Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
JAN 11 2010
Bureau of Land Management
Farmington Field Office

FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: USA SF 079487

1a. Type of Work: [X] DRILL [ ] REENTER

6. If Indian, Allotee or Tribe Name:

1b. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone

7. Unit or CA Agreement Name and No.: NMNM-78418A

2. Name of Operator: Energen Resources Corporation

8. Lease Name and Well No.: San Juan 30-4 Unit #64H

3a. Address: 2010 Afton Place Farmington, New Mexico 87401

3b. Phone No. (include area code): (505)325-6800

9. API Well No.: 30-039-30897

4. Location of Well (Report location clearly and in accordance with any State equirements)*

At surface: 750' FSL, 1403' FWL SESW S.21, T.30N., R4W

At proposed prod. zone: 800' FSL, 2540' FWL SESW S.22 T.30N., R4W

10. Field and Pool, or Exploratory: Blanco Pictured Cliffs

11. Sec., T., R., M., or Blk. and Survey or Area: N Sec. 21-T30N-R04W

14. Distance in miles and direction from nearest town or post office*: 9 miles from Gobernador, NM

12. County or Parish: Rio Arriba

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
750'	640	160 SW/4

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
75'	10058' MD	NM2707

21. Elevations (Show whether DF, KDB, RT, GL, etc.	22. Approximate date work will start*	23. Estimated duration
7554' GL	04/01/2010	30 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:

RCVD JUN 8'10

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the BLM

OIL CONS. DIV.

DIST. 3

25. Signature	Name (Printed/Typed)	Date
Stephen Byers	Stephen Byers	1/11/2010

Title: Drilling Engineer

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Monica Kuehling		6/7/2010
Title	**Office**	
AFM	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)

HOLD C104 FOR Changes in Status to SJ30-4 #50
30-039-26609

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

JUN 11 2010

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

NMOCD
Hold C104
for Directional Survey
and "As Drilled" plat

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

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

RECEIVED

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

JAN 11 2010

Bureau of Land Management
Farmington Field Office

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-30897	72400	BLANCO PICTURED CLIFFS

[4] Property Code	[5] Property Name	[6] Well Number
21994	SAN JUAN 30-4 UNIT	64 H

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7554'

[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
N	21	30N	4W		750'	SOUTH	1403'	WEST	RIO ARRIBA

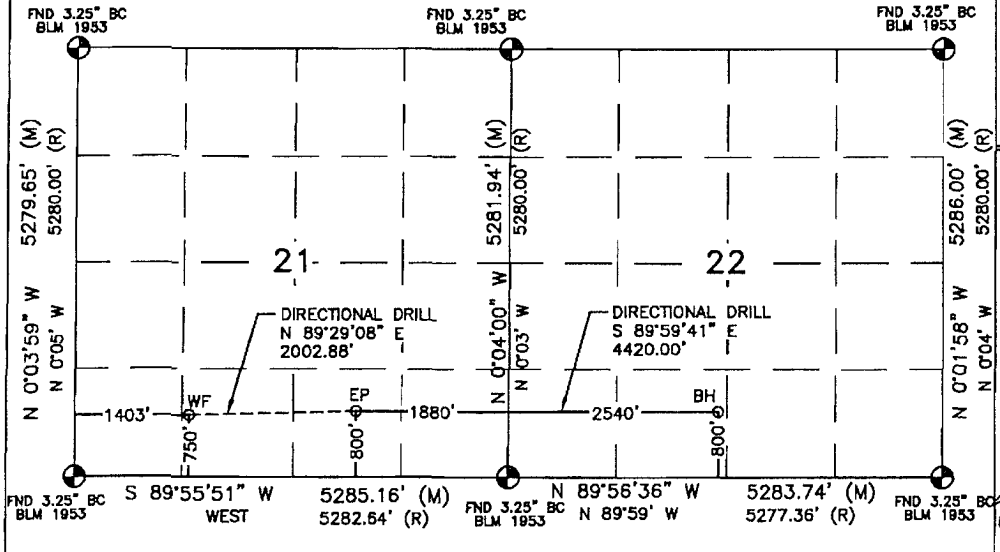
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	22	30N	4W		800'	SOUTH	2540'	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
SW 1/4 160 Sec. 22 "Project Area"			

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

[16]



SURFACE LOCATION
LAT. 36.79196° N
LONG. 107.26451° W
DATUM (NAD 1983)

ENTRY POINT
LAT. 36.79210° N
LONG. 107.25767° W
DATUM (NAD 1983)

BOTTOM HOLE
LAT. 36.79210° N
LONG. 107.24258° W
DATUM (NAD 1983)

[17] OPERATOR CERTIFICATION

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

Stephen Byers 1-11-10
Signature Date

Stephen Byers
Printed Name

[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.

