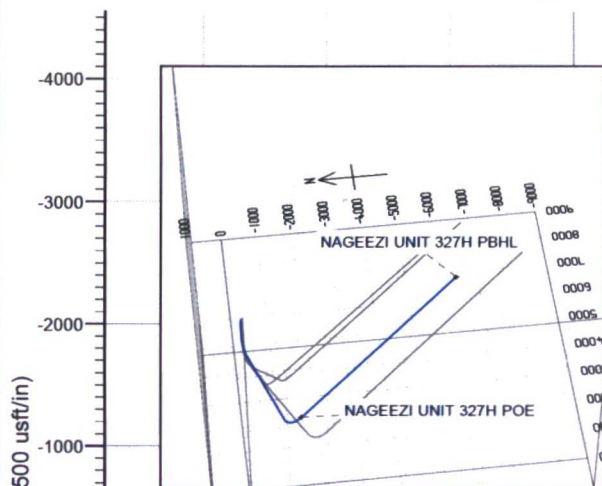
Project: San Juan County, NM
Site: S33-T24N-R9W
Well: NAGEEZI UNIT 327H
Wellbore: OH
Design: Plan #2



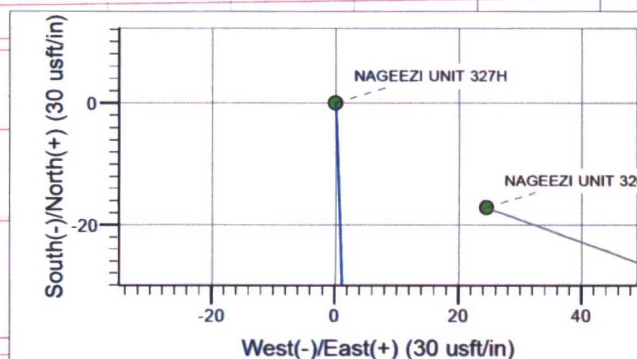
Azimuths to True North
Magnetic North: 9.07°

Magnetic Field
Strength: 49755.6nT
Dip Angle: 62.90°
Date: 1/24/2017
Model: HDGM

Plan #2 NAGEEZI UNIT 327H 10000 LR 10' KB @ 6970' Offset Ground Level @ 6954.00 North American Datum 1983 Well NAGEEZI UNIT 327H, True North									
Type	Target	No Target (Freehand)	Azimuth	Origin Type	N/S	E/W	From	TVD	
Name			TVD	+N/-S	+E/-W	Latitude	Longitude		
NAGEEZI UNIT 327H PBHL			4981.76	-6153.01	5078.13	36.260437	-107.776262		
NAGEEZI UNIT 327H POE			5070.05	-1501.95	795.27	36.273215	-107.791699		
NAGEEZI UNIT 327H PBHL			5150.26	-6065.09	5901.65	36.255129	-107.773770		
NAGEEZI UNIT 327H POE			5249.77	-2112.07	364.93	36.271539	-107.792549		



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
838.89	839.17	Ojo Alamo Ss.
1015.68	1017.15	Kirtland Shale
1323.98	1331.41	Fruitland Coal
1602.95	1621.54	Pictured Cliffs Ss.
1696.57	1719.50	Lewis Shale
2344.93	2397.95	Cliffhouse Ss.
3094.88	3182.70	Menefee Fn.
4052.99	4185.26	Point Lookout Ss.
4195.41	4334.28	Mancos Shale
4744.94	4915.23	Mancos Silt
5001.21	5291.97	Gallup Fn.
5062.54	5493.16	Payzone Top
5070.06	5600.04	Payzone Base
		Horizontal Target



Vertical Section at 137.36° (1500 usft/in)

WELL DETAILS: NAGEEZI UNIT 327H

+N/-S	+E/-W	North	Ground Level:	6954.00	Latitude	Longitude
0.00	0.00	1920253.67	Easting	2734747.88	36.277341	-107.793787





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 327H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
TVD Reference: 16' KB @ 6970.00usft
MD Reference: 16' KB @ 6970.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

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 Latitude: 36.277341
From: Lat/Long Easting: 2,734,747.88 usft Longitude: -107.793787
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16" Grid Convergence: 0.02 °

Well NAGEEZI UNIT 327H

Well Position +N/-S 0.00 usft Northing: 1,920,253.67 usft Latitude: 36.277341
+E/-W 0.00 usft Easting: 2,734,747.88 usft Longitude: -107.793787
Position Uncertainty 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 6,954.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/24/2017	9.07	62.90	49,756

Design Plan #2

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	137.36

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	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	0.00	
1,100.00	10.00	178.00	1,097.47	-43.50	1.52	2.00	2.00	0.00	178.00	
1,531.06	17.13	156.45	1,516.48	-139.26	28.23	2.00	1.65	-5.00	-46.18	
4,771.29	17.13	156.45	4,613.03	-1,013.97	409.46	0.00	0.00	0.00	0.00	
5,600.60	90.80	137.36	5,070.05	-1,501.95	795.27	9.00	8.88	-2.30	-19.83	NAGEEZI UNIT 327H
11,923.82	90.80	137.36	4,981.76	-6,153.01	5,078.13	0.00	0.00	0.00	0.00	NAGEEZI UNIT 327H



Cathedral Energy Services Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 327H
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 327H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	Start Build 2.00
700.00	2.00	178.00	699.98	-1.74	0.06	1.32	2.00	2.00	
800.00	4.00	178.00	799.84	-6.97	0.24	5.30	2.00	2.00	
839.17	4.78	178.00	838.89	-9.97	0.35	7.57	2.00	2.00	Ojo Alamo Ss.
900.00	6.00	178.00	899.45	-15.68	0.55	11.91	2.00	2.00	
1,000.00	8.00	178.00	998.70	-27.86	0.97	21.16	2.00	2.00	
1,017.15	8.34	178.00	1,015.68	-30.30	1.06	23.01	2.00	2.00	Kirtland Shale
1,100.00	10.00	178.00	1,097.47	-43.50	1.52	33.03	2.00	2.00	Start DLS 2.00 TFO -46.18
1,200.00	11.47	170.73	1,195.72	-61.99	3.42	47.92	2.00	1.47	
1,300.00	13.09	165.16	1,293.43	-82.76	7.93	66.25	2.00	1.61	
1,331.41	13.62	163.68	1,323.98	-89.74	9.88	72.71	2.00	1.68	Fruitland Coal
1,400.00	14.79	160.82	1,390.48	-105.76	15.02	87.98	2.00	1.72	
1,500.00	16.57	157.38	1,486.76	-130.98	24.70	113.09	2.00	1.77	
1,531.06	17.13	156.45	1,516.48	-139.26	28.23	121.57	2.00	1.80	Start 3240.23 hold at 1531.06 MD
1,600.00	17.13	156.45	1,582.37	-157.87	36.34	140.76	0.00	0.00	
1,621.54	17.13	156.45	1,602.95	-163.69	38.88	146.75	0.00	0.00	Pictured Cliffs Ss.
1,700.00	17.13	156.45	1,677.93	-184.87	48.11	168.58	0.00	0.00	
1,719.50	17.13	156.45	1,696.57	-190.13	50.40	174.01	0.00	0.00	Lewis Shale
1,800.00	17.13	156.45	1,773.50	-211.86	59.88	196.41	0.00	0.00	
1,900.00	17.13	156.45	1,869.07	-238.86	71.64	224.24	0.00	0.00	
2,000.00	17.13	156.45	1,964.63	-265.85	83.41	252.07	0.00	0.00	
2,100.00	17.13	156.45	2,060.20	-292.85	95.17	279.90	0.00	0.00	
2,200.00	17.13	156.45	2,155.76	-319.85	106.94	307.72	0.00	0.00	
2,300.00	17.13	156.45	2,251.33	-346.84	118.70	335.55	0.00	0.00	
2,397.95	17.13	156.45	2,344.93	-373.28	130.23	362.81	0.00	0.00	Cliffhouse Ss.
2,400.00	17.13	156.45	2,346.89	-373.84	130.47	363.38	0.00	0.00	
2,500.00	17.13	156.45	2,442.46	-400.83	142.23	391.21	0.00	0.00	
2,600.00	17.13	156.45	2,538.03	-427.83	154.00	419.04	0.00	0.00	
2,700.00	17.13	156.45	2,633.59	-454.82	165.76	446.87	0.00	0.00	
2,800.00	17.13	156.45	2,729.16	-481.82	177.53	474.69	0.00	0.00	
2,900.00	17.13	156.45	2,824.72	-508.81	189.30	502.52	0.00	0.00	
3,000.00	17.13	156.45	2,920.29	-535.81	201.06	530.35	0.00	0.00	
3,100.00	17.13	156.45	3,015.86	-562.80	212.83	558.18	0.00	0.00	
3,182.70	17.13	156.45	3,094.88	-585.13	222.56	581.19	0.00	0.00	Menefee Fn.
3,200.00	17.13	156.45	3,111.42	-589.80	224.59	586.01	0.00	0.00	
3,300.00	17.13	156.45	3,206.99	-616.79	236.36	613.83	0.00	0.00	
3,400.00	17.13	156.45	3,302.55	-643.79	248.12	641.66	0.00	0.00	
3,500.00	17.13	156.45	3,398.12	-670.78	259.89	669.49	0.00	0.00	
3,600.00	17.13	156.45	3,493.68	-697.78	271.65	697.32	0.00	0.00	
3,700.00	17.13	156.45	3,589.25	-724.77	283.42	725.15	0.00	0.00	
3,800.00	17.13	156.45	3,684.82	-751.77	295.18	752.98	0.00	0.00	
3,900.00	17.13	156.45	3,780.38	-778.76	306.95	780.80	0.00	0.00	
4,000.00	17.13	156.45	3,875.95	-805.76	318.72	808.63	0.00	0.00	
4,100.00	17.13	156.45	3,971.51	-832.76	330.48	836.46	0.00	0.00	
4,185.26	17.13	156.45	4,052.99	-855.77	340.51	860.18	0.00	0.00	Point Lookout Ss.
4,200.00	17.13	156.45	4,067.08	-859.75	342.25	864.29	0.00	0.00	



