

RECEIVED

JAN 27 2017

Form 3160-5
(June 2015)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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.Farmington Field Office
Bureau of Land Management5. Lease Serial No.
12374
6. Allottee or Tribe Name
N/A

SUBMIT IN TRIPLICATE - Other instructions on page 2

OIL CONS. DIV DIST. 3

FEB 13 2017

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: 181' FNL and 2461' FEL Section 33, T24N, R9W
BHL: 770' FNL and 1110' FEL Section 3, T23N, R9W

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

NMMN 132981A

8. Well Name and No.

Nageezi Unit 326H

9. API Well No.

30-045-35786

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

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 recompleat 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 recompleat 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 326H survey plats, Drilling Plan and Wellbore Diagram to reflect the following changes:

1. Update SHL from 188' FNL, 2436' to 181' FNL, 2461' FEL
2. Update BHL from 1040' FNL, 1740' FEL to 770' FNL, 1110' FEL
3. Update POE from 2080' FNL, 420' FEL to 2280' FNL, 2120' 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."

PLEASE ADVISE OF APPROVAL OR ACCEPTANCE OF THIS
NOTICE. DO NOT BELIEVE THE LESSEE AND
OPERATOR ARE OBTAINING ANY OTHER
APPROVALS REQUIRED FOR OPERATIONS
ON OR NEAR INDIAN LANDS

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

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

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 PE

Date 2/6/2017

Office #10

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)

NMOCD AV

29

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., Artesia, N.M. 87410
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONS. DIV DIST. 3

Form C-102
Revised August 1, 2011

FEB 20 2017

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35786		*Pool Code 98080	*Pool Name NAGEEZI UNIT HZ (OIL)
*Property Code 315244	*Property Name NAGEEZI UNIT		*Well Number 326H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*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		181'	NORTH	2461'	EAST	SAN JUAN

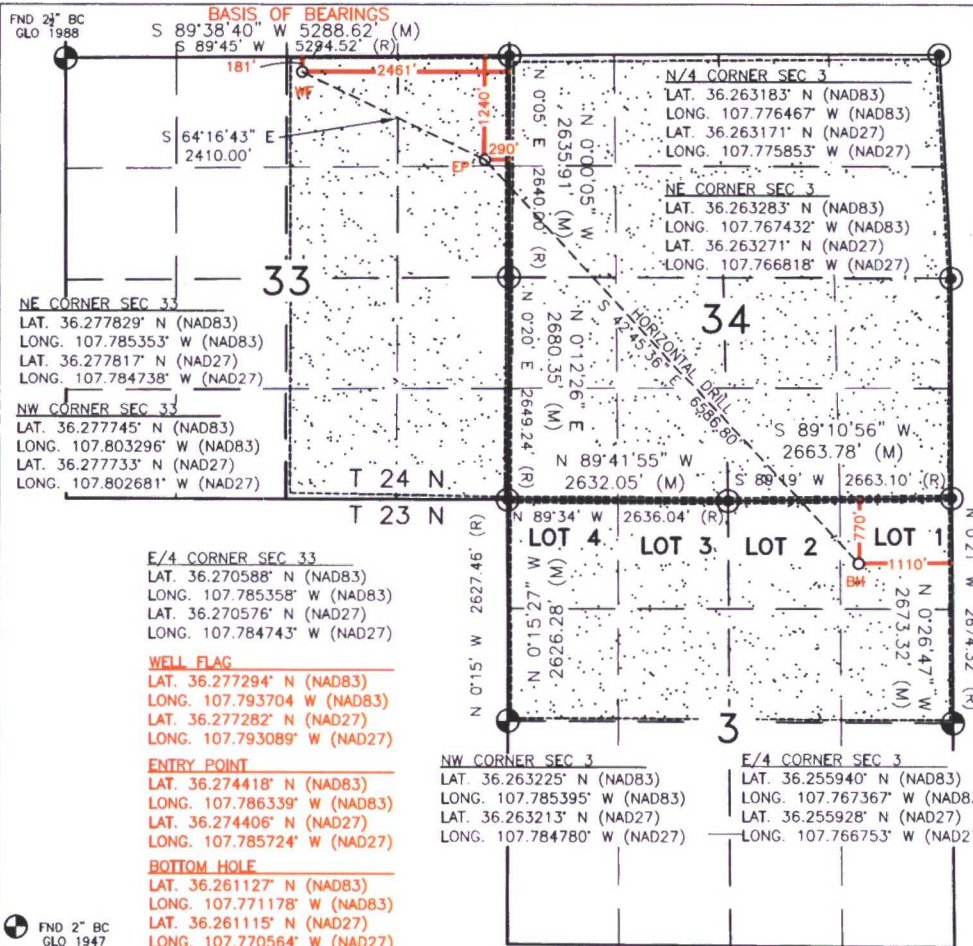
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	3	23N	9W	1	770'	NORTH	1110'	EAST	SAN JUAN

*Dedicated Acres PENETRATED SPACING UNIT: E/2 SEC 33 (320 ACRES), ALL SEC 34 (640 ACRES), N/2 SEC 3 (323.42 ACRES) Total Acres = 1283.42		*Joint or Infill	*Consolidation Code	*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 OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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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.

Katie Wegner 02/17/17
Signature Date

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

1625 W. French Dr., Hobbs, N.M. 88240
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DISTRICT II

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DISTRICT III

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

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

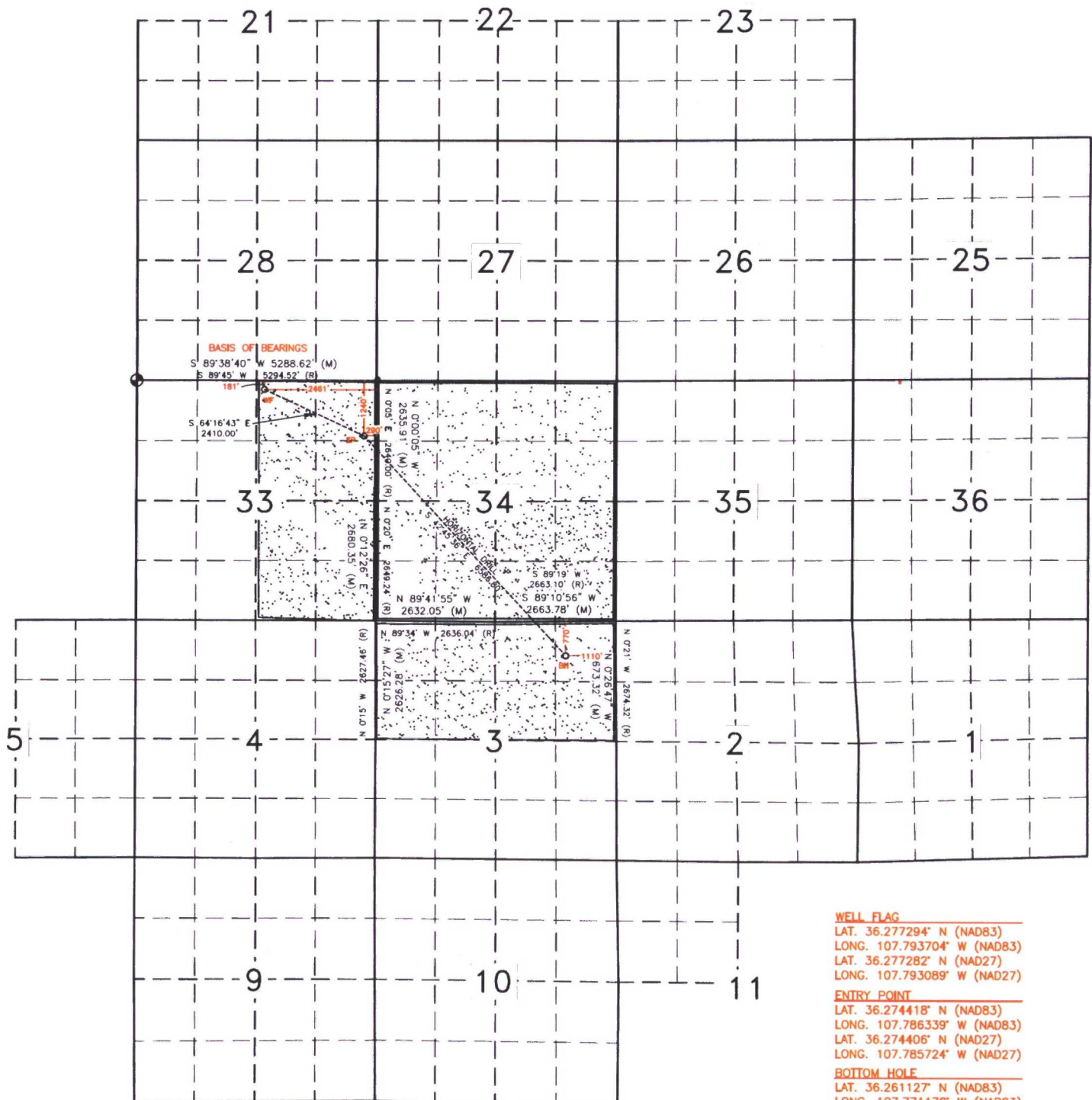
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
NAGEEZI UNIT #326H

**WELL FLAG**

LAT. 36.277294° N (NAD83)
LONG. 107.793704° W (NAD83)
LAT. 36.277282° N (NAD27)
LONG. 107.793089° W (NAD27)

ENTRY POINT

LAT. 36.274418° N (NAD83)
LONG. 107.786339° W (NAD83)
LAT. 36.274406° N (NAD27)
LONG. 107.785724° W (NAD27)

BOTTOM HOLE

LAT. 36.261127° N (NAD83)
LONG. 107.771178° W (NAD83)
LAT. 36.261115° N (NAD27)
LONG. 107.770564° W (NAD27)

PENETRATED SPACING UNIT: E/2 SEC 33 (320 ACRES), ALL SEC 34 (640 ACRES), N/2 SEC 3 (323.42 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

Nageezi Unit 326H
 SHL: NWNE Sec 33, T24N, R9W
 181' FNL, 2461' FEL
 BHL: NENE Sec 3, T23N, R9W
 770' FNL, 1110 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	4,806
Gallup Fn.	5,066

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	4,806
Oil/Gas	Gallup Fn.	5,066

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 326H**SHL: NWNE Sec 33, T24N, R9W****181' FNL, 2461' FEL****BHL: NENE Sec 3, T23N, R9W****770' FNL, 1110' 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'-12526'	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 326H
SHL: NWE Sec 33, T24N, R9W
181' FNL, 2461' FEL
BHL: NENE Sec 3, T23N, R9W
770' FNL, 1110 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	Type 1-2 construction cement w/ 20% fly ash Weight 14.5ppg	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5700'	100% open hole excess Stage 1 Lead: 657 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	5500'-12526'	30% open hole excess Cement Vol: 664 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 326H**SHL: NWNE Sec 33, T24N, R9W****181' FNL, 2461' FEL****BHL: NENE Sec 3, T23N, R9W****770' FNL, 1110 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 4760'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5016'/12526'	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'-5068'/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"	5068'/5700'- 5016'/12526'	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 326H

SHL: NWNE Sec 33, T24N, R9W

181' FNL, 2461' FEL

BHL: NENE Sec 3, T23N, R9W

770' FNL, 1110 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 +/- 2405 psi based on a 9.0 ppg at 5139' 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.

[illegible]



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	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	2171.36	29.43	110.07	2107.52	-126.86	347.16	2.00	110.07	328.78	
4	5217.01	29.43	110.07	4760.23	-640.48	1752.63	0.00	0.00	1659.86	
5	5939.04	90.80	137.75	5107.69	-1008.93	2212.30	9.00	30.83	2242.42	
6	12526.22	90.80	137.75	5015.72	-5884.41	6640.87	0.00	0.00	8828.73	NAGEEZI UNIT 326H PBHL

Project: San Juan County, NM
Site: S33-T24N-R9W
Well: NAGEEZI UNIT 326H
Wellbore: OH
Design: Plan #2

