

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David R. Catanach Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 8-3-15

Well information;

Operator Encana, Well Name and Number Nageez; Unit # 103H

API# 30-045-35704, Section 22, Township 24 N/S, Range 9 E/W

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☒ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.


NMOCD Approved by Signature

11-30-2015
Date KC

NOV 19 2015

Bureau of Land Management
Farmington Field OfficeForm 3160-3
(March 2012)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM 12374 (BHL)	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A	
2. Name of Operator: Encana Oil & Gas (USA) Inc.		7. If Unit or CA Agreement, Name and No. Nageezi Unit NMNM 132981X	
3a. Address: 370 17th Street, Suite 1700 Denver, CO 80202		8. Lease Name and Well No. Nageezi Unit 103H	
3b. Phone No. (include area code) 720-876-5919		9. API Well No. 30-045-35704	
4. Location of Well (Report location clearly and in accordance with city State requirements.) At surface: 1,745' FSL, 239' FWL, Section 22, T24N, R9W At proposed prod. zone: 1,580' FSL, 330' FWL, Section 21, T24N, R9W		10. Field and Pool or Exploratory Nageezi Unit Horizontal Oil Pool	
11. Sec., T, R, M, or Blk. and Survey or Area Section 22, T24N, R9W NMNM		12. County or Parish San Juan	
13. Distance in miles and direction from nearest town or post office* +/- 33.3 miles South from the intersection of US HWY 64 & US HWY 550 in Bloomfield, NM		13. State NM	
15. Distance from proposed* location to nearest property or lease line, ft. BHL is 330' FWL Section 21, T24N, R9W (Also to nearest drg. unit line, if any)		16. No. of acres in lease NMNM 12374- 2,240.0 acres (BHL Lease)	
17. Spacing Unit dedicated to this well 9,135.51 acres - S2 SEC 23-23, ALL SEC 24-28, 33-35 T24N R9W; ALL SEC 1-4, E2 SEC 5; ALL OF SEC 9-10 & NW SEC 11 T23N R11W		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL is +/- 30' South of Nageezi Unit 102H	
19. Proposed Depth: 5,271' TVD, 10,302' MD		20. BLM/BIA Bond No. on file COB-000235	
21. Elevations (Show whether DF, KIM, RT, (il., etc.) 6,819' GL; 6,835' KB		22. Approximate date work will start* 03/01/2015	
23. Estimated duration 20 days		24. Attachments	

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

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

25. Signature:	Name (Printed Typed) Katie Wegner	Date 08/03/2015
Title Regulatory Analyst		
Approved by (Signature):	Name (Printed Typed) AFN	Date 11/17/15
Title AFN	Office FFO	

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

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

(Continued on page 2)

*(Instructions on page 2)

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

NMOCD AV

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

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

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-8161 Fax: (505) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

DISTRICT III

1000 Edo Bravos Rd., Aztec, N.M. 87410
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3460 Fax: (505) 478-3462

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

¹ API Number 30-045-35704		² Pool Code 98080	³ Pool Name NAGEEZI UNIT HORIZONTAL OIL POOL
⁴ Property Code 315244	⁵ Property Name NAGEEZI UNIT		⁶ Well Number 103H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.		⁹ Elevation 6818.6'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	22	24N	9W		1745'	SOUTH	239'	WEST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	21	24N	9W		1580'	SOUTH	330'	WEST	SAN JUAN

¹² Dedicated Acres PENETRATED SPACING UNITS: (S/2 SEC 21- 320 ACRES) 9,135.51 ACRES - S/2 SEC 21-23; ALL 28-28, 33-35, T24N, R9W; ALL SEC. 1-4, E/2 SEC. 5; ALL OF SEC. 9-10 & NW SEC. 11, T23N, R11W-UNDIVIDED UNIT	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13856 (9,135.51 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**

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.

Jillian McGrath 7/30/15
Signature Date
Jillian McGrath
Printed Name
Jillian.McGrath@encana.com
E-mail Address

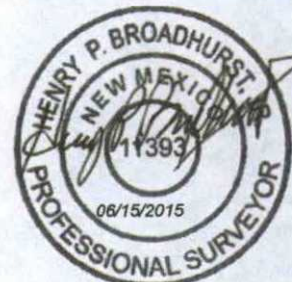
SURVEYOR CERTIFICATION

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.

MAY 19, 2014

Date of Survey

Signature and Seal of Professional Surveyor:

**BOTTOM HOLE**

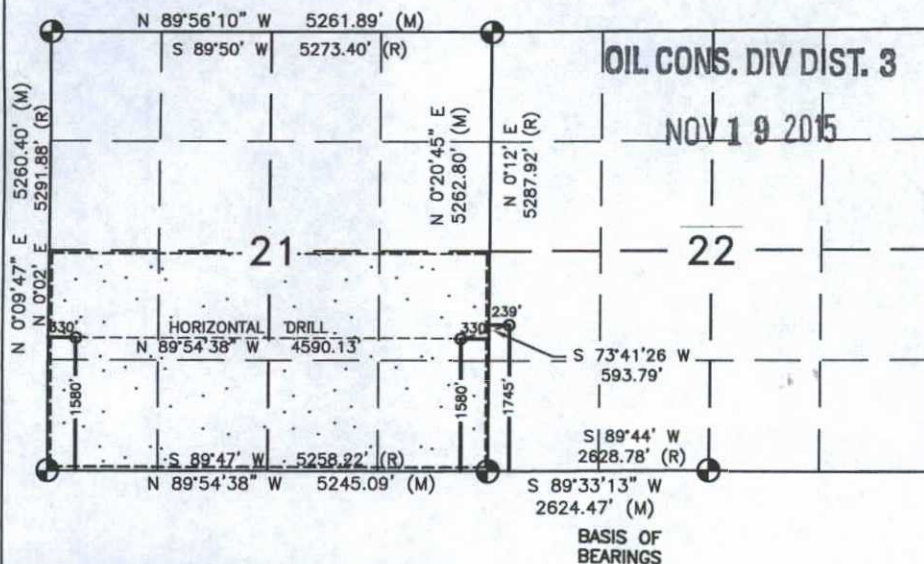
LAT. 36.296691° N (NAD83)
LONG. 107.802422° W (NAD83)
LAT. 36.296679° N (NAD27)
LONG. 107.801807° W (NAD27)

ENTRY POINT

LAT. 36.296673° N (NAD83)
LONG. 107.786851° W (NAD83)
LAT. 36.296661° N (NAD27)
LONG. 107.786362° W (NAD27)

WELL FLAG

LAT. 36.297131° N (NAD83)
LONG. 107.784918° W (NAD83)
LAT. 36.297119° N (NAD27)
LONG. 107.784303° W (NAD27)

**NORTHWEST CORNER SEC. 21**

LAT. 36.306799° N (NAD83)
LONG. 107.803508° W (NAD83)
LAT. 36.306787° N (NAD27)
LONG. 107.802893° W (NAD27)

SOUTHWEST CORNER SEC. 21

LAT. 36.292354° N (NAD83)
LONG. 107.803555° W (NAD83)
LAT. 36.292342° N (NAD27)
LONG. 107.802940° W (NAD27)

NORTHEAST CORNER SEC. 21

LAT. 36.306784° N (NAD83)
LONG. 107.785657° W (NAD83)
LAT. 36.306772° N (NAD27)
LONG. 107.785042° W (NAD27)

SOUTHEAST CORNER SEC. 21

LAT. 36.292333° N (NAD83)
LONG. 107.785764° W (NAD83)
LAT. 36.292321° N (NAD27)
LONG. 107.785149° W (NAD27)

ALL CORNERS
FND 2 1/2" BC
GLO 1933

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

811 S. First St., Artesia, N.M. 88210
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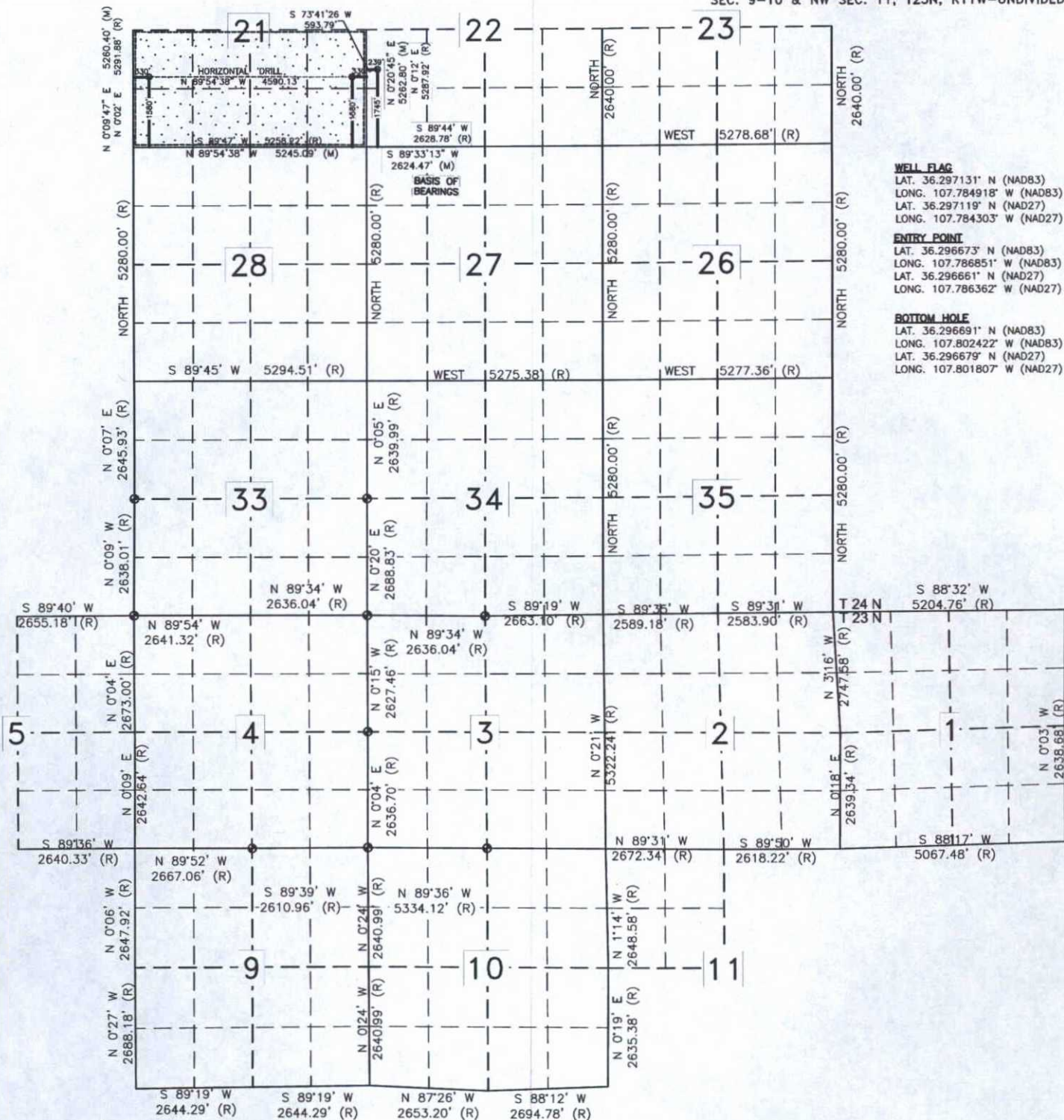
OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
NAGEEZI UNIT #103H