Cathedral Energy Services Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 327H
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 327H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	17.13	156.45	4,162.65	-886.75	354.01	892.12	0.00	0.00	
4,334.28	17.13	156.45	4,195.41	-896.00	358.05	901.66	0.00	0.00	Mancos Shale
4,400.00	17.13	156.45	4,258.21	-913.74	365.78	919.94	0.00	0.00	
4,500.00	17.13	156.45	4,353.78	-940.74	377.54	947.77	0.00	0.00	
4,600.00	17.13	156.45	4,449.34	-967.73	389.31	975.60	0.00	0.00	
4,700.00	17.13	156.45	4,544.91	-994.73	401.07	1,003.43	0.00	0.00	
4,771.29	17.13	156.45	4,613.03	-1,013.97	409.46	1,023.27	0.00	0.00	Start DLS 9.00 TFO -19.83
4,800.00	19.58	153.84	4,640.29	-1,022.17	413.27	1,031.88	9.00	8.53	
4,850.00	23.91	150.53	4,686.72	-1,038.51	421.96	1,049.78	9.00	8.66	
4,900.00	28.29	148.19	4,731.61	-1,057.41	433.19	1,071.30	9.00	8.76	
4,915.23	29.63	147.60	4,744.94	-1,063.66	437.11	1,078.55	9.00	8.81	Mancos Silt
4,950.00	32.70	146.43	4,774.69	-1,078.75	446.91	1,096.28	9.00	8.83	
5,000.00	37.13	145.06	4,815.68	-1,102.38	463.03	1,124.59	9.00	8.86	
5,050.00	41.58	143.94	4,854.33	-1,128.18	481.45	1,156.04	9.00	8.89	
5,100.00	46.03	143.00	4,890.41	-1,155.97	502.05	1,190.45	9.00	8.91	
5,150.00	50.49	142.19	4,923.69	-1,185.59	524.72	1,227.59	9.00	8.92	
5,200.00	54.95	141.48	4,953.97	-1,216.86	549.30	1,267.24	9.00	8.93	
5,250.00	59.42	140.84	4,981.05	-1,249.58	575.66	1,309.16	9.00	8.94	
5,291.97	63.17	140.35	5,001.21	-1,278.01	599.02	1,345.91	9.00	8.94	Gallup Fn.
5,300.00	63.89	140.26	5,004.79	-1,283.55	603.61	1,353.09	9.00	8.94	
5,350.00	68.36	139.72	5,025.02	-1,318.56	633.00	1,398.75	9.00	8.95	
5,400.00	72.84	139.22	5,041.62	-1,354.39	663.65	1,445.87	9.00	8.95	
5,450.00	77.31	138.73	5,054.49	-1,390.83	695.35	1,494.15	9.00	8.95	
5,493.16	81.18	138.33	5,062.54	-1,422.60	723.43	1,536.54	9.00	8.95	Payzone Top
5,500.00	81.79	138.27	5,063.56	-1,427.65	727.92	1,543.30	9.00	8.95	
5,550.00	86.27	137.82	5,068.76	-1,464.62	761.16	1,593.01	9.00	8.95	
5,600.04	90.75	137.37	5,070.06	-1,501.54	794.89	1,643.02	9.00	8.95	Horizontal Target
5,600.60	90.80	137.36	5,070.05	-1,501.95	795.27	1,643.58	9.00	8.95	Start 6323.21 hold at 5600.60 MD
5,700.00	90.80	137.36	5,068.66	-1,575.07	862.60	1,742.97	0.00	0.00	
5,800.00	90.80	137.36	5,067.27	-1,648.62	930.33	1,842.96	0.00	0.00	
5,900.00	90.80	137.36	5,065.87	-1,722.18	998.06	1,942.95	0.00	0.00	
6,000.00	90.80	137.36	5,064.47	-1,795.73	1,065.79	2,042.94	0.00	0.00	
6,100.00	90.80	137.36	5,063.08	-1,869.29	1,133.53	2,142.93	0.00	0.00	
6,200.00	90.80	137.36	5,061.68	-1,942.84	1,201.26	2,242.92	0.00	0.00	
6,300.00	90.80	137.36	5,060.28	-2,016.40	1,268.99	2,342.91	0.00	0.00	
6,400.00	90.80	137.36	5,058.89	-2,089.95	1,336.72	2,442.90	0.00	0.00	
6,500.00	90.80	137.36	5,057.49	-2,163.51	1,404.46	2,542.89	0.00	0.00	
6,600.00	90.80	137.36	5,056.10	-2,237.06	1,472.19	2,642.88	0.00	0.00	
6,700.00	90.80	137.36	5,054.70	-2,310.62	1,539.92	2,742.87	0.00	0.00	
6,800.00	90.80	137.36	5,053.30	-2,384.17	1,607.65	2,842.86	0.00	0.00	
6,900.00	90.80	137.36	5,051.91	-2,457.73	1,675.39	2,942.86	0.00	0.00	
7,000.00	90.80	137.36	5,050.51	-2,531.29	1,743.12	3,042.85	0.00	0.00	
7,100.00	90.80	137.36	5,049.11	-2,604.84	1,810.85	3,142.84	0.00	0.00	
7,200.00	90.80	137.36	5,047.72	-2,678.40	1,878.58	3,242.83	0.00	0.00	
7,300.00	90.80	137.36	5,046.32	-2,751.95	1,946.31	3,342.82	0.00	0.00	
7,400.00	90.80	137.36	5,044.93	-2,825.51	2,014.05	3,442.81	0.00	0.00	
7,500.00	90.80	137.36	5,043.53	-2,899.06	2,081.78	3,542.80	0.00	0.00	
7,600.00	90.80	137.36	5,042.13	-2,972.62	2,149.51	3,642.79	0.00	0.00	
7,700.00	90.80	137.36	5,040.74	-3,046.17	2,217.24	3,742.78	0.00	0.00	
7,800.00	90.80	137.36	5,039.34	-3,119.73	2,284.98	3,842.77	0.00	0.00	
7,900.00	90.80	137.36	5,037.94	-3,193.28	2,352.71	3,942.76	0.00	0.00	
8,000.00	90.80	137.36	5,036.55	-3,266.84	2,420.44	4,042.75	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 327H
Wellbore: OH
Design: Plan #2

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

Well NAGEEZI UNIT 327H
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
8,100.00	90.80	137.36	5,035.15	-3,340.39	2,488.17	4,142.74	0.00	0.00	
8,200.00	90.80	137.36	5,033.76	-3,413.95	2,555.91	4,242.73	0.00	0.00	
8,300.00	90.80	137.36	5,032.36	-3,487.50	2,623.64	4,342.72	0.00	0.00	
8,400.00	90.80	137.36	5,030.96	-3,561.06	2,691.37	4,442.71	0.00	0.00	
8,500.00	90.80	137.36	5,029.57	-3,634.61	2,759.10	4,542.70	0.00	0.00	
8,600.00	90.80	137.36	5,028.17	-3,708.17	2,826.84	4,642.69	0.00	0.00	
8,700.00	90.80	137.36	5,026.77	-3,781.73	2,894.57	4,742.68	0.00	0.00	
8,800.00	90.80	137.36	5,025.38	-3,855.28	2,962.30	4,842.67	0.00	0.00	
8,900.00	90.80	137.36	5,023.98	-3,928.84	3,030.03	4,942.66	0.00	0.00	
9,000.00	90.80	137.36	5,022.58	-4,002.39	3,097.76	5,042.65	0.00	0.00	
9,100.00	90.80	137.36	5,021.19	-4,075.95	3,165.50	5,142.64	0.00	0.00	
9,200.00	90.80	137.36	5,019.79	-4,149.50	3,233.23	5,242.63	0.00	0.00	
9,300.00	90.80	137.36	5,018.40	-4,223.06	3,300.96	5,342.62	0.00	0.00	
9,400.00	90.80	137.36	5,017.00	-4,296.61	3,368.69	5,442.61	0.00	0.00	
9,500.00	90.80	137.36	5,015.60	-4,370.17	3,436.43	5,542.60	0.00	0.00	
9,600.00	90.80	137.36	5,014.21	-4,443.72	3,504.16	5,642.59	0.00	0.00	
9,700.00	90.80	137.36	5,012.81	-4,517.28	3,571.89	5,742.58	0.00	0.00	
9,800.00	90.80	137.36	5,011.41	-4,590.83	3,639.62	5,842.57	0.00	0.00	
9,900.00	90.80	137.36	5,010.02	-4,664.39	3,707.36	5,942.56	0.00	0.00	
10,000.00	90.80	137.36	5,008.62	-4,737.94	3,775.09	6,042.55	0.00	0.00	
10,100.00	90.80	137.36	5,007.23	-4,811.50	3,842.82	6,142.54	0.00	0.00	
10,200.00	90.80	137.36	5,005.83	-4,885.05	3,910.55	6,242.53	0.00	0.00	
10,300.00	90.80	137.36	5,004.43	-4,958.61	3,978.29	6,342.52	0.00	0.00	
10,400.00	90.80	137.36	5,003.04	-5,032.17	4,046.02	6,442.51	0.00	0.00	
10,500.00	90.80	137.36	5,001.64	-5,105.72	4,113.75	6,542.50	0.00	0.00	
10,600.00	90.80	137.36	5,000.24	-5,179.28	4,181.48	6,642.49	0.00	0.00	
10,700.00	90.80	137.36	4,998.85	-5,252.83	4,249.21	6,742.48	0.00	0.00	
10,800.00	90.80	137.36	4,997.45	-5,326.39	4,316.95	6,842.47	0.00	0.00	
10,900.00	90.80	137.36	4,996.06	-5,399.94	4,384.68	6,942.47	0.00	0.00	
11,000.00	90.80	137.36	4,994.66	-5,473.50	4,452.41	7,042.46	0.00	0.00	
11,100.00	90.80	137.36	4,993.26	-5,547.05	4,520.14	7,142.45	0.00	0.00	
11,200.00	90.80	137.36	4,991.87	-5,620.61	4,587.88	7,242.44	0.00	0.00	
11,300.00	90.80	137.36	4,990.47	-5,694.16	4,655.61	7,342.43	0.00	0.00	
11,400.00	90.80	137.36	4,989.07	-5,767.72	4,723.34	7,442.42	0.00	0.00	
11,500.00	90.80	137.36	4,987.68	-5,841.27	4,791.07	7,542.41	0.00	0.00	
11,600.00	90.80	137.36	4,986.28	-5,914.83	4,858.81	7,642.40	0.00	0.00	
11,700.00	90.80	137.36	4,984.89	-5,988.38	4,926.54	7,742.39	0.00	0.00	
11,800.00	90.80	137.36	4,983.49	-6,061.94	4,994.27	7,842.38	0.00	0.00	
11,900.00	90.80	137.36	4,982.09	-6,135.49	5,062.00	7,942.37	0.00	0.00	
11,923.82	90.80	137.36	4,981.76	-6,153.01	5,078.13	7,966.18	0.00	0.00	TD at 11923.82



Cathedral Energy Services Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 327H
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 327H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Targets									
Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
	- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
NAGEEZI UNIT 325H PI		0.00	0.00	5,249.77	-2,112.07	364.93	1,918,141.75	2,735,113.67	
	- plan misses target center by 752.18usft at 5755.38usft MD (5067.89 TVD, -1615.80 N, 900.11 E)								
	- Point								
NAGEEZI UNIT 325H PI		0.00	0.00	5,150.26	-8,085.09	5,901.65	1,912,170.99	2,740,652.83	
	- plan misses target center by 2107.01usft at 11923.82usft MD (4981.76 TVD, -6153.01 N, 5078.13 E)								
	- Point								
NAGEEZI UNIT 327H PI		0.00	0.00	5,070.05	-1,501.95	795.27	1,918,752.04	2,735,543.77	
	- plan hits target center								
	- Point								
NAGEEZI UNIT 327H PI		0.00	0.00	4,981.76	-6,153.01	5,078.13	1,914,102.73	2,739,828.53	
	- plan hits target center								
	- Point								

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
839.17	839.00	Ojo Alamo Ss.		-0.80	137.36	
1,017.15	1,016.00	Kirtland Shale		-0.80	137.36	
1,331.41	1,325.00	Fruitland Coal		-0.80	137.36	
1,621.54	1,605.00	Pictured Cliffs Ss.		-0.80	137.36	
1,719.50	1,699.00	Lewis Shale		-0.80	137.36	
2,397.95	2,350.00	Cliffhouse Ss.		-0.80	137.36	
3,182.70	3,103.00	Menefee Fn.		-0.80	137.36	
4,185.26	4,065.00	Point Lookout Ss.		-0.80	137.36	
4,334.28	4,208.00	Mancos Shale		-0.80	137.36	
4,915.23	4,760.00	Mancos Silt		-0.80	137.36	
5,291.97	5,020.00	Gallup Fn.		-0.80	137.36	
5,493.16	5,084.00	Payzone Top		-0.80	137.36	
5,600.04	5,093.00	Horizontal Target		-0.80	137.36	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
600.00	600.00	0.00	0.00	Start Build 2.00
1,100.00	1,097.47	-43.50	1.52	Start DLS 2.00 TFO -46.18
1,531.06	1,516.48	-139.26	28.23	Start 3240.23 hold at 1531.06 MD
4,771.29	4,613.03	-1,013.97	409.46	Start DLS 9.00 TFO -19.83
5,600.60	5,070.05	-1,501.95	795.27	Start 6323.21 hold at 5600.60 MD
11,923.82	4,981.76	-6,153.01	5,078.13	TD at 11923.82



