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FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JAN 03 2012

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM NM 86080
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Encana Oil & Gas (USA) Inc.		7. If Unit or CA Agreement, Name and No.
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202	3b. Phone No. (include area code) 720-876-3989	8. Lease Name and Well No. Bisti H09-2510 01H
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface H2184' FNL and 476' FEL Section 9, T25N, R10W At proposed prod. zone E2184' FNL and 330' FWL Section 9, T25N, R10W		9. API Well No. 30-045-35341
14. Distance in miles and direction from nearest town or post office* 24.0 miles SE of Bloomfield, NM		10. Field and Pool, or Exploratory Wildcat
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) BHL is 330' from west lease line	16. No. of acres in lease 640 acres	11. Sec., T. R. M. or Blk. and Survey or Area Section 9, T25N, R10W NMPM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft Latex 1-S is 393' North of Wellbore	19. Proposed Depth 6710' TVD/9845' MD	12. County or Parish San Juan
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6636' GL, 6650' KB	22. Approximate date work will start* 03/01/2012	13. State NM
23. Estimated duration 45 days		17. Spacing Unit dedicated to this well 320 acres RCVD APR 11 '12
24. Attachments		20. BLM/BIA Bond No. on file COB-000235 OIL CONS. DIV. DIST. 3

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3-4. The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form: DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED GENERAL REQUIREMENTS.

1. Well plat certified by a registered surveyor.	4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
2. A Drilling Plan.	5. Operator certification
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)	6. Such other site specific information and/or plans as may be required by the BLM.
25. Signature 	Name (Printed/Typed) Brenda R. Linster
Title Regulatory Advisor	Date 12/29/2011
Approved by 	Name (Printed/Typed) AFM
Title AFM	Date 4/5/12

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)

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

*(Instructions on page 2)

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A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOCD PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

Comply w/ 19.15.16.1062
NMOCD

Hold C104
for Directional Survey
and "As Drilled" plat

APR 18 2012 ca

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

Hold C104
for Directional Survey
and "As Drilled" plat

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District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 E. First St., Azusa, NM 88210
Phone: (575) 743-1233 Fax: (575) 743-0720
District III
1000 Rio Grande Road, Azusa, NM 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 Farmington Field Office
Energy, Minerals & Natural Resources Department Bureau of Land Management
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

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30.045-35341		*Pool Code 97932	*Pool Name WC 25N10W9; Gallup (O)
*Property Code 39159	*Property Name BISTI H09-2510		*Well Number 01H
*OGRID No. 282347	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6635.7

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
H	9	25-N	10-W		2184'	NORTH	476'	EAST	SAN JUAN

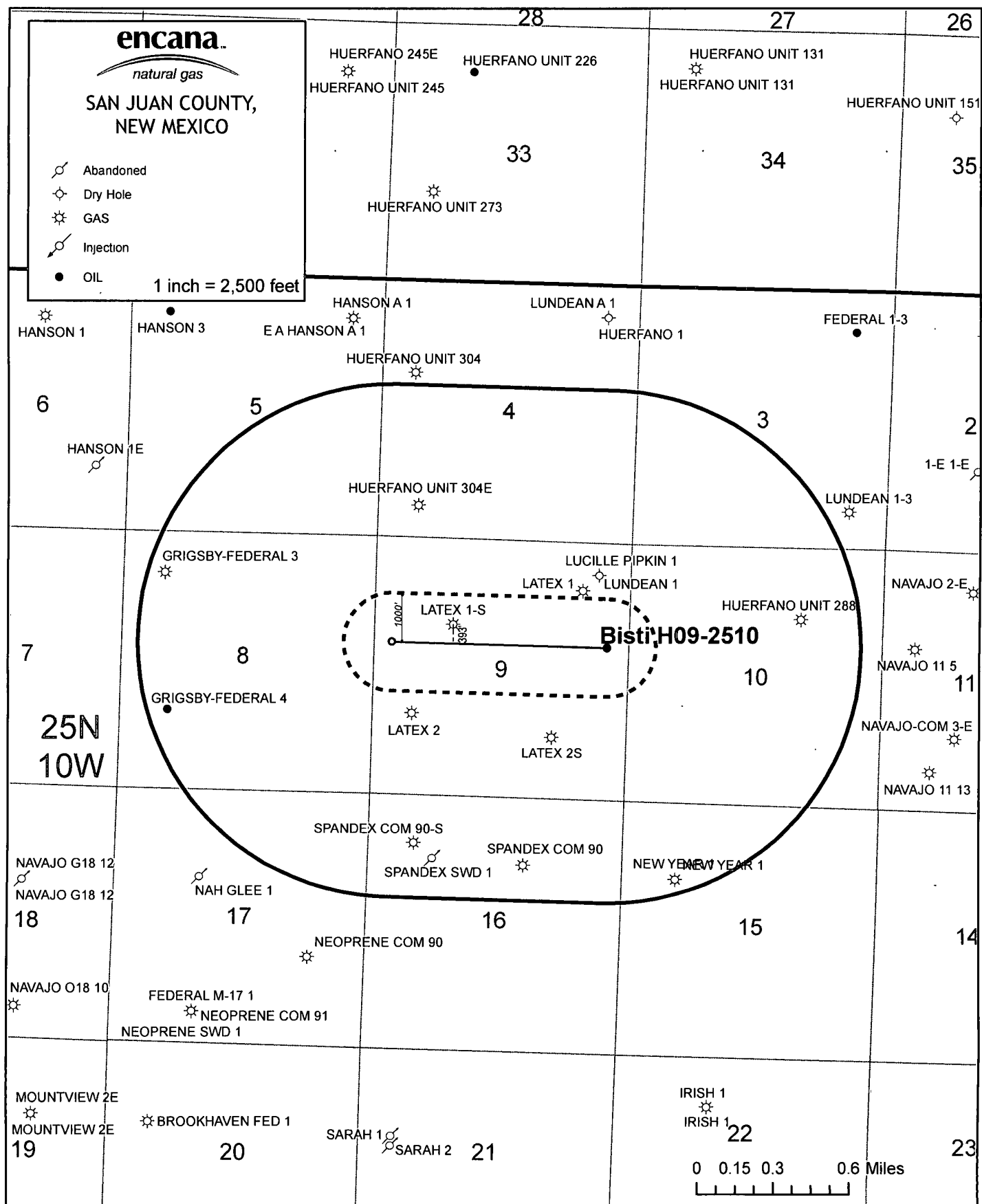
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	9	25-N	10-W		2184'	NORTH	330'	WEST	SAN JUAN