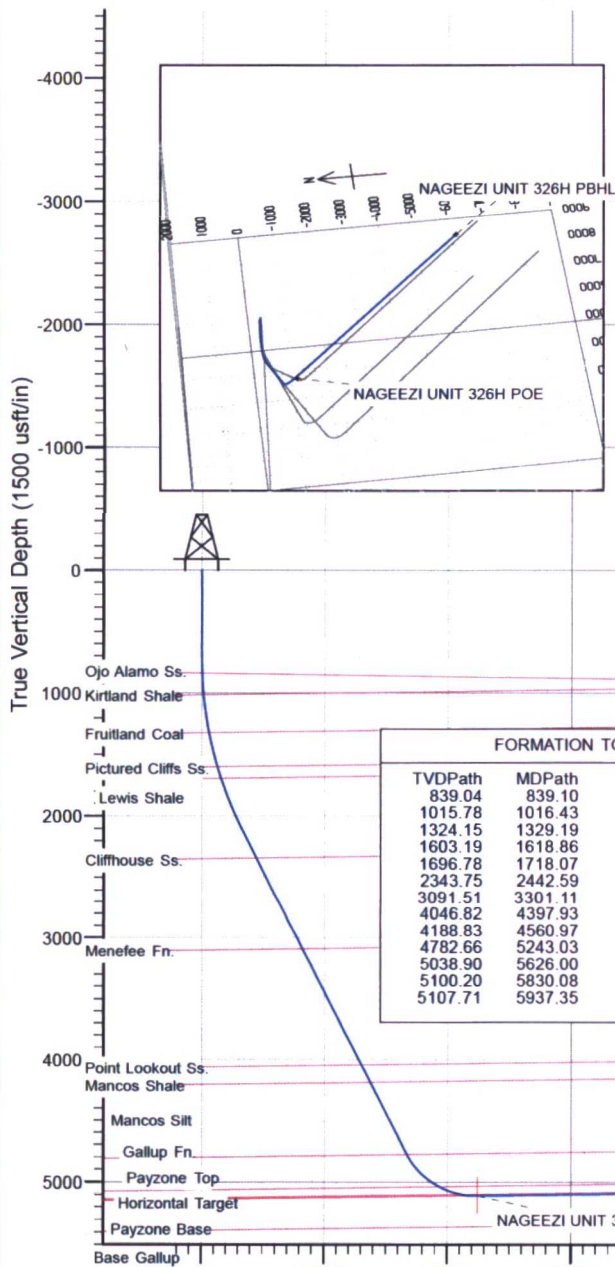


Azimuths to True North
Magnetic North: 9.07°

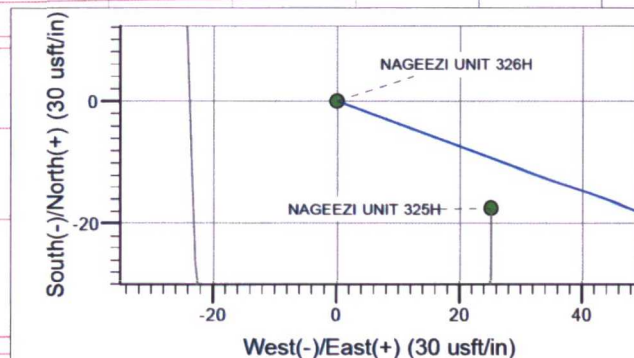
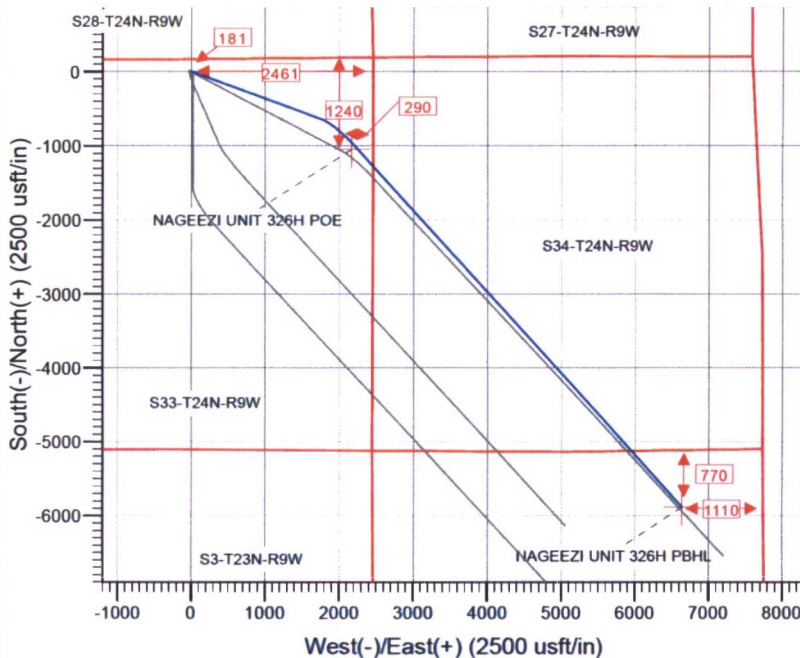
Magnetic Field
Strength: 49755.6nT
Dip Angle: 62.90°
Date: 1/24/2017
Model: HDGM

Plan #2
NAGEEZI UNIT 326H
Woods, LA
16' KB @ 6970 Dbsft
Ground Level @ 6954.00
North American Datum 1983
Well NAGEEZI UNIT 326H, True North

Type	Target	Acsmth	Origin	Type	N/S	E/W	From	TVD	Latitude	Longitude
User	No. Target (if in hand)	TVD	Start							
NAGEEZI UNIT 326H PBHL		5015.72	-5884.41	6640.87	36.261127	107.771178				
NAGEEZI UNIT 326H POE		5107.69	-1040.85	2170.90	36.274418	107.786339				
NAGEEZI UNIT 326H POE		5156.26	-6862.99	587.18	36.255129	107.773770				
NAGEEZI UNIT 326H POE		5249.77	-2094.96	340.46	36.271539	107.752549				



TVDPPath	MDPath	Formation
839.04	839.10	Ojo Alamo Ss.
1015.78	1016.43	Kirtland Shale
1324.15	1329.19	Fruitland Coal
1603.19	1618.86	Pictured Cliffs Ss.
1696.78	1718.07	Lewis Shale
2343.75	2442.59	Cliffhouse Ss.
3091.51	3301.11	Menefee Fn.
4046.82	4397.93	Point Lookout Ss.
4188.83	4560.97	Mancos Shale
4782.66	5243.03	Mancos Silt
5038.90	5626.00	Gallup Fn.
5100.20	5830.08	Payzone Top
5107.71	5937.35	Payzone Base
		Horizontal Target



Vertical Section at 137.26° (1500 usft/in)

WELL DETAILS: NAGEEZI UNIT 326H

+N/-S	+E/-W	Northing	Ground Level:	6954.00	Latitude	Longitude
0.00	0.00	1920236.57	Easting	2734772.35	36.277294	-107.793704





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 326H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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
Geo Datum: North American Datum 1983
Map Zone: New Mexico Western Zone

System Datum: Mean Sea Level

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 326H

Well Position: +N/-S 0.00 usft Northing: 1,920,236.57 usft Latitude: 36.277294
+E/-W 0.00 usft Easting: 2,734,772.35 usft Longitude: -107.793704
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	137.26

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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,171.36	29.43	110.07	2,107.52	-126.86	347.16	2.00	2.00	0.00	110.07	
5,217.01	29.43	110.07	4,760.23	-640.48	1,752.63	0.00	0.00	0.00	0.00	
5,939.04	90.80	137.75	5,107.69	-1,008.93	2,212.30	9.00	8.50	3.83	30.83	
12,526.22	90.80	137.75	5,015.72	-5,884.41	6,640.87	0.00	0.00	0.00	0.00	NAGEEZI UNIT 326H



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 326H
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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
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	Start Build 2.00
800.00	2.00	110.07	799.98	-0.60	1.64	1.55	2.00	2.00	
839.10	2.78	110.07	839.04	-1.16	3.17	3.00	2.00	2.00	Ojo Alamo Ss.
900.00	4.00	110.07	899.84	-2.40	6.55	6.21	2.00	2.00	
1,000.00	6.00	110.07	999.45	-5.39	14.74	13.96	2.00	2.00	
1,016.43	6.33	110.07	1,015.78	-5.99	16.40	15.53	2.00	2.00	Kirtland Shale
1,100.00	8.00	110.07	1,098.70	-9.57	26.19	24.80	2.00	2.00	
1,200.00	10.00	110.07	1,197.47	-14.94	40.88	38.71	2.00	2.00	
1,300.00	12.00	110.07	1,295.62	-21.49	58.80	55.69	2.00	2.00	
1,329.19	12.58	110.07	1,324.15	-23.62	64.64	61.21	2.00	2.00	Fruitland Coal
1,400.00	14.00	110.07	1,393.06	-29.21	79.93	75.70	2.00	2.00	
1,500.00	16.00	110.07	1,489.64	-38.09	104.24	98.72	2.00	2.00	
1,600.00	18.00	110.07	1,585.27	-48.13	131.69	124.72	2.00	2.00	
1,618.86	18.38	110.07	1,603.19	-50.15	137.22	129.96	2.00	2.00	Pictured Cliffs Ss.
1,700.00	20.00	110.07	1,679.82	-59.30	162.27	153.68	2.00	2.00	
1,718.07	20.36	110.07	1,696.78	-61.44	168.13	159.23	2.00	2.00	Lewis Shale
1,800.00	22.00	110.07	1,773.17	-71.60	195.93	185.56	2.00	2.00	
1,900.00	24.00	110.07	1,865.21	-85.01	232.63	220.31	2.00	2.00	
2,000.00	26.00	110.07	1,955.84	-99.52	272.32	257.90	2.00	2.00	
2,100.00	28.00	110.07	2,044.94	-115.10	314.96	298.29	2.00	2.00	
2,171.36	29.43	110.07	2,107.52	-126.86	347.16	328.78	2.00	2.00	Start 3045.66 hold at 2171.36 MD
2,200.00	29.43	110.07	2,132.47	-131.69	360.38	341.30	0.00	0.00	
2,300.00	29.43	110.07	2,219.56	-148.56	406.52	385.00	0.00	0.00	
2,400.00	29.43	110.07	2,306.66	-165.42	452.67	428.71	0.00	0.00	
2,442.59	29.43	110.07	2,343.75	-172.60	472.32	447.32	0.00	0.00	Cliffhouse Ss.
2,500.00	29.43	110.07	2,393.76	-182.29	498.82	472.41	0.00	0.00	
2,600.00	29.43	110.07	2,480.86	-199.15	544.96	516.11	0.00	0.00	
2,700.00	29.43	110.07	2,567.96	-216.01	591.11	559.82	0.00	0.00	
2,800.00	29.43	110.07	2,655.05	-232.88	637.26	603.52	0.00	0.00	
2,900.00	29.43	110.07	2,742.15	-249.74	683.40	647.23	0.00	0.00	
3,000.00	29.43	110.07	2,829.25	-266.60	729.55	690.93	0.00	0.00	
3,100.00	29.43	110.07	2,916.35	-283.47	775.70	734.64	0.00	0.00	
3,200.00	29.43	110.07	3,003.45	-300.33	821.84	778.34	0.00	0.00	
3,300.00	29.43	110.07	3,090.54	-317.20	867.99	822.04	0.00	0.00	
3,301.11	29.43	110.07	3,091.51	-317.38	868.50	822.53	0.00	0.00	Menefee Fn.
3,400.00	29.43	110.07	3,177.64	-334.06	914.14	865.75	0.00	0.00	
3,500.00	29.43	110.07	3,264.74	-350.92	960.28	909.45	0.00	0.00	
3,600.00	29.43	110.07	3,351.84	-367.79	1,006.43	953.16	0.00	0.00	
3,700.00	29.43	110.07	3,438.94	-384.65	1,052.58	996.86	0.00	0.00	
3,800.00	29.43	110.07	3,526.03	-401.52	1,098.73	1,040.56	0.00	0.00	
3,900.00	29.43	110.07	3,613.13	-418.38	1,144.87	1,084.27	0.00	0.00	
4,000.00	29.43	110.07	3,700.23	-435.24	1,191.02	1,127.97	0.00	0.00	
4,100.00	29.43	110.07	3,787.33	-452.11	1,237.17	1,171.68	0.00	0.00	
4,200.00	29.43	110.07	3,874.43	-468.97	1,283.31	1,215.38	0.00	0.00	
4,300.00	29.43	110.07	3,961.53	-485.83	1,329.46	1,259.08	0.00	0.00	



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Wellbore: OH
Design: Plan #2

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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
4,397.93	29.43	110.07	4,046.82	-502.35	1,374.65	1,301.88	0.00	0.00	Point Lookout Ss.
4,400.00	29.43	110.07	4,048.62	-502.70	1,375.61	1,302.79	0.00	0.00	
4,500.00	29.43	110.07	4,135.72	-519.56	1,421.75	1,346.49	0.00	0.00	
4,560.97	29.43	110.07	4,188.83	-529.84	1,449.89	1,373.14	0.00	0.00	Mancos Shale
4,600.00	29.43	110.07	4,222.82	-536.43	1,467.90	1,390.20	0.00	0.00	
4,700.00	29.43	110.07	4,309.92	-553.29	1,514.05	1,433.90	0.00	0.00	
4,800.00	29.43	110.07	4,397.02	-570.15	1,560.19	1,477.60	0.00	0.00	
4,900.00	29.43	110.07	4,484.11	-587.02	1,606.34	1,521.31	0.00	0.00	
5,000.00	29.43	110.07	4,571.21	-603.88	1,652.49	1,565.01	0.00	0.00	
5,100.00	29.43	110.07	4,658.31	-620.74	1,698.63	1,608.72	0.00	0.00	
5,200.00	29.43	110.07	4,745.41	-637.61	1,744.78	1,652.42	0.00	0.00	
5,217.01	29.43	110.07	4,760.23	-640.48	1,752.63	1,659.86	0.00	0.00	Start DLS 9.00 TFO 30.83
5,243.03	31.46	112.37	4,782.66	-645.26	1,764.92	1,671.70	9.00	7.81	Mancos Silt
5,250.00	32.01	112.94	4,788.58	-646.67	1,768.30	1,675.03	9.00	7.90	
5,300.00	36.03	116.58	4,830.02	-658.42	1,793.66	1,700.88	9.00	8.03	
5,350.00	40.13	119.57	4,869.38	-672.96	1,820.84	1,730.00	9.00	8.21	
5,400.00	44.30	122.08	4,906.40	-690.19	1,849.67	1,762.22	9.00	8.34	
5,450.00	48.52	124.24	4,940.87	-710.01	1,879.96	1,797.34	9.00	8.44	
5,500.00	52.78	126.14	4,972.57	-732.31	1,911.54	1,835.14	9.00	8.51	
5,550.00	57.06	127.84	5,001.30	-756.93	1,944.20	1,875.40	9.00	8.56	
5,600.00	61.36	129.37	5,026.89	-783.73	1,977.75	1,917.85	9.00	8.60	
5,626.00	63.60	130.12	5,038.90	-798.48	1,995.48	1,940.71	9.00	8.63	Gallup Fn.
5,650.00	65.68	130.79	5,049.18	-812.55	2,011.98	1,962.24	9.00	8.64	
5,700.00	70.01	132.11	5,068.03	-843.20	2,046.67	2,008.30	9.00	8.66	
5,750.00	74.35	133.36	5,083.33	-875.50	2,081.62	2,055.74	9.00	8.68	
5,800.00	78.69	134.56	5,094.98	-909.24	2,116.61	2,104.27	9.00	8.69	
5,830.08	81.31	135.26	5,100.20	-930.16	2,137.59	2,133.87	9.00	8.70	Payzone Top
5,850.00	83.05	135.72	5,102.91	-944.23	2,151.42	2,153.59	9.00	8.70	
5,900.00	87.40	136.86	5,107.08	-980.24	2,185.84	2,203.40	9.00	8.71	
5,937.35	90.65	137.71	5,107.71	-1,007.68	2,211.16	2,240.73	9.00	8.71	Horizontal Target
5,939.04	90.80	137.75	5,107.69	-1,008.93	2,212.30	2,242.42	9.00	8.71	Start 6587.19 hold at 5939.04 MD
6,000.00	90.80	137.75	5,106.84	-1,054.05	2,253.28	2,303.38	0.00	0.00	
6,100.00	90.80	137.75	5,105.44	-1,128.06	2,320.51	2,403.36	0.00	0.00	
6,200.00	90.80	137.75	5,104.05	-1,202.08	2,387.74	2,503.35	0.00	0.00	
6,300.00	90.80	137.75	5,102.65	-1,276.09	2,454.97	2,603.34	0.00	0.00	
6,400.00	90.80	137.75	5,101.25	-1,350.11	2,522.20	2,703.32	0.00	0.00	
6,500.00	90.80	137.75	5,099.86	-1,424.12	2,589.43	2,803.31	0.00	0.00	
6,600.00	90.80	137.75	5,098.46	-1,498.14	2,656.66	2,903.30	0.00	0.00	
6,700.00	90.80	137.75	5,097.07	-1,572.15	2,723.89	3,003.28	0.00	0.00	
6,800.00	90.80	137.75	5,095.67	-1,646.17	2,791.12	3,103.27	0.00	0.00	
6,900.00	90.80	137.75	5,094.27	-1,720.18	2,858.36	3,203.26	0.00	0.00	
7,000.00	90.80	137.75	5,092.88	-1,794.19	2,925.59	3,303.24	0.00	0.00	
7,100.00	90.80	137.75	5,091.48	-1,868.21	2,992.82	3,403.23	0.00	0.00	
7,200.00	90.80	137.75	5,090.08	-1,942.22	3,060.05	3,503.22	0.00	0.00	
7,300.00	90.80	137.75	5,088.69	-2,016.24	3,127.28	3,603.20	0.00	0.00	
7,400.00	90.80	137.75	5,087.29	-2,090.25	3,194.51	3,703.19	0.00	0.00	
7,500.00	90.80	137.75	5,085.90	-2,164.27	3,261.74	3,803.18	0.00	0.00	
7,600.00	90.80	137.75	5,084.50	-2,238.28	3,328.97	3,903.16	0.00	0.00	
7,700.00	90.80	137.75	5,083.10	-2,312.30	3,396.20	4,003.15	0.00	0.00	
7,800.00	90.80	137.75	5,081.71	-2,386.31	3,463.43	4,103.14	0.00	0.00	
7,900.00	90.80	137.75	5,080.31	-2,460.33	3,530.66	4,203.12	0.00	0.00	
8,000.00	90.80	137.75	5,078.91	-2,534.34	3,597.89	4,303.11	0.00	0.00	