EnCana Oil & Gas (USA) Inc

San Juan County, NM

S33-T24N-R9W

NAGEEZI UNIT 327H

OH

Plan #2

Anticollision Report

24 January, 2017



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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 Plan #2

Filter type: NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method: Stations
Depth Range: Unlimited
Results Limited by: Maximum center-center distance of 5,280.00usft
Warning Levels Evaluated at: 2.00 Sigma

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

Survey Tool Program Date 1/24/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,923.48	Plan #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S33-T24N-R9W						
NAGEEZI UNIT 324H - OH - Plan #2	1,035.56	1,030.46	78.15	71.22	11.278	CC, ES
NAGEEZI UNIT 324H - OH - Plan #2	11,923.82	11,537.20	1,319.77	954.09	3.609	SF
NAGEEZI UNIT 325H - OH - Plan #2	1,869.75	1,870.34	40.05	26.76	3.014	CC
NAGEEZI UNIT 325H - OH - Plan #2	1,900.00	1,900.67	40.12	26.55	2.957	ES
NAGEEZI UNIT 325H - OH - Plan #2	11,923.82	12,129.26	735.19	381.08	2.076	SF
NAGEEZI UNIT 326H - OH - Plan #2	783.59	782.67	27.93	22.77	5.410	CC
NAGEEZI UNIT 326H - OH - Plan #2	800.00	798.89	27.98	22.70	5.299	ES
NAGEEZI UNIT 326H - OH - Plan #2	11,923.82	11,645.76	1,344.78	971.87	3.606	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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
0.00	0.00	0.00	0.00	0.00	0.00	124.94	-51.69	73.98	90.25				
100.00	100.00	100.00	100.00	0.15	0.15	124.94	-51.69	73.98	90.25	89.95	0.30	299.723	
200.00	200.00	200.00	200.00	0.51	0.51	124.94	-51.69	73.98	90.25	89.23	1.02	88.651	
300.00	300.00	300.00	300.00	0.87	0.87	124.94	-51.69	73.98	90.25	88.52	1.74	52.018	
400.00	400.00	400.00	400.00	1.23	1.23	124.94	-51.69	73.98	90.25	87.80	2.45	36.808	
500.00	500.00	500.00	500.00	1.58	1.58	124.94	-51.69	73.98	90.25	87.08	3.17	28.480	
600.00	600.00	600.00	600.00	1.94	1.94	124.94	-51.69	73.98	90.25	86.37	3.89	23.226	
700.00	699.98	699.98	699.98	2.28	2.30	-53.97	-51.69	73.98	89.21	84.63	4.59	19.456	
800.00	799.84	799.84	799.84	2.62	2.66	-56.83	-51.69	73.98	86.24	80.96	5.28	16.348	
900.00	899.45	899.45	899.45	2.96	3.02	-62.01	-51.69	73.98	81.79	75.81	5.97	13.691	
1,000.00	998.70	996.12	996.10	3.31	3.35	-69.66	-52.44	75.41	78.43	71.76	6.67	11.753	
1,035.56	1,033.89	1,030.46	1,030.42	3.44	3.47	-72.94	-53.06	76.62	78.15	71.22	6.93	11.278 CC, ES	
1,100.00	1,097.47	1,092.59	1,092.45	3.68	3.68	-79.39	-54.68	79.72	79.16	71.76	7.40	10.704	
1,200.00	1,195.72	1,188.88	1,188.39	4.07	4.01	-82.33	-58.42	86.89	83.86	75.73	8.13	10.310	
1,300.00	1,293.43	1,285.11	1,283.95	4.48	4.35	-86.01	-63.64	96.90	91.50	82.62	8.88	10.303	
1,400.00	1,390.48	1,381.27	1,379.01	4.91	4.70	-89.63	-70.33	109.75	101.78	92.14	9.64	10.560	
1,500.00	1,486.76	1,477.37	1,473.47	5.36	5.07	-92.80	-78.49	125.40	114.34	103.91	10.42	10.970	
1,531.06	1,516.48	1,507.20	1,502.67	5.51	5.19	-93.67	-81.32	130.83	118.64	107.97	10.67	11.118	
1,600.00	1,582.37	1,573.44	1,567.26	5.84	5.46	-97.04	-88.10	143.85	129.05	117.81	11.24	11.481	
1,700.00	1,677.93	1,669.50	1,660.28	6.34	5.87	-100.11	-99.16	165.08	146.08	133.98	12.10	12.076	
1,800.00	1,773.50	1,765.35	1,752.25	6.84	6.30	-101.51	-111.63	189.01	164.84	151.85	12.99	12.688	
1,900.00	1,869.07	1,860.77	1,842.86	7.35	6.78	-101.70	-125.45	215.52	185.07	171.14	13.92	13.291	
2,000.00	1,964.63	1,955.56	1,931.83	7.88	7.28	-101.05	-140.55	244.49	206.70	191.81	14.89	13.881	
2,100.00	2,060.20	2,049.51	2,018.91	8.40	7.83	-99.81	-156.85	275.77	229.82	213.93	15.89	14.465	
2,200.00	2,155.76	2,142.44	2,103.86	8.93	8.42	-98.19	-174.26	309.19	254.55	237.64	16.91	15.057	
2,300.00	2,251.33	2,234.18	2,186.47	9.47	9.05	-96.31	-192.69	344.55	281.03	263.09	17.94	15.667	
2,400.00	2,346.89	2,324.56	2,266.57	10.01	9.73	-94.30	-212.03	381.66	309.41	290.43	18.97	16.308	
2,500.00	2,442.46	2,413.44	2,344.02	10.55	10.46	-92.23	-232.18	420.33	339.81	319.81	20.00	16.989	
2,600.00	2,538.03	2,500.00	2,418.11	11.10	11.22	-90.18	-252.86	460.02	372.35	351.34	21.00	17.728	
2,700.00	2,633.59	2,586.18	2,490.49	11.64	12.04	-88.14	-274.47	501.49	407.08	385.07	22.01	18.492	
2,800.00	2,729.16	2,673.77	2,562.77	12.19	12.93	-86.13	-297.34	545.36	443.87	420.82	23.05	19.254	
2,900.00	2,824.72	2,765.42	2,638.19	12.74	13.89	-84.29	-321.41	591.55	481.38	457.21	24.17	19.913	
3,000.00	2,920.29	2,857.08	2,713.61	13.29	14.87	-82.72	-345.47	637.74	519.26	493.97	25.30	20.527	
3,100.00	3,015.86	2,948.73	2,789.03	13.85	15.87	-81.36	-369.54	683.93	557.44	531.02	26.42	21.098	
3,200.00	3,111.42	3,040.39	2,864.45	14.40	16.88	-80.17	-393.61	730.11	595.85	568.30	27.55	21.630	
3,300.00	3,206.99	3,132.04	2,939.87	14.96	17.91	-79.12	-417.68	776.30	634.46	605.78	28.68	22.124	
3,400.00	3,302.55	3,223.70	3,015.28	15.51	18.94	-78.20	-441.75	822.49	673.23	643.42	29.81	22.585	
3,500.00	3,398.12	3,315.36	3,090.70	16.07	19.98	-77.37	-465.82	868.68	712.14	681.19	30.94	23.014	
3,600.00	3,493.68	3,407.01	3,166.12	16.62	21.02	-76.63	-489.89	914.86	751.16	719.08	32.08	23.416	
3,700.00	3,589.25	3,498.67	3,241.54	17.18	22.08	-75.96	-513.96	961.05	790.27	757.05	33.22	23.791	
3,800.00	3,684.82	3,590.32	3,316.96	17.74	23.13	-75.35	-538.03	1,007.24	829.47	795.11	34.36	24.142	
3,900.00	3,780.38	3,681.98	3,392.38	18.30	24.19	-74.80	-562.10	1,053.43	868.74	833.24	35.50	24.472	
4,000.00	3,875.95	3,773.63	3,467.80	18.86	25.26	-74.29	-586.16	1,099.61	908.08	871.44	36.64	24.781	
4,100.00	3,971.51	3,865.29	3,543.22	19.42	26.33	-73.83	-610.23	1,145.80	947.47	909.68	37.79	25.073	
4,200.00	4,067.08	3,956.94	3,618.64	19.98	27.40	-73.40	-634.30	1,191.99	986.91	947.97	38.94	25.347	
4,300.00	4,162.65	4,048.60	3,694.06	20.54	28.47	-73.01	-658.37	1,238.18	1,026.39	986.30	40.08	25.606	
4,400.00	4,258.21	4,140.25	3,769.48	21.10	29.55	-72.65	-682.44	1,284.36	1,065.91	1,024.67	41.23	25.851	
4,500.00	4,353.78	4,231.91	3,844.90	21.66	30.63	-72.31	-706.51	1,330.55	1,105.46	1,063.08	42.38	26.082	
4,600.00	4,449.34	4,323.56	3,920.32	22.22	31.71	-71.99	-730.58	1,376.74	1,145.04	1,101.51	43.54	26.302	
4,700.00	4,544.91	4,415.22	3,995.74	22.78	32.79	-71.70	-754.65	1,422.93	1,184.66	1,139.97	44.69	26.509	
4,771.29	4,613.03	4,480.56	4,049.50	23.18	33.56	-71.50	-771.81	1,455.85	1,212.91	1,167.40	45.51	26.651	
4,800.00	4,640.29	4,507.05	4,071.30	23.35	33.87	-68.13	-778.76	1,469.20	1,223.92	1,178.06	45.86	26.691	

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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Output errors are at
Database:
Offset TVD Reference:

Well NAGEEZI UNIT 327H
16' KB @ 6970.00usft
16' KB @ 6970.00usft
True
Minimum Curvature
2.00 sigma
USA EDM 5000 Multi Users DB
Offset Datum