PENETRATED SPACING UNITS: (S/2 SEC 21- 320 ACRES)
9,135.51 ACRES - S/2 SEC 21-23; ALL 26-28,
33-35, T24N, R9W; ALL SEC. 1-4, E/2 SEC. 5; ALL OF
SEC. 9-10 & NW SEC. 11, T23N, R11W-UNDIVIDED UNIT



WELL FLAG

LAT. 36.297131° N (NAD83)
LONG. 107.784918° W (NAD83)
LAT. 36.297119° N (NAD27)
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BOTTOM HOLE

LAT. 36.296691° N (NAD83)
LONG. 107.802422° W (NAD83)
LAT. 36.296679° N (NAD27)
LONG. 107.801807° W (NAD27)

Nageezi Unit 103H**SHL: NW/4 SW/4 Sec 22 T24N R9W, 1745' FSL, 239' FWL****BHL: NW/4 SW/4 Sec 21 T24N R9W, 1580' FSL, 330' FWL****San Juan, New Mexico****Lease Number: NMNM 132981X****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
San Jose Fn.	n/a
Nacimiento Fn.	surface
Ojo Alamo Ss.	808
Kirtland Shale	1,000
Fruitland Coal	1,144
Pictured Cliffs Ss.	1,551
Lewis Shale	1,724
Cliffhouse Ss.	2,417
Menefee Fn.	3,141
Point Lookout Ss.	4,035
Mancos Shale	4,194
Mancos Silt	4,787
Gallup Fn.	5,040
Base Gallup	5,361

The referenced surface elevation is 6819', KB 6835'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,144
Oil/Gas	Pictured Cliffs Ss.	1,551
Oil/Gas	Cliffhouse Ss.	2,417
Gas	Menefee Fn.	3,141
Oil/Gas	Point Lookout Ss.	4,035
Oil/Gas	Mancos Shale	4,194
Oil/Gas	Mancos Silt	4,787
Oil/Gas	Gallup Fn.	5,040

All shows of fresh water and minerals will be reported and protected.

Nageezi Unit 103H**SHL: NW/4 SW/4 Sec 22 T24N R9W, 1745' FSL, 239' FWL****BHL: NW/4 SW/4 Sec 21 T24N R9W, 1580' FSL, 330' FWL****San Juan, New Mexico****Lease Number: NMNM 132981X****3. PRESSURE CONTROL**

- a) Pressure control equipment and configuration will be designed to meet 2M standards.
- b) Working pressure on rams and BOPE will be 3,000 psi.
- c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.
- d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
- e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
- f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.
- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times.
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

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

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Conductor	0'-60'	26"	16"	42.09#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5713'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5613'-10302'	6 1/8"	4 1/2"	11.6#	B80*, LTC New

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

*B80 pipe specifications are attached.

Casing design is subject to revision based on geologic conditions encountered.

Nageezi Unit 103H**SHL: NW/4 SW/4 Sec 22 T24N R9W, 1745' FSL, 239' FWL****BHL: NW/4 SW/4 Sec 21 T24N R9W, 1580' FSL, 330' FWL****San Juan, New Mexico****Lease Number: NMNM 132981X**

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1,500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

b) The proposed cementing program is as follows:

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	228 sks	Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5713'	100% open hole excess Stage 1 Lead: 533 sks Stage 1 Tail: 404 sks	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail: Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5613'- 10302'	50% OH excess Stage 1 Blend Total: 267sks	Blend: Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL- 52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk	Liner Hanger	N/A

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 400'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5271'/10302'	Gallup

Nageezi Unit 103H**SHL: NW/4 SW/4 Sec 22 T24N R9W, 1745' FSL, 239' FWL****BHL: NW/4 SW/4 Sec 21 T24N R9W, 1580' FSL, 330' FWL****San Juan, New Mexico****Lease Number: NMNM 117562 & NMNM 109390****6. DRILLING FLUIDS PROGRAM****a) Surface through Intermediate Casing Point:**

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60'/60'	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0'-500'/500'	Fresh Water	8.3-10	60-70	NC
8 3/4"	500'/500'-5295'/5713'	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"	5295'/5713'- 5271'/10302'	Fresh Water LSND	8.3-10	15-25	<15

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

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

7. TESTING, CORING, & LOGGING

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

Cased Hole:

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

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

The anticipated bottom hole pressure is +/- 2479 psi based on a 9.0 ppg at 5298' 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 1, 2015. 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 20 days.

LOC: NW1/4 SW1/4 Sec 22 T24N R9W, 1745' FS County: San Juan WELL: Nageezi Unit 103H			Encana Oil & Gas (USA) Inc.			ENG: 0 RIG: Unassigned GLE: 6818.6 RKBE: 6834.6			7/30/15
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60	60'		26	16" 42.09# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2	
Multi-Well pad take survey every stand and run anti-collision report prior to spud	None	San Jose Fn. Nacimiento Fn. 9 5/8" Csg	0 surface 500	 500.00		12 1/4	9 5/8" 36ppf J55 LTC TOC Surface with 100% OH Excess: 228 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water.	Fresh wtr 8.3-10	Vertical <1°
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Ss. Kirtland Shale Fruitland Coal Pictured Cliffs Ss. Lewis Shale Cliffhouse Ss. Menefee Fn. Point Lookout Ss. Mancos Shale	808 1,000 1,144 1,551 1,724 2,417 3,141 4,035 4,194			8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 938sks Stage 1 Lead: 533 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk. Stage 1 Tail: 404 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°
Surveys every 30' through the curve	Mud logger onsite	KOP Mancos Silt Gallup Fn. 7" Csg	400 4,787 5,040 5,295	400.00 5,713'					
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD Base Gallup	5,298 5,271 5,361	10,302		6 1/8	100' overlap at liner top 4589' Drilled Lateral		Horz Inc/TVD 90.3deg/5297.6ft TD = 10301.7 MD
MWD Gamma Directional							4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 267sks Stage 1 Blend: 267 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL-52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk.	WBM 8.3-10	

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 400', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 5713' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~55 deg, drill lateral to 10302' run 4 1/2 inch cemented liner



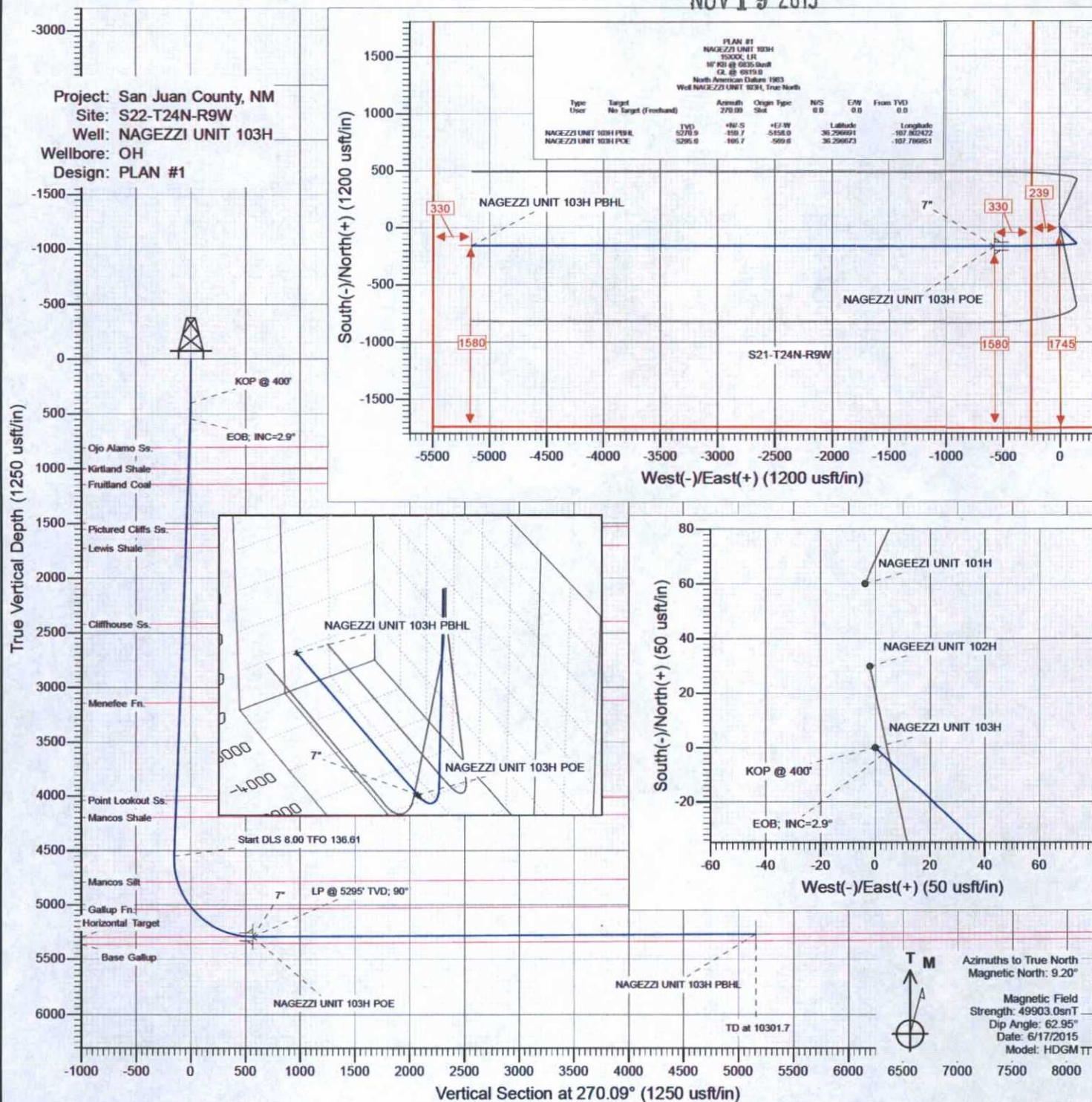
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	544.8	2.90	133.43	544.7	-2.5	2.7	2.00	133.43	-2.7	
4	4558.1	2.90	133.43	4552.9	-141.9	149.9	0.00	0.00	-150.1	
5	5713.2	90.30	270.09	5295.0	-166.7	-569.6	8.00	136.61	569.3	NAGEZZI UNIT 103H POE
6	10301.7	90.30	270.09	5270.9	-159.7	-5158.0	0.00	0.00	5157.7	NAGEZZI UNIT 103H PBHL