*Dedicated Acres 320 160	*Joint of Infill	*Consolidation Code	*Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

16	S89°59'08"W 2635.27'(M) S89°58'W 79.84 Chains (R) ENCANA OIL & GAS (USA) INC. BISTI H09-2510-01H BOTTOM HOLE: LAT: 36.41633°N - NAD 83 LONG: 107.80671°W - NAD 83 LAT: 36.250066°N - NAD 27 LONG: 107.846273°W - NAD 27 ENCANA OIL & GAS (USA) INC. BISTI H09-2510-01H SURFACE LOCATION LAT: 36.41633°N - NAD 83 LONG: 107.80671°W - NAD 83 LAT: 36.250066°N - NAD 27 LONG: 107.846273°W - NAD 27	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 undivided 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Brenda R. Linster</i> 12/29/11 Signature Date Brenda R. Linster Printed Name brenda.linster@encana.com E-mail Address
18	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. NOV 14 2011 Date of Survey <i>William E. Mahnke II</i> Signature of Registered Professional Surveyor WILLIAM E. MAHNKE II, MS Certificate Number 12308466		



Bisti H09-2510 01H

SHL: SENE Section 9, T25N, R10W

2184 FNL and 476 FEL

BHL: SWNW Section 9, T25N, R10W

2184 FNL and 330 FEL

San Juan County, New Mexico

Lease Number: NM NM 86080

Encana Oil & Gas (USA) Inc. Drilling Plan

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

<u>Formation</u>	<u>Depth (TVD)</u>
Ojo Alamo	950'
Kirtland	1125'
Fruitland Coal	1425'
Pictured Cliffs	1845'
Lewis	1970'
Cliffhouse	3280'
Menefee	3425'
Point Lookout	4312'
Mancos	4554'
Gallup	5360'
Upper Carlile	5827'
Juana Lopez	5890'
Lower Carlile	6025'
Greenhorn	6257'
Graneros	6311'
Dakota	6353'
Morrison	6610'

The referenced surface elevation is 6636', KB 6650'

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

<u>Substance</u>	<u>Formation</u>	<u>Depth (TVD)</u>
Water	Ojo Alamo	950'
Gas	Fruitland Coal	1425'
Gas	Pictured Cliffs	1845'
Gas	Cliffhouse	3280'
Gas	Point Lookout	4312'
Oil/Gas	Mancos	4554'
Oil/Gas	Dakota	6353'

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.