Offset Design S33-T24N-R9W - NAGEEZI UNIT 324H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
4,850.00	4,686.72	4,553.93	4,109.88	23.67	34.43	-63.81	-791.07	1,492.83	1,241.26	1,194.74	46.53	26.679	
4,900.00	4,731.61	4,601.50	4,149.02	24.04	34.99	-60.81	-803.56	1,516.79	1,256.21	1,208.92	47.29	26.566	
4,950.00	4,774.69	4,649.45	4,188.48	24.44	35.56	-58.74	-816.16	1,540.96	1,268.67	1,220.54	48.13	26.357	
5,000.00	4,815.68	4,697.51	4,228.03	24.89	36.13	-57.35	-828.78	1,565.18	1,278.64	1,229.57	49.07	26.058	
5,050.00	4,854.33	4,745.38	4,267.41	25.38	36.70	-56.52	-841.35	1,589.30	1,286.11	1,236.02	50.09	25.676	
5,100.00	4,890.41	4,792.75	4,306.39	25.91	37.26	-56.15	-853.79	1,613.17	1,291.11	1,239.91	51.20	25.217	
5,150.00	4,923.69	4,839.33	4,344.72	26.48	37.81	-56.18	-866.02	1,636.65	1,293.72	1,241.32	52.40	24.691	
5,200.00	4,953.97	4,884.84	4,382.17	27.10	38.35	-56.56	-877.97	1,659.58	1,294.03	1,240.35	53.68	24.107	
5,250.00	4,981.05	4,929.01	4,418.51	27.77	38.88	-57.26	-889.57	1,681.84	1,292.17	1,237.12	55.05	23.474	
5,300.00	5,004.79	4,971.54	4,453.52	28.47	39.38	-58.24	-900.74	1,703.27	1,288.29	1,231.79	56.50	22.802	
5,350.00	5,025.02	5,012.19	4,486.97	29.22	39.86	-59.48	-911.41	1,723.76	1,282.58	1,224.55	58.03	22.101	
5,400.00	5,041.62	5,050.71	4,518.66	30.01	40.32	-60.95	-921.53	1,743.16	1,275.23	1,215.59	59.64	21.381	
5,450.00	5,054.49	5,086.85	4,548.39	30.84	40.75	-62.61	-931.02	1,761.38	1,266.48	1,205.16	61.32	20.653	
5,500.00	5,063.56	5,120.39	4,575.99	31.70	41.15	-64.43	-939.83	1,778.28	1,256.55	1,193.49	63.06	19.925	
5,550.00	5,068.76	5,151.12	4,601.29	32.59	41.52	-66.36	-947.90	1,793.77	1,245.71	1,180.86	64.85	19.209	
5,600.00	5,070.05	5,179.18	4,624.37	33.50	41.85	-68.39	-955.27	1,807.91	1,234.07	1,167.37	66.70	18.503	
5,700.00	5,068.66	5,231.17	4,667.15	35.36	42.47	-70.50	-968.92	1,834.10	1,213.45	1,143.05	70.39	17.239	
5,800.00	5,067.27	5,283.47	4,710.18	37.31	43.09	-72.63	-982.65	1,860.46	1,198.40	1,124.24	74.16	16.160	
5,900.00	5,065.87	5,335.76	4,753.22	39.33	43.72	-74.78	-996.39	1,886.81	1,189.29	1,111.39	77.89	15.268	
5,999.77	5,064.48	5,387.94	4,796.15	41.40	44.34	-76.93	-1,010.09	1,913.10	1,186.24	1,104.73	81.51	14.553	
6,000.00	5,064.47	5,388.06	4,796.25	41.40	44.34	-76.93	-1,010.12	1,913.17	1,186.24	1,104.72	81.52	14.551	
6,100.00	5,063.08	5,440.36	4,839.29	43.53	44.96	-79.08	-1,023.85	1,939.52	1,189.31	1,104.35	84.97	13.997	
6,200.00	5,061.68	5,492.66	4,882.32	45.69	45.59	-81.23	-1,037.59	1,965.88	1,198.46	1,110.28	88.17	13.592	
6,300.00	5,060.28	5,544.96	4,925.36	47.90	46.21	-83.36	-1,051.32	1,992.23	1,213.53	1,122.44	91.09	13.322	
6,400.00	5,058.89	5,597.26	4,968.39	50.13	46.83	-85.48	-1,065.06	2,018.59	1,234.32	1,140.61	93.71	13.172	
6,500.00	5,057.49	5,654.67	5,015.61	52.39	47.52	-87.77	-1,080.16	2,047.54	1,260.53	1,164.41	96.12	13.114	
6,600.00	5,056.10	5,900.24	5,186.27	54.68	51.36	-95.77	-1,177.62	2,192.23	1,287.57	1,184.78	102.79	12.527	
6,700.00	5,054.70	6,313.43	5,296.91	56.99	60.11	-100.75	-1,445.12	2,476.98	1,298.40	1,185.66	112.74	11.517	
6,800.00	5,053.30	6,413.43	5,295.51	59.32	62.29	-100.75	-1,518.39	2,545.02	1,298.81	1,181.55	117.26	11.076	
6,900.00	5,051.91	6,513.43	5,294.11	61.66	64.50	-100.74	-1,591.66	2,613.05	1,299.21	1,177.40	121.82	10.665	
7,000.00	5,050.51	6,613.43	5,292.72	64.02	66.73	-100.74	-1,664.94	2,681.09	1,299.62	1,173.22	126.41	10.281	
7,100.00	5,049.11	6,713.42	5,291.32	66.39	68.98	-100.74	-1,738.21	2,749.13	1,300.03	1,169.01	131.03	9.922	
7,200.00	5,047.72	6,813.42	5,289.93	68.77	71.25	-100.73	-1,811.48	2,817.17	1,300.44	1,164.77	135.67	9.585	
7,300.00	5,046.32	6,913.42	5,288.53	71.16	73.54	-100.73	-1,884.75	2,885.20	1,300.85	1,160.51	140.34	9.269	
7,400.00	5,044.93	7,013.42	5,287.13	73.57	75.84	-100.73	-1,958.02	2,953.24	1,301.26	1,156.23	145.03	8.972	
7,500.00	5,043.53	7,113.42	5,285.74	75.98	78.16	-100.72	-2,031.30	3,021.28	1,301.67	1,151.92	149.75	8.693	
7,600.00	5,042.13	7,213.42	5,284.34	78.40	80.49	-100.72	-2,104.57	3,089.32	1,302.08	1,147.60	154.47	8.429	
7,700.00	5,040.74	7,313.42	5,282.94	80.83	82.84	-100.71	-2,177.84	3,157.35	1,302.49	1,143.27	159.22	8.180	
7,800.00	5,039.34	7,413.42	5,281.55	83.26	85.19	-100.71	-2,251.11	3,225.39	1,302.90	1,138.91	163.98	7.945	
7,900.00	5,037.94	7,513.42	5,280.15	85.70	87.56	-100.71	-2,324.38	3,293.43	1,303.31	1,134.55	168.76	7.723	
8,000.00	5,036.55	7,613.42	5,278.76	88.14	89.93	-100.70	-2,397.66	3,361.47	1,303.71	1,130.17	173.54	7.512	
8,100.00	5,035.15	7,713.42	5,277.36	90.59	92.32	-100.70	-2,470.93	3,429.50	1,304.12	1,125.78	178.34	7.312	
8,200.00	5,033.76	7,813.42	5,275.96	93.05	94.71	-100.70	-2,544.20	3,497.54	1,304.53	1,121.38	183.15	7.123	
8,300.00	5,032.36	7,913.41	5,274.57	95.51	97.11	-100.69	-2,617.47	3,565.58	1,304.94	1,116.97	187.97	6.942	
8,400.00	5,030.96	8,013.41	5,273.17	97.97	99.52	-100.69	-2,690.74	3,633.62	1,305.35	1,112.55	192.80	6.771	
8,500.00	5,029.57	8,113.41	5,271.78	100.44	101.93	-100.69	-2,764.02	3,701.65	1,305.76	1,108.12	197.64	6.607	
8,600.00	5,028.17	8,213.41	5,270.38	102.91	104.35	-100.68	-2,837.29	3,769.69	1,306.17	1,103.69	202.48	6.451	
8,700.00	5,026.77	8,313.41	5,268.98	105.38	106.77	-100.68	-2,910.56	3,837.73	1,306.58	1,099.25	207.33	6.302	
8,800.00	5,025.38	8,413.41	5,267.59	107.86	109.20	-100.68	-2,983.83	3,905.77	1,306.99	1,094.80	212.19	6.159	
8,900.00	5,023.98	8,513.41	5,266.19	110.33	111.64	-100.67	-3,057.10	3,973.80	1,307.40	1,090.34	217.06	6.023	
9,000.00	5,022.58	8,613.41	5,264.79	112.81	114.08	-100.67	-3,130.38	4,041.84	1,307.81	1,085.88	221.93	5.893	
9,100.00	5,021.19	8,713.41	5,263.40	115.30	116.52	-100.67	-3,203.65	4,109.88	1,308.22	1,081.41	226.80	5.768	