OIL CONS. DIV DIST. 3

NOV 19 2015

Project: San Juan County, NM
Site: S22-T24N-R9W
Well: NAGEZZI UNIT 103H
Wellbore: OH
Design: PLAN #1



WELL DETAILS: NAGEZZI UNIT 103H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1927458.91	2737358.40	36.297131	-107.784918	



NOV 19 2015

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S22-T24N-R9W
 Well: NAGEZZI UNIT 103H
 Wellbore: OH
 Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
 TVD Reference: 16' KB @ 6835.0usft
 MD Reference: 16' KB @ 6835.0usft
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Project San Juan County, NM

Map System: US State Plane 1983 System Datum: Mean Sea Level
 Geo Datum: North American Datum 1983
 Map Zone: New Mexico Western Zone

Site S22-T24N-R9W

Site Position: Northing: 1,927,518.97 usft Latitude: 36.297296
 From: Lat/Long Easting: 2,737,354.54 usft Longitude: -107.784931
 Position Uncertainty: 0.0 usft Slot Radius: 13-3/16" Grid Convergence: 0.03 °

Well NAGEZZI UNIT 103H

Well Position +N/-S 0.0 usft Northing: 1,927,458.91 usft Latitude: 36.297131
 +E/-W 0.0 usft Easting: 2,737,358.40 usft Longitude: -107.784918
 Position Uncertainty 0.0 usft Wellhead Elevation: 0.0 usft Ground Level: 6,819.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/17/2015	9.20	62.95	49,903

Design PLAN #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	270.09

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
544.8	2.90	133.43	544.7	-2.5	2.7	2.00	2.00	0.00	133.43	
4,558.1	2.90	133.43	4,552.9	-141.9	149.9	0.00	0.00	0.00	0.00	
5,713.2	90.30	270.09	5,295.0	-166.7	-569.6	8.00	7.57	11.83	136.61	NAGEZZI UNIT 103H
10,301.7	90.30	270.09	5,270.9	-159.7	-5,158.0	0.00	0.00	0.00	0.00	NAGEZZI UNIT 103H

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S22-T24N-R9W
 Well: NAGEZZI UNIT 103H
 Wellbore: OH
 Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
 TVD Reference: 16' KB @ 6835.0usft
 MD Reference: 16' KB @ 6835.0usft
 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
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
500.0	2.00	133.43	500.0	-1.2	1.3	-1.3	2.00	2.00	
544.8	2.90	133.43	544.7	-2.5	2.7	-2.7	2.00	2.00	EOB; INC=2.9°
600.0	2.90	133.43	599.9	-4.4	4.7	-4.7	0.00	0.00	
700.0	2.90	133.43	699.7	-7.9	8.4	-8.4	0.00	0.00	
800.0	2.90	133.43	799.6	-11.4	12.0	-12.0	0.00	0.00	
808.5	2.90	133.43	808.1	-11.7	12.3	-12.3	0.00	0.00	Ojo Alamo Ss.
900.0	2.90	133.43	899.5	-14.9	15.7	-15.7	0.00	0.00	
1,000.0	2.90	133.43	999.4	-18.3	19.4	-19.4	0.00	0.00	
1,000.7	2.90	133.43	1,000.1	-18.4	19.4	-19.4	0.00	0.00	Kirtland Shale
1,100.0	2.90	133.43	1,099.2	-21.8	23.0	-23.1	0.00	0.00	
1,145.0	2.90	133.43	1,144.1	-23.4	24.7	-24.7	0.00	0.00	Fruitland Coal
1,200.0	2.90	133.43	1,199.1	-25.3	26.7	-26.7	0.00	0.00	
1,300.0	2.90	133.43	1,299.0	-28.7	30.4	-30.4	0.00	0.00	
1,400.0	2.90	133.43	1,398.8	-32.2	34.0	-34.1	0.00	0.00	
1,500.0	2.90	133.43	1,498.7	-35.7	37.7	-37.8	0.00	0.00	
1,552.5	2.90	133.43	1,551.2	-37.5	39.6	-39.7	0.00	0.00	Pictured Cliffs Ss.
1,600.0	2.90	133.43	1,598.6	-39.2	41.4	-41.4	0.00	0.00	
1,700.0	2.90	133.43	1,698.5	-42.6	45.0	-45.1	0.00	0.00	
1,725.8	2.90	133.43	1,724.2	-43.5	46.0	-46.1	0.00	0.00	Lewis Shale
1,800.0	2.90	133.43	1,798.3	-46.1	48.7	-48.8	0.00	0.00	
1,900.0	2.90	133.43	1,898.2	-49.6	52.4	-52.5	0.00	0.00	
2,000.0	2.90	133.43	1,998.1	-53.1	56.0	-56.1	0.00	0.00	
2,100.0	2.90	133.43	2,098.0	-56.5	59.7	-59.8	0.00	0.00	
2,200.0	2.90	133.43	2,197.8	-60.0	63.4	-63.5	0.00	0.00	
2,300.0	2.90	133.43	2,297.7	-63.5	67.1	-67.2	0.00	0.00	
2,400.0	2.90	133.43	2,397.6	-67.0	70.7	-70.8	0.00	0.00	
2,419.8	2.90	133.43	2,417.4	-67.6	71.4	-71.6	0.00	0.00	Cliffhouse Ss.
2,500.0	2.90	133.43	2,497.4	-70.4	74.4	-74.5	0.00	0.00	
2,600.0	2.90	133.43	2,597.3	-73.9	78.1	-78.2	0.00	0.00	
2,700.0	2.90	133.43	2,697.2	-77.4	81.7	-81.9	0.00	0.00	
2,800.0	2.90	133.43	2,797.1	-80.8	85.4	-85.5	0.00	0.00	
2,900.0	2.90	133.43	2,896.9	-84.3	89.1	-89.2	0.00	0.00	
3,000.0	2.90	133.43	2,996.8	-87.8	92.7	-92.9	0.00	0.00	
3,100.0	2.90	133.43	3,096.7	-91.3	96.4	-96.5	0.00	0.00	
3,144.9	2.90	133.43	3,141.5	-92.8	98.1	-98.2	0.00	0.00	Menefee Fn.
3,200.0	2.90	133.43	3,196.5	-94.7	100.1	-100.2	0.00	0.00	
3,300.0	2.90	133.43	3,296.4	-98.2	103.7	-103.9	0.00	0.00	
3,400.0	2.90	133.43	3,396.3	-101.7	107.4	-107.6	0.00	0.00	
3,500.0	2.90	133.43	3,496.2	-105.2	111.1	-111.2	0.00	0.00	
3,600.0	2.90	133.43	3,596.0	-108.6	114.8	-114.9	0.00	0.00	
3,700.0	2.90	133.43	3,695.9	-112.1	118.4	-118.6	0.00	0.00	
3,800.0	2.90	133.43	3,795.8	-115.6	122.1	-122.3	0.00	0.00	
3,900.0	2.90	133.43	3,895.7	-119.1	125.8	-125.9	0.00	0.00	
4,000.0	2.90	133.43	3,995.5	-122.5	129.4	-129.6	0.00	0.00	
4,040.2	2.90	133.43	4,035.6	-123.9	130.9	-131.1	0.00	0.00	Point Lookout Ss.
4,100.0	2.90	133.43	4,095.4	-126.0	133.1	-133.3	0.00	0.00	
4,199.4	2.90	133.43	4,194.7	-129.5	136.7	-136.9	0.00	0.00	Mancos Shale