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- e) Blind and Pipe Rams/BOP will be tested against a test plug to either 70 percent of the casings internal yield pressure or 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	Hole Size	Csg Size	Weight	Grade
Conductor	0-60'	26"	20"	94#	H40, STC New
Surface	0'-500'	17 1/2"	13 3/8"	48#	H40, STC New
Intermediate	0'-4850'	12 1/4"	9 5/8"	40#	J55, STC New
Production Liner	4650'-9845'	8 1/2"	5 1/2"	17#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (lb/ft)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lb)	Collapse	Burst	Tension
13 3/8"	48	H40	STC	740	1730	322	1.125	1.1	1.5
9 5/8"	40	J55	STC	2570	3950	452	1.125	1.1	1.5
5 1/2"	17	B80	LTC	6290	7740	320	1.125	1.1	1.5

*B80 pipe specifications are attached

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

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

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b) The proposed cementing program is as follows:

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	80sk	Redi-mix Construction Grade Cement	Surface	None
Surface	500'	Lead: 130sk Tail: 100sk	Lead: Varicem Poz Cmt 1% Cal-Seal 12.7ppg, 1.78cuft/sk Tail: Type III Prem Plus 6% Salt 13.5ppg 1.77cuft/sk	Surface	1 per joint on bottom 3 joints,
Intermediate	4850'	50% open hole excess Lead:1424sk Tail: 176sk	Lead: Fillseal Poz Cmt 1% foam 13ppg, 1.43cuft/sk Tail: HalCem Class H 1% foam 13ppg 1.43cuft/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints, turbolizers will be use at the base of the Ojo Alamo
Production Liner*	4650'-9845'	None – External casing packers	N/A	N/A	N/A

*Production liner clarification: Utilizing external swell casing packer system for zonal isolation will not use cement in the production liner.

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected.

All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

Follow NMAC 19.15.16.10.6.2

5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed well will be drilled in two phases. A pilot hole will be drilled in the first phase, followed by kicking off a horizontal lateral in the existing wellbore in the second phase. The intent of drilling a pilot hole is to obtain open hole log and core data. The intent of the second phase of the well is to plug back the pilot hole with cement to the kick off point. After plugging back, the plan is to drill a horizontal lateral from the kick off point in the existing wellbore to the proposed bottom hole location.

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Directional plans are attached.

Well Phase	Description	Proposed Depth (TVD/MD)	Formation
1	Vertical Pilot Hole	6710'/6710'	Morrison
2	Horizontal Lateral	5591'/9845'	Gallup

Proposed Plug Back Procedure:

TOPS: TVD
KOP 5100'
Graneros Shale 6311'
Dakota 6353'

Set 2 cement plugs in 8 ½" hole

Plug A: Bottom plug over Dakota

Plug B: Kick plug at KOP

Plug A

1. TIH to TD of vertical pilot hole at 6710'
2. Spot 400' cement plug from 6310'- 6710'
 - a. 135sx of Class A cement (1.18ft³/sk yield)
 - b. Spot tuned spacer
3. Pull uphole and reverse out
4. TIH and tag plug, proceed when cement is solid
5. Fill hole and move uphole to spot kick plug

Plug B

1. Spot 300' kick plug from 5000' – 5300'
 - a. 91sx of Class A cement with salt (1.3ft³/sk yield)
 - b. Spot tuned spacer
2. Pull uphole and reverse out
3. Pump bottoms up 2 times, pull uphole
4. Tag plug, drill ahead to KOP when cement is solid

6. DRILLING FLUIDS PROGRAM

a) Phase 1, Vertical Pilot Hole:

Hole Size (in)	TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
26"	0-60'	Fresh Water	8.3-9.2	38-100	4-28
17 1/2"	0-500'	Fresh Water	8.4-8.6	60-70	NC
12 1/4"	500-4850'	Fresh Water LSND	8.5-8.8	40-50	8-10
8 1/2"	4850-6710'	Fresh Water LSND	8.5-8.8	40-50	8-10

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b) Phase 2, Kick off to Horizontal Lateral:

Hole Size (in)	TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
8 1/2"	5100' (KOP)- 9845'	Synthetic Oil Based Mud	8.6-9.0	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, including fresh water and oil-based operations. 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 and LOGGING

- a) Drill Stem Testing – None anticipated
- b) Coring – Obtain core starting in the Mancos formation. Specific cored intervals will be determined real time by onsite geologists.
- c) Mud Logging – Mud loggers will be on location from Surface Casing to TD.
- d) Logging – See Below

Open Hole:

Triple combo with Spectral Gamma TD to surface casing
Specialty logs will be decided real time by onsite geologists

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 +/- 3140 psi based on a 9.0 ppg at 6710' TVD of the vertical pilot hole. 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, 2012. 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 45 days.

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10. NOTIFICATION REQUIREMENTS & OTHER ITEMS