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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	137.75	5,077.52	-2,608.35	3,665.12	4,403.10	0.00	0.00	
8,200.00	90.80	137.75	5,076.12	-2,682.37	3,732.35	4,503.08	0.00	0.00	
8,300.00	90.80	137.75	5,074.73	-2,756.38	3,799.58	4,603.07	0.00	0.00	
8,400.00	90.80	137.75	5,073.33	-2,830.40	3,866.81	4,703.06	0.00	0.00	
8,500.00	90.80	137.75	5,071.93	-2,904.41	3,934.04	4,803.04	0.00	0.00	
8,600.00	90.80	137.75	5,070.54	-2,978.43	4,001.27	4,903.03	0.00	0.00	
8,700.00	90.80	137.75	5,069.14	-3,052.44	4,068.50	5,003.02	0.00	0.00	
8,800.00	90.80	137.75	5,067.75	-3,126.46	4,135.73	5,103.00	0.00	0.00	
8,900.00	90.80	137.75	5,066.35	-3,200.47	4,202.96	5,202.99	0.00	0.00	
9,000.00	90.80	137.75	5,064.95	-3,274.49	4,270.19	5,302.98	0.00	0.00	
9,100.00	90.80	137.75	5,063.56	-3,348.50	4,337.42	5,402.96	0.00	0.00	
9,200.00	90.80	137.75	5,062.16	-3,422.52	4,404.65	5,502.95	0.00	0.00	
9,300.00	90.80	137.75	5,060.76	-3,496.53	4,471.88	5,602.94	0.00	0.00	
9,400.00	90.80	137.75	5,059.37	-3,570.54	4,539.11	5,702.92	0.00	0.00	
9,500.00	90.80	137.75	5,057.97	-3,644.56	4,606.34	5,802.91	0.00	0.00	
9,600.00	90.80	137.75	5,056.58	-3,718.57	4,673.57	5,902.90	0.00	0.00	
9,700.00	90.80	137.75	5,055.18	-3,792.59	4,740.80	6,002.88	0.00	0.00	
9,800.00	90.80	137.75	5,053.78	-3,866.60	4,808.03	6,102.87	0.00	0.00	
9,900.00	90.80	137.75	5,052.39	-3,940.62	4,875.26	6,202.86	0.00	0.00	
10,000.00	90.80	137.75	5,050.99	-4,014.63	4,942.49	6,302.84	0.00	0.00	
10,100.00	90.80	137.75	5,049.59	-4,088.65	5,009.72	6,402.83	0.00	0.00	
10,200.00	90.80	137.75	5,048.20	-4,162.66	5,076.95	6,502.82	0.00	0.00	
10,300.00	90.80	137.75	5,046.80	-4,236.68	5,144.18	6,602.80	0.00	0.00	
10,400.00	90.80	137.75	5,045.41	-4,310.69	5,211.41	6,702.79	0.00	0.00	
10,500.00	90.80	137.75	5,044.01	-4,384.71	5,278.64	6,802.78	0.00	0.00	
10,600.00	90.80	137.75	5,042.61	-4,458.72	5,345.87	6,902.76	0.00	0.00	
10,700.00	90.80	137.75	5,041.22	-4,532.73	5,413.10	7,002.75	0.00	0.00	
10,800.00	90.80	137.75	5,039.82	-4,606.75	5,480.33	7,102.73	0.00	0.00	
10,900.00	90.80	137.75	5,038.43	-4,680.76	5,547.56	7,202.72	0.00	0.00	
11,000.00	90.80	137.75	5,037.03	-4,754.78	5,614.79	7,302.71	0.00	0.00	
11,100.00	90.80	137.75	5,035.63	-4,828.79	5,682.02	7,402.69	0.00	0.00	
11,200.00	90.80	137.75	5,034.24	-4,902.81	5,749.25	7,502.68	0.00	0.00	
11,300.00	90.80	137.75	5,032.84	-4,976.82	5,816.48	7,602.67	0.00	0.00	
11,400.00	90.80	137.75	5,031.44	-5,050.84	5,883.71	7,702.65	0.00	0.00	
11,500.00	90.80	137.75	5,030.05	-5,124.85	5,950.94	7,802.64	0.00	0.00	
11,600.00	90.80	137.75	5,028.65	-5,198.87	6,018.17	7,902.63	0.00	0.00	
11,700.00	90.80	137.75	5,027.26	-5,272.88	6,085.40	8,002.61	0.00	0.00	
11,800.00	90.80	137.75	5,025.86	-5,346.89	6,152.63	8,102.60	0.00	0.00	
11,900.00	90.80	137.75	5,024.46	-5,420.91	6,219.86	8,202.59	0.00	0.00	
12,000.00	90.80	137.75	5,023.07	-5,494.92	6,287.09	8,302.57	0.00	0.00	
12,100.00	90.80	137.75	5,021.67	-5,568.94	6,354.32	8,402.56	0.00	0.00	
12,200.00	90.80	137.75	5,020.27	-5,642.95	6,421.55	8,502.55	0.00	0.00	
12,300.00	90.80	137.75	5,018.88	-5,716.97	6,488.78	8,602.53	0.00	0.00	
12,400.00	90.80	137.75	5,017.48	-5,790.98	6,556.01	8,702.52	0.00	0.00	
12,500.00	90.80	137.75	5,016.09	-5,865.00	6,623.24	8,802.51	0.00	0.00	
12,526.22	90.80	137.75	5,015.72	-5,884.41	6,640.87	8,828.73	0.00	0.00	TD at 12526.22



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Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
NAGEEZI UNIT 326H PI - plan hits target center - Point	0.00	0.00	5,015.72	-5,884.41	6,640.87	1,914,354.88	2,741,415.63	36.261127	-107.771178
NAGEEZI UNIT 325H PI - plan misses target center by 2085.40usft at 5239.52usft MD (4779.66 TVD, -644.57 N, 1763.23 E) - Point	0.00	0.00	5,249.77	-2,094.96	340.46	1,918,141.75	2,735,113.67	36.271539	-107.792549
NAGEEZI UNIT 326H PI - plan misses target center by 56.14usft at 5939.28usft MD (5107.69 TVD, -1009.10 N, 2212.46 E) - Point	0.00	0.00	5,107.69	-1,046.85	2,170.90	1,919,190.60	2,736,943.68	36.274418	-107.786339
NAGEEZI UNIT 325H PI - plan misses target center by 2317.19usft at 12526.22usft MD (5015.72 TVD, -5884.41 N, 6640.87 E) - Point	0.00	0.00	5,150.26	-8,067.99	5,877.18	1,912,170.99	2,740,652.83	36.255129	-107.773770

Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
839.10	839.00	Ojo Alamo Ss.		0.80	137.26
1,016.43	1,016.00	Kirtland Shale		-0.80	137.26
1,329.19	1,325.00	Fruitland Coal		-0.80	137.26
1,618.86	1,605.00	Pictured Cliffs Ss.		-0.80	137.26
1,718.07	1,699.00	Lewis Shale		-0.80	137.26
2,442.59	2,350.00	Cliffhouse Ss.		-0.80	137.26
3,301.11	3,103.00	Menefee Fn.		-0.80	137.26
4,397.93	4,065.00	Point Lookout Ss.		-0.80	137.26
4,560.97	4,208.00	Mancos Shale		-0.80	137.26
5,243.03	4,806.00	Mancos Silt		-0.80	137.26
5,626.00	5,066.00	Gallup Fn.		-0.80	137.26
5,830.08	5,130.00	Payzone Top		-0.80	137.26
5,937.35	5,139.00	Horizontal Target		-0.80	137.26

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
700.00	700.00	0.00	0.00	Start Build 2.00
2,171.36	2,107.52	-126.86	347.16	Start 3045.66 hold at 2171.36 MD
5,217.01	4,760.23	-640.48	1,752.63	Start DLS 9.00 TFO 30.83
5,939.04	5,107.69	-1,008.93	2,212.30	Start 6587.19 hold at 5939.04 MD
12,526.22	5,015.72	-5,884.41	6,640.87	TD at 12526.22



EnCana Oil & Gas (USA) Inc

San Juan County, NM

S33-T24N-R9W

NAGEEZI UNIT 326H

OH

Plan #2

Anticollision Report

24 January, 2017



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 326H
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 326H	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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
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 5,280.00usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/24/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	12,526.22	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	1,497.03	1,488.64	24.73	14.29	2.369	CC
NAGEEZI UNIT 324H - OH - Plan #2	1,500.00	1,491.59	24.73	14.27	2.364	ES
NAGEEZI UNIT 324H - OH - Plan #2	12,526.22	12,432.35	199.22	52.21	1.355	Level 3, SF
NAGEEZI UNIT 325H - OH - Plan #2	1,076.75	1,074.89	14.46	7.20	1.993	CC, ES, SF
NAGEEZI UNIT 327H - OH - Plan #2	782.67	783.59	27.93	22.77	5.410	CC
NAGEEZI UNIT 327H - OH - Plan #2	800.00	800.96	27.98	22.70	5.299	ES
NAGEEZI UNIT 327H - OH - Plan #2	11,700.00	11,923.82	1,345.87	972.43	3.604	SF