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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.00	5,019.79	8,813.41	5,262.00	117.78	118.97	-100.66	-3,276.92	4,177.92	1,308.62	1,076.94	231.69	5.648	
9,300.00	5,018.40	8,913.41	5,260.61	120.27	121.42	-100.66	-3,350.19	4,245.95	1,309.03	1,072.46	236.57	5.533	
9,400.00	5,017.00	9,013.41	5,259.21	122.76	123.88	-100.66	-3,423.46	4,313.99	1,309.44	1,067.98	241.46	5.423	
9,500.00	5,015.60	9,113.40	5,257.81	125.25	126.34	-100.65	-3,496.74	4,382.03	1,309.85	1,063.49	246.36	5.317	
9,600.00	5,014.21	9,213.40	5,256.42	127.75	128.80	-100.65	-3,570.01	4,450.07	1,310.26	1,059.00	251.26	5.215	
9,700.00	5,012.81	9,313.40	5,255.02	130.24	131.27	-100.65	-3,643.28	4,518.10	1,310.67	1,054.51	256.16	5.117	
9,800.00	5,011.41	9,413.40	5,253.63	132.74	133.73	-100.64	-3,716.55	4,586.14	1,311.08	1,050.01	261.07	5.022	
9,900.00	5,010.02	9,513.40	5,252.23	135.24	136.20	-100.64	-3,789.82	4,654.18	1,311.49	1,045.51	265.98	4.931	
10,000.00	5,008.62	9,613.40	5,250.83	137.73	138.68	-100.64	-3,863.10	4,722.21	1,311.90	1,041.00	270.90	4.843	
10,100.00	5,007.23	9,713.40	5,249.44	140.23	141.15	-100.63	-3,936.37	4,790.25	1,312.31	1,036.49	275.81	4.758	
10,200.00	5,005.83	9,813.40	5,248.04	142.74	143.63	-100.63	-4,009.64	4,858.29	1,312.72	1,031.98	280.73	4.676	
10,300.00	5,004.43	9,913.40	5,246.64	145.24	146.11	-100.63	-4,082.91	4,926.33	1,313.13	1,027.47	285.66	4.597	
10,400.00	5,003.04	10,013.40	5,245.25	147.74	148.59	-100.62	-4,156.18	4,994.36	1,313.53	1,022.95	290.58	4.520	
10,500.00	5,001.64	10,113.40	5,243.85	150.25	151.08	-100.62	-4,229.46	5,062.40	1,313.94	1,018.43	295.51	4.446	
10,600.00	5,000.24	10,213.39	5,242.46	152.76	153.56	-100.62	-4,302.73	5,130.44	1,314.35	1,013.91	300.44	4.375	
10,700.00	4,998.85	10,313.39	5,241.06	155.26	156.05	-100.61	-4,376.00	5,198.48	1,314.76	1,009.39	305.38	4.305	
10,800.00	4,997.45	10,413.39	5,239.66	157.77	158.54	-100.61	-4,449.27	5,266.51	1,315.17	1,004.86	310.31	4.238	
10,900.00	4,996.06	10,513.39	5,238.27	160.28	161.03	-100.61	-4,522.54	5,334.55	1,315.58	1,000.33	315.25	4.173	
11,000.00	4,994.66	10,613.39	5,236.87	162.79	163.52	-100.60	-4,595.82	5,402.59	1,315.99	995.80	320.19	4.110	
11,100.00	4,993.26	10,713.39	5,235.47	165.30	166.02	-100.60	-4,669.09	5,470.63	1,316.40	991.27	325.13	4.049	
11,200.00	4,991.87	10,813.39	5,234.08	167.81	168.51	-100.60	-4,742.36	5,538.66	1,316.81	986.74	330.07	3.989	
11,300.00	4,990.47	10,913.39	5,232.68	170.32	171.01	-100.59	-4,815.63	5,606.70	1,317.22	982.20	335.02	3.932	
11,400.00	4,989.07	11,013.39	5,231.29	172.84	173.51	-100.59	-4,888.90	5,674.74	1,317.63	977.66	339.96	3.876	
11,500.00	4,987.68	11,113.39	5,229.89	175.35	176.00	-100.59	-4,962.18	5,742.78	1,318.04	973.12	344.91	3.821	
11,600.00	4,986.28	11,213.39	5,228.49	177.86	178.51	-100.58	-5,035.45	5,810.81	1,318.45	968.58	349.86	3.768	
11,700.00	4,984.89	11,313.39	5,227.10	180.38	181.01	-100.58	-5,108.72	5,878.85	1,318.85	964.04	354.81	3.717	
11,800.00	4,983.49	11,413.38	5,225.70	182.89	183.51	-100.58	-5,181.99	5,946.89	1,319.26	959.50	359.76	3.667	
11,900.00	4,982.09	11,513.38	5,224.31	185.41	186.01	-100.57	-5,255.26	6,014.93	1,319.67	954.95	364.72	3.618	
11,923.82	4,981.76	11,537.20	5,223.97	185.78	186.61	-100.57	-5,272.71	6,031.13	1,319.77	954.09	365.68	3.609 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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 325H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor	
0.00	0.00	0.00	0.00	0.00	0.00	124.93	-34.58	49.52	60.40				
100.00	100.00	100.00	100.00	0.15	0.15	124.93	-34.58	49.52	60.40	60.10	0.30	200.581	
200.00	200.00	200.00	200.00	0.51	0.51	124.93	-34.58	49.52	60.40	59.38	1.02	59.327	
300.00	300.00	300.00	300.00	0.87	0.87	124.93	-34.58	49.52	60.40	58.66	1.74	34.812	
400.00	400.00	400.00	400.00	1.23	1.23	124.93	-34.58	49.52	60.40	57.95	2.45	24.633	
500.00	500.00	500.00	500.00	1.58	1.58	124.93	-34.58	49.52	60.40	57.23	3.17	19.060	
600.00	600.00	600.00	600.00	1.94	1.94	124.93	-34.58	49.52	60.40	56.51	3.89	15.543	
700.00	699.98	699.98	699.98	2.28	2.30	-54.43	-34.58	49.52	59.37	54.78	4.59	12.947	
800.00	799.84	799.84	799.84	2.62	2.66	-58.80	-34.58	49.52	56.48	51.21	5.28	10.707	
900.00	899.45	899.45	899.45	2.96	3.02	-67.01	-34.58	49.52	52.49	46.52	5.97	8.787	
1,000.00	998.70	998.43	998.42	3.31	3.35	-78.24	-36.27	49.52	49.27	42.60	6.66	7.392	
1,100.00	1,097.47	1,097.77	1,097.62	3.68	3.68	-90.52	-41.41	49.51	48.03	40.67	7.36	6.526	
1,200.00	1,195.72	1,197.51	1,196.97	4.07	4.02	-95.49	-50.02	49.49	47.62	39.53	8.09	5.888	
1,300.00	1,293.43	1,297.59	1,296.32	4.48	4.36	-102.06	-62.13	49.47	46.47	37.62	8.85	5.251	
1,400.00	1,390.48	1,397.91	1,395.41	4.91	4.72	-110.88	-77.74	49.45	44.66	35.01	9.65	4.628	
1,500.00	1,486.76	1,498.34	1,494.00	5.36	5.09	-122.79	-96.84	49.42	42.77	32.31	10.46	4.089	
1,531.06	1,516.48	1,529.54	1,524.48	5.51	5.22	-127.24	-103.48	49.41	42.35	31.64	10.71	3.954	
1,600.00	1,582.37	1,598.86	1,591.95	5.84	5.49	-139.10	-119.40	49.38	41.74	30.49	11.24	3.713	
1,700.00	1,677.93	1,699.57	1,689.23	6.34	5.91	-155.70	-145.44	49.34	41.03	29.06	11.98	3.426	
1,800.00	1,773.50	1,800.26	1,785.52	6.84	6.36	-172.76	-174.88	49.30	40.31	27.59	12.71	3.170	
1,869.75	1,840.16	1,870.34	1,851.89	7.20	6.69	-174.36	-197.35	49.26	40.05	26.76	13.29	3.014 CC	
1,900.00	1,869.07	1,900.67	1,880.45	7.35	6.84	-168.45	-207.58	49.24	40.12	26.55	13.57	2.957 ES	
2,000.00	1,964.63	2,000.56	1,973.69	7.88	7.34	-147.69	-243.40	49.19	41.92	27.23	14.69	2.854	
2,100.00	2,060.20	2,099.69	2,064.94	8.40	7.88	-126.79	-282.13	49.13	47.51	31.49	16.02	2.965	
2,200.00	2,155.76	2,197.92	2,154.14	8.93	8.45	-108.92	-323.23	49.06	58.00	40.70	17.29	3.354	
2,300.00	2,251.33	2,295.93	2,242.98	9.47	9.03	-96.87	-364.64	49.00	72.43	54.04	18.38	3.940	
2,400.00	2,346.89	2,393.95	2,331.82	10.01	9.63	-89.00	-406.05	48.93	88.96	69.58	19.38	4.589	
2,500.00	2,442.46	2,491.96	2,420.66	10.55	10.24	-83.64	-447.46	48.87	106.62	86.26	20.36	5.238	
2,600.00	2,538.03	2,589.98	2,509.49	11.10	10.87	-79.81	-488.87	48.80	124.93	103.61	21.32	5.859	
2,700.00	2,633.59	2,687.99	2,598.33	11.64	11.49	-76.97	-530.28	48.73	143.64	121.35	22.29	6.443	
2,800.00	2,729.16	2,786.01	2,687.17	12.19	12.13	-74.78	-571.69	48.67	162.62	139.35	23.27	6.988	
2,900.00	2,824.72	2,884.02	2,776.01	12.74	12.77	-73.06	-613.10	48.60	181.78	157.52	24.26	7.494	
3,000.00	2,920.29	2,982.04	2,864.85	13.29	13.42	-71.66	-654.51	48.54	201.07	175.82	25.25	7.964	
3,100.00	3,015.86	3,080.05	2,953.68	13.85	14.07	-70.50	-695.92	48.47	220.45	194.20	26.25	8.400	
3,200.00	3,111.42	3,178.07	3,042.52	14.40	14.72	-69.54	-737.33	48.41	239.90	212.66	27.25	8.804	
3,300.00	3,206.99	3,276.08	3,131.36	14.96	15.38	-68.71	-778.74	48.34	259.41	231.16	28.26	9.180	
3,400.00	3,302.55	3,374.10	3,220.20	15.51	16.04	-68.01	-820.15	48.28	278.97	249.70	29.27	9.531	
3,500.00	3,398.12	3,472.11	3,309.04	16.07	16.70	-67.39	-861.56	48.21	298.56	268.27	30.29	9.857	
3,600.00	3,493.68	3,570.13	3,397.88	16.62	17.37	-66.85	-902.97	48.15	318.18	286.87	31.31	10.162	
3,700.00	3,589.25	3,668.14	3,486.71	17.18	18.04	-66.38	-944.38	48.08	337.82	305.49	32.33	10.448	
3,800.00	3,684.82	3,766.16	3,575.55	17.74	18.70	-65.95	-985.79	48.01	357.49	324.13	33.36	10.716	
3,900.00	3,780.38	3,864.17	3,664.39	18.30	19.37	-65.57	-1,027.20	47.95	377.17	342.78	34.39	10.967	
4,000.00	3,875.95	3,962.19	3,753.23	18.86	20.05	-65.23	-1,068.61	47.88	396.86	361.44	35.42	11.203	
4,100.00	3,971.51	4,060.21	3,842.07	19.42	20.72	-64.92	-1,110.02	47.82	416.57	380.11	36.46	11.426	
4,200.00	4,067.08	4,158.22	3,930.91	19.98	21.39	-64.64	-1,151.43	47.75	436.29	398.79	37.49	11.636	
4,300.00	4,162.65	4,256.24	4,019.74	20.54	22.07	-64.38	-1,192.84	47.69	456.01	417.48	38.53	11.834	
4,400.00	4,258.21	4,354.25	4,108.58	21.10	22.75	-64.15	-1,234.25	47.62	475.75	436.17	39.57	12.022	
4,500.00	4,353.78	4,452.27	4,197.42	21.66	23.42	-63.93	-1,275.66	47.56	495.49	454.87	40.62	12.200	
4,600.00	4,449.34	4,550.28	4,286.26	22.22	24.10	-63.73	-1,317.07	47.49	515.24	473.58	41.66	12.368	
4,700.00	4,544.91	4,648.30	4,375.10	22.78	24.78	-63.54	-1,358.48	47.43	534.99	492.29	42.70	12.528	
4,771.29	4,613.03	4,718.17	4,438.43	23.18	25.27	-63.42	-1,388.00	47.38	549.08	505.63	43.45	12.637	
4,800.00	4,640.29	4,746.33	4,463.95	23.35	25.46	-63.41	-1,399.89	47.36	554.67	510.91	43.77	12.673	