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S22-T24N-R9W
Well: NAGEZZI UNIT 103H
Wellbore: OH
Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
TVD Reference: 16' KB @ 6835.0usft
MD Reference: 16' KB @ 6835.0usft
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
4,200.0	2.90	133.43	4,195.3	-129.5	136.8	-137.0	0.00	0.00	
4,300.0	2.90	133.43	4,295.1	-132.9	140.4	-140.6	0.00	0.00	
4,400.0	2.90	133.43	4,395.0	-136.4	144.1	-144.3	0.00	0.00	
4,500.0	2.90	133.43	4,494.9	-139.9	147.8	-148.0	0.00	0.00	
4,558.1	2.90	133.43	4,552.9	-141.9	149.9	-150.1	0.00	0.00	Start DLS 8.00 TFO 136.61
4,600.0	2.35	212.10	4,594.8	-143.4	150.2	-150.4	8.00	-1.31	
4,700.0	9.45	258.04	4,694.2	-146.8	141.1	-141.3	8.00	7.11	
4,796.2	17.05	263.58	4,787.8	-150.0	119.3	-119.5	8.00	7.90	Mancos Silt
4,800.0	17.35	263.70	4,791.4	-150.2	118.2	-118.4	8.00	7.94	
4,900.0	25.32	265.87	4,884.5	-153.3	82.0	-82.2	8.00	7.96	
5,000.0	33.30	267.05	4,971.6	-156.3	33.2	-33.4	8.00	7.98	
5,086.4	40.20	267.72	5,040.8	-158.6	-18.5	18.2	8.00	7.99	Gallup Fn.
5,100.0	41.28	267.81	5,051.1	-159.0	-27.3	27.1	8.00	7.99	
5,200.0	49.27	268.36	5,121.4	-161.3	-98.3	98.0	8.00	7.99	
5,300.0	57.27	268.80	5,181.2	-163.3	-178.3	178.1	8.00	7.99	
5,400.0	65.26	269.16	5,229.2	-164.8	-265.9	265.7	8.00	7.99	
5,500.0	73.25	269.48	5,264.6	-165.9	-359.4	359.1	8.00	7.99	
5,600.0	81.25	269.77	5,286.7	-166.6	-456.8	456.6	8.00	7.99	
5,700.0	89.24	270.05	5,294.9	-166.7	-556.4	556.1	8.00	8.00	
5,713.2	90.30	270.09	5,295.0	-166.7	-569.6	569.3	7.99	7.98	LP @ 5295' TVD; 90° - 7" - NAGEZZI UNIT 103
5,800.0	90.30	270.09	5,294.5	-166.6	-656.4	656.1	0.00	0.00	
5,900.0	90.30	270.09	5,294.0	-166.4	-756.4	756.1	0.00	0.00	
6,000.0	90.30	270.09	5,293.5	-166.3	-856.4	856.1	0.00	0.00	
6,100.0	90.30	270.09	5,293.0	-166.1	-956.4	956.1	0.00	0.00	
6,200.0	90.30	270.09	5,292.4	-166.0	-1,056.4	1,056.1	0.00	0.00	
6,300.0	90.30	270.09	5,291.9	-165.8	-1,156.4	1,156.1	0.00	0.00	
6,400.0	90.30	270.09	5,291.4	-165.7	-1,256.4	1,256.1	0.00	0.00	
6,500.0	90.30	270.09	5,290.9	-165.5	-1,356.4	1,356.1	0.00	0.00	
6,600.0	90.30	270.09	5,290.3	-165.4	-1,456.4	1,456.1	0.00	0.00	
6,700.0	90.30	270.09	5,289.8	-165.2	-1,556.4	1,556.1	0.00	0.00	
6,800.0	90.30	270.09	5,289.3	-165.1	-1,656.4	1,656.1	0.00	0.00	
6,900.0	90.30	270.09	5,288.8	-164.9	-1,756.4	1,756.1	0.00	0.00	
7,000.0	90.30	270.09	5,288.2	-164.8	-1,856.4	1,856.1	0.00	0.00	
7,100.0	90.30	270.09	5,287.7	-164.6	-1,956.4	1,956.1	0.00	0.00	
7,200.0	90.30	270.09	5,287.2	-164.4	-2,056.4	2,056.1	0.00	0.00	
7,300.0	90.30	270.09	5,286.7	-164.3	-2,156.4	2,156.1	0.00	0.00	
7,400.0	90.30	270.09	5,286.1	-164.1	-2,256.4	2,256.1	0.00	0.00	
7,500.0	90.30	270.09	5,285.6	-164.0	-2,356.4	2,356.1	0.00	0.00	
7,600.0	90.30	270.09	5,285.1	-163.8	-2,456.4	2,456.1	0.00	0.00	
7,700.0	90.30	270.09	5,284.6	-163.7	-2,556.4	2,556.1	0.00	0.00	
7,800.0	90.30	270.09	5,284.0	-163.5	-2,656.4	2,656.1	0.00	0.00	
7,900.0	90.30	270.09	5,283.5	-163.4	-2,756.4	2,756.1	0.00	0.00	
8,000.0	90.30	270.09	5,283.0	-163.2	-2,856.4	2,856.1	0.00	0.00	
8,100.0	90.30	270.09	5,282.5	-163.1	-2,956.4	2,956.1	0.00	0.00	
8,200.0	90.30	270.09	5,281.9	-162.9	-3,056.4	3,056.1	0.00	0.00	
8,300.0	90.30	270.09	5,281.4	-162.8	-3,156.4	3,156.1	0.00	0.00	
8,400.0	90.30	270.09	5,280.9	-162.6	-3,256.4	3,256.1	0.00	0.00	
8,500.0	90.30	270.09	5,280.4	-162.5	-3,356.3	3,356.1	0.00	0.00	
8,600.0	90.30	270.09	5,279.8	-162.3	-3,456.3	3,456.1	0.00	0.00	
8,700.0	90.30	270.09	5,279.3	-162.2	-3,556.3	3,556.1	0.00	0.00	
8,800.0	90.30	270.09	5,278.8	-162.0	-3,656.3	3,656.1	0.00	0.00	
8,900.0	90.30	270.09	5,278.3	-161.8	-3,756.3	3,756.1	0.00	0.00	

Planning Report

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 Wellbore: OH
 Design: PLAN #1

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 MD Reference: 16' KB @ 6835.0usft
 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
9,000.0	90.30	270.09	5,277.7	-161.7	-3,856.3	3,856.1	0.00	0.00	
9,100.0	90.30	270.09	5,277.2	-161.5	-3,956.3	3,956.1	0.00	0.00	
9,200.0	90.30	270.09	5,276.7	-161.4	-4,056.3	4,056.1	0.00	0.00	
9,300.0	90.30	270.09	5,276.2	-161.2	-4,156.3	4,156.1	0.00	0.00	
9,400.0	90.30	270.09	5,275.6	-161.1	-4,256.3	4,256.1	0.00	0.00	
9,500.0	90.30	270.09	5,275.1	-160.9	-4,356.3	4,356.1	0.00	0.00	
9,600.0	90.30	270.09	5,274.6	-160.8	-4,456.3	4,456.1	0.00	0.00	
9,700.0	90.30	270.09	5,274.1	-160.6	-4,556.3	4,556.1	0.00	0.00	
9,800.0	90.30	270.09	5,273.5	-160.5	-4,656.3	4,656.1	0.00	0.00	
9,900.0	90.30	270.09	5,273.0	-160.3	-4,756.3	4,756.1	0.00	0.00	
10,000.0	90.30	270.09	5,272.5	-160.2	-4,856.3	4,856.1	0.00	0.00	
10,100.0	90.30	270.09	5,272.0	-160.0	-4,956.3	4,956.1	0.00	0.00	
10,200.0	90.30	270.09	5,271.4	-159.9	-5,056.3	5,056.1	0.00	0.00	
10,300.0	90.30	270.09	5,270.9	-159.7	-5,156.3	5,156.1	0.00	0.00	
10,301.7	90.30	270.09	5,270.9	-159.7	-5,158.0	5,157.7	0.00	0.00	TD at 10301.7 - NAGEZZI UNIT 103H PBHL

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
NAGEZZI UNIT 103H Pt	0.00	0.00	5,295.0	-166.7	-569.6	1,927,291.91	2,736,788.87	36.296673	-107.786851
- plan hits target center									
- Point									
NAGEZZI UNIT 103H Pt	0.00	0.00	5,270.9	-159.7	-5,158.0	1,927,296.63	2,732,200.48	36.296691	-107.802422
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,713.2	5,295.0	7"	0	0

Planning Report

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 Company: EnCana Oil & Gas (USA) Inc
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 Wellbore: OH
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 Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")
808.5	808.0	Ojo Alamo Ss.		-0.30	
1,000.7	1,000.0	Kirtland Shale		-0.30	
1,145.0	1,144.0	Fruitland Coal		-0.30	
1,552.5	1,551.0	Pictured Cliffs Ss.		-0.30	
1,725.8	1,724.0	Lewis Shale		-0.30	
2,419.8	2,417.0	Cliffhouse Ss.		-0.30	
3,144.9	3,141.0	Menefee Fn.		-0.30	
4,040.2	4,035.0	Point Lookout Ss.		-0.30	
4,199.4	4,194.0	Mancos Shale		-0.30	
4,796.2	4,787.0	Mancos Silt		-0.30	
5,086.4	5,040.0	Gallup Fn.		-0.30	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.0	400.0	0.0	0.0	KOP @ 400'
544.8	544.7	-2.5	2.7	EOB; INC=2.9°
4,558.1	4,552.9	-141.9	149.9	Start DLS 8.00 TFO 136.61
5,713.2	5,295.0	-166.7	-569.6	LP @ 5295' TVD; 90°
10,301.7	5,270.9	-159.7	-5,158.0	TD at 10301.7



EnCana Oil & Gas (USA) Inc

San Juan County, NM

S22-T24N-R9W

NAGEZZI UNIT 103H

OH

PLAN #1

Anticollision Report

17 June, 2015

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEZZI UNIT 103H
Project:	San Juan County, NM	TVD Reference:	16' KB @ 6835.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	16' KB @ 6835.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	NAGEZZI UNIT 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference	PLAN #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,236.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	6/17/2015	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	10,301.7	PLAN #1 (OH)	Geolink MWD	Geolink MWD

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						
S22-T24N-R9W						
NAGEEZI UNIT 101H - OH - PLAN #1	400.0	400.0	60.2	58.8	44.901	CC, ES
NAGEEZI UNIT 101H - OH - PLAN #1	10,301.7	10,360.0	651.4	393.8	2.529	SF
NAGEEZI UNIT 102H - OH - PLAN #1	400.0	400.0	29.9	28.6	22.322	CC
NAGEEZI UNIT 102H - OH - PLAN #1	1,646.8	1,651.9	30.0	23.8	4.868	ES
NAGEEZI UNIT 102H - OH - PLAN #1	10,301.7	10,365.2	659.9	402.0	2.558	SF