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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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		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	124.93	-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	700.00	700.00	700.00	2.30	2.30	124.93	-34.58	49.52	60.40	55.80	4.60	13.122	
800.00	799.98	799.98	799.98	2.65	2.66	15.30	-34.58	49.52	58.71	53.40	5.31	11.060	
900.00	899.84	899.84	899.84	2.99	3.02	16.80	-34.58	49.52	53.68	47.67	6.01	8.935	
1,000.00	999.45	997.90	997.88	3.34	3.36	19.53	-35.36	51.00	47.07	40.36	6.71	7.019	
1,100.00	1,098.70	1,096.18	1,096.03	3.70	3.69	23.75	-37.69	55.47	40.69	33.27	7.42	5.485	
1,200.00	1,197.47	1,194.69	1,194.17	4.08	4.03	30.19	-41.58	62.95	34.75	26.60	8.15	4.266	
1,300.00	1,295.62	1,293.43	1,292.20	4.47	4.38	39.85	-47.05	73.44	29.65	20.76	8.89	3.336	
1,400.00	1,393.06	1,392.40	1,389.98	4.89	4.74	53.63	-54.09	86.95	26.04	16.39	9.65	2.698	
1,497.03	1,486.79	1,488.64	1,484.51	5.32	5.11	70.41	-62.43	102.96	24.73	14.29	10.44	2.369 CC	
1,500.00	1,489.64	1,491.59	1,487.40	5.34	5.12	70.95	-62.71	103.49	24.73	14.27	10.46	2.364 ES	
1,600.00	1,585.27	1,591.01	1,584.33	5.82	5.53	88.53	-72.91	123.07	26.26	14.91	11.35	2.314	
1,700.00	1,679.82	1,690.66	1,680.66	6.35	5.96	102.89	-84.69	145.66	30.35	18.06	12.29	2.469	
1,800.00	1,773.17	1,790.54	1,776.27	6.92	6.42	113.12	-98.04	171.28	36.28	23.01	13.27	2.734	
1,900.00	1,865.21	1,890.64	1,871.02	7.56	6.93	120.05	-112.95	199.90	43.42	29.14	14.28	3.041	
2,000.00	1,955.84	1,990.97	1,964.79	8.25	7.48	124.69	-129.43	231.52	51.37	36.03	15.34	3.349	
2,100.00	2,044.94	2,091.52	2,057.47	9.01	8.09	127.81	-147.45	266.11	59.92	43.45	16.47	3.639	
2,171.36	2,107.52	2,163.41	2,122.86	9.60	8.56	129.38	-161.26	292.60	66.29	48.97	17.32	3.828	
2,200.00	2,132.47	2,192.31	2,148.92	9.85	8.75	129.84	-167.02	303.65	68.82	51.15	17.67	3.894	
2,300.00	2,219.56	2,293.43	2,239.14	10.72	9.49	129.80	-188.13	344.16	76.40	57.37	19.03	4.015	
2,400.00	2,306.66	2,394.72	2,327.82	11.62	10.30	127.67	-210.74	387.55	82.11	61.50	20.61	3.985	
2,500.00	2,393.76	2,495.93	2,414.65	12.53	11.18	123.76	-234.76	433.65	86.24	63.79	22.45	3.841	
2,600.00	2,480.86	2,596.80	2,499.32	13.46	12.14	118.15	-260.10	482.27	89.36	64.77	24.59	3.634	
2,700.00	2,567.96	2,696.55	2,581.52	14.39	13.16	111.39	-286.21	532.38	92.52	65.59	26.93	3.435	
2,800.00	2,655.05	2,795.91	2,663.27	15.34	14.22	105.06	-312.30	582.45	96.85	67.60	29.25	3.312	
2,900.00	2,742.15	2,895.26	2,745.02	16.30	15.29	99.32	-338.39	632.52	102.26	70.79	31.47	3.250	
3,000.00	2,829.25	2,994.61	2,826.78	17.26	16.38	94.21	-364.48	682.58	108.59	75.02	33.57	3.235	
3,100.00	2,916.35	3,093.97	2,908.53	18.22	17.48	89.68	-390.57	732.65	115.70	80.13	35.57	3.253	
3,200.00	3,003.45	3,193.32	2,990.28	19.19	18.59	85.70	-416.66	782.71	123.44	85.98	37.46	3.295	
3,300.00	3,090.54	3,292.67	3,072.04	20.17	19.72	82.19	-442.75	832.78	131.71	92.44	39.27	3.354	
3,400.00	3,177.64	3,392.02	3,153.79	21.14	20.85	79.11	-468.84	882.85	140.41	99.40	41.01	3.424	
3,500.00	3,264.74	3,491.38	3,235.54	22.12	21.99	76.40	-494.93	932.91	149.47	106.77	42.70	3.501	
3,600.00	3,351.84	3,590.73	3,317.30	23.11	23.14	73.99	-521.02	982.98	158.82	114.48	44.34	3.582	
3,700.00	3,438.94	3,690.08	3,399.05	24.09	24.29	71.86	-547.12	1,033.05	168.42	122.47	45.95	3.665	
3,800.00	3,526.03	3,789.43	3,480.80	25.08	25.44	69.96	-573.21	1,083.11	178.23	130.69	47.54	3.749	
3,900.00	3,613.13	3,888.79	3,562.56	26.07	26.60	68.26	-599.30	1,133.18	188.22	139.11	49.11	3.833	
4,000.00	3,700.23	3,988.14	3,644.31	27.06	27.76	66.73	-625.39	1,183.24	198.35	147.69	50.66	3.915	
4,100.00	3,787.33	4,067.49	3,726.06	28.05	28.93	65.35	-651.48	1,233.31	208.61	156.40	52.20	3.996	
4,200.00	3,874.43	4,186.84	3,807.82	29.04	30.10	64.10	-677.57	1,283.38	218.97	165.24	53.74	4.075	
4,300.00	3,961.53	4,286.20	3,889.57	30.04	31.27	62.96	-703.66	1,333.44	229.43	174.17	55.27	4.151	
4,400.00	4,048.62	4,385.55	3,971.32	31.03	32.44	61.92	-729.75	1,383.51	239.98	183.19	56.79	4.226	
4,500.00	4,135.72	4,484.90	4,053.08	32.03	33.61	60.97	-755.84	1,433.58	250.59	192.28	58.31	4.298	
4,600.00	4,222.82	4,584.25	4,134.83	33.03	34.79	60.10	-781.93	1,483.64	261.27	201.44	59.83	4.367	
4,700.00	4,309.92	4,683.61	4,216.58	34.02	35.96	59.29	-808.02	1,533.71	272.00	210.66	61.34	4.434	
4,800.00	4,397.02	4,782.96	4,298.34	35.02	37.14	58.55	-834.11	1,583.77	282.78	219.93	62.85	4.499	
4,900.00	4,484.11	4,882.31	4,380.09	36.02	38.32	57.86	-860.20	1,633.84	293.61	229.24	64.37	4.561	

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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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
5,000.00	4,571.21	4,981.66	4,461.84	37.02	39.50	57.22	-886.29	1,683.91	304.47	238.59	65.88	4.622	
5,100.00	4,658.31	5,081.02	4,543.60	38.02	40.68	56.62	-912.38	1,733.97	315.37	247.98	67.39	4.680	
5,200.00	4,745.41	5,180.37	4,625.35	39.02	41.86	56.07	-938.47	1,784.04	326.30	257.40	68.91	4.735	
5,217.01	4,760.23	5,197.27	4,639.26	39.19	42.07	55.98	-942.91	1,792.56	328.17	259.00	69.16	4.745	
5,250.00	4,788.58	5,230.13	4,666.29	39.53	42.46	53.29	-951.54	1,809.11	331.01	261.30	69.71	4.748	
5,300.00	4,830.02	5,280.09	4,707.41	40.11	43.05	50.30	-964.66	1,834.29	332.37	261.66	70.71	4.700	
5,350.00	4,869.38	5,329.99	4,748.47	40.76	43.65	48.39	-977.76	1,859.44	330.17	258.25	71.92	4.591	
5,400.00	4,906.40	5,379.51	4,789.21	41.47	44.24	47.41	-990.77	1,884.39	324.48	251.12	73.36	4.423	
5,450.00	4,940.87	5,428.34	4,829.40	42.24	44.82	47.30	-1,003.59	1,909.00	315.37	240.33	75.03	4.203	
5,500.00	4,972.57	5,476.19	4,868.77	43.07	45.39	48.07	-1,016.15	1,933.11	303.00	226.02	76.98	3.936	
5,550.00	5,001.30	5,522.76	4,907.09	43.94	45.95	49.77	-1,028.38	1,956.58	287.60	208.36	79.24	3.630	
5,600.00	5,026.89	5,567.76	4,944.12	44.87	46.48	52.54	-1,040.20	1,979.25	269.50	187.64	81.86	3.292	
5,650.00	5,049.18	5,610.92	4,979.63	45.83	47.00	56.55	-1,051.53	2,001.00	249.14	164.24	84.90	2.934	
5,700.00	5,068.03	5,650.00	5,011.79	46.82	47.46	61.78	-1,061.80	2,020.70	227.21	138.88	88.33	2.572	
5,750.00	5,083.33	5,682.83	5,038.26	47.84	47.88	67.61	-1,071.12	2,037.73	205.49	113.59	91.90	2.236	
5,800.00	5,094.98	5,715.34	5,063.53	48.86	48.32	74.49	-1,081.49	2,055.35	185.50	90.09	95.40	1.944	
5,850.00	5,102.91	5,750.00	5,089.36	49.90	48.82	82.85	-1,093.76	2,074.93	168.50	70.18	98.31	1.714	
5,900.00	5,107.08	5,782.49	5,112.46	50.93	49.32	91.52	-1,106.37	2,093.98	156.12	56.90	99.22	1.573	
5,939.04	5,107.69	5,809.67	5,130.92	51.73	49.76	98.95	-1,117.72	2,110.38	150.87	53.07	97.80	1.543	
5,963.78	5,107.34	5,827.57	5,142.62	52.23	50.07	103.61	-1,125.58	2,121.41	149.92	54.17	95.75	1.566	
6,000.00	5,106.84	5,855.51	5,160.16	52.97	50.55	110.59	-1,138.45	2,138.95	151.79	60.26	91.53	1.658	
6,100.00	5,105.44	5,944.45	5,209.61	55.04	52.21	128.76	-1,184.00	2,197.05	170.95	93.02	77.92	2.194	
6,200.00	5,104.05	6,051.83	5,255.41	57.15	54.41	142.15	-1,247.26	2,270.56	196.68	128.33	68.35	2.878	
6,300.00	5,102.65	6,176.05	5,287.84	59.29	57.10	149.70	-1,329.47	2,357.57	215.94	151.80	64.14	3.367	
6,400.00	5,101.25	6,306.49	5,297.00	61.45	59.96	152.01	-1,422.93	2,447.79	221.72	156.46	65.26	3.398	
6,500.00	5,099.86	6,406.49	5,295.61	63.65	62.14	152.26	-1,496.20	2,515.83	221.20	153.89	67.31	3.286	
6,600.00	5,098.46	6,506.48	5,294.21	65.87	64.34	152.52	-1,569.47	2,583.86	220.69	151.34	69.35	3.182	
6,700.00	5,097.07	6,606.47	5,292.81	68.11	66.57	152.77	-1,642.74	2,651.90	220.19	148.80	71.39	3.084	
6,800.00	5,095.67	6,706.47	5,291.42	70.37	68.82	153.02	-1,716.00	2,719.93	219.69	146.28	73.41	2.993	
6,900.00	5,094.27	6,806.46	5,290.02	72.64	71.09	153.28	-1,789.27	2,787.96	219.20	143.77	75.42	2.906	
7,000.00	5,092.88	6,906.46	5,288.63	74.94	73.38	153.54	-1,862.54	2,856.00	218.70	141.29	77.41	2.825	
7,100.00	5,091.48	7,006.45	5,287.23	77.24	75.68	153.79	-1,935.81	2,924.03	218.22	138.83	79.39	2.749	
7,200.00	5,090.08	7,106.44	5,285.83	79.56	78.00	154.05	-2,009.08	2,992.07	217.74	136.39	81.34	2.677	
7,300.00	5,088.69	7,206.44	5,284.44	81.90	80.33	154.31	-2,082.34	3,060.10	217.26	133.98	83.28	2.609	
7,400.00	5,087.29	7,306.43	5,283.04	84.24	82.67	154.57	-2,155.61	3,128.13	216.78	131.59	85.19	2.545	
7,500.00	5,085.90	7,406.43	5,281.65	86.59	85.03	154.84	-2,228.88	3,196.17	216.32	129.23	87.08	2.484	
7,600.00	5,084.50	7,506.42	5,280.25	88.96	87.39	155.10	-2,302.15	3,264.20	215.85	126.90	88.95	2.427	
7,700.00	5,083.10	7,606.41	5,278.85	91.33	89.77	155.36	-2,375.42	3,332.24	215.39	124.60	90.79	2.372	
7,800.00	5,081.71	7,706.41	5,277.46	93.71	92.15	155.63	-2,448.69	3,400.27	214.94	122.33	92.60	2.321	
7,900.00	5,080.31	7,806.40	5,276.06	96.10	94.54	155.90	-2,521.95	3,468.30	214.49	120.10	94.39	2.272	
8,000.00	5,078.91	7,906.40	5,274.67	98.49	96.94	156.16	-2,595.22	3,536.34	214.04	117.89	96.15	2.226	
8,100.00	5,077.52	8,006.39	5,273.27	100.90	99.35	156.43	-2,668.49	3,604.37	213.60	115.71	97.89	2.182	
8,200.00	5,076.12	8,106.38	5,271.87	103.30	101.76	156.70	-2,741.76	3,672.40	213.16	113.57	99.59	2.140	
8,300.00	5,074.73	8,206.38	5,270.48	105.72	104.18	156.98	-2,815.03	3,740.44	212.73	111.46	101.27	2.101	
8,400.00	5,073.33	8,306.37	5,269.08	108.14	106.60	157.25	-2,888.30	3,808.47	212.31	109.38	102.92	2.063	
8,500.00	5,071.93	8,406.37	5,267.69	110.56	109.03	157.52	-2,961.56	3,876.51	211.88	107.34	104.54	2.027	
8,600.00	5,070.54	8,506.36	5,266.29	112.99	111.47	157.80	-3,034.83	3,944.54	211.47	105.34	106.13	1.992	
8,700.00	5,069.14	8,606.35	5,264.89	115.42	113.91	158.07	-3,108.10	4,012.57	211.05	103.36	107.69	1.960	
8,800.00	5,067.75	8,706.35	5,263.50	117.85	116.35	158.35	-3,181.37	4,080.61	210.65	101.42	109.22	1.929	
8,900.00	5,066.35	8,806.34	5,262.10	120.29	118.80	158.63	-3,254.64	4,148.64	210.24	99.52	110.72	1.899	
9,000.00	5,064.95	8,906.34	5,260.70	122.74	121.25	158.90	-3,327.91	4,216.68	209.85	97.65	112.20	1.870	
9,100.00	5,063.56	9,006.33	5,259.31	125.19	123.71	159.18	-3,401.17	4,284.71	209.45	95.82	113.64	1.843	