CC - Min centre to center distance or covergent 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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 325H - OH - Plan #2													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		Between Centres (usft)	Between Ellipses (usft)	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)						
4,850.00	4,686.72	4,795.31	4,508.35	23.67	25.80	67.99	-1,420.59	47.33	564.04	519.63	44.41	12.700		
4,900.00	4,731.61	4,843.98	4,552.46	24.04	26.14	70.00	-1,441.15	47.29	572.95	527.78	45.17	12.684		
4,950.00	4,774.69	4,892.03	4,596.00	24.44	26.47	71.81	-1,461.45	47.26	581.47	535.43	46.04	12.631		
5,000.00	4,815.68	4,939.15	4,638.72	24.89	26.80	73.56	-1,481.36	47.23	589.77	542.76	47.01	12.546		
5,050.00	4,854.33	4,985.07	4,680.34	25.38	27.12	75.31	-1,500.76	47.20	598.05	549.96	48.08	12.438		
5,100.00	4,890.41	5,029.50	4,720.61	25.91	27.43	77.06	-1,519.53	47.17	606.57	557.32	49.25	12.316		
5,150.00	4,923.69	5,072.17	4,759.28	26.48	27.72	78.80	-1,537.55	47.14	615.62	565.12	50.50	12.191		
5,200.00	4,953.97	5,112.80	4,796.11	27.10	28.01	80.46	-1,554.72	47.11	625.51	573.70	51.81	12.073		
5,250.00	4,981.05	5,151.16	4,830.88	27.77	28.27	81.99	-1,570.93	47.09	636.55	583.39	53.16	11.974		
5,300.00	5,004.79	5,199.01	4,873.68	28.47	28.62	83.97	-1,592.25	48.31	648.72	594.02	54.70	11.860		
5,350.00	5,025.02	5,250.54	4,918.32	29.22	29.02	85.96	-1,617.62	52.49	661.68	605.40	56.29	11.756		
5,400.00	5,041.62	5,306.48	4,964.73	30.01	29.49	87.99	-1,647.83	60.34	675.28	617.39	57.88	11.666		
5,450.00	5,054.49	5,367.94	5,012.83	30.84	30.05	90.10	-1,683.92	72.88	689.28	629.82	59.46	11.593		
5,500.00	5,063.56	5,436.29	5,062.26	31.70	30.70	92.32	-1,727.25	91.50	703.42	642.46	60.96	11.539		
5,550.00	5,068.76	5,513.26	5,112.12	32.59	31.49	94.67	-1,779.44	118.09	717.31	654.98	62.33	11.507		
5,600.00	5,070.05	5,602.01	5,161.06	33.50	32.48	97.19	-1,843.14	155.66	730.61	667.07	63.54	11.499		
5,700.00	5,068.66	5,821.48	5,237.37	35.36	35.26	103.00	-2,009.02	275.47	749.34	683.97	65.37	11.463		
5,800.00	5,067.27	6,005.48	5,249.20	37.31	37.91	104.00	-2,146.32	396.68	752.06	684.04	68.02	11.056		
5,900.00	5,065.87	6,105.48	5,247.98	39.33	39.49	104.02	-2,219.66	464.65	751.78	680.02	71.76	10.476		
6,000.00	5,064.47	6,205.48	5,246.76	41.40	41.16	104.04	-2,292.99	532.63	751.50	675.86	75.64	9.936		
6,100.00	5,063.08	6,305.48	5,245.53	43.53	42.91	104.06	-2,366.32	600.61	751.22	671.59	79.63	9.434		
6,200.00	5,061.68	6,405.48	5,244.31	45.69	44.74	104.08	-2,439.65	668.58	750.95	667.22	83.73	8.969		
6,300.00	5,060.28	6,505.48	5,243.09	47.90	46.65	104.10	-2,512.99	736.56	750.67	662.76	87.91	8.539		
6,400.00	5,058.89	6,605.48	5,241.87	50.13	48.61	104.12	-2,586.32	804.53	750.39	658.23	92.16	8.142		
6,500.00	5,057.49	6,705.48	5,240.65	52.39	50.63	104.14	-2,659.65	872.51	750.11	653.63	96.48	7.775		
6,600.00	5,056.10	6,805.48	5,239.43	54.68	52.69	104.16	-2,732.98	940.49	749.84	648.98	100.85	7.435		
6,700.00	5,054.70	6,905.48	5,238.20	56.99	54.80	104.17	-2,806.32	1,008.46	749.56	644.28	105.28	7.120		
6,800.00	5,053.30	7,005.48	5,236.98	59.32	56.94	104.19	-2,879.65	1,076.44	749.28	639.54	109.74	6.827		
6,900.00	5,051.91	7,105.48	5,235.76	61.66	59.12	104.21	-2,952.98	1,144.41	749.00	634.75	114.25	6.556		
7,000.00	5,050.51	7,205.48	5,234.54	64.02	61.33	104.23	-3,026.31	1,212.39	748.73	629.94	118.79	6.303		
7,100.00	5,049.11	7,305.48	5,233.32	66.39	63.56	104.25	-3,099.65	1,280.37	748.45	625.10	123.35	6.068		
7,200.00	5,047.72	7,405.47	5,232.10	68.77	65.82	104.27	-3,172.98	1,348.34	748.17	620.23	127.95	5.848		
7,300.00	5,046.32	7,505.47	5,230.87	71.16	68.10	104.29	-3,246.31	1,416.32	747.90	615.33	132.56	5.642		
7,400.00	5,044.93	7,605.47	5,229.65	73.57	70.40	104.31	-3,319.64	1,484.29	747.62	610.42	137.20	5.449		
7,500.00	5,043.53	7,705.47	5,228.43	75.98	72.71	104.33	-3,392.98	1,552.27	747.34	605.49	141.85	5.268		
7,600.00	5,042.13	7,805.47	5,227.21	78.40	75.04	104.35	-3,466.31	1,620.24	747.07	600.54	146.53	5.098		
7,700.00	5,040.74	7,905.47	5,225.99	80.83	77.38	104.37	-3,539.64	1,688.22	746.79	595.57	151.21	4.939		
7,800.00	5,039.34	8,005.47	5,224.77	83.26	79.74	104.39	-3,612.97	1,756.20	746.51	590.60	155.92	4.788		
7,900.00	5,037.94	8,105.47	5,223.54	85.70	82.11	104.41	-3,686.31	1,824.17	746.24	585.61	160.63	4.646		
8,000.00	5,036.55	8,205.47	5,222.32	88.14	84.49	104.42	-3,759.64	1,892.15	745.96	580.60	165.36	4.511		
8,100.00	5,035.15	8,305.47	5,221.10	90.59	86.88	104.44	-3,832.97	1,960.12	745.68	575.59	170.09	4.384		
8,200.00	5,033.76	8,405.47	5,219.88	93.05	89.27	104.46	-3,906.30	2,028.10	745.41	570.57	174.84	4.263		
8,300.00	5,032.36	8,505.47	5,218.66	95.51	91.68	104.48	-3,979.63	2,096.08	745.13	565.54	179.59	4.149		
8,400.00	5,030.96	8,605.47	5,217.43	97.97	94.09	104.50	-4,052.97	2,164.05	744.86	560.50	184.35	4.040		
8,500.00	5,029.57	8,705.47	5,216.21	100.44	96.51	104.52	-4,126.30	2,232.03	744.58	555.46	189.12	3.937		
8,600.00	5,028.17	8,805.47	5,214.99	102.91	98.93	104.54	-4,199.63	2,300.00	744.30	550.41	193.90	3.839		
8,700.00	5,026.77	8,905.46	5,213.77	105.38	101.36	104.56	-4,272.96	2,367.98	744.03	545.35	198.68	3.745		
8,800.00	5,025.38	9,005.46	5,212.55	107.86	103.80	104.58	-4,346.30	2,435.95	743.75	540.29	203.46	3.655		
8,900.00	5,023.98	9,105.46	5,211.33	110.33	106.24	104.60	-4,419.63	2,503.93	743.48	535.22	208.26	3.570		
9,000.00	5,022.58	9,205.46	5,210.10	112.81	108.69	104.62	-4,492.96	2,571.91	743.20	530.15	213.05	3.488		
9,100.00	5,021.19	9,305.46	5,208.88	115.30	111.14	104.64	-4,566.29	2,639.88	742.93	525.07	217.85	3.410		
9,200.00	5,019.79	9,405.46	5,207.66	117.78	113.60	104.66	-4,639.63	2,707.86	742.65	519.99	222.66	3.335		

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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 325H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.00	5,018.40	9,505.46	5,206.44	120.27	116.05	104.68	-4,712.96	2,775.83	742.38	514.91	227.47	3.264	
9,400.00	5,017.00	9,605.46	5,205.22	122.76	118.52	104.70	-4,786.29	2,843.81	742.10	509.82	232.28	3.195	
9,500.00	5,015.60	9,705.46	5,204.00	125.25	120.98	104.72	-4,859.62	2,911.79	741.83	504.73	237.09	3.129	
9,600.00	5,014.21	9,805.46	5,202.77	127.75	123.45	104.74	-4,932.96	2,979.76	741.55	499.64	241.91	3.065	
9,700.00	5,012.81	9,905.46	5,201.55	130.24	125.92	104.75	-5,006.29	3,047.74	741.28	494.54	246.73	3.004	
9,800.00	5,011.41	10,005.46	5,200.33	132.74	128.40	104.77	-5,079.62	3,115.71	741.00	489.45	251.56	2.946	
9,900.00	5,010.02	10,105.46	5,199.11	135.24	130.87	104.79	-5,152.95	3,183.69	740.73	484.35	256.38	2.889	
10,000.00	5,008.62	10,205.46	5,197.89	137.73	133.35	104.81	-5,226.29	3,251.67	740.45	479.24	261.21	2.835	
10,100.00	5,007.23	10,305.45	5,196.67	140.23	135.83	104.83	-5,299.62	3,319.64	740.18	474.14	266.04	2.782	
10,200.00	5,005.83	10,405.45	5,195.44	142.74	138.32	104.85	-5,372.95	3,387.62	739.90	469.03	270.87	2.732	
10,300.00	5,004.43	10,505.45	5,194.22	145.24	140.80	104.87	-5,446.28	3,455.59	739.63	463.93	275.70	2.683	
10,400.00	5,003.04	10,605.45	5,193.00	147.74	143.29	104.89	-5,519.62	3,523.57	739.36	458.82	280.54	2.635	
10,500.00	5,001.64	10,705.45	5,191.78	150.25	145.78	104.91	-5,592.95	3,591.54	739.08	453.71	285.38	2.590	
10,600.00	5,000.24	10,805.45	5,190.56	152.76	148.27	104.93	-5,666.28	3,659.52	738.81	448.60	290.21	2.546	
10,700.00	4,998.85	10,905.45	5,189.34	155.26	150.76	104.95	-5,739.61	3,727.50	738.53	443.48	295.05	2.503	
10,800.00	4,997.45	11,005.45	5,188.11	157.77	153.26	104.97	-5,812.95	3,795.47	738.26	438.37	299.89	2.462	
10,900.00	4,996.06	11,105.45	5,186.89	160.28	155.76	104.99	-5,886.28	3,863.45	737.99	433.26	304.73	2.422	
11,000.00	4,994.66	11,205.45	5,185.67	162.79	158.25	105.01	-5,959.61	3,931.42	737.71	428.14	309.57	2.383	
11,100.00	4,993.26	11,305.45	5,184.45	165.30	160.75	105.03	-6,032.94	3,999.40	737.44	423.02	314.41	2.345	
11,200.00	4,991.87	11,405.45	5,183.23	167.81	163.25	105.05	-6,106.28	4,067.38	737.17	417.91	319.26	2.309	
11,300.00	4,990.47	11,505.45	5,182.01	170.32	165.75	105.07	-6,179.61	4,135.35	736.89	412.79	324.10	2.274	
11,400.00	4,989.07	11,605.45	5,180.78	172.84	168.26	105.09	-6,252.94	4,203.33	736.62	407.67	328.95	2.239	
11,500.00	4,987.68	11,705.44	5,179.56	175.35	170.76	105.11	-6,326.27	4,271.30	736.35	402.56	333.79	2.206	
11,600.00	4,986.28	11,805.44	5,178.34	177.86	173.26	105.13	-6,399.61	4,339.28	736.07	397.44	338.64	2.174	
11,700.00	4,984.89	11,905.44	5,177.12	180.38	175.77	105.15	-6,472.94	4,407.25	735.80	392.32	343.48	2.142	
11,800.00	4,983.49	12,005.44	5,175.90	182.89	178.28	105.17	-6,546.27	4,475.23	735.53	387.20	348.33	2.112	
11,900.00	4,982.09	12,105.44	5,174.67	185.41	180.79	105.19	-6,619.60	4,543.21	735.25	382.08	353.17	2.082	
11,923.82	4,981.76	12,129.26	5,174.38	185.78	181.38	105.19	-6,637.07	4,559.40	735.19	381.08	354.11	2.076 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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 326H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	124.97	-17.11	24.46	29.85					
100.00	100.00	100.00	100.00	0.15	0.15	124.97	-17.11	24.46	29.85	29.55	0.30	99.142		
200.00	200.00	200.00	200.00	0.51	0.51	124.97	-17.11	24.46	29.85	28.84	1.02	29.324		
300.00	300.00	300.00	300.00	0.87	0.87	124.97	-17.11	24.46	29.85	28.12	1.74	17.206		
400.00	400.00	400.00	400.00	1.23	1.23	124.97	-17.11	24.46	29.85	27.40	2.45	12.175		
500.00	500.00	500.00	500.00	1.58	1.58	124.97	-17.11	24.46	29.85	26.68	3.17	9.421		
600.00	600.00	600.00	600.00	1.94	1.94	124.97	-17.11	24.46	29.85	25.97	3.89	7.683		
700.00	699.98	699.98	699.98	2.28	2.30	-55.82	-17.11	24.46	28.84	24.25	4.59	6.289		
783.59	783.47	782.67	782.66	2.56	2.59	-63.31	-17.52	25.58	27.93	22.77	5.16	5.410 CC		
800.00	799.84	798.89	798.87	2.62	2.64	-65.38	-17.69	26.07	27.98	22.70	5.28	5.299 ES		
900.00	899.45	897.55	897.40	2.96	2.98	-80.58	-19.45	30.86	30.61	24.61	6.00	5.102		
1,000.00	998.70	995.74	995.22	3.31	3.33	-95.52	-22.34	38.79	38.38	31.65	6.73	5.703		
1,100.00	1,097.47	1,093.25	1,092.02	3.68	3.68	-106.28	-26.36	49.78	51.50	44.04	7.46	6.907		
1,200.00	1,195.72	1,190.13	1,187.74	4.07	4.04	-105.94	-31.46	63.75	68.08	59.89	8.19	8.313		
1,300.00	1,293.43	1,286.55	1,282.46	4.48	4.42	-104.94	-37.65	80.67	86.29	77.35	8.94	9.650		
1,400.00	1,390.48	1,382.51	1,376.07	4.91	4.81	-103.82	-44.88	100.46	105.90	96.17	9.73	10.889		
1,500.00	1,486.76	1,478.00	1,468.47	5.36	5.24	-102.78	-53.15	123.08	126.77	116.22	10.55	12.019		
1,531.06	1,516.48	1,507.56	1,496.91	5.51	5.37	-102.47	-55.92	130.67	133.50	122.69	10.81	12.349		
1,600.00	1,582.37	1,573.01	1,559.56	5.84	5.69	-103.61	-62.41	148.44	148.99	137.57	11.42	13.051		
1,700.00	1,677.93	1,667.42	1,649.14	6.34	6.18	-104.11	-72.64	176.43	172.89	160.56	12.33	14.024		
1,800.00	1,773.50	1,761.04	1,736.94	6.84	6.70	-103.69	-83.78	206.92	198.40	185.12	13.28	14.944		
1,900.00	1,869.07	1,853.67	1,822.74	7.35	7.26	-102.68	-95.77	239.71	225.54	211.29	14.25	15.823		
2,000.00	1,964.63	1,945.15	1,906.31	7.88	7.87	-101.31	-108.53	274.64	254.41	239.15	15.25	16.677		
2,100.00	2,060.20	2,035.31	1,987.48	8.40	8.52	-99.72	-122.00	311.50	285.09	268.82	16.27	17.523		
2,200.00	2,155.76	2,124.00	2,066.08	8.93	9.21	-98.01	-136.10	350.09	317.69	300.40	17.29	18.376		
2,300.00	2,251.33	2,214.11	2,144.76	9.47	9.97	-96.25	-151.18	391.35	352.10	333.76	18.35	19.191		
2,400.00	2,346.89	2,307.33	2,225.95	10.01	10.79	-94.69	-166.90	434.37	387.05	367.58	19.46	19.888		
2,500.00	2,442.46	2,400.55	2,307.14	10.55	11.62	-93.39	-182.62	477.39	422.20	401.62	20.58	20.511		
2,600.00	2,538.03	2,493.76	2,388.33	11.10	12.47	-92.28	-198.34	520.40	457.52	435.80	21.71	21.070		
2,700.00	2,633.59	2,586.98	2,469.52	11.64	13.34	-91.34	-214.06	563.42	492.96	470.11	22.85	21.574		
2,800.00	2,729.16	2,680.20	2,550.71	12.19	14.21	-90.52	-229.78	606.44	528.51	504.52	23.99	22.029		
2,900.00	2,824.72	2,773.42	2,631.90	12.74	15.09	-89.80	-245.50	649.45	564.14	539.01	25.14	22.442		
3,000.00	2,920.29	2,866.64	2,713.09	13.29	15.98	-89.17	-261.22	692.47	599.84	573.55	26.29	22.818		
3,100.00	3,015.86	2,959.85	2,794.28	13.85	16.87	-88.61	-276.94	735.49	635.60	608.16	27.44	23.161		
3,200.00	3,111.42	3,053.07	2,875.47	14.40	17.77	-88.11	-292.66	778.51	671.40	642.80	28.60	23.475		
3,300.00	3,206.99	3,146.29	2,956.67	14.96	18.67	-87.66	-308.38	821.52	707.25	677.48	29.76	23.764		
3,400.00	3,302.55	3,239.51	3,037.86	15.51	19.58	-87.25	-324.10	864.54	743.12	712.20	30.93	24.029		
3,500.00	3,398.12	3,332.72	3,119.05	16.07	20.49	-86.88	-339.82	907.56	779.03	746.94	32.09	24.275		
3,600.00	3,493.68	3,425.94	3,200.24	16.62	21.40	-86.55	-355.54	950.57	814.97	781.71	33.26	24.503		
3,700.00	3,589.25	3,519.16	3,281.43	17.18	22.31	-86.24	-371.26	993.59	850.92	816.49	34.43	24.714		
3,800.00	3,684.82	3,612.38	3,362.62	17.74	23.23	-85.95	-386.98	1,036.61	886.90	851.29	35.60	24.911		
3,900.00	3,780.38	3,705.60	3,443.81	18.30	24.15	-85.69	-402.70	1,079.63	922.89	886.11	36.78	25.094		
4,000.00	3,875.95	3,798.81	3,525.00	18.86	25.07	-85.45	-418.42	1,122.64	958.90	920.95	37.95	25.265		
4,100.00	3,971.51	3,892.03	3,606.19	19.42	25.99	-85.23	-434.14	1,165.66	994.92	955.79	39.13	25.426		
4,200.00	4,067.08	3,985.25	3,687.38	19.98	26.91	-85.02	-449.86	1,208.68	1,030.96	990.65	40.31	25.577		
4,300.00	4,162.65	4,078.47	3,768.57	20.54	27.84	-84.82	-465.58	1,251.69	1,067.01	1,025.52	41.49	25.718		
4,400.00	4,258.21	4,171.69	3,849.77	21.10	28.76	-84.64	-481.30	1,294.71	1,103.06	1,060.39	42.67	25.851		
4,500.00	4,353.78	4,264.90	3,930.96	21.66	29.69	-84.47	-497.02	1,337.73	1,139.13	1,095.28	43.85	25.977		
4,600.00	4,449.34	4,358.12	4,012.15	22.22	30.62	-84.31	-512.74	1,380.74	1,175.20	1,130.17	45.03	26.096		
4,700.00	4,544.91	4,451.34	4,093.34	22.78	31.54	-84.16	-528.46	1,423.76	1,211.28	1,165.07	46.22	26.208		
4,771.29	4,613.03	4,517.79	4,151.22	23.18	32.21	-84.06	-539.67	1,454.43	1,237.01	1,189.95	47.06	26.285		
4,800.00	4,640.29	4,544.67	4,174.63	23.35	32.47	-80.69	-544.20	1,466.83	1,247.11	1,199.69	47.42	26.302		