- a) The spud date will be reported orally to the Authorized Officer within 24 hours prior to spudding. Written notification via a Sundry Notice (Form 3160-5) will be submitted to the Authorized Officer within 5 days of spudding.
- b) The Authorized Officer will be notified at least 24 hours in advance of BOP pressure tests.
- c) The Authorized Officer will be notified at least 24 hours in advance of running and cementing casing strings.
- d) A Sundry Notice (Form 3160-5) will be submitted to the Authorized Officer within 30 days of setting each string of casing. Information will include the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated to the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date the work was done.
- e) Should the well be successfully completed for production, the Authorized Officer will be notified orally within 24 hours of placing the well on production. Written notification via a Sundry Notice (Form 3160-5) will be submitted to the Authorized Officer within 5 days of placing on production.
- f) Whether the well is completed as a dry hole or as a producer, a Well Completion and Recompletion Report and Log (Form 3160-4) will be submitted no later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3160. One copy of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the Authorized Officer.
- g) Starting with the month in which operations commence and continuing each month until the well is physically plugged and abandoned, this well will be reported on Form 3160-6, Monthly Report of Operations. Reports will be filed by the 10th day of the second month following the operation month.
- h) All off-lease storage, off-lease measurement, commingling on-lease or off-lease will have prior written approval from the Authorized Officer.
- i) Oil and gas measurement facilities will be installed on the well location. Oil and gas meters will be calibrated in place prior to any deliveries. The Authorized Officer will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the Authorized Officer. All meter measurement facilities will conform to the API standards for liquid hydrocarbons and to AGA standards for natural gas measurement.
- j) A site facility diagram as required by 43 CFR 3162.7-5(d) will be submitted within 60 days after measurement facilities are installed. Any venting or flaring of gas will be done in accordance with Notice to Lessees (NTL-4A) and may need prior approval from the Authorized Officer.

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- k) Minor Events will be reported on the Monthly Report of Operations and Production (Form 3160-6). All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in Notice to Lessee (NTL-3A) will be reported to the Authorized Officer. Major events will be reported verbally within 24 hours, followed by a written report within 15 days. Other than Major Events will be reported in writing within 15 days.

LOC: Sec 9-T25N-R10W County: San Juan WELL: Bisti H09-2510 01H			WELL SUMMARY					ENG: J. Fox/ A. RIG: GLE: xxx RKBE: xxx	12/28/11
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
		Nacimiento	60	60'		26	20" 94# 80sx Type I Neat 48.8ppg cmt	Fresh wtr 8.3-9.2 Vis 38-100 YP 4-28 FL 4-28	
Surveys After csg is run	None Mud logger onsite at spud		500	500		17 1/2	13 3/8" 48ppf H40 STC Lead 130sx Vancem Poz cmt 1% Cal-Seal 12.7ppg 1.78cuft/sk (231 cuft) + tail 100sx Type III Prem Plus 0.3% Thix 6% Salt 13.5ppg 1.77cuft/sk (177 cuft). TOC @ sfc	Fresh wtr 8.4-8.6 Vis 40-50 YP 25-35	Vertical <1°
Surveys every 500'	Triple combo	Ojo Alamo Ss Kirtland Shale Fruitland Coal Pictured Cliffs Ss Lewis Shale Chacra Cliffhouse Ss Menefee Fn Point Lookout Ss Mancos Sh	950 1125 1425 1845 1970 2635 3280 3425 4312 4554 4850	4850		12 1/4	9 5/8" 40ppf J55 STC 50% OH Excess. Lead 1424sx Fillseal Poz Cmt w/1% foam 13ppg 1.43cuft/sk (2036 cuft) + tail 176sx HalCem Cmt Class H 1% foam 13ppg 1.43cuft/sk (252 cuft) Permit TOC @ surface	Fresh Wtr 8.5-8.8 Vis 40-50 YP 10-12 FL 8-10	Vertical <1°
Surveys every 500' Gyro at CP MWD Gamma Directional	High Def DLL Microlaterlog WTS comp Neut WTS ZDL with PE Caliper Digital GR DAL	KICK OFF PT	5100			8 1/2 w/opt 7 7/8 in lateral	5 1/2" 17ppf I/L80 LTC Running external swellable csg packers for isolation of prod string	Fresh Wtr LSND-in pilot 8.5-8.8 Switch to OBM at K/O 8.6-9.0	KOP 5100 10 deg/100' 5591'TVD TD = 9,845' MD
		Gallup Top horz target Prodelta Gallup Upper Carlile Shale Juana Lopez Sh Lower Carlile Sh Greenhorn LS Graneros Sh Dakota Grp Morrison Pilot Hole TD	5360 5630 5675 5827 5890 6025 6257 6311 6353 6610 6710	5957			3845' Lateral	8.6-9.0 OBM	

NOTES:

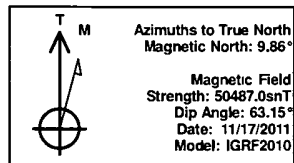
- 1) Drill with 26" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 13 3/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to 4850' , 12 1/4" hole size
- 5) Run OH logs, R&C 9 5/8" casing, circ cmt 50' into sur csg shoe
- 6) Drill 8 1/2" hole to core point, core Gallup & possibly Dakota, confirm coring details
- 7) RIH with 8 1/2" bit to drill 150' rathole, run OH logs
- 8) Plugback to 4850' with cmt
- 9) PU directional tools and K/O cmt plug and start curve at 10deg/100' build rate
- 10) Drill curve to 20-30deg then switch over to OBM system
- 11) If drill curve without hole issues, omit contingent csg string and proceed with 8 1/2 bit to landing depth
- 12) If need bit trip, option to switch to 7 7/8 bit for remainder of well
- 13) Land at 90deg, drill 3845' lateral to 9,845', run 5 1/2" liner with external swellable csg packers