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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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		
9,200.00	5,062.16	9,106.32	5,257.91	127.63	126.16	159.47	-3,474.44	4,352.74	209.07	94.02	115.05	1.817	
9,300.00	5,060.76	9,206.32	5,256.52	130.09	128.63	159.75	-3,547.71	4,420.78	208.69	92.26	116.43	1.792	
9,400.00	5,059.37	9,306.31	5,255.12	132.54	131.09	160.03	-3,620.98	4,488.81	208.31	90.53	117.78	1.769	
9,500.00	5,057.97	9,406.31	5,253.72	135.00	133.56	160.31	-3,694.25	4,556.84	207.94	88.83	119.10	1.746	
9,600.00	5,056.58	9,506.30	5,252.33	137.46	136.03	160.60	-3,767.52	4,624.88	207.57	87.18	120.39	1.724	
9,700.00	5,055.18	9,606.29	5,250.93	139.93	138.50	160.89	-3,840.78	4,692.91	207.21	85.55	121.65	1.703	
9,800.00	5,053.78	9,706.29	5,249.54	142.39	140.98	161.17	-3,914.05	4,760.95	206.85	83.96	122.89	1.683	
9,900.00	5,052.39	9,806.28	5,248.14	144.86	143.45	161.46	-3,987.32	4,828.98	206.50	82.41	124.09	1.664	
10,000.00	5,050.99	9,906.28	5,246.74	147.33	145.93	161.75	-4,060.59	4,897.01	206.15	80.89	125.26	1.646	
10,100.00	5,049.59	10,006.27	5,245.35	149.80	148.42	162.04	-4,133.86	4,965.05	205.81	79.40	126.41	1.628	
10,200.00	5,048.20	10,106.26	5,243.95	152.27	150.90	162.33	-4,207.12	5,033.08	205.48	77.95	127.53	1.611	
10,300.00	5,046.80	10,206.26	5,242.56	154.75	153.38	162.62	-4,280.39	5,101.12	205.15	76.53	128.62	1.595	
10,400.00	5,045.41	10,306.25	5,241.16	157.22	155.87	162.92	-4,353.66	5,169.15	204.82	75.14	129.68	1.579	
10,500.00	5,044.01	10,406.25	5,239.76	159.70	158.36	163.21	-4,426.93	5,237.18	204.50	73.79	130.71	1.565	
10,600.00	5,042.61	10,506.24	5,238.37	162.18	160.85	163.50	-4,500.20	5,305.22	204.19	72.47	131.72	1.550	
10,700.00	5,041.22	10,606.23	5,236.97	164.66	163.34	163.80	-4,573.47	5,373.25	203.88	71.17	132.70	1.536	
10,800.00	5,039.82	10,706.23	5,235.57	167.15	165.84	164.10	-4,646.73	5,441.28	203.57	69.91	133.66	1.523	
10,900.00	5,038.43	10,806.22	5,234.18	169.63	168.33	164.39	-4,720.00	5,509.32	203.28	68.68	134.59	1.510	
11,000.00	5,037.03	10,906.22	5,232.78	172.11	170.83	164.69	-4,793.27	5,577.35	202.98	67.48	135.50	1.498 Level 3	
11,100.00	5,035.63	11,006.21	5,231.39	174.60	173.33	164.99	-4,866.54	5,645.39	202.70	66.31	136.39	1.486 Level 3	
11,200.00	5,034.24	11,106.20	5,229.99	177.09	175.83	165.29	-4,939.81	5,713.42	202.42	65.17	137.25	1.475 Level 3	
11,300.00	5,032.84	11,206.20	5,228.59	179.58	178.33	165.59	-5,013.08	5,781.45	202.14	64.05	138.09	1.464 Level 3	
11,400.00	5,031.44	11,306.19	5,227.20	182.07	180.83	165.89	-5,086.34	5,849.49	201.87	62.96	138.91	1.453 Level 3	
11,500.00	5,030.05	11,406.19	5,225.80	184.56	183.33	166.19	-5,159.61	5,917.52	201.61	61.90	139.71	1.443 Level 3	
11,600.00	5,028.65	11,506.18	5,224.41	187.05	185.83	166.50	-5,232.88	5,985.56	201.35	60.86	140.49	1.433 Level 3	
11,700.00	5,027.26	11,606.17	5,223.01	189.54	188.34	166.80	-5,306.15	6,053.59	201.09	59.84	141.25	1.424 Level 3	
11,800.00	5,025.86	11,706.17	5,221.61	192.03	190.84	167.11	-5,379.42	6,121.62	200.85	58.85	142.00	1.414 Level 3	
11,900.00	5,024.46	11,806.16	5,220.22	194.53	193.35	167.41	-5,452.69	6,189.66	200.60	57.88	142.73	1.406 Level 3	
12,000.00	5,023.07	11,906.16	5,218.82	197.02	195.86	167.72	-5,525.95	6,257.69	200.37	56.93	143.44	1.397 Level 3	
12,100.00	5,021.67	12,006.15	5,217.43	199.52	198.36	168.02	-5,599.22	6,325.73	200.14	55.99	144.14	1.388 Level 3	
12,200.00	5,020.27	12,106.14	5,216.03	202.02	200.87	168.33	-5,672.49	6,393.76	199.91	55.08	144.83	1.380 Level 3	
12,300.00	5,018.88	12,206.14	5,214.63	204.51	203.38	168.64	-5,745.76	6,461.79	199.69	54.18	145.51	1.372 Level 3	
12,400.00	5,017.48	12,306.13	5,213.24	207.01	205.89	168.95	-5,819.03	6,529.83	199.48	53.30	146.18	1.365 Level 3	
12,500.00	5,016.09	12,406.13	5,211.84	209.51	208.40	169.26	-5,892.30	6,597.86	199.27	52.44	146.83	1.357 Level 3	
12,526.22	5,015.72	12,432.35	5,211.48	210.17	209.06	169.34	-5,911.51	6,615.70	199.22	52.21	147.01	1.355 Level 3, 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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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: O-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	124.89	-17.47	25.05	30.54				
100.00	100.00	100.00	100.00	0.15	0.15	124.89	-17.47	25.05	30.54	30.24	0.30	101.439	
200.00	200.00	200.00	200.00	0.51	0.51	124.89	-17.47	25.05	30.54	29.53	1.02	30.003	
300.00	300.00	300.00	300.00	0.87	0.87	124.89	-17.47	25.05	30.54	28.81	1.74	17.605	
400.00	400.00	400.00	400.00	1.23	1.23	124.89	-17.47	25.05	30.54	28.09	2.45	12.457	
500.00	500.00	500.00	500.00	1.58	1.58	124.89	-17.47	25.05	30.54	27.38	3.17	9.639	
600.00	600.00	600.00	600.00	1.94	1.94	124.89	-17.47	25.05	30.54	26.66	3.89	7.861	
700.00	700.00	700.00	700.00	2.30	2.30	124.89	-17.47	25.05	30.54	25.94	4.60	6.636	
800.00	799.98	799.98	799.98	2.65	2.66	15.71	-17.47	25.05	28.86	23.55	5.31	5.437	
900.00	899.84	899.84	899.84	2.99	3.02	19.15	-17.47	25.05	23.87	17.86	6.01	3.972	
1,000.00	999.45	999.00	998.98	3.34	3.36	33.21	-19.18	25.05	17.23	10.53	6.70	2.571	
1,076.75	1,075.66	1,074.89	1,074.79	3.62	3.61	62.51	-22.81	25.05	14.46	7.20	7.26	1.993 CC, ES, SF	
1,100.00	1,098.70	1,097.84	1,097.68	3.70	3.68	73.98	-24.30	25.04	14.81	7.39	7.43	1.995	
1,200.00	1,197.47	1,196.14	1,195.61	4.08	4.01	110.54	-32.77	25.03	23.93	15.80	8.13	2.944	
1,300.00	1,295.62	1,293.67	1,292.44	4.47	4.35	124.32	-44.48	25.01	40.99	32.17	8.83	4.645	
1,400.00	1,393.06	1,390.23	1,387.84	4.89	4.69	129.45	-59.31	24.99	62.86	53.32	9.55	6.584	
1,500.00	1,489.64	1,485.60	1,481.53	5.34	5.05	131.48	-77.12	24.96	88.73	78.44	10.29	8.620	
1,600.00	1,585.27	1,579.60	1,573.24	5.82	5.42	132.21	-97.70	24.93	118.33	107.26	11.07	10.692	
1,700.00	1,679.82	1,672.06	1,662.75	6.35	5.80	132.31	-120.88	24.89	151.52	139.65	11.87	12.765	
1,800.00	1,773.17	1,762.83	1,749.84	6.92	6.19	132.07	-146.43	24.85	188.18	175.48	12.70	14.814	
1,900.00	1,865.21	1,851.77	1,834.35	7.56	6.60	131.64	-174.13	24.81	228.22	214.65	13.57	16.818	
2,000.00	1,955.84	1,938.76	1,916.15	8.25	7.03	131.08	-203.74	24.76	271.52	257.05	14.47	18.761	
2,100.00	2,044.94	2,023.72	1,995.12	9.01	7.47	130.45	-235.05	24.71	317.99	302.57	15.41	20.630	
2,171.36	2,107.52	2,083.05	2,049.71	9.60	7.79	129.95	-258.30	24.67	353.01	336.90	16.11	21.913	
2,200.00	2,132.47	2,106.60	2,071.24	9.85	7.92	129.98	-267.84	24.66	367.41	351.02	16.39	22.413	
2,300.00	2,219.56	2,190.39	2,147.32	10.72	8.41	129.89	-302.94	24.60	418.23	400.80	17.43	23.997	
2,400.00	2,306.66	2,276.42	2,225.30	11.62	8.92	129.78	-339.29	24.54	469.19	450.67	18.53	25.325	
2,500.00	2,393.76	2,362.46	2,303.28	12.53	9.44	129.68	-375.64	24.49	520.15	500.50	19.65	26.471	
2,600.00	2,480.86	2,448.50	2,381.26	13.46	9.97	129.61	-411.99	24.43	571.12	550.32	20.79	27.464	
2,700.00	2,567.96	2,534.54	2,459.24	14.39	10.51	129.54	-448.34	24.37	622.08	600.12	21.96	28.330	
2,800.00	2,655.05	2,620.57	2,537.23	15.34	11.06	129.49	-484.69	24.31	673.05	649.91	23.14	29.090	
2,900.00	2,742.15	2,706.61	2,615.21	16.30	11.61	129.44	-521.04	24.26	724.01	699.68	24.33	29.759	
3,000.00	2,829.25	2,792.65	2,693.19	17.26	12.17	129.40	-557.39	24.20	774.98	749.44	25.53	30.352	
3,100.00	2,916.35	2,878.68	2,771.17	18.22	12.74	129.37	-593.74	24.14	825.94	799.19	26.75	30.879	
3,200.00	3,003.45	2,964.72	2,849.15	19.19	13.30	129.34	-630.09	24.08	876.91	848.94	27.97	31.352	
3,300.00	3,090.54	3,050.76	2,927.13	20.17	13.87	129.31	-666.44	24.03	927.87	898.67	29.20	31.776	
3,400.00	3,177.64	3,136.80	3,005.11	21.14	14.45	129.28	-702.78	23.97	978.84	948.40	30.44	32.160	
3,500.00	3,264.74	3,222.83	3,083.10	22.12	15.02	129.26	-739.13	23.91	1,029.80	998.12	31.68	32.507	
3,600.00	3,351.84	3,308.87	3,161.08	23.11	15.60	129.24	-775.48	23.85	1,080.77	1,047.84	32.93	32.823	
3,700.00	3,438.94	3,394.91	3,239.06	24.09	16.18	129.22	-811.83	23.80	1,131.73	1,097.56	34.18	33.112	
3,800.00	3,526.03	3,480.94	3,317.04	25.08	16.76	129.20	-848.18	23.74	1,182.70	1,147.26	35.44	33.376	
3,900.00	3,613.13	3,566.98	3,395.02	26.07	17.35	129.19	-884.53	23.68	1,233.67	1,196.97	36.70	33.618	
4,000.00	3,700.23	3,653.02	3,473.00	27.06	17.93	129.17	-920.88	23.62	1,284.63	1,246.67	37.96	33.842	
4,100.00	3,787.33	3,739.05	3,550.99	28.05	18.52	129.16	-957.23	23.57	1,335.60	1,296.37	39.23	34.048	
4,200.00	3,874.43	3,825.09	3,628.97	29.04	19.11	129.15	-993.58	23.51	1,386.57	1,346.07	40.50	34.240	
4,300.00	3,961.53	3,911.13	3,706.95	30.04	19.70	129.14	-1,029.93	23.45	1,437.53	1,395.76	41.77	34.417	
4,400.00	4,048.62	3,997.17	3,784.93	31.03	20.29	129.13	-1,066.28	23.39	1,488.50	1,445.46	43.04	34.583	
4,500.00	4,135.72	4,083.20	3,862.91	32.03	20.88	129.12	-1,102.62	23.34	1,539.47	1,495.15	44.32	34.737	
4,600.00	4,222.82	4,169.24	3,940.89	33.03	21.47	129.11	-1,138.97	23.28	1,590.43	1,544.84	45.60	34.881	
4,700.00	4,309.92	4,255.28	4,018.87	34.02	22.06	129.10	-1,175.32	23.22	1,641.40	1,594.52	46.88	35.016	
4,800.00	4,397.02	4,341.31	4,096.86	35.02	22.66	129.09	-1,211.67	23.17	1,692.37	1,644.21	48.16	35.142	
4,900.00	4,484.11	4,427.35	4,174.84	36.02	23.25	129.08	-1,248.02	23.11	1,743.33	1,693.89	49.44	35.261	