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S22-T24N-R9W
Site Error: 0.0usft
Reference Well: NAGEZZI UNIT 103H
Well Error: 0.0usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
TVD Reference: 16' KB @ 6835.0usft
MD Reference: 16' KB @ 6835.0usft
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 S22-T24N-R9W - NAGEZZI UNIT 101H - OH - PLAN #1													Offset Site Error: 0.0 usft
Survey Program: 0-Goolink MWD													Offset Well Error: 0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-3.65	60.1	-3.8	60.2				
100.0	100.0	100.0	100.0	0.1	0.1	-3.65	60.1	-3.8	60.2	59.9	0.29	205.263	
200.0	200.0	200.0	200.0	0.3	0.3	-3.65	60.1	-3.8	60.2	59.5	0.64	93.707	
300.0	300.0	300.0	300.0	0.5	0.5	-3.65	60.1	-3.8	60.2	59.2	0.99	60.712	
400.0	400.0	400.0	400.0	0.7	0.7	-3.65	60.1	-3.8	60.2	58.8	1.34	44.901 CC, ES	
500.0	500.0	500.0	500.0	0.8	0.8	-138.17	60.1	-3.8	61.5	59.8	1.69	36.367	
600.0	599.9	597.9	597.9	1.0	1.0	-140.11	61.6	-3.2	66.5	64.5	2.04	32.622	
700.0	699.7	695.5	695.4	1.2	1.2	-140.59	66.2	-1.1	74.8	72.4	2.39	31.302	
800.0	799.6	792.8	792.3	1.4	1.4	-139.82	73.7	2.2	86.0	83.2	2.74	31.329	
900.0	899.5	892.1	891.1	1.6	1.6	-138.83	82.6	6.1	98.3	95.2	3.11	31.623	
1,000.0	999.4	991.3	989.8	1.8	1.8	-138.06	91.5	10.1	110.7	107.2	3.47	31.846	
1,100.0	1,099.2	1,090.5	1,088.6	2.0	2.1	-137.45	100.4	14.0	123.0	119.2	3.84	32.020	
1,200.0	1,199.1	1,189.7	1,187.3	2.2	2.3	-136.95	109.3	17.9	135.4	131.2	4.21	32.162	
1,300.0	1,299.0	1,289.0	1,286.1	2.4	2.5	-136.53	118.2	21.9	147.8	143.2	4.58	32.278	
1,400.0	1,398.8	1,388.2	1,384.8	2.6	2.8	-136.18	127.1	25.8	160.2	155.2	4.95	32.376	
1,500.0	1,498.7	1,487.4	1,483.6	2.8	3.0	-135.88	136.0	29.7	172.6	167.3	5.32	32.459	
1,600.0	1,598.6	1,586.6	1,582.3	3.0	3.2	-135.62	144.9	33.6	185.0	179.3	5.69	32.531	
1,700.0	1,698.5	1,685.9	1,681.0	3.1	3.5	-135.39	153.8	37.6	197.4	191.3	6.06	32.594	
1,800.0	1,798.3	1,785.1	1,779.8	3.3	3.7	-135.19	162.7	41.5	209.8	203.4	6.43	32.650	
1,900.0	1,898.2	1,884.3	1,878.5	3.5	3.9	-135.01	171.6	45.4	222.2	215.4	6.80	32.699	
2,000.0	1,998.1	1,983.5	1,977.3	3.7	4.2	-134.85	180.5	49.4	234.6	227.4	7.17	32.743	
2,100.0	2,098.0	2,082.8	2,076.0	3.9	4.4	-134.71	189.4	53.3	247.0	239.5	7.54	32.782	
2,200.0	2,197.8	2,182.0	2,174.8	4.1	4.7	-134.58	198.3	57.2	259.4	251.5	7.91	32.818	
2,300.0	2,297.7	2,281.2	2,273.5	4.3	4.9	-134.46	207.2	61.2	271.9	263.6	8.28	32.851	
2,400.0	2,397.6	2,380.4	2,372.3	4.5	5.1	-134.35	216.1	65.1	284.3	275.6	8.65	32.880	
2,500.0	2,497.4	2,479.7	2,471.0	4.7	5.4	-134.25	225.0	69.0	296.7	287.7	9.02	32.907	
2,600.0	2,597.3	2,578.9	2,569.8	4.9	5.6	-134.16	233.9	73.0	309.1	299.7	9.39	32.932	
2,700.0	2,697.2	2,678.1	2,668.5	5.1	5.9	-134.08	242.8	76.9	321.5	311.8	9.76	32.955	
2,800.0	2,797.1	2,777.3	2,767.3	5.3	6.1	-134.00	251.7	80.8	334.0	323.8	10.13	32.977	
2,900.0	2,896.9	2,876.6	2,866.0	5.5	6.3	-133.93	260.6	84.7	346.4	335.9	10.50	32.997	
3,000.0	2,996.8	2,975.8	2,964.8	5.7	6.6	-133.86	269.5	88.7	358.8	347.9	10.87	33.015	
3,100.0	3,096.7	3,075.0	3,063.5	5.9	6.8	-133.80	278.4	92.6	371.2	360.0	11.24	33.032	
3,200.0	3,196.5	3,174.2	3,162.2	6.1	7.1	-133.74	287.3	96.5	383.6	372.0	11.61	33.048	
3,300.0	3,296.4	3,273.5	3,261.0	6.3	7.3	-133.68	296.2	100.5	396.1	384.1	11.98	33.064	
3,400.0	3,396.3	3,372.7	3,359.7	6.5	7.5	-133.63	305.1	104.4	408.5	396.1	12.35	33.078	
3,500.0	3,496.2	3,471.9	3,458.5	6.7	7.8	-133.58	314.1	108.3	420.9	408.2	12.72	33.091	
3,600.0	3,596.0	3,571.1	3,557.2	6.9	8.0	-133.54	323.0	112.3	433.3	420.2	13.09	33.104	
3,700.0	3,695.9	3,670.4	3,656.0	7.0	8.3	-133.49	331.9	116.2	445.8	432.3	13.46	33.116	
3,800.0	3,795.8	3,769.6	3,754.7	7.2	8.5	-133.45	340.8	120.1	458.2	444.4	13.83	33.127	
3,900.0	3,895.7	3,868.8	3,853.5	7.4	8.8	-133.41	349.7	124.1	470.6	456.4	14.20	33.138	
4,000.0	3,995.5	3,968.0	3,952.2	7.6	9.0	-133.38	358.6	128.0	483.0	468.5	14.57	33.148	
4,100.0	4,095.4	4,067.3	4,051.0	7.8	9.2	-133.34	367.5	131.9	495.5	480.5	14.94	33.157	
4,200.0	4,195.3	4,166.5	4,149.7	8.0	9.5	-133.31	376.4	135.9	507.9	492.6	15.31	33.166	
4,300.0	4,295.1	4,265.7	4,248.5	8.2	9.7	-133.28	385.3	139.8	520.3	504.6	15.68	33.175	
4,400.0	4,395.0	4,364.9	4,347.2	8.4	10.0	-133.25	394.2	143.7	532.7	516.7	16.05	33.183	
4,500.0	4,494.9	4,464.2	4,445.9	8.6	10.2	-133.22	403.1	147.6	545.2	528.7	16.42	33.191	
4,600.0	4,594.8	4,563.3	4,544.7	8.8	10.5	147.90	412.0	151.6	557.6	540.8	16.78	33.231	
4,700.0	4,694.2	4,662.5	4,643.4	8.9	10.7	102.24	420.9	153.8	570.1	553.1	17.02	33.492	
4,800.0	4,791.4	4,763.5	4,743.3	9.0	10.8	97.01	429.9	143.6	582.6	565.4	17.15	33.970	
4,900.0	4,884.5	4,866.4	4,842.8	9.0	11.0	95.25	438.9	118.9	594.9	577.6	17.24	34.496	
5,000.0	4,971.6	4,971.5	4,939.6	9.1	11.1	94.45	447.7	79.1	606.6	589.2	17.43	34.798	
5,100.0	5,051.1	5,078.7	5,031.3	9.4	11.3	94.05	456.1	24.4	617.5	599.6	17.91	34.481	