Encana Oil & Gas
 Project: San Juan Co., NM (NAD83)
 Site: Sec.9-T25N-R10W
 Well: Bisti H09-2510-01H
 Wellbore: Wellbore #1
 Design: Design #2
 Lat: 36.416840
 Long: -107.894530
 Pad GL: 6636.00
 KB: WELL @ 6650.00usft (Original Well Elev)

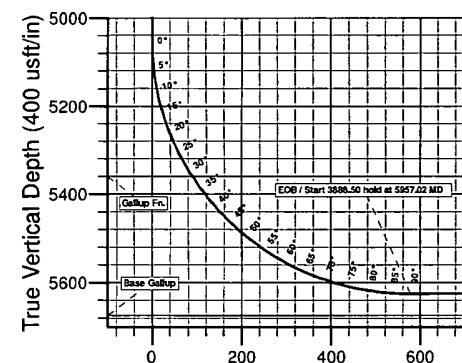


PROJECT DETAILS: San Juan Co., NM (NAD83)	
Geodetic System: US State Plane 1983	
Datum: North American Datum 1983	
Ellipsoid: GRS 1980	
Zone: New Mexico Western Zone	
System Datum: Mean Sea Level	



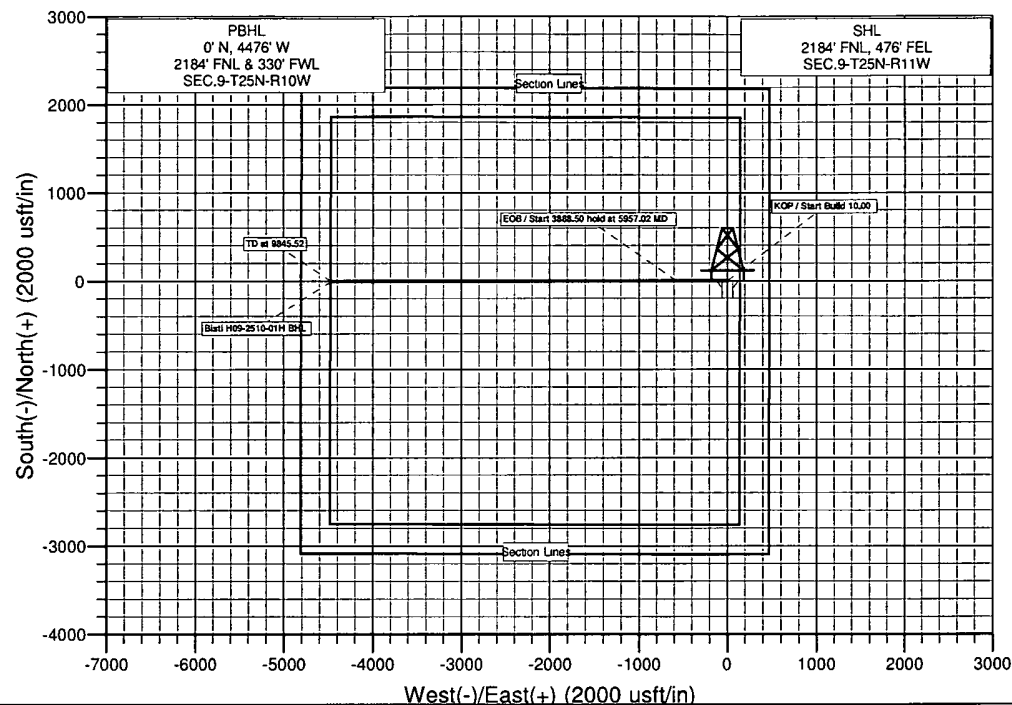
WELL DETAILS: Bisti H09-2510-01H						
+N/-S	+E/-W	Northing	Ground Level: Easting	6636.00	Latitude	Longitude
0.00	0.00	1971038.647	2705086.202		36.416840	-107.894530

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Bisti H09-2510-01H BHL	5590.94	-3.29	-4466.31	36.416830	-107.909710	Point