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
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Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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 Uncertainty Axis	Separation Factor	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)			
5,000.00	4,571.21	4,513.39	4,252.82	37.02	23.85	129.08	-1,284.37	23.05	1,794.30	1,743.57	50.73	35.373	
5,100.00	4,658.31	4,599.42	4,330.80	38.02	24.44	129.07	-1,320.72	22.99	1,845.26	1,793.25	52.01	35.479	
5,200.00	4,745.41	4,685.46	4,408.78	39.02	25.04	129.06	-1,357.07	22.94	1,896.23	1,842.93	53.30	35.578	
5,217.01	4,760.23	4,700.10	4,422.05	39.19	25.14	129.06	-1,363.25	22.93	1,904.90	1,851.39	53.52	35.595	
5,250.00	4,788.58	4,728.41	4,447.71	39.53	25.34	124.86	-1,375.21	22.91	1,921.81	1,867.86	53.95	35.622	
5,300.00	4,830.02	4,770.91	4,486.23	40.11	25.63	119.28	-1,393.17	22.88	1,947.75	1,893.11	54.64	35.647	
5,350.00	4,869.38	4,812.71	4,524.11	40.76	25.92	114.44	-1,410.83	22.85	1,973.94	1,918.57	55.37	35.653	
5,400.00	4,906.40	4,853.52	4,561.11	41.47	26.20	110.17	-1,428.07	22.82	2,000.27	1,944.14	56.12	35.641	
5,450.00	4,940.87	4,893.12	4,597.00	42.24	26.48	106.37	-1,444.80	22.80	2,026.63	1,969.72	56.91	35.612	
5,500.00	4,972.57	4,931.25	4,631.55	43.07	26.74	102.94	-1,460.91	22.77	2,052.95	1,995.23	57.72	35.570	
5,550.00	5,001.30	4,967.67	4,664.57	43.94	27.00	99.83	-1,476.30	22.75	2,079.15	2,020.61	58.54	35.518	
5,600.00	5,026.89	6,112.90	5,247.89	44.87	39.61	99.01	-2,207.99	445.23	2,103.80	2,026.14	77.66	27.090	
5,650.00	5,049.18	6,157.03	5,247.35	45.83	40.34	97.53	-2,240.34	475.23	2,107.01	2,027.46	79.55	26.485	
5,700.00	5,068.03	6,202.86	5,246.79	46.82	41.11	96.28	-2,273.95	506.38	2,109.86	2,028.35	81.51	25.885	
5,750.00	5,083.33	6,250.11	5,246.21	47.84	41.93	95.28	-2,308.61	538.50	2,112.24	2,028.71	83.53	25.288	
5,800.00	5,094.98	6,298.50	5,245.62	48.86	42.78	94.51	-2,344.09	571.40	2,114.04	2,028.46	85.58	24.702	
5,850.00	5,102.91	6,347.73	5,245.02	49.90	43.68	93.99	-2,380.19	604.86	2,115.19	2,027.51	87.68	24.125	
5,900.00	5,107.08	6,397.48	5,244.41	50.93	44.59	93.73	-2,416.68	638.68	2,115.63	2,025.86	89.78	23.565	
5,939.04	5,107.69	6,436.49	5,243.93	51.73	45.33	93.70	-2,445.29	665.20	2,115.47	2,024.05	91.42	23.139	
6,000.00	5,106.84	6,497.45	5,243.19	52.97	46.49	93.71	-2,489.99	706.64	2,114.86	2,020.86	94.00	22.499	
6,100.00	5,105.44	6,597.45	5,241.97	55.04	48.45	93.71	-2,563.32	774.61	2,113.87	2,015.58	98.29	21.507	
6,200.00	5,104.05	6,697.44	5,240.75	57.15	50.46	93.72	-2,636.65	842.58	2,112.87	2,010.22	102.65	20.583	
6,300.00	5,102.65	6,797.44	5,239.52	59.29	52.52	93.72	-2,709.98	910.55	2,111.87	2,004.80	107.07	19.723	
6,400.00	5,101.25	6,897.43	5,238.30	61.45	54.63	93.73	-2,783.31	978.53	2,110.87	1,999.32	111.55	18.923	
6,500.00	5,099.86	6,997.43	5,237.08	63.65	56.77	93.74	-2,856.64	1,046.50	2,109.88	1,993.80	116.08	18.176	
6,600.00	5,098.46	7,097.42	5,235.86	65.87	58.94	93.74	-2,929.97	1,114.47	2,108.88	1,988.23	120.65	17.480	
6,700.00	5,097.07	7,197.42	5,234.64	68.11	61.15	93.75	-3,003.29	1,182.44	2,107.88	1,982.63	125.25	16.829	
6,800.00	5,095.67	7,297.41	5,233.42	70.37	63.38	93.76	-3,076.62	1,250.42	2,106.89	1,976.99	129.89	16.220	
6,900.00	5,094.27	7,397.41	5,232.19	72.64	65.64	93.76	-3,149.95	1,318.39	2,105.89	1,971.33	134.56	15.650	
7,000.00	5,092.88	7,497.40	5,230.97	74.94	67.91	93.77	-3,223.28	1,386.36	2,104.89	1,965.63	139.26	15.115	
7,100.00	5,091.48	7,597.40	5,229.75	77.24	70.21	93.78	-3,296.61	1,454.33	2,103.89	1,959.92	143.98	14.613	
7,200.00	5,090.08	7,697.39	5,228.53	79.56	72.52	93.78	-3,369.94	1,522.31	2,102.90	1,954.18	148.72	14.140	
7,300.00	5,088.69	7,797.39	5,227.31	81.90	74.85	93.79	-3,443.27	1,590.28	2,101.90	1,948.42	153.49	13.694	
7,400.00	5,087.29	7,897.38	5,226.09	84.24	77.19	93.80	-3,516.60	1,658.25	2,100.90	1,942.64	158.27	13.274	
7,500.00	5,085.90	7,997.37	5,224.86	86.59	79.55	93.80	-3,589.93	1,726.23	2,099.91	1,936.84	163.06	12.878	
7,600.00	5,084.50	8,097.37	5,223.64	88.96	81.92	93.81	-3,663.26	1,794.20	2,098.91	1,931.03	167.88	12.503	
7,700.00	5,083.10	8,197.36	5,222.42	91.33	84.29	93.82	-3,736.59	1,862.17	2,097.91	1,925.21	172.70	12.147	
7,800.00	5,081.71	8,297.36	5,221.20	93.71	86.68	93.82	-3,809.92	1,930.14	2,096.92	1,919.37	177.54	11.811	
7,900.00	5,080.31	8,397.35	5,219.98	96.10	89.08	93.83	-3,883.24	1,998.12	2,095.92	1,913.53	182.39	11.491	
8,000.00	5,078.91	8,497.35	5,218.76	98.49	91.48	93.84	-3,956.57	2,066.09	2,094.92	1,907.67	187.26	11.187	
8,100.00	5,077.52	8,597.34	5,217.53	100.90	93.89	93.84	-4,029.90	2,134.06	2,093.93	1,901.80	192.13	10.899	
8,200.00	5,076.12	8,697.34	5,216.31	103.30	96.31	93.85	-4,103.23	2,202.03	2,092.93	1,895.92	197.01	10.623	
8,300.00	5,074.73	8,797.33	5,215.09	105.72	98.74	93.86	-4,176.56	2,270.01	2,091.93	1,890.03	201.90	10.361	
8,400.00	5,073.33	8,897.33	5,213.87	108.14	101.17	93.86	-4,249.89	2,337.98	2,090.94	1,884.14	206.80	10.111	
8,500.00	5,071.93	8,997.32	5,212.65	110.56	103.60	93.87	-4,323.22	2,405.95	2,089.94	1,878.24	211.70	9.872	
8,600.00	5,070.54	9,097.32	5,211.43	112.99	106.04	93.88	-4,396.55	2,473.93	2,088.94	1,872.33	216.61	9.644	
8,700.00	5,069.14	9,197.31	5,210.20	115.42	108.49	93.88	-4,469.88	2,541.90	2,087.95	1,866.42	221.53	9.425	
8,800.00	5,067.75	9,297.31	5,208.98	117.85	110.94	93.89	-4,543.21	2,609.87	2,086.95	1,860.50	226.45	9.216	
8,900.00	5,066.35	9,397.30	5,207.76	120.29	113.39	93.90	-4,616.54	2,677.84	2,085.96	1,854.57	231.38	9.015	
9,000.00	5,064.95	9,497.30	5,206.54	122.74	115.85	93.90	-4,689.87	2,745.82	2,084.96	1,848.64	236.32	8.823	
9,100.00	5,063.56	9,597.29	5,205.32	125.19	118.31	93.91	-4,763.19	2,813.79	2,083.96	1,842.70	241.26	8.638	
9,200.00	5,062.16	9,697.29	5,204.10	127.63	120.78	93.92	-4,836.52	2,881.76	2,082.97	1,836.76	246.20	8.460	

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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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	5,060.76	9,797.28	5,202.87	130.09	123.25	93.92	-4,909.85	2,949.73	2,081.97	1,830.82	251.15	8.290	
9,400.00	5,059.37	9,897.27	5,201.65	132.54	125.72	93.93	-4,983.18	3,017.71	2,080.97	1,824.87	256.10	8.126	
9,500.00	5,057.97	9,997.27	5,200.43	135.00	128.19	93.94	-5,056.51	3,085.68	2,079.98	1,818.92	261.06	7.967	
9,600.00	5,056.58	10,097.26	5,199.21	137.46	130.67	93.94	-5,129.84	3,153.65	2,078.98	1,812.96	266.02	7.815	
9,700.00	5,055.18	10,197.26	5,197.99	139.93	133.15	93.95	-5,203.17	3,221.63	2,077.99	1,807.00	270.98	7.668	
9,800.00	5,053.78	10,297.25	5,196.77	142.39	135.63	93.96	-5,276.50	3,289.60	2,076.99	1,801.04	275.95	7.527	
9,900.00	5,052.39	10,397.25	5,195.54	144.86	138.11	93.96	-5,349.83	3,357.57	2,075.99	1,795.07	280.92	7.390	
10,000.00	5,050.99	10,497.24	5,194.32	147.33	140.60	93.97	-5,423.16	3,425.54	2,075.00	1,789.10	285.89	7.258	
10,100.00	5,049.59	10,597.24	5,193.10	149.80	143.09	93.98	-5,496.49	3,493.52	2,074.00	1,783.13	290.87	7.130	
10,200.00	5,048.20	10,697.23	5,191.88	152.27	145.58	93.98	-5,569.82	3,561.49	2,073.00	1,777.16	295.84	7.007	
10,300.00	5,046.80	10,797.23	5,190.66	154.75	148.07	93.99	-5,643.14	3,629.46	2,072.01	1,771.18	300.83	6.888	
10,400.00	5,045.41	10,897.22	5,189.44	157.22	150.56	94.00	-5,716.47	3,697.43	2,071.01	1,765.21	305.81	6.772	
10,500.00	5,044.01	10,997.22	5,188.21	159.70	153.05	94.00	-5,789.80	3,765.41	2,070.02	1,759.22	310.79	6.660	
10,600.00	5,042.61	11,097.21	5,186.99	162.18	155.55	94.01	-5,863.13	3,833.38	2,069.02	1,753.24	315.78	6.552	
10,700.00	5,041.22	11,197.21	5,185.77	164.66	158.05	94.02	-5,936.46	3,901.35	2,068.03	1,747.26	320.77	6.447	
10,800.00	5,039.82	11,297.20	5,184.55	167.15	160.55	94.02	-6,009.79	3,969.32	2,067.03	1,741.27	325.76	6.345	
10,900.00	5,038.43	11,397.20	5,183.33	169.63	163.05	94.03	-6,083.12	4,037.30	2,066.03	1,735.28	330.75	6.246	
11,000.00	5,037.03	11,497.19	5,182.11	172.11	165.55	94.04	-6,156.45	4,105.27	2,065.04	1,729.29	335.75	6.151	
11,100.00	5,035.63	11,597.19	5,180.88	174.60	168.05	94.04	-6,229.78	4,173.24	2,064.04	1,723.30	340.74	6.058	
11,200.00	5,034.24	11,697.18	5,179.66	177.09	170.55	94.05	-6,303.11	4,241.22	2,063.05	1,717.31	345.74	5.967	
11,300.00	5,032.84	11,797.18	5,178.44	179.58	173.06	94.06	-6,376.44	4,309.19	2,062.05	1,711.31	350.74	5.879	
11,400.00	5,031.44	11,897.17	5,177.22	182.07	175.56	94.06	-6,449.77	4,377.16	2,061.05	1,705.32	355.74	5.794	
11,500.00	5,030.05	11,997.16	5,176.00	184.56	178.07	94.07	-6,523.10	4,445.13	2,060.06	1,699.32	360.74	5.711	
11,600.00	5,028.65	12,097.16	5,174.78	187.05	180.58	94.08	-6,596.42	4,513.11	2,059.06	1,693.32	365.74	5.630	
11,700.00	5,027.26	12,197.15	5,173.55	189.54	183.09	94.08	-6,669.75	4,581.08	2,058.07	1,687.32	370.75	5.551	
11,800.00	5,025.86	12,297.15	5,172.33	192.03	185.60	94.09	-6,743.08	4,649.05	2,057.07	1,681.32	375.75	5.475	
11,900.00	5,024.46	12,397.14	5,171.11	194.53	188.11	94.10	-6,816.41	4,717.02	2,056.08	1,675.32	380.76	5.400	
12,000.00	5,023.07	12,497.14	5,169.89	197.02	190.62	94.11	-6,889.74	4,785.00	2,055.08	1,669.31	385.77	5.327	
12,100.00	5,021.67	12,597.13	5,168.67	199.52	193.13	94.11	-6,963.07	4,852.97	2,054.09	1,663.31	390.78	5.256	
12,200.00	5,020.27	12,697.13	5,167.45	202.02	195.64	94.12	-7,036.40	4,920.94	2,053.09	1,657.30	395.79	5.187	
12,300.00	5,018.88	12,797.12	5,166.22	204.51	198.15	94.13	-7,109.73	4,988.92	2,052.09	1,651.30	400.80	5.120	
12,400.00	5,017.48	12,897.12	5,165.00	207.01	200.67	94.13	-7,183.06	5,056.89	2,051.10	1,645.29	405.81	5.054	
12,500.00	5,016.09	12,997.11	5,163.78	209.51	203.18	94.14	-7,256.39	5,124.86	2,050.10	1,639.28	410.82	4.990	
12,526.22	5,015.72	13,023.33	5,163.46	210.17	203.84	94.14	-7,275.62	5,142.69	2,049.84	1,637.71	412.14	4.974	