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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 327H
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 326H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
4,850.00	4,686.72	4,591.87	4,215.74	23.67	32.94	-76.35	-552.16	1,488.61	1,263.38	1,215.28	48.10	26.267	
4,900.00	4,731.61	4,639.35	4,257.09	24.04	33.42	-73.32	-560.17	1,510.52	1,277.91	1,229.05	48.86	26.154	
4,950.00	4,774.69	4,686.79	4,298.41	24.44	33.89	-71.19	-568.17	1,532.42	1,290.68	1,240.97	49.71	25.965	
5,000.00	4,815.68	4,733.92	4,339.46	24.89	34.36	-69.72	-576.12	1,554.16	1,301.66	1,251.02	50.64	25.706	
5,050.00	4,854.33	4,780.43	4,379.97	25.38	34.83	-68.79	-583.96	1,575.63	1,310.88	1,259.24	51.64	25.383	
5,100.00	4,890.41	4,826.05	4,419.71	25.91	35.28	-68.29	-591.65	1,596.68	1,318.41	1,265.69	52.73	25.003	
5,150.00	4,923.69	4,870.49	4,458.41	26.48	35.73	-68.15	-599.15	1,617.19	1,324.34	1,270.45	53.89	24.575	
5,200.00	4,953.97	4,913.48	4,495.86	27.10	36.15	-68.31	-606.40	1,637.03	1,328.78	1,273.66	55.12	24.106	
5,250.00	4,981.05	4,954.75	4,531.80	27.77	36.57	-68.71	-613.36	1,656.07	1,331.88	1,275.46	56.42	23.605	
5,300.00	5,004.79	4,994.06	4,566.03	28.47	36.96	-69.33	-619.99	1,674.21	1,333.79	1,276.00	57.79	23.081	
5,350.00	5,025.02	5,031.14	4,598.34	29.22	37.33	-70.11	-626.24	1,691.32	1,334.69	1,275.48	59.21	22.542	
5,400.00	5,041.62	5,065.79	4,628.51	30.01	37.68	-71.00	-632.08	1,707.31	1,334.77	1,274.10	60.67	21.999	
5,450.00	5,054.49	5,097.77	4,656.37	30.84	38.00	-71.98	-637.48	1,722.07	1,334.24	1,272.06	62.17	21.460	
5,500.00	5,063.56	5,126.91	4,681.75	31.70	38.29	-72.99	-642.39	1,735.52	1,333.28	1,269.59	63.70	20.932	
5,550.00	5,068.76	5,153.01	4,704.48	32.59	38.55	-74.00	-646.79	1,747.56	1,332.11	1,266.89	65.22	20.425	
5,600.00	5,070.05	5,176.17	4,724.66	33.50	38.78	-74.97	-650.70	1,758.25	1,330.89	1,264.14	66.75	19.939	
5,638.32	5,069.52	5,192.19	4,738.80	34.20	38.94	-75.60	-653.40	1,765.64	1,330.45	1,262.57	67.88	19.599	
5,700.00	5,068.66	5,218.52	4,761.54	35.36	39.21	-76.62	-657.84	1,777.79	1,331.62	1,261.92	69.70	19.104	
5,800.00	5,067.27	5,274.87	4,809.44	37.31	39.82	-78.77	-669.27	1,805.14	1,338.25	1,265.37	72.87	18.364	
5,900.00	5,065.87	5,355.55	4,873.61	39.33	40.84	-81.63	-691.85	1,848.43	1,349.69	1,273.23	76.46	17.651	
6,000.00	5,064.47	5,475.38	4,957.32	41.40	42.66	-85.33	-738.14	1,920.31	1,363.89	1,283.01	80.87	16.865	
6,100.00	5,063.08	5,653.90	5,050.78	43.53	45.91	-89.40	-831.98	2,039.14	1,377.06	1,290.52	86.54	15.912	
6,200.00	5,061.68	5,894.79	5,106.82	45.69	50.82	-91.86	-993.56	2,206.74	1,383.54	1,290.28	93.26	14.835	
6,300.00	5,060.28	6,022.08	5,106.53	47.90	53.42	-91.92	-1,087.50	2,292.59	1,383.02	1,284.99	98.04	14.107	
6,400.00	5,058.89	6,122.08	5,105.13	50.13	55.50	-91.92	-1,161.51	2,359.82	1,382.34	1,279.86	102.48	13.489	
6,500.00	5,057.49	6,222.07	5,103.74	52.39	57.62	-91.92	-1,235.52	2,427.05	1,381.66	1,274.68	106.98	12.915	
6,600.00	5,056.10	6,322.07	5,102.34	54.68	59.76	-91.92	-1,309.53	2,494.28	1,380.98	1,269.45	111.53	12.382	
6,700.00	5,054.70	6,422.07	5,100.95	56.99	61.94	-91.93	-1,383.55	2,561.51	1,380.30	1,264.18	116.12	11.887	
6,800.00	5,053.30	6,522.07	5,099.55	59.32	64.14	-91.93	-1,457.56	2,628.74	1,379.62	1,258.87	120.75	11.426	
6,900.00	5,051.91	6,622.06	5,098.15	61.66	66.36	-91.93	-1,531.57	2,695.96	1,378.94	1,253.53	125.41	10.995	
7,000.00	5,050.51	6,722.06	5,096.76	64.02	68.60	-91.93	-1,605.59	2,763.19	1,378.26	1,248.16	130.10	10.594	
7,100.00	5,049.11	6,822.06	5,095.36	66.39	70.87	-91.93	-1,679.60	2,830.42	1,377.58	1,242.77	134.82	10.218	
7,200.00	5,047.72	6,922.06	5,093.97	68.77	73.15	-91.93	-1,753.61	2,897.65	1,376.90	1,237.34	139.56	9.866	
7,300.00	5,046.32	7,022.05	5,092.57	71.16	75.44	-91.93	-1,827.62	2,964.88	1,376.22	1,231.90	144.32	9.536	
7,400.00	5,044.93	7,122.05	5,091.17	73.57	77.75	-91.93	-1,901.64	3,032.11	1,375.54	1,226.44	149.10	9.225	
7,500.00	5,043.53	7,222.05	5,089.78	75.98	80.08	-91.93	-1,975.65	3,099.34	1,374.86	1,220.96	153.90	8.933	
7,600.00	5,042.13	7,322.05	5,088.38	78.40	82.41	-91.93	-2,049.66	3,166.56	1,374.18	1,215.46	158.72	8.658	
7,700.00	5,040.74	7,422.05	5,086.98	80.83	84.76	-91.94	-2,123.68	3,233.79	1,373.50	1,209.95	163.55	8.398	
7,800.00	5,039.34	7,522.04	5,085.59	83.26	87.11	-91.94	-2,197.69	3,301.02	1,372.82	1,204.43	168.39	8.152	
7,900.00	5,037.94	7,622.04	5,084.19	85.70	89.48	-91.94	-2,271.70	3,368.25	1,372.14	1,198.89	173.25	7.920	
8,000.00	5,036.55	7,722.04	5,082.80	88.14	91.85	-91.94	-2,345.71	3,435.48	1,371.46	1,193.35	178.12	7.700	
8,100.00	5,035.15	7,822.04	5,081.40	90.59	94.24	-91.94	-2,419.73	3,502.71	1,370.78	1,187.79	182.99	7.491	
8,200.00	5,033.76	7,922.03	5,080.00	93.05	96.63	-91.94	-2,493.74	3,569.94	1,370.10	1,182.22	187.88	7.292	
8,300.00	5,032.36	8,022.03	5,078.61	95.51	99.02	-91.94	-2,567.75	3,637.16	1,369.42	1,176.64	192.78	7.104	
8,400.00	5,030.96	8,122.03	5,077.21	97.97	101.43	-91.94	-2,641.77	3,704.39	1,368.74	1,171.06	197.68	6.924	
8,500.00	5,029.57	8,222.03	5,075.82	100.44	103.84	-91.94	-2,715.78	3,771.62	1,368.06	1,165.47	202.59	6.753	
8,600.00	5,028.17	8,322.02	5,074.42	102.91	106.25	-91.94	-2,789.79	3,838.85	1,367.38	1,159.87	207.51	6.589	
8,700.00	5,026.77	8,422.02	5,073.02	105.38	108.67	-91.94	-2,863.80	3,906.08	1,366.70	1,154.26	212.44	6.433	
8,800.00	5,025.38	8,522.02	5,071.63	107.86	111.09	-91.95	-2,937.82	3,973.31	1,366.02	1,148.65	217.37	6.284	
8,900.00	5,023.98	8,622.02	5,070.23	110.33	113.52	-91.95	-3,011.83	4,040.54	1,365.34	1,143.03	222.31	6.142	
9,000.00	5,022.58	8,722.02	5,068.83	112.81	115.95	-91.95	-3,085.84	4,107.76	1,364.66	1,137.41	227.25	6.005	
9,100.00	5,021.19	8,822.01	5,067.44	115.30	118.39	-91.95	-3,159.86	4,174.99	1,363.98	1,131.78	232.20	5.874	