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

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S22-T24N-R9W
Site Error: 0.0usft
Reference Well: NAGEZZI UNIT 103H
Well Error: 0.0usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
TVD Reference: 16' KB @ 6835.0usft
MD Reference: 16' KB @ 6835.0usft
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 S22-T24N-R9W - NAGEZZI UNIT 101H - OH - PLAN #1														Offset Site Error:	0.0 usft
Survey Program: O-Geoclink MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
5,200.0	5,121.4	5,188.1	5,115.3	9.9	11.6	93.83	463.8	-44.9	627.4	608.5	18.87	33.252			
5,300.0	5,181.2	5,299.3	5,189.0	10.7	12.1	93.72	470.6	-127.8	635.9	615.4	20.54	30.958			
5,400.0	5,229.2	5,412.3	5,249.9	12.0	13.0	93.65	476.2	-222.7	642.9	619.8	23.05	27.895			
5,500.0	5,264.6	5,526.7	5,295.7	13.6	14.4	93.60	480.6	-327.3	648.0	621.7	26.33	24.608			
5,600.0	5,286.7	5,642.1	5,324.4	15.5	16.2	93.56	483.3	-438.9	651.3	621.0	30.26	21.520			
5,700.0	5,294.9	5,758.0	5,335.0	17.5	18.4	93.52	484.5	-554.2	652.5	617.8	34.63	18.843			
5,800.0	5,294.5	5,859.6	5,334.6	19.6	20.5	93.52	484.6	-655.8	652.5	613.5	38.98	16.739			
5,900.0	5,294.0	5,959.6	5,334.1	21.9	22.6	93.52	484.8	-755.8	652.4	609.0	43.43	15.024			
6,000.0	5,293.5	6,059.6	5,333.5	24.1	24.8	93.52	484.9	-855.8	652.4	604.4	47.97	13.600			
6,100.0	5,293.0	6,159.6	5,333.0	26.4	27.0	93.52	485.0	-955.8	652.4	599.8	52.59	12.405			
6,200.0	5,292.4	6,259.6	5,332.5	28.8	29.3	93.52	485.2	-1,055.8	652.4	595.1	57.26	11.393			
6,300.0	5,291.9	6,359.6	5,332.0	31.1	31.6	93.52	485.3	-1,155.8	652.3	590.4	61.97	10.526			
6,400.0	5,291.4	6,459.6	5,331.4	33.5	33.9	93.52	485.4	-1,255.8	652.3	585.6	66.72	9.777			
6,500.0	5,290.9	6,559.6	5,330.9	35.9	36.3	93.52	485.5	-1,355.7	652.3	580.8	71.49	9.124			
6,600.0	5,290.3	6,659.6	5,330.4	38.3	38.7	93.52	485.7	-1,455.7	652.3	576.0	76.28	8.551			
6,700.0	5,289.8	6,759.6	5,329.9	40.7	41.1	93.52	485.8	-1,555.7	652.2	571.1	81.09	8.043			
6,800.0	5,289.3	6,859.6	5,329.3	43.1	43.4	93.52	485.9	-1,655.7	652.2	566.3	85.92	7.591			
6,900.0	5,288.8	6,959.6	5,328.8	45.5	45.8	93.52	486.1	-1,755.7	652.2	561.4	90.76	7.186			
7,000.0	5,288.2	7,059.6	5,328.3	47.9	48.3	93.52	486.2	-1,855.7	652.2	556.6	95.60	6.822			
7,100.0	5,287.7	7,159.6	5,327.8	50.4	50.7	93.52	486.3	-1,955.7	652.1	551.7	100.46	6.492			
7,200.0	5,287.2	7,259.6	5,327.2	52.8	53.1	93.52	486.4	-2,055.7	652.1	546.8	105.32	6.192			
7,300.0	5,286.7	7,359.6	5,326.7	55.2	55.5	93.52	486.6	-2,155.7	652.1	541.9	110.20	5.918			
7,400.0	5,286.1	7,459.6	5,326.2	57.7	57.9	93.52	486.7	-2,255.7	652.1	537.0	115.07	5.667			
7,500.0	5,285.6	7,559.6	5,325.7	60.1	60.4	93.52	486.8	-2,355.7	652.1	532.1	119.96	5.436			
7,600.0	5,285.1	7,659.6	5,325.2	62.6	62.8	93.52	487.0	-2,455.7	652.0	527.2	124.84	5.223			
7,700.0	5,284.6	7,759.6	5,324.6	65.0	65.3	93.52	487.1	-2,555.7	652.0	522.3	129.73	5.026			
7,800.0	5,284.0	7,859.6	5,324.1	67.5	67.7	93.52	487.2	-2,655.7	652.0	517.4	134.63	4.843			
7,900.0	5,283.5	7,959.6	5,323.6	69.9	70.1	93.52	487.3	-2,755.7	652.0	512.4	139.52	4.673			
8,000.0	5,283.0	8,059.6	5,323.1	72.4	72.6	93.52	487.5	-2,855.7	651.9	507.5	144.42	4.514			
8,100.0	5,282.5	8,159.6	5,322.5	74.8	75.0	93.52	487.6	-2,955.7	651.9	502.6	149.33	4.366			
8,200.0	5,281.9	8,259.6	5,322.0	77.3	77.5	93.52	487.7	-3,055.7	651.9	497.7	154.23	4.227			
8,300.0	5,281.4	8,359.6	5,321.5	79.8	79.9	93.52	487.9	-3,155.7	651.9	492.7	159.14	4.096			
8,400.0	5,280.9	8,459.6	5,321.0	82.2	82.4	93.52	488.0	-3,255.7	651.8	487.8	164.05	3.973			
8,500.0	5,280.4	8,559.6	5,320.4	84.7	84.8	93.53	488.1	-3,355.7	651.8	482.9	168.96	3.858			
8,600.0	5,279.8	8,659.6	5,319.9	87.1	87.3	93.53	488.3	-3,455.7	651.8	477.9	173.87	3.749			
8,700.0	5,279.3	8,759.6	5,319.4	89.6	89.8	93.53	488.4	-3,555.7	651.8	473.0	178.79	3.646			
8,800.0	5,278.8	8,859.6	5,318.9	92.1	92.2	93.53	488.5	-3,655.7	651.7	468.0	183.70	3.548			
8,900.0	5,278.3	8,959.6	5,318.3	94.5	94.7	93.53	488.6	-3,755.7	651.7	463.1	188.62	3.455			
9,000.0	5,277.7	9,059.6	5,317.8	97.0	97.1	93.53	488.8	-3,855.7	651.7	458.2	193.54	3.367			
9,100.0	5,277.2	9,159.6	5,317.3	99.4	99.6	93.53	488.9	-3,955.7	651.7	453.2	198.46	3.284			
9,200.0	5,276.7	9,259.6	5,316.8	101.9	102.0	93.53	489.0	-4,055.7	651.6	448.3	203.38	3.204			
9,300.0	5,276.2	9,359.6	5,316.2	104.4	104.5	93.53	489.2	-4,155.7	651.6	443.3	208.30	3.128			
9,400.0	5,275.6	9,459.6	5,315.7	106.8	107.0	93.53	489.3	-4,255.7	651.6	438.4	213.22	3.056			
9,500.0	5,275.1	9,559.6	5,315.2	109.3	109.4	93.53	489.4	-4,355.7	651.6	433.4	218.14	2.987			
9,600.0	5,274.6	9,659.6	5,314.7	111.8	111.9	93.53	489.5	-4,455.7	651.6	428.5	223.06	2.921			
9,700.0	5,274.1	9,759.6	5,314.2	114.2	114.4	93.53	489.7	-4,555.7	651.5	423.5	227.99	2.858			
9,800.0	5,273.5	9,859.6	5,313.6	116.7	116.8	93.53	489.8	-4,655.7	651.5	418.6	232.91	2.797			
9,900.0	5,273.0	9,959.6	5,313.1	119.2	119.3	93.53	489.9	-4,755.7	651.5	413.6	237.84	2.739			
10,000.0	5,272.5	10,059.6	5,312.6	121.6	121.7	93.53	490.1	-4,855.7	651.5	408.7	242.76	2.684			
10,100.0	5,272.0	10,159.6	5,312.1	124.1	124.2	93.53	490.2	-4,955.7	651.4	403.7	247.69	2.630			
10,200.0	5,271.4	10,259.6	5,311.5	126.6	126.7	93.53	490.3	-5,055.7	651.4	398.8	252.62	2.579			
10,300.0	5,270.9	10,359.6	5,311.0	129.0	129.1	93.53	490.4	-5,155.7	651.4	393.8	257.54	2.529			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEZZI UNIT 103H
Project:	San Juan County, NM	TVD Reference:	16' KB @ 6835.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	16' KB @ 6835.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	NAGEZZI UNIT 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S22-T24N-R9W - NAGEZZI UNIT 101H - OH - PLAN #1													Offset Site Error:	0.0 usft
Survey Program: 0-Goolink MWD													Offset Well Error:	0.0 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)				
10,300.6	5,270.9	10,360.0	5,311.0	129.1	129.2	93.53	490.4	-5,156.1	651.4	393.8	257.57	2.529		
10,301.7	5,270.9	10,360.0	5,311.0	129.1	129.2	93.53	490.4	-5,156.1	651.4	393.8	257.60	2.529 SF		