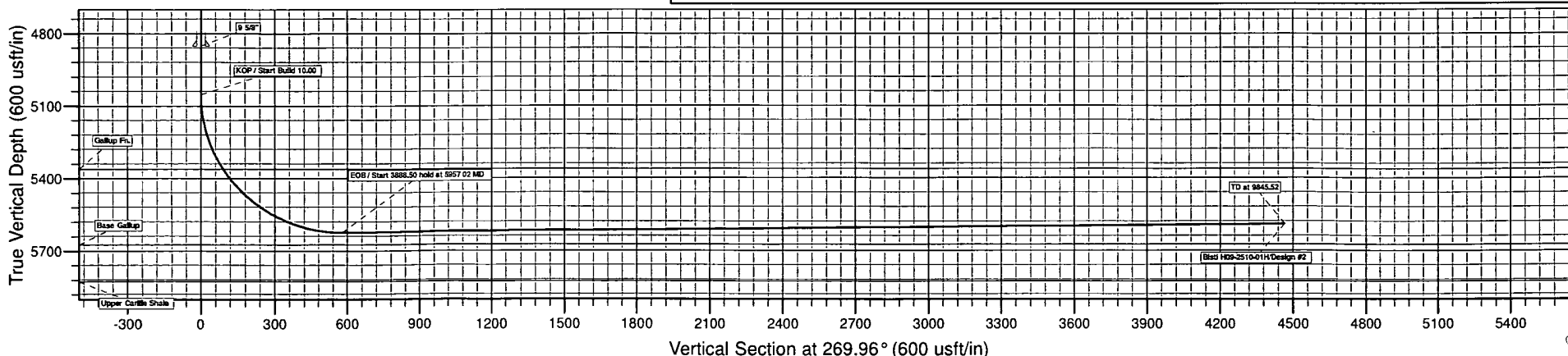


CASING DETAILS			
TVD	MD	Name	Size
500.00	500.00	13 3/8"	13-3/8
4850.00	4850.00	9 5/8"	9-5/8

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
950.00	950.00	Ojo Alamo Ss.
1125.00	1125.00	Kirtland Shale
1425.00	1425.00	Fruitland Coal
1845.00	1845.00	Pictured Cliffs Ss.
1970.00	1970.00	Lewis Shale
2635.00	2635.00	Chacra
3280.00	3280.00	Cliffhouse Ss.
3425.00	3425.00	Menefee Fn.
4312.00	4312.00	Point Lookout Ss.
4554.00	4554.00	Mancos Shale
5360.00	5377.17	Gallup Fn.



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5052.02	0.00	0.00	5052.02	0.00	0.00	0.00	0.00	0.00	KOP / Start Build 10.00
5957.02	90.50	269.96	5624.96	-0.43	-577.96	10.00	269.96	577.96	EOB / Start 3888.50 hold at 5957.02 MD
9845.52	90.50	269.96	5591.02	-3.29	-4466.31	0.00	0.00	4466.31	TD at 9845.52



Great White Directional Services

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bisti H09-2510-01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 6650.00usft (Original Well Elev)
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 6650.00usft (Original Well Elev)
Site:	Sec.9-T25N-R10W	North Reference:	True
Well:	Bisti H09-2510-01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project	San Juan Co., NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Sec.9-T25N-R10W			
Site Position:		Northing:	1,971,038.648 usft	Latitude: 36.416840
From:	Lat/Long	Easting:	2,705,086.201 usft	Longitude: -107.894530
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: -0.04 "

Well	Bisti H09-2510-01H			
Well Position	+N/-S	0.00 usft	Northing:	1,971,038.648 usft
	+E/-W	0.00 usft	Easting:	2,705,086.201 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	
			Ground Level:	6,636.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	11/17/11	9.86	63.15	50,487

Design	Design #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	269.96

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,052.02	0.00	0.00	5,052.02	0.00	0.00	0.00	0.00	0.00	0.00	
5,957.02	90.50	269.96	5,624.96	-0.43	-577.96	10.00	10.00	0.00	269.96	Bisti H09-2510-01H B
9,845.52	90.50	269.96	5,591.02	-3.29	-4,466.31	0.00	0.00	0.00	0.00	Bisti H09-2510-01H B

Great White Directional Services

Planning Report

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bisti H09-2510-01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 6650.00usft (Original Well Elev)
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 6650.00usft (Original Well Elev)
Site:	Sec.9-T25N-R10W	North Reference:	True
Well:	Bisti H09-2510-01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	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	0.00
200.00	0.00	0.00	200.00	0.00	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	0.00
400.00	0.00	0.00	400.00	0.00	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	0.00
13 3/8"									
600.00	0.00	0.00	600.00	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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00
Ojo Alamo Ss.									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,125.00	0.00	0.00	1,125.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland Shale									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,425.00	0.00	0.00	1,425.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland Coal									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,845.00	0.00	0.00	1,845.00	0.00	0.00	0.00	0.00	0.00	0.00
Pictured Cliffs Ss.									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,970.00	0.00	0.00	1,970.00	0.00	0.00	0.00	0.00	0.00	0.00
Lewis Shale									
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,635.00	0.00	0.00	2,635.00	0.00	0.00	0.00	0.00	0.00	0.00
Chacra									
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,280.00	0.00	0.00	3,280.00	0.00	0.00	0.00	0.00	0.00	0.00
Cliffhouse Ss.									
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,425.00	0.00	0.00	3,425.00	0.00	0.00	0.00	0.00	0.00	0.00
Menefee Fn.									
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00