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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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 #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)					
0.00	0.00	0.00	0.00	0.00	0.00	-55.03	17.11	-24.46	29.85				
100.00	100.00	100.00	100.00	0.15	0.15	-55.03	17.11	-24.46	29.85	29.55	0.30	99.142	
200.00	200.00	200.00	200.00	0.51	0.51	-55.03	17.11	-24.46	29.85	28.84	1.02	29.324	
300.00	300.00	300.00	300.00	0.87	0.87	-55.03	17.11	-24.46	29.85	28.12	1.74	17.206	
400.00	400.00	400.00	400.00	1.23	1.23	-55.03	17.11	-24.46	29.85	27.40	2.45	12.175	
500.00	500.00	500.00	500.00	1.58	1.58	-55.03	17.11	-24.46	29.85	26.68	3.17	9.421	
600.00	600.00	600.00	600.00	1.94	1.94	-55.03	17.11	-24.46	29.85	25.97	3.89	7.683	
700.00	700.00	700.59	700.57	2.30	2.29	-57.84	15.34	-24.40	28.83	24.24	4.60	6.274	
782.67	782.66	783.59	783.47	2.59	2.56	-175.44	11.23	-24.26	27.93	22.77	5.16	5.410 CC	
800.00	799.98	800.96	800.79	2.65	2.62	-177.66	10.07	-24.22	27.98	22.70	5.28	5.299 ES	
900.00	899.84	900.90	900.34	2.99	2.96	166.88	1.33	-23.91	30.70	24.75	5.95	5.157	
1,000.00	999.45	1,000.18	998.88	3.34	3.31	151.72	-10.78	-23.49	38.61	31.96	6.65	5.804	
1,100.00	1,098.70	1,098.60	1,096.09	3.70	3.68	140.76	-26.14	-22.95	51.93	44.53	7.39	7.023	
1,200.00	1,197.47	1,197.80	1,193.56	4.08	4.06	133.62	-44.45	-21.11	68.77	60.63	8.14	8.449	
1,300.00	1,295.62	1,296.81	1,290.32	4.47	4.47	128.81	-64.95	-16.72	87.29	78.38	8.91	9.795	
1,400.00	1,393.06	1,395.61	1,386.23	4.89	4.89	125.32	-87.60	-9.81	107.27	97.55	9.72	11.035	
1,500.00	1,489.64	1,494.17	1,481.17	5.34	5.34	122.62	-112.34	-0.40	128.58	118.00	10.58	12.158	
1,600.00	1,585.27	1,591.86	1,574.59	5.82	5.80	120.70	-138.57	10.92	151.26	139.78	11.48	13.177	
1,700.00	1,679.82	1,688.83	1,667.26	6.35	6.28	120.09	-164.74	22.33	175.67	163.24	12.42	14.139	
1,800.00	1,773.17	1,785.32	1,759.47	6.92	6.77	120.37	-190.79	33.68	201.79	188.38	13.41	15.045	
1,900.00	1,865.21	1,881.23	1,851.12	7.56	7.26	121.22	-216.68	44.97	229.68	215.24	14.44	15.904	
2,000.00	1,955.84	1,976.42	1,942.10	8.25	7.75	122.43	-242.38	56.17	259.46	243.95	15.51	16.730	
2,100.00	2,044.94	2,070.79	2,032.28	9.01	8.25	123.84	-267.86	67.27	291.28	274.67	16.61	17.536	
2,171.36	2,107.52	2,137.56	2,096.09	9.60	8.60	124.91	-285.88	75.13	315.31	297.89	17.41	18.106	
2,200.00	2,132.47	2,164.26	2,121.61	9.85	8.74	125.50	-293.09	78.27	325.19	307.45	17.74	18.331	
2,300.00	2,219.56	2,257.48	2,210.69	10.72	9.24	127.31	-318.25	89.24	359.92	341.05	18.88	19.065	
2,400.00	2,306.66	2,350.69	2,299.78	11.62	9.74	128.81	-343.42	100.20	394.92	374.90	20.02	19.721	
2,500.00	2,393.76	2,443.91	2,388.86	12.53	10.25	130.06	-368.58	111.17	430.11	408.94	21.18	20.310	
2,600.00	2,480.86	2,537.13	2,477.94	13.46	10.75	131.12	-393.75	122.14	465.46	443.13	22.34	20.840	
2,700.00	2,567.96	2,630.35	2,567.03	14.39	11.26	132.04	-418.91	133.11	500.93	477.44	23.50	21.319	
2,800.00	2,655.05	2,723.57	2,656.11	15.34	11.77	132.83	-444.07	144.07	536.50	511.84	24.66	21.753	
2,900.00	2,742.15	2,816.78	2,745.20	16.30	12.28	133.53	-469.24	155.04	572.15	546.32	25.83	22.149	
3,000.00	2,829.25	2,910.00	2,834.28	17.26	12.80	134.14	-494.40	166.01	607.86	580.86	27.00	22.510	
3,100.00	2,916.35	3,003.22	2,923.37	18.22	13.31	134.69	-519.57	176.98	643.63	615.45	28.18	22.842	
3,200.00	3,003.45	3,096.44	3,012.45	19.19	13.83	135.18	-544.73	187.94	679.44	650.09	29.35	23.147	
3,300.00	3,090.54	3,189.65	3,101.53	20.17	14.34	135.62	-569.90	198.91	715.29	684.76	30.53	23.428	
3,400.00	3,177.64	3,282.87	3,190.62	21.14	14.86	136.02	-595.06	209.88	751.18	719.47	31.71	23.688	
3,500.00	3,264.74	3,376.09	3,279.70	22.12	15.38	136.38	-620.23	220.85	787.09	754.20	32.89	23.929	
3,600.00	3,351.84	3,469.31	3,368.79	23.11	15.90	136.71	-645.39	231.81	823.03	788.96	34.07	24.154	
3,700.00	3,438.94	3,562.53	3,457.87	24.09	16.42	137.01	-670.55	242.78	858.99	823.74	35.26	24.363	
3,800.00	3,526.03	3,655.74	3,546.96	25.08	16.94	137.29	-695.72	253.75	894.97	858.53	36.44	24.558	
3,900.00	3,613.13	3,748.96	3,636.04	26.07	17.46	137.55	-720.88	264.72	930.97	893.34	37.63	24.741	
4,000.00	3,700.23	3,842.18	3,725.13	27.06	17.98	137.79	-746.05	275.68	966.98	928.17	38.82	24.912	
4,100.00	3,787.33	3,935.40	3,814.21	28.05	18.50	138.01	-771.21	286.65	1,003.01	963.01	40.00	25.073	
4,200.00	3,874.43	4,028.62	3,903.29	29.04	19.02	138.21	-796.38	297.62	1,039.05	997.86	41.19	25.225	
4,300.00	3,961.53	4,121.83	3,992.38	30.04	19.54	138.41	-821.54	308.59	1,075.10	1,032.72	42.38	25.368	
4,400.00	4,048.62	4,215.05	4,081.46	31.03	20.06	138.58	-846.70	319.55	1,111.16	1,067.59	43.57	25.503	
4,500.00	4,135.72	4,308.27	4,170.55	32.03	20.58	138.75	-871.87	330.52	1,147.22	1,102.46	44.76	25.630	
4,600.00	4,222.82	4,401.49	4,259.63	33.03	21.11	138.91	-897.03	341.49	1,183.30	1,137.35	45.95	25.751	
4,700.00	4,309.92	4,494.70	4,348.72	34.02	21.63	139.06	-922.20	352.46	1,219.38	1,172.24	47.14	25.866	
4,800.00	4,397.02	4,587.92	4,437.80	35.02	22.15	139.20	-947.36	363.42	1,255.47	1,207.14	48.33	25.975	
4,900.00	4,484.11	4,681.14	4,526.89	36.02	22.68	139.33	-972.53	374.39	1,291.57	1,242.04	49.53	26.078	

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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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 #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance						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)	Total Uncertainty Axis		
5,000.00	4,571.21	4,813.44	4,652.90	37.02	23.44	139.45	-1,009.19	390.89	1,327.63	1,276.42	51.21	25.927	
5,100.00	4,658.31	5,591.68	5,070.11	38.02	33.34	122.23	-1,478.28	764.77	1,333.06	1,267.93	65.13	20.468	
5,192.19	4,738.60	5,638.32	5,069.52	38.94	34.20	120.41	-1,512.59	796.36	1,330.45	1,262.57	67.88	19.599	
5,200.00	4,745.41	5,641.64	5,069.48	39.02	34.27	120.29	-1,515.03	798.60	1,330.47	1,262.37	68.09	19.539	
5,217.01	4,760.23	5,648.86	5,069.38	39.19	34.40	120.00	-1,520.34	803.50	1,330.64	1,262.09	68.55	19.412	
5,250.00	4,788.58	5,663.63	5,069.17	39.53	34.68	116.89	-1,531.21	813.50	1,331.46	1,262.02	69.43	19.176	
5,300.00	4,830.02	5,688.88	5,068.82	40.11	35.15	112.73	-1,549.78	830.60	1,333.81	1,262.98	70.83	18.832	
5,350.00	4,869.38	5,717.43	5,068.42	40.76	35.70	109.06	-1,570.78	849.94	1,337.30	1,265.01	72.29	18.499	
5,400.00	4,906.40	5,749.11	5,067.98	41.47	36.32	105.75	-1,594.08	871.40	1,341.70	1,267.87	73.82	18.175	
5,450.00	4,940.87	5,783.73	5,067.49	42.24	36.99	102.74	-1,619.55	894.85	1,346.75	1,271.33	75.42	17.856	
5,500.00	4,972.57	5,821.07	5,066.97	43.07	37.73	99.99	-1,647.01	920.14	1,352.21	1,275.11	77.10	17.538	
5,550.00	5,001.30	5,860.91	5,066.42	43.94	38.54	97.50	-1,676.31	947.12	1,357.82	1,278.97	78.86	17.219	
5,600.00	5,026.89	5,902.99	5,065.83	44.87	39.39	95.28	-1,707.27	975.62	1,363.34	1,282.66	80.68	16.898	
5,650.00	5,049.18	5,947.05	5,065.21	45.83	40.30	93.33	-1,739.68	1,005.47	1,368.54	1,285.95	82.59	16.571	
5,700.00	5,068.03	5,992.84	5,064.57	46.82	41.25	91.66	-1,773.36	1,036.48	1,373.21	1,288.65	84.56	16.240	
5,750.00	5,083.33	6,040.05	5,063.91	47.84	42.25	90.30	-1,808.09	1,068.46	1,377.17	1,290.58	86.59	15.904	
5,800.00	5,094.98	6,088.41	5,063.24	48.86	43.28	89.26	-1,843.65	1,101.21	1,380.28	1,291.60	88.68	15.565	
5,850.00	5,102.91	6,137.61	5,062.55	49.90	44.34	88.54	-1,879.84	1,134.54	1,382.41	1,291.60	90.81	15.223	
5,900.00	5,107.08	6,187.35	5,061.86	50.93	45.42	88.15	-1,916.43	1,168.23	1,383.48	1,290.51	92.97	14.881	
5,939.04	5,107.69	6,226.37	5,061.31	51.73	46.27	88.08	-1,945.13	1,194.65	1,383.56	1,288.89	94.67	14.614	
6,000.00	5,106.84	6,287.33	5,060.46	52.97	47.62	88.08	-1,989.97	1,235.94	1,383.14	1,285.80	97.34	14.209	
6,100.00	5,105.44	6,387.33	5,059.07	55.04	49.85	88.08	-2,063.52	1,303.67	1,382.46	1,280.68	101.78	13.583	
6,200.00	5,104.05	6,487.32	5,057.67	57.15	52.11	88.08	-2,137.08	1,371.40	1,381.78	1,275.51	106.27	13.002	
6,300.00	5,102.65	6,587.32	5,056.27	59.29	54.39	88.08	-2,210.63	1,439.14	1,381.10	1,270.29	110.81	12.463	
6,400.00	5,101.25	6,687.32	5,054.88	61.45	56.70	88.08	-2,284.18	1,506.87	1,380.42	1,265.02	115.40	11.962	
6,500.00	5,099.86	6,787.32	5,053.48	63.65	59.02	88.08	-2,357.74	1,574.60	1,379.74	1,259.72	120.02	11.496	
6,600.00	5,098.46	6,887.31	5,052.08	65.87	61.36	88.08	-2,431.29	1,642.33	1,379.06	1,254.39	124.68	11.061	
6,700.00	5,097.07	6,987.31	5,050.69	68.11	63.72	88.08	-2,504.85	1,710.06	1,378.38	1,249.02	129.36	10.655	
6,800.00	5,095.67	7,087.31	5,049.29	70.37	66.09	88.08	-2,578.40	1,777.79	1,377.70	1,243.63	134.07	10.276	
6,900.00	5,094.27	7,187.31	5,047.90	72.64	68.47	88.08	-2,651.95	1,845.52	1,377.02	1,238.21	138.81	9.920	
7,000.00	5,092.88	7,287.31	5,046.50	74.94	70.86	88.07	-2,725.51	1,913.25	1,376.34	1,232.77	143.57	9.586	
7,100.00	5,091.48	7,387.30	5,045.10	77.24	73.26	88.07	-2,799.06	1,980.98	1,375.66	1,227.31	148.35	9.273	
7,200.00	5,090.08	7,487.30	5,043.71	79.56	75.67	88.07	-2,872.61	2,048.71	1,374.98	1,221.83	153.15	8.978	
7,300.00	5,088.69	7,587.30	5,042.31	81.90	78.09	88.07	-2,946.17	2,116.44	1,374.30	1,216.34	157.96	8.700	
7,400.00	5,087.29	7,687.30	5,040.91	84.24	80.52	88.07	-3,019.72	2,184.17	1,373.62	1,210.83	162.79	8.438	
7,500.00	5,085.90	7,787.29	5,039.52	86.59	82.95	88.07	-3,093.27	2,251.90	1,372.94	1,205.31	167.63	8.190	
7,600.00	5,084.50	7,887.29	5,038.12	88.96	85.39	88.07	-3,166.83	2,319.63	1,372.26	1,199.78	172.48	7.956	
7,700.00	5,083.10	7,987.29	5,036.73	91.33	87.83	88.07	-3,240.38	2,387.37	1,371.58	1,194.23	177.35	7.734	
7,800.00	5,081.71	8,087.29	5,035.33	93.71	90.28	88.07	-3,313.94	2,455.10	1,370.90	1,188.67	182.23	7.523	
7,900.00	5,080.31	8,187.28	5,033.93	96.10	92.74	88.07	-3,387.49	2,522.83	1,370.22	1,183.11	187.11	7.323	
8,000.00	5,078.91	8,287.28	5,032.54	98.49	95.19	88.06	-3,461.04	2,590.56	1,369.54	1,177.53	192.01	7.133	
8,100.00	5,077.52	8,387.28	5,031.14	100.90	97.66	88.06	-3,534.60	2,658.29	1,368.86	1,171.95	196.91	6.952	
8,200.00	5,076.12	8,487.28	5,029.74	103.30	100.12	88.06	-3,608.15	2,726.02	1,368.18	1,166.36	201.82	6.779	
8,300.00	5,074.73	8,587.28	5,028.35	105.72	102.59	88.06	-3,681.70	2,793.75	1,367.50	1,160.76	206.74	6.615	
8,400.00	5,073.33	8,687.27	5,026.95	108.14	105.06	88.06	-3,755.26	2,861.48	1,366.82	1,155.16	211.66	6.458	
8,500.00	5,071.93	8,787.27	5,025.56	110.56	107.54	88.06	-3,828.81	2,929.21	1,366.14	1,149.55	216.59	6.307	
8,600.00	5,070.54	8,887.27	5,024.16	112.99	110.02	88.06	-3,902.36	2,996.94	1,365.46	1,143.93	221.53	6.164	
8,700.00	5,069.14	8,987.27	5,022.76	115.42	112.50	88.06	-3,975.92	3,064.67	1,364.78	1,138.31	226.47	6.026	
8,800.00	5,067.75	9,087.26	5,021.37	117.85	114.98	88.06	-4,049.47	3,132.40	1,364.10	1,132.68	231.42	5.895	
8,900.00	5,066.35	9,187.26	5,019.97	120.29	117.47	88.06	-4,123.03	3,200.13	1,363.42	1,127.05	236.37	5.768	
9,000.00	5,064.95	9,287.26	5,018.57	122.74	119.95	88.05	-4,196.58	3,267.86	1,362.74	1,121.41	241.32	5.647	
9,100.00	5,063.56	9,387.26	5,017.18	125.19	122.44	88.05	-4,270.13	3,335.59	1,362.06	1,115.77	246.28	5.530	