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S22-T24N-R9W
Site Error: 0.0usft
Reference Well: NAGEZZI UNIT 103H
Well Error: 0.0usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
TVD Reference: 16' KB @ 6835.0usft
MD Reference: 16' KB @ 6835.0usft
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 S22-T24N-R9W - NAGEZZI UNIT 102H - OH - PLAN #1													Offset Site Error: 0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-3.95	29.9	-2.1	29.9	29.6	0.29	102.045	
100.0	100.0	100.0	100.0	0.1	0.1	-3.95	29.9	-2.1	29.9	29.3	0.64	46.586	
200.0	200.0	200.0	200.0	0.3	0.3	-3.95	29.9	-2.1	29.9	28.9	0.99	30.182	
300.0	300.0	300.0	300.0	0.5	0.5	-3.95	29.9	-2.1	29.9	28.6	1.34	22.322 CC	
400.0	400.0	400.0	400.0	0.7	0.7	-3.95	29.9	-2.1	29.9	28.6	1.34	22.322 CC	
500.0	500.0	500.0	500.0	0.8	0.8	-139.54	29.9	-2.1	31.2	29.5	1.69	18.474	
600.0	599.9	599.9	599.9	1.0	1.0	-144.53	29.9	-2.1	34.9	32.9	2.04	17.111	
700.0	699.7	699.7	699.7	1.2	1.2	-148.82	29.9	-2.1	39.2	36.8	2.39	16.364	
800.0	799.6	799.6	799.6	1.4	1.4	-152.26	29.9	-2.1	43.6	40.8	2.74	15.876	
900.0	899.5	899.5	899.5	1.6	1.5	-155.06	29.9	-2.1	48.1	45.0	3.09	15.543	
1,000.0	999.4	999.4	999.4	1.8	1.7	-157.38	29.9	-2.1	52.7	49.3	3.44	15.308	
1,100.0	1,099.2	1,101.2	1,101.1	2.0	1.9	-159.79	28.1	-1.7	55.7	51.9	3.80	14.678	
1,200.0	1,199.1	1,203.0	1,202.8	2.2	2.1	-163.03	22.8	-0.6	55.4	51.3	4.14	13.368	
1,300.0	1,299.0	1,304.7	1,304.1	2.4	2.3	-167.69	14.0	1.3	52.0	47.5	4.49	11.569	
1,400.0	1,398.8	1,405.8	1,404.5	2.6	2.5	-175.04	1.8	3.9	45.8	40.9	4.85	9.448	
1,500.0	1,498.7	1,506.3	1,503.7	2.8	2.8	172.24	-13.8	7.2	37.9	32.6	5.25	7.216	
1,600.0	1,598.6	1,605.8	1,601.3	3.0	3.1	148.95	-32.6	11.1	31.1	25.2	5.82	5.334	
1,646.8	1,645.3	1,651.9	1,646.4	3.0	3.2	133.77	-42.3	13.2	30.0	23.8	6.15	4.868 ES	
1,700.0	1,698.5	1,704.3	1,697.5	3.1	3.4	116.55	-53.3	15.5	31.4	24.9	6.48	4.846	
1,800.0	1,798.3	1,802.7	1,793.6	3.3	3.7	92.03	-74.1	19.9	40.4	33.6	6.87	5.881	
1,900.0	1,898.2	1,901.2	1,889.7	3.5	4.1	77.92	-94.9	24.3	54.0	46.8	7.16	7.532	
2,000.0	1,998.1	1,999.6	1,985.8	3.7	4.4	69.70	-115.6	28.7	69.4	61.9	7.46	9.302	
2,100.0	2,098.0	2,098.0	2,081.9	3.9	4.8	64.53	-136.4	33.1	85.7	77.9	7.78	11.024	
2,200.0	2,197.8	2,196.4	2,178.0	4.1	5.2	61.02	-157.2	37.5	102.5	94.4	8.11	12.647	
2,300.0	2,297.7	2,294.8	2,274.1	4.3	5.6	58.50	-178.0	41.9	119.6	111.1	8.45	14.158	
2,400.0	2,397.6	2,393.2	2,370.2	4.5	5.9	56.62	-198.7	46.3	136.8	128.0	8.79	15.561	
2,500.0	2,497.4	2,491.7	2,466.3	4.7	6.3	55.15	-219.5	50.7	154.1	145.0	9.14	16.862	
2,600.0	2,597.3	2,590.1	2,562.4	4.9	6.7	53.99	-240.3	55.1	171.6	162.1	9.49	18.069	
2,700.0	2,697.2	2,688.5	2,658.5	5.1	7.1	53.03	-261.1	59.5	189.0	179.2	9.85	19.190	
2,800.0	2,797.1	2,786.9	2,754.6	5.3	7.5	52.24	-281.8	63.8	206.5	196.3	10.21	20.234	
2,900.0	2,896.9	2,885.3	2,850.7	5.5	7.9	51.58	-302.6	68.2	224.1	213.5	10.57	21.208	
3,000.0	2,996.8	2,983.7	2,946.8	5.7	8.3	51.00	-323.4	72.6	241.7	230.7	10.93	22.118	
3,100.0	3,096.7	3,082.2	3,042.9	5.9	8.7	50.51	-344.1	77.0	259.3	248.0	11.29	22.971	
3,200.0	3,196.5	3,180.6	3,139.0	6.1	9.1	50.08	-364.9	81.4	276.9	265.2	11.65	23.770	
3,300.0	3,296.4	3,279.0	3,235.1	6.3	9.5	49.70	-385.7	85.8	294.5	282.5	12.01	24.521	
3,400.0	3,396.3	3,377.4	3,331.2	6.5	9.9	49.37	-406.5	90.2	312.1	299.8	12.37	25.229	
3,500.0	3,496.2	3,475.8	3,427.3	6.7	10.3	49.07	-427.2	94.6	329.8	317.0	12.73	25.896	
3,600.0	3,596.0	3,574.2	3,523.4	6.9	10.7	48.80	-448.0	99.0	347.4	334.3	13.10	26.526	
3,700.0	3,695.9	3,672.7	3,619.5	7.0	11.1	48.55	-468.8	103.4	365.1	351.6	13.46	27.122	
3,800.0	3,795.8	3,771.1	3,715.6	7.2	11.5	48.33	-489.6	107.8	382.7	368.9	13.82	27.687	
3,900.0	3,895.7	3,869.5	3,811.7	7.4	11.9	48.13	-510.3	112.2	400.4	386.2	14.19	28.223	
4,000.0	3,995.5	3,967.9	3,907.8	7.6	12.3	47.95	-531.1	116.6	418.1	403.5	14.55	28.731	
4,100.0	4,095.4	4,066.3	4,003.9	7.8	12.7	47.78	-551.9	121.0	435.8	420.8	14.92	29.215	
4,200.0	4,195.3	4,164.7	4,100.0	8.0	13.1	47.62	-572.6	125.4	453.4	438.2	15.28	29.676	
4,300.0	4,295.1	4,263.2	4,196.1	8.2	13.5	47.48	-593.4	129.7	471.1	455.5	15.64	30.116	
4,400.0	4,395.0	4,361.6	4,292.2	8.4	13.9	47.34	-614.2	134.1	488.8	472.8	16.01	30.535	
4,500.0	4,494.9	4,460.0	4,388.3	8.6	14.3	47.22	-635.0	138.5	506.5	490.1	16.37	30.936	
4,600.0	4,594.8	4,558.4	4,484.4	8.8	14.7	-31.05	-655.7	142.9	524.2	507.5	16.71	31.363	
4,700.0	4,694.2	4,656.1	4,579.8	8.9	15.1	-76.78	-676.4	146.3	541.8	524.9	16.88	32.088	
4,800.0	4,791.4	4,755.2	4,676.3	9.0	15.5	-82.48	-697.2	138.8	559.4	542.5	16.96	32.978	
4,900.0	4,884.5	4,856.7	4,773.1	9.0	15.8	-84.67	-718.1	117.1	576.7	559.7	17.07	33.783	
5,000.0	4,971.6	4,960.7	4,868.2	9.1	16.2	-85.85	-738.7	80.5	593.4	576.0	17.35	34.207	

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

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S22-T24N-R9W
Site Error: 0.0usft
Reference Well: NAGEZZI UNIT 103H
Well Error: 0.0usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
TVD Reference: 16' KB @ 6835.0usft
MD Reference: 16' KB @ 6835.0usft
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 S22-T24N-R9W - NAGEZZI UNIT 102H - OH - PLAN #1														Offset Site Error:	0.0 usft
Survey Program: O-Geolink MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning		
Reference	Offset	Reference	Offset	Reference	Offset		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,100.0	5,051.1	5,067.5	4,959.4	9.4	16.5	-86.60	-758.4	28.7	608.9	591.0	17.98	33.872			
5,200.0	5,121.4	5,177.1	5,044.1	9.9	16.9	-87.13	-776.6	-38.3	623.0	604.0	19.08	32.654			
5,300.0	5,181.2	5,289.5	5,119.5	10.7	17.4	-87.51	-792.9	-119.8	635.3	614.5	20.87	30.436			
5,400.0	5,229.2	5,404.4	5,182.8	12.0	18.1	-87.80	-806.6	-214.7	645.4	622.0	23.40	27.578			
5,500.0	5,264.6	5,521.6	5,231.3	13.6	19.1	-88.02	-817.0	-320.7	653.0	626.4	26.65	24.507			
5,600.0	5,286.7	5,640.4	5,262.5	15.5	20.4	-88.17	-823.7	-435.0	657.9	627.5	30.45	21.603			
5,700.0	5,294.9	5,760.2	5,274.8	17.5	22.0	-88.26	-826.3	-554.0	659.9	625.2	34.64	19.047			
5,800.0	5,294.5	5,863.5	5,274.6	19.6	23.6	-88.26	-826.2	-657.3	659.9	620.9	38.98	16.928			
5,900.0	5,294.0	5,963.5	5,274.0	21.9	25.4	-88.27	-826.1	-757.3	659.9	616.5	43.44	15.193			
6,000.0	5,293.5	6,063.5	5,273.5	24.1	27.2	-88.27	-825.9	-857.3	659.9	611.9	47.99	13.752			
6,100.0	5,293.0	6,163.5	5,273.0	26.4	29.2	-88.27	-825.7	-957.3	659.9	607.3	52.61	12.544			
6,200.0	5,292.4	6,263.5	5,272.5	28.8	31.3	-88.27	-825.6	-1,057.3	659.9	602.6	57.28	11.520			
6,300.0	5,291.9	6,363.5	5,271.9	31.1	33.4	-88.27	-825.4	-1,157.3	659.9	597.9	62.00	10.644			
6,400.0	5,291.4	6,463.5	5,271.4	33.5	35.6	-88.27	-825.3	-1,257.3	659.9	593.2	66.75	9.886			
6,500.0	5,290.9	6,563.5	5,270.9	35.9	37.9	-88.27	-825.1	-1,357.3	659.9	588.4	71.53	9.226			
6,600.0	5,290.3	6,663.5	5,270.4	38.3	40.1	-88.27	-825.0	-1,457.3	659.9	583.6	76.33	8.646			
6,700.0	5,289.8	6,763.5	5,269.9	40.7	42.4	-88.27	-824.8	-1,557.3	659.9	578.8	81.15	8.132			
6,800.0	5,289.3	6,863.5	5,269.3	43.1	44.7	-88.27	-824.7	-1,657.3	659.9	573.9	85.98	7.675			
6,900.0	5,288.8	6,963.5	5,268.8	45.5	47.0	-88.27	-824.5	-1,757.3	659.9	569.1	90.82	7.266			
7,000.0	5,288.2	7,063.5	5,268.3	47.9	49.4	-88.27	-824.4	-1,857.3	659.9	564.2	95.68	6.897			
7,100.0	5,287.7	7,163.5	5,267.8	50.4	51.7	-88.27	-824.2	-1,957.3	659.9	559.4	100.54	6.564			
7,200.0	5,287.2	7,263.5	5,267.2	52.8	54.1	-88.27	-824.1	-2,057.3	659.9	554.5	105.41	6.260			
7,300.0	5,286.7	7,363.5	5,266.7	55.2	56.5	-88.27	-823.9	-2,157.3	659.9	549.6	110.29	5.983			
7,400.0	5,286.1	7,463.5	5,266.2	57.7	58.8	-88.27	-823.8	-2,257.3	659.9	544.7	115.17	5.730			
7,500.0	5,285.6	7,563.5	5,265.7	60.1	61.2	-88.27	-823.6	-2,357.3	659.9	539.9	120.06	5.496			
7,600.0	5,285.1	7,663.5	5,265.1	62.6	63.6	-88.27	-823.5	-2,457.3	659.9	535.0	124.96	5.281			
7,700.0	5,284.6	7,763.5	5,264.6	65.0	66.0	-88.27	-823.3	-2,557.3	659.9	530.1	129.85	5.082			
7,800.0	5,284.0	7,863.5	5,264.1	67.5	68.5	-88.27	-823.1	-2,657.3	659.9	525.2	134.76	4.897			
7,900.0	5,283.5	7,963.5	5,263.6	69.9	70.9	-88.27	-823.0	-2,757.3	659.9	520.3	139.66	4.725			
8,000.0	5,283.0	8,063.5	5,263.1	72.4	73.3	-88.27	-822.8	-2,857.3	659.9	515.4	144.57	4.565			
8,100.0	5,282.5	8,163.5	5,262.5	74.8	75.7	-88.27	-822.7	-2,957.3	659.9	510.4	149.48	4.415			
8,200.0	5,281.9	8,263.5	5,262.0	77.3	78.1	-88.27	-822.5	-3,057.3	659.9	505.5	154.39	4.274			
8,300.0	5,281.4	8,363.5	5,261.5	79.8	80.6	-88.27	-822.4	-3,157.3	659.9	500.6	159.30	4.143			
8,400.0	5,280.9	8,463.5	5,261.0	82.2	83.0	-88.27	-822.2	-3,257.3	659.9	495.7	164.22	4.019			
8,500.0	5,280.4	8,563.5	5,260.4	84.7	85.4	-88.27	-822.1	-3,357.3	659.9	490.8	169.14	3.902			
8,600.0	5,279.8	8,663.5	5,259.9	87.1	87.9	-88.27	-821.9	-3,457.3	659.9	485.9	174.06	3.791			
8,700.0	5,279.3	8,763.5	5,259.4	89.6	90.3	-88.27	-821.8	-3,557.3	659.9	480.9	178.98	3.687			
8,800.0	5,278.8	8,863.5	5,258.9	92.1	92.7	-88.27	-821.6	-3,657.3	659.9	476.0	183.90	3.588			
8,900.0	5,278.3	8,963.5	5,258.3	94.5	95.2	-88.27	-821.5	-3,757.3	659.9	471.1	188.82	3.495			
9,000.0	5,277.7	9,063.5	5,257.8	97.0	97.6	-88.27	-821.3	-3,857.3	659.9	466.2	193.75	3.406			
9,100.0	5,277.2	9,163.5	5,257.3	99.4	100.1	-88.27	-821.2	-3,957.3	659.9	461.2	198.68	3.322			
9,200.0	5,276.7	9,263.5	5,256.8	101.9	102.5	-88.27	-821.0	-4,057.3	659.9	456.3	203.60	3.241			
9,300.0	5,276.2	9,363.5	5,256.2	104.4	105.0	-88.27	-820.9	-4,157.3	659.9	451.4	208.53	3.165			
9,400.0	5,275.6	9,463.5	5,255.7	106.8	107.4	-88.27	-820.7	-4,257.3	659.9	446.5	213.46	3.092			
9,500.0	5,275.1	9,563.5	5,255.2	109.3	109.9	-88.27	-820.5	-4,357.3	659.9	441.5	218.39	3.022			
9,600.0	5,274.6	9,663.5	5,254.7	111.8	112.3	-88.27	-820.4	-4,457.3	659.9	436.6	223.32	2.955			
9,700.0	5,274.1	9,763.5	5,254.2	114.2	114.8	-88.27	-820.2	-4,557.3	659.9	431.7	228.25	2.891			
9,800.0	5,273.5	9,863.5	5,253.6	116.7	117.2	-88.27	-820.1	-4,657.3	659.9	426.7	233.18	2.830			
9,900.0	5,273.0	9,963.5	5,253.1	119.2	119.7	-88.27	-819.9	-4,757.3	659.9	421.8	238.11	2.771			
10,000.0	5,272.5	10,063.5	5,252.6	121.6	122.1	-88.27	-819.8	-4,857.3	659.9	416.9	243.05	2.715			
10,100.0	5,272.0	10,163.5	5,252.1	124.1	124.6	-88.27	-819.6	-4,957.3	659.9	411.9	247.98	2.661			
10,200.0	5,271.4	10,263.5	5,251.5	126.6	127.0	-88.27	-819.5	-5,057.3	659.9	407.0	252.91	2.609			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEZZI UNIT 103H
Project:	San Juan County, NM	TVD Reference:	16' KB @ 6835.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	16' KB @ 6835.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	NAGEZZI UNIT 103H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design													S22-T24N-R9W - NAGEEZI UNIT 102H - OH - PLAN #1		Offset Site Error:		0.0 usft	
Survey Program: 0-Geolink MWD													Offset Well Error:		0.0 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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning					
10,300.0	5,270.9	10,363.5	5,251.0	129.0	129.5	-88.27	-819.3	-5,157.2	659.9	402.1	257.85	2.559						
10,301.7	5,270.9	10,365.2	5,251.0	129.1	129.5	-88.27	-819.3	-5,158.9	659.9	402.0	257.93	2.558 SF						