Great White Directional Services

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bisti H09-2510-01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 6650.00usft (Original Well Elev)
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 6650.00usft (Original Well Elev)
Site:	Sec.9-T25N-R10W	North Reference:	True
Well:	Bisti H09-2510-01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,312.00	0.00	0.00	4,312.00	0.00	0.00	0.00	0.00	0.00	0.00
Point Lookout Ss.									
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,554.00	0.00	0.00	4,554.00	0.00	0.00	0.00	0.00	0.00	0.00
Mancos Shale									
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,850.00	0.00	0.00	4,850.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,052.02	0.00	0.00	5,052.02	0.00	0.00	0.00	0.00	0.00	0.00
KOP / Start Build 10.00									
5,100.00	4.80	269.96	5,099.94	0.00	-2.01	2.01	10.00	10.00	0.00
5,200.00	14.80	269.96	5,198.36	-0.01	-19.00	19.00	10.00	10.00	0.00
5,300.00	24.80	269.96	5,292.33	-0.04	-52.83	52.83	10.00	10.00	0.00
5,377.17	32.52	269.96	5,360.00	-0.07	-89.81	89.81	10.00	10.00	0.00
Gallup Fr.									
5,400.00	34.80	269.96	5,379.00	-0.08	-102.46	102.46	10.00	10.00	0.00
5,500.00	44.80	269.96	5,455.73	-0.12	-166.39	166.39	10.00	10.00	0.00
5,600.00	54.80	269.96	5,520.20	-0.18	-242.67	242.67	10.00	10.00	0.00
5,700.00	64.80	269.96	5,570.44	-0.24	-328.99	328.99	10.00	10.00	0.00
5,800.00	74.80	269.96	5,604.93	-0.31	-422.72	422.72	10.00	10.00	0.00
5,900.00	84.80	269.96	5,622.62	-0.38	-521.01	521.01	10.00	10.00	0.00
5,957.02	90.50	269.96	5,624.96	-0.43	-577.96	577.96	10.00	10.00	0.00
EOB / Start 3888.50 hold at 5957.02 MD									
6,000.00	90.50	269.96	5,624.58	-0.46	-620.94	620.94	0.00	0.00	0.00
6,100.00	90.50	269.96	5,623.71	-0.53	-720.93	720.93	0.00	0.00	0.00
6,200.00	90.50	269.96	5,622.84	-0.60	-820.93	820.93	0.00	0.00	0.00
6,300.00	90.50	269.96	5,621.96	-0.68	-920.92	920.92	0.00	0.00	0.00
6,400.00	90.50	269.96	5,621.09	-0.75	-1,020.92	1,020.92	0.00	0.00	0.00
6,500.00	90.50	269.96	5,620.22	-0.83	-1,120.92	1,120.92	0.00	0.00	0.00
6,600.00	90.50	269.96	5,619.35	-0.90	-1,220.91	1,220.91	0.00	0.00	0.00
6,700.00	90.50	269.96	5,618.47	-0.97	-1,320.91	1,320.91	0.00	0.00	0.00
6,800.00	90.50	269.96	5,617.60	-1.05	-1,420.91	1,420.91	0.00	0.00	0.00
6,900.00	90.50	269.96	5,616.73	-1.12	-1,520.90	1,520.90	0.00	0.00	0.00
7,000.00	90.50	269.96	5,615.85	-1.19	-1,620.90	1,620.90	0.00	0.00	0.00
7,100.00	90.50	269.96	5,614.98	-1.27	-1,720.89	1,720.89	0.00	0.00	0.00
7,200.00	90.50	269.96	5,614.11	-1.34	-1,820.89	1,820.89	0.00	0.00	0.00
7,300.00	90.50	269.96	5,613.24	-1.41	-1,920.89	1,920.89	0.00	0.00	0.00
7,400.00	90.50	269.96	5,612.36	-1.49	-2,020.88	2,020.88	0.00	0.00	0.00
7,500.00	90.50	269.96	5,611.49	-1.56	-2,120.88	2,120.88	0.00	0.00	0.00
7,600.00	90.50	269.96	5,610.62	-1.64	-2,220.87	2,220.88	0.00	0.00	0.00