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 327H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Output errors are at
Database:
Offset TVD Reference:

Well NAGEEZI UNIT 327H
16' KB @ 6970.00usft
16' KB @ 6970.00usft
True
Minimum Curvature
2.00 sigma
USA EDM 5000 Multi Users DB
Offset Datum

Offset Design S33-T24N-R9W - NAGEEZI UNIT 326H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Distance		Total		Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
9,200.00	5,019.79	8,922.01	5,066.04	117.78	120.83	-91.95	-3,233.87	4,242.22	1,363.30	1,126.15	237.15	5.749	
9,300.00	5,018.40	9,022.01	5,064.65	120.27	123.28	-91.95	-3,307.88	4,309.45	1,362.62	1,120.52	242.11	5.628	
9,400.00	5,017.00	9,122.01	5,063.25	122.76	125.72	-91.95	-3,381.89	4,376.68	1,361.94	1,114.87	247.07	5.512	
9,500.00	5,015.60	9,222.00	5,061.85	125.25	128.17	-91.95	-3,455.91	4,443.91	1,361.26	1,109.23	252.03	5.401	
9,600.00	5,014.21	9,322.00	5,060.46	127.75	130.63	-91.95	-3,529.92	4,511.14	1,360.58	1,103.58	257.00	5.294	
9,700.00	5,012.81	9,422.00	5,059.06	130.24	133.08	-91.95	-3,603.93	4,578.37	1,359.90	1,097.93	261.97	5.191	
9,800.00	5,011.41	9,522.00	5,057.66	132.74	135.54	-91.96	-3,677.95	4,645.59	1,359.22	1,092.27	266.95	5.092	
9,900.00	5,010.02	9,621.99	5,056.27	135.24	138.00	-91.96	-3,751.96	4,712.82	1,358.54	1,086.62	271.92	4.996	
10,000.00	5,008.62	9,721.99	5,054.87	137.73	140.47	-91.96	-3,825.97	4,780.05	1,357.86	1,080.96	276.91	4.904	
10,100.00	5,007.23	9,821.99	5,053.48	140.23	142.93	-91.96	-3,899.98	4,847.28	1,357.18	1,075.29	281.89	4.815	
10,200.00	5,005.83	9,921.99	5,052.08	142.74	145.40	-91.96	-3,974.00	4,914.51	1,356.50	1,069.63	286.88	4.729	
10,300.00	5,004.43	10,021.99	5,050.68	145.24	147.87	-91.96	-4,048.01	4,981.74	1,355.82	1,063.96	291.86	4.645	
10,400.00	5,003.04	10,121.98	5,049.29	147.74	150.34	-91.96	-4,122.02	5,048.97	1,355.14	1,058.29	296.86	4.565	
10,500.00	5,001.64	10,221.98	5,047.89	150.25	152.82	-91.96	-4,196.03	5,116.19	1,354.46	1,052.61	301.85	4.487	
10,600.00	5,000.24	10,321.98	5,046.50	152.76	155.29	-91.96	-4,270.05	5,183.42	1,353.78	1,046.94	306.84	4.412	
10,700.00	4,998.85	10,421.98	5,045.10	155.26	157.77	-91.96	-4,344.06	5,250.65	1,353.10	1,041.26	311.84	4.339	
10,800.00	4,997.45	10,521.97	5,043.70	157.77	160.25	-91.97	-4,418.07	5,317.88	1,352.42	1,035.58	316.84	4.268	
10,900.00	4,996.06	10,621.97	5,042.31	160.28	162.73	-91.97	-4,492.09	5,385.11	1,351.74	1,029.90	321.84	4.200	
11,000.00	4,994.66	10,721.97	5,040.91	162.79	165.21	-91.97	-4,566.10	5,452.34	1,351.06	1,024.21	326.85	4.134	
11,100.00	4,993.26	10,821.97	5,039.51	165.30	167.69	-91.97	-4,640.11	5,519.57	1,350.38	1,018.53	331.85	4.069	
11,200.00	4,991.87	10,921.96	5,038.12	167.81	170.18	-91.97	-4,714.12	5,586.79	1,349.70	1,012.84	336.86	4.007	
11,300.00	4,990.47	11,021.96	5,036.72	170.32	172.66	-91.97	-4,788.14	5,654.02	1,349.02	1,007.16	341.86	3.946	
11,400.00	4,989.07	11,121.96	5,035.33	172.84	175.15	-91.97	-4,862.15	5,721.25	1,348.34	1,001.47	346.87	3.887	
11,500.00	4,987.68	11,221.96	5,033.93	175.35	177.63	-91.97	-4,936.16	5,788.48	1,347.66	995.78	351.88	3.830	
11,600.00	4,986.28	11,321.96	5,032.53	177.86	180.12	-91.97	-5,010.18	5,855.71	1,346.98	990.08	356.90	3.774	
11,700.00	4,984.89	11,421.95	5,031.14	180.38	182.61	-91.97	-5,084.19	5,922.94	1,346.30	984.39	361.91	3.720	
11,800.00	4,983.49	11,521.95	5,029.74	182.89	185.10	-91.98	-5,158.20	5,990.17	1,345.62	978.70	366.92	3.667	
11,900.00	4,982.09	11,621.95	5,028.35	185.41	187.60	-91.98	-5,232.21	6,057.40	1,344.94	973.00	371.94	3.616	
11,923.82	4,981.76	11,645.76	5,028.01	185.78	188.19	-91.98	-5,249.84	6,073.41	1,344.78	971.87	372.91	3.606 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 327H
 Well Error: 0.00usft
 Reference Wellbore: OH
 Reference Design: Plan #2

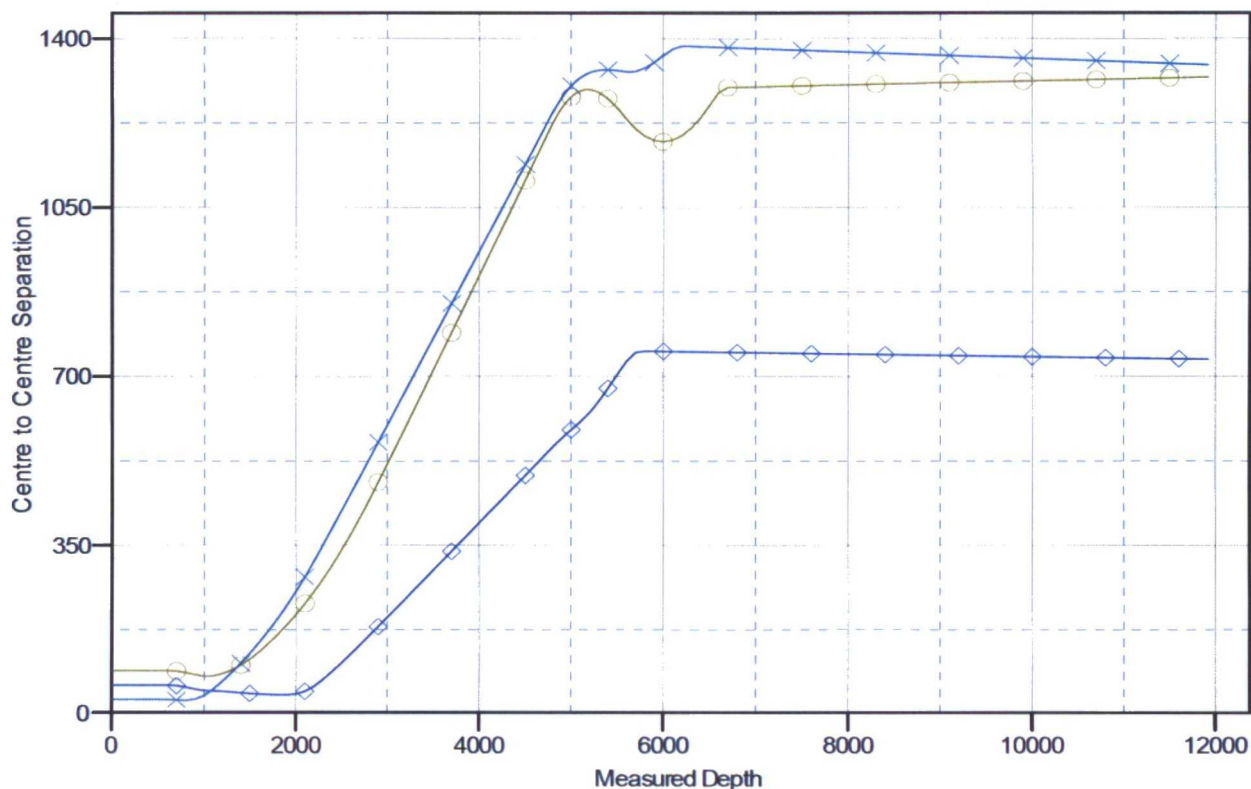
Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Output errors are at
 Database:
 Offset TVD Reference:

Well NAGEEZI UNIT 327H
 16' KB @ 6970.00usft
 16' KB @ 6970.00usft
 True
 Minimum Curvature
 2.00 sigma
 USA EDM 5000 Multi Users DB
 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 327H
 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 #2 V0 —◆— NAGEEZI UNIT 325H, OH, Plan #2 V0 —×— NAGEEZI UNIT 326H, OH, Plan #2 V0