Anticollision Report

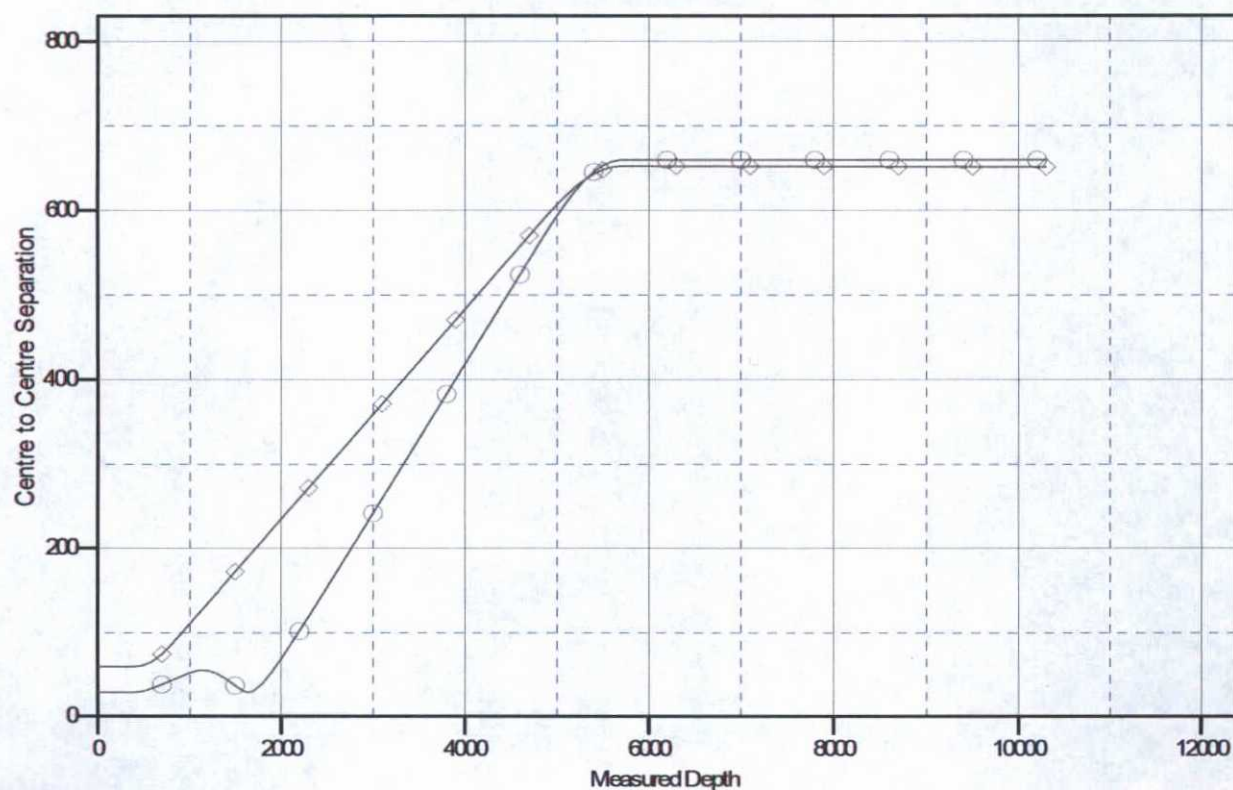
Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S22-T24N-R9W
 Site Error: 0.0usft
 Reference Well: NAGEZZI UNIT 103H
 Well Error: 0.0usft
 Reference Wellbore: OH
 Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEZZI UNIT 103H
 TVD Reference: 16' KB @ 6835.0usft
 MD Reference: 16' KB @ 6835.0usft
 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 @ 6835.0usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: NAGEZZI UNIT 103H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.03°

Ladder Plot



LEGEND

◆ NAGEZZI UNIT 101H, OH, PLAN#1 V0 ● NAGEZZI UNIT 102H, OH, PLAN#1 V0

Nageezi Unit 103H

**SHL: NWSW Section 22, T24N, R9W
1,745 FSL and 239 FWL**

**BHL: NWSW Section 21, T24N, R9W
1,580 FSL and 330 FWL**

San Juan County, New Mexico

Lease Number: NMNM 132981X

7. METHODS FOR HANDLING WASTE

A. Cuttings

1. A closed-loop system will be used. Cuttings will be moved through a shaker system on the drill rig that separates drilling fluids from the cuttings. Cuttings will be stored onsite in above-ground storage tanks. Cuttings will be pulled from the storage tanks, mixed with saw dust or similar absorbent material, and disposed of at the Envirotech, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.
2. The closed-loop system storage tanks will be adequately sized to ensure confinement of all fluids and will provide sufficient freeboard to prevent uncontrolled releases.
3. A 20-mil liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.

B. Drilling Fluids

1. A closed-loop system will be used. Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical. Residual fluids will be vacuumed from the storage tanks and disposed of at Basin Disposal, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.
2. The closed-loop system storage tanks will be adequately sized to ensure confinement of all fluids and will provide sufficient freeboard to prevent uncontrolled releases.
3. The closed-loop system storage tanks will be placed in bermed secondary containment sized to accommodate a minimum of 110 percent of the volume of the largest storage tank.
4. A 20-mil liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.

C. Flowback Water

1. The water-based solution that flows back to the surface during and after completion operations will be placed in storage tanks on the location.
2. Flowback water will be confined to a storage tank for a period not to exceed 90 days after initial production and will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.

D. Spills – any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site. Encana will also notify the BLM within 24 hours of any spill.

E. Sewage – self-contained, chemical toilets will be provided for human waste disposal. The toilet holding tanks will be pumped, as needed, and the contents thereof disposed of in an approved sewage disposal facility. The toilets will be onsite during all operations.

F. Garbage and other waste material – garbage, trash and other waste materials will be collected in a portable, self-contained and fully-enclosed trash container during drilling and completion operations. The accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location.

G. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash container will be cleaned up and removed from the well location.

ENCANA OIL & GAS (USA) INC.

NAGEEZI UNIT #103H

1745' FSL & 239' FWL

LOCATED IN THE NW/4 SW/4 OF SECTION 22, T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, TRAVEL SOUTH ON HWY 550 FOR 32.0 MILES. (M.P. 119.6).
- 2) TURN RIGHT AND GO 1.3 MILES WHERE ACCESS IS STAKED ON LEFT SIDE OF ROAD.

WELL FLAG LOCATED AT LAT. 36.297131° N, LONG. 107.784918° W (NAD 83).

JOB No.: ENC317

DATE: 02/06/2015

DRAWN BY: TWT

ENCANA



CCI

CHENAUT CONSULTING INC.

4800 COLLEGE BLVD.
SUITE 201
FARMINGTON, NM 87402
(505)-325-7707

Sheet C

WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
Nageezi Unit 103H