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 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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 #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 (°)	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)			
9,200.00	5,062.16	9,487.25	5,015.78	127.63	124.94	88.05	-4,343.69	3,403.33	1,361.38	1,110.13	251.25	5.418	
9,300.00	5,060.76	9,587.25	5,014.39	130.09	127.43	88.05	-4,417.24	3,471.06	1,360.70	1,104.48	256.22	5.311	
9,400.00	5,059.37	9,687.25	5,012.99	132.54	129.92	88.05	-4,490.79	3,538.79	1,360.02	1,098.83	261.19	5.207	
9,500.00	5,057.97	9,787.25	5,011.59	135.00	132.42	88.05	-4,564.35	3,606.52	1,359.34	1,093.18	266.16	5.107	
9,600.00	5,056.58	9,887.25	5,010.20	137.46	134.92	88.05	-4,637.90	3,674.25	1,358.66	1,087.52	271.14	5.011	
9,700.00	5,055.18	9,987.24	5,008.80	139.93	137.42	88.05	-4,711.45	3,741.98	1,357.98	1,081.86	276.12	4.918	
9,800.00	5,053.78	10,087.24	5,007.40	142.39	139.92	88.05	-4,785.01	3,809.71	1,357.30	1,076.20	281.10	4.828	
9,900.00	5,052.39	10,187.24	5,006.01	144.86	142.42	88.05	-4,858.56	3,877.44	1,356.62	1,070.53	286.09	4.742	
10,000.00	5,050.99	10,287.24	5,004.61	147.33	144.92	88.05	-4,932.12	3,945.17	1,355.94	1,064.86	291.08	4.658	
10,100.00	5,049.59	10,387.23	5,003.22	149.80	147.42	88.04	-5,005.67	4,012.90	1,355.26	1,059.19	296.07	4.578	
10,200.00	5,048.20	10,487.23	5,001.82	152.27	149.93	88.04	-5,079.22	4,080.63	1,354.58	1,053.52	301.06	4.499	
10,300.00	5,046.80	10,587.23	5,000.42	154.75	152.44	88.04	-5,152.78	4,148.36	1,353.90	1,047.84	306.06	4.424	
10,400.00	5,045.41	10,687.23	4,999.03	157.22	154.94	88.04	-5,226.33	4,216.09	1,353.22	1,042.16	311.05	4.350	
10,500.00	5,044.01	10,787.22	4,997.63	159.70	157.45	88.04	-5,299.88	4,283.82	1,352.54	1,036.49	316.05	4.279	
10,600.00	5,042.61	10,887.22	4,996.23	162.18	159.96	88.04	-5,373.44	4,351.56	1,351.86	1,030.80	321.05	4.211	
10,700.00	5,041.22	10,987.22	4,994.84	164.66	162.47	88.04	-5,446.99	4,419.29	1,351.18	1,025.12	326.06	4.144	
10,800.00	5,039.82	11,087.22	4,993.44	167.15	164.98	88.04	-5,520.55	4,487.02	1,350.50	1,019.44	331.06	4.079	
10,900.00	5,038.43	11,187.22	4,992.05	169.63	167.49	88.04	-5,594.10	4,554.75	1,349.82	1,013.75	336.07	4.017	
11,000.00	5,037.03	11,287.21	4,990.65	172.11	170.00	88.04	-5,667.65	4,622.48	1,349.14	1,008.06	341.08	3.956	
11,100.00	5,035.63	11,387.21	4,989.25	174.60	172.51	88.03	-5,741.21	4,690.21	1,348.46	1,002.37	346.08	3.896	
11,200.00	5,034.24	11,487.21	4,987.86	177.09	175.03	88.03	-5,814.76	4,757.94	1,347.78	996.68	351.09	3.839	
11,300.00	5,032.84	11,587.21	4,986.46	179.58	177.54	88.03	-5,888.31	4,825.67	1,347.10	990.99	356.11	3.783	
11,400.00	5,031.44	11,687.20	4,985.06	182.07	180.06	88.03	-5,961.87	4,893.40	1,346.42	985.30	361.12	3.728	
11,500.00	5,030.05	11,787.20	4,983.67	184.56	182.57	88.03	-6,035.42	4,961.13	1,345.74	979.60	366.13	3.676	
11,600.00	5,028.65	11,887.20	4,982.27	187.05	185.09	88.03	-6,108.97	5,028.86	1,345.06	973.91	371.15	3.624	
11,645.05	5,028.02	11,923.82	4,981.76	188.17	185.78	88.03	-6,135.91	5,053.66	1,344.78	971.88	372.90	3.606	
11,700.00	5,027.26	11,923.82	4,981.76	189.54	185.78	88.03	-6,135.91	5,053.66	1,345.87	972.43	373.44	3.604 SF	
11,800.00	5,025.86	11,923.82	4,981.76	192.03	185.78	88.03	-6,135.91	5,053.66	1,353.59	980.72	372.87	3.630	
11,900.00	5,024.46	11,923.82	4,981.76	194.53	185.78	88.03	-6,135.91	5,053.66	1,368.60	998.24	370.35	3.695	
12,000.00	5,023.07	11,923.82	4,981.76	197.02	185.78	88.03	-6,135.91	5,053.66	1,390.65	1,024.59	366.06	3.799	
12,100.00	5,021.67	11,923.82	4,981.76	199.52	185.78	88.03	-6,135.91	5,053.66	1,419.42	1,059.20	360.22	3.940	
12,200.00	5,020.27	11,923.82	4,981.76	202.02	185.78	88.03	-6,135.91	5,053.66	1,454.51	1,101.41	353.10	4.119	
12,300.00	5,018.88	11,923.82	4,981.76	204.51	185.78	88.03	-6,135.91	5,053.66	1,495.48	1,150.50	344.98	4.335	
12,400.00	5,017.48	11,923.82	4,981.76	207.01	185.78	88.03	-6,135.91	5,053.66	1,541.85	1,205.71	336.14	4.587	
12,500.00	5,016.09	11,923.82	4,981.76	209.51	185.78	88.03	-6,135.91	5,053.66	1,593.16	1,266.33	326.83	4.875	
12,526.22	5,015.72	11,923.82	4,981.76	210.17	185.78	88.03	-6,135.91	5,053.66	1,607.37	1,283.03	324.34	4.956	

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



Cathedral Energy Services
Anticollision Report

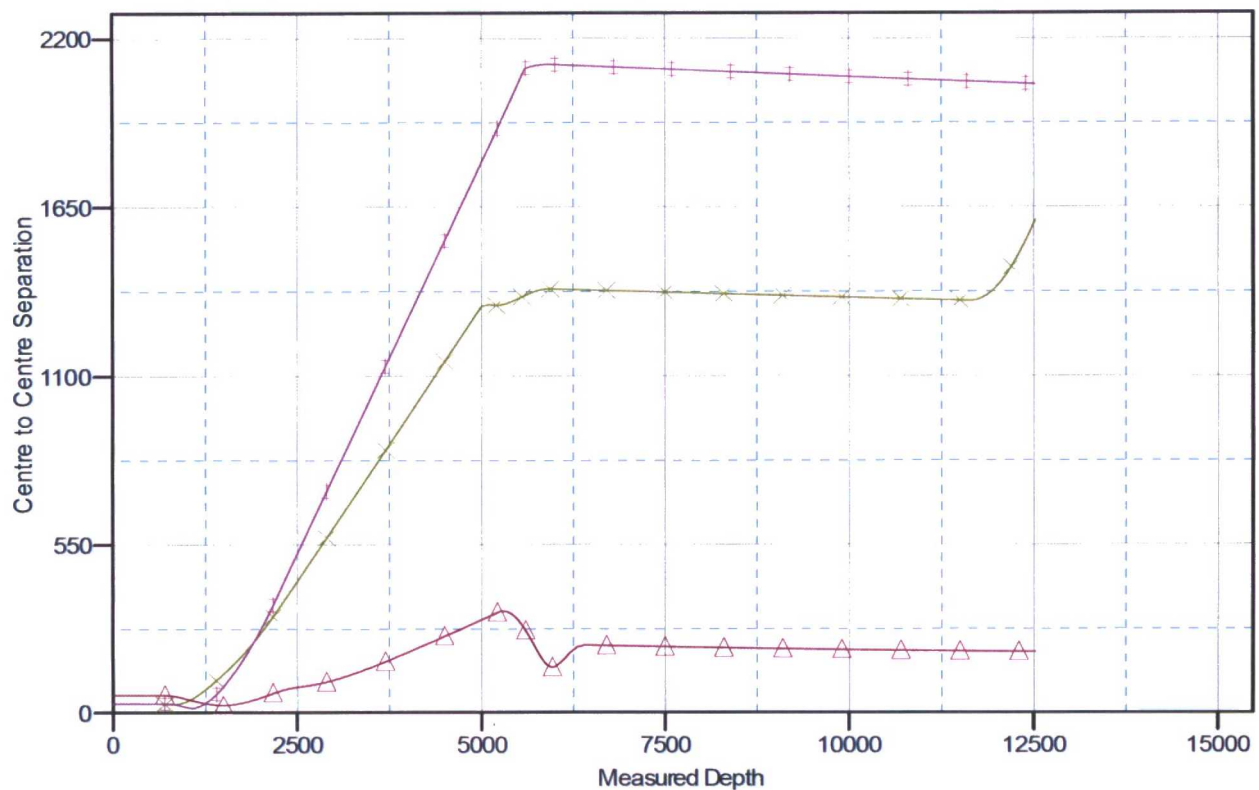
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S33-T24N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 326H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: Plan #2

Local Co-ordinate Reference: Well NAGEEZI UNIT 326H
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 -107.83333 °

Coordinates are relative to: NAGEEZI UNIT 326H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.02°

Ladder Plot



LEGEND

✕ NAGEEZI UNIT 327H, OH, Plan #2 V0 ▲ NAGEEZI UNIT 324H, OH, Plan #2 V0 ■ NAGEEZI UNIT 325H, OH, Plan #2 V0

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (505) 334-6178 Fax: (505) 334-9720

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) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35786		*Pool Code 98080	*Pool Name NAGEEZI UNIT HZ (OIL)
*Property Code 315244	*Property Name NAGEEZI UNIT		*Well Number 326H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6954.2'

10 Surface Location

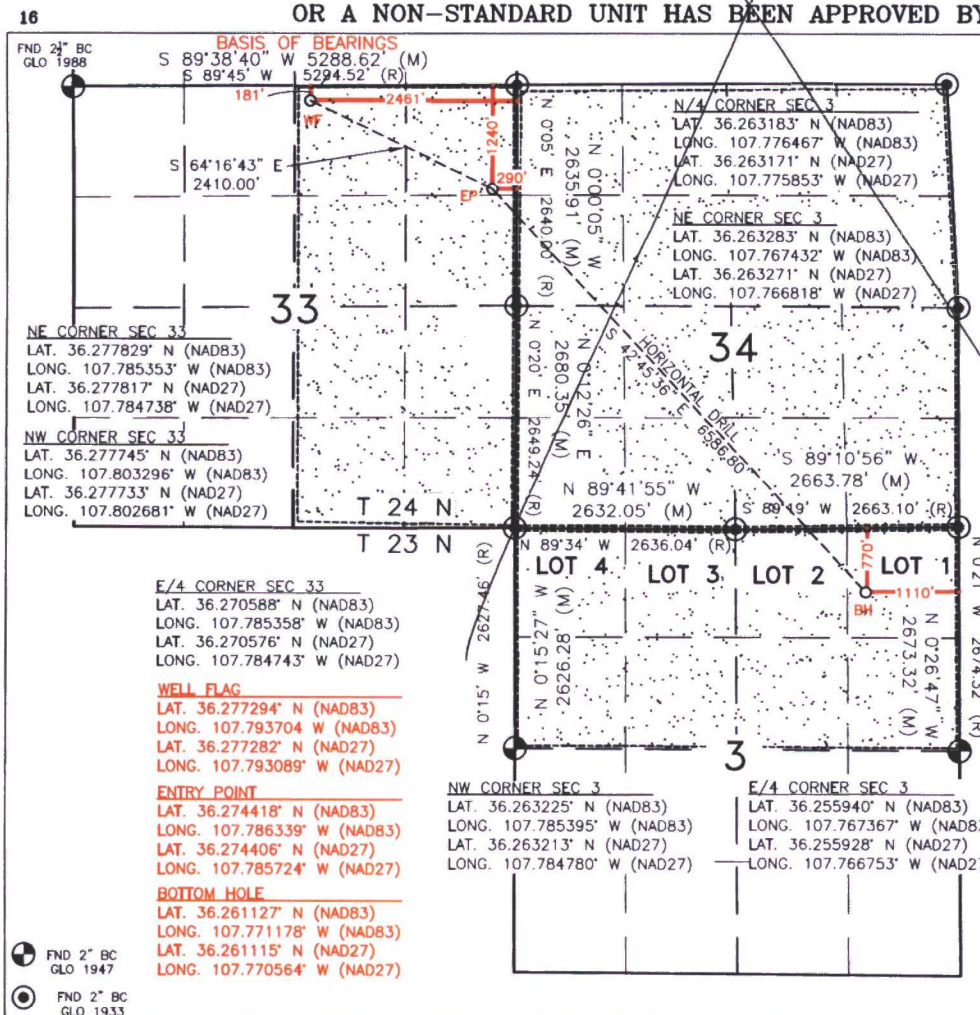
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	24N	9W		181'	NORTH	2461'	EAST	SAN JUAN

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
A	3	23N	9W	1	770'	NORTH	1110'	EAST	SAN JUAN

12 Dedicated Acres 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 (5/2); 25-28, 33-36, 1-4, 9-10 (ALL); 5 (W/2); 11 (NW/4) - UNDIVIDED UNIT		13 Joint or Infill	14 Consolidation Code	15 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 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.

Katie Wegner 01/26/17
Signature Date

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