Great White Directional Services

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bisti H09-2510-01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 6650.00usft (Original Well Elev)
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 6650.00usft (Original Well Elev)
Site:	Sec.9-T25N-R10W	North Reference:	True
Well:	Bisti H09-2510-01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,700.00	90.50	269.96	5,609.75	-1.71	-2,320.87	2,320.87	0.00	0.00	0.00
7,800.00	90.50	269.96	5,608.87	-1.78	-2,420.87	2,420.87	0.00	0.00	0.00
7,900.00	90.50	269.96	5,608.00	-1.86	-2,520.86	2,520.86	0.00	0.00	0.00
8,000.00	90.50	269.96	5,607.13	-1.93	-2,620.86	2,620.86	0.00	0.00	0.00
8,100.00	90.50	269.96	5,606.26	-2.00	-2,720.86	2,720.86	0.00	0.00	0.00
8,200.00	90.50	269.96	5,605.38	-2.08	-2,820.85	2,820.85	0.00	0.00	0.00
8,300.00	90.50	269.96	5,604.51	-2.15	-2,920.85	2,920.85	0.00	0.00	0.00
8,400.00	90.50	269.96	5,603.64	-2.22	-3,020.84	3,020.84	0.00	0.00	0.00
8,500.00	90.50	269.96	5,602.76	-2.30	-3,120.84	3,120.84	0.00	0.00	0.00
8,600.00	90.50	269.96	5,601.89	-2.37	-3,220.84	3,220.84	0.00	0.00	0.00
8,700.00	90.50	269.96	5,601.02	-2.45	-3,320.83	3,320.83	0.00	0.00	0.00
8,800.00	90.50	269.96	5,600.15	-2.52	-3,420.83	3,420.83	0.00	0.00	0.00
8,900.00	90.50	269.96	5,599.27	-2.59	-3,520.82	3,520.83	0.00	0.00	0.00
9,000.00	90.50	269.96	5,598.40	-2.67	-3,620.82	3,620.82	0.00	0.00	0.00
9,100.00	90.50	269.96	5,597.53	-2.74	-3,720.82	3,720.82	0.00	0.00	0.00
9,200.00	90.50	269.96	5,596.66	-2.81	-3,820.81	3,820.81	0.00	0.00	0.00
9,300.00	90.50	269.96	5,595.78	-2.89	-3,920.81	3,920.81	0.00	0.00	0.00
9,400.00	90.50	269.96	5,594.91	-2.96	-4,020.81	4,020.81	0.00	0.00	0.00
9,500.00	90.50	269.96	5,594.04	-3.03	-4,120.80	4,120.80	0.00	0.00	0.00
9,600.00	90.50	269.96	5,593.17	-3.11	-4,220.80	4,220.80	0.00	0.00	0.00
9,700.00	90.50	269.96	5,592.29	-3.18	-4,320.79	4,320.80	0.00	0.00	0.00
9,800.00	90.50	269.96	5,591.42	-3.26	-4,420.79	4,420.79	0.00	0.00	0.00
9,845.52	90.50	269.96	5,591.02	-3.29	-4,466.31	4,466.31	0.00	0.00	0.00
TD at 9845.52 - Bisti H09-2510-01H BHL									

Design 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									
Bisti H09-2510-01H BHL	0.00	359.95	5,590.94	-3.29	-4,466.31	1,971,038.191	2,700,619.893	36.416830	-107.909710
- plan misses target center by 0.08usft at 9845.52usft MD (5591.02 TVD, -3.29 N, -4466.31 E)									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
500.00	500.00	13 3/8"	13-3/8	17-1/2
4,850.00	4,850.00	9 5/8"	9-5/8	12-1/4

Great White Directional Services

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Bisti H09-2510-01H
Company:	Encana Oil & Gas	TVD Reference:	WELL @ 6650.00usft (Original Well Elev)
Project:	San Juan Co., NM (NAD83)	MD Reference:	WELL @ 6650.00usft (Original Well Elev)
Site:	Sec.9-T25N-R10W	North Reference:	True
Well:	Bisti H09-2510-01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
950.00	-5,700.00	Ojo Alamo Ss.		0.00		
1,125.00	-5,525.00	Kirtland Shale		0.00		
1,425.00	-5,225.00	Fruitland Coal		0.00		
1,845.00	-4,805.00	Pictured Cliffs Ss.		0.00		
1,970.00	-4,680.00	Lewis Shale		0.00		
2,635.00	-4,015.00	Chacra		0.00		
3,280.00	-3,370.00	Cliffhouse Ss.		0.00		
3,425.00	-3,225.00	Menefee Fn.		0.00		
4,312.00	-2,338.00	Point Lookout Ss.		0.00		
4,554.00	-2,096.00	Mancos Shale		0.00		
5,377.17	-1,290.00	Gallup Fn.		0.00		
5,651.00	0.00	Base Gallup		0.00		
5,651.00	0.00	Upper Carlile Shale		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,052.02	5,052.02	0.00	0.00	KOP / Start Build 10.00	
5,957.02	5,624.96	-0.43	-577.96	EOB / Start 3888.50 hold at 5957.02 MD	
9,845.52	5,591.02	-3.29	-4,466.31	TD at 9845.52	

WELLHEAD BLOWOUT CONTROL SYSTEM



Well name and number:

Bisti H09-2510 01H