OCTOBER 14, 2009
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201

1/11/2010

ENERGEN RESOURCES

OPERATIONS PLAN

WELL NAME.....San Juan 30-4 Unit #64
JOB TYPE.....Horizontal PC Lower Sand
DEPT.....Drilling and Completions

GENERAL INFORMATION

Surface Location	750 FSL 1403 FWL
S-T-R	(N) Sec.21, T30N, R04W
Bottom Hole Location	800 FSL 2540 FWL
S-T-R	(N) Sec.22, T30N, R04W
County, State	Rio Arriba, New Mexico
Elevations	7554' GL
Total Depth	10058' +/- (MD); 4492' (TVD)
Formation Objective	Pictured Cliffs

FORMATION TOPS

San Jose	Surface
Nacimiento	2610' (TVD)
Ojo Alamo Ss	3652' (TVD)
Kirtland Sh	4137' (TVD)
Fruitland Fm	4167' (TVD)
Pictured Cliffs	4259' (TVD) 4662'MD
Top Target PC	4457' (TVD) 5263'MD
Base Target PC	4543' (TVD)
Total Depth	**4492' (TVD), 10058' (MD)**

DRILLING

Conductor: 15" wellbore will be drilled with a freshwater mud system (spud mud)
Surface: 12-1/4" wellbore will be drilled with a fresh water mud system (spud mud).
Intermediate: 8-3/4" wellbore will be drilled with a LSND mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.4 ppg to 9.0 ppg.
Production: 6-1/4" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics. Anticipated BHP can be as high as 1600 psi.

Projected KOP is 2600' TVD with 4.02°/100' doglegs.

Blowout Control Specifications:
A 3000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. A 2" nominal, 2000 psi minimum choke manifold will also be used. An upper Kelly Cock valve handle and drill string valve should be available to fit each drill string and be available on the rig floor during drilling operations. **Pressure test BOP to 250 psi for 15 min and 2000 psi for 15 min.**

Logging Program:
Open hole logs: FMI 5638 – 10058 MD, 4492' – 4492' TVD.
Mudlogs: 4257' TVD, 5063' MD to TD
Surveys: Surface to KOP every 500' and a minimum of every 200' for directional.

1/11/2010

ENERGEN RESOURCES

CASING, TUBING & CASING EQUIPMENT

String	Start Depth	End Depth	Wellbore	Size	Wt	Grade
Conductor	0	150	15"	13-3/8"	48 lb/ft	H-40 ST&C
Surface	0	2000	12-1/4"	9-5/8"	32.3 lb/ft	H-40 ST&C
Intermediate TVD	0 0	5638 4492	8-3/4"	7"	23 lb/ft	J-55 LT&C
Prod. Liner TVD	5538 4490	10058 4492	6-1/4"	4-1/2"	11.6 lb/ft	J-55 LT&C
Tubing	0	5338	none	2-3/8"	4.7 lb/ft	J-55

Conductor Casing: Texas Pattern Guide Shoe on bottom of first joint and an insert float valve on top of first joint. Casing centralization with a minimum of 3 standard bow spring centralizers to achieve optimal standoff.

Surface Casing: Texas Pattern Guide Shoe on bottom of first joint and an insert float valve on top of first joint. Casing centralization with a minimum of 3 standard bow spring centralizers to achieve optimal standoff.

Intermediate Casing: Self fill float shoe with self fill float collar on bottom and top of first joint. Casing centralization with double bow spring and centralizers to optimize standoff.

Production Liner: Bull nose guide shoe on bottom of first joint, H-Latch liner drop off tool on top of last joint.

WELLHEAD

11" 3000 x 9 5/8" weld/slip on casing head. 9 5/8" x 7"x 2 3/8" 3000 psi Flanged Wellhead .

CEMENTING

Conductor Casing: 107 sks Type V with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk ~~50~~ 125 ft^3 of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test conductor casing to 750 psi for 30 min.

Surface Casing: 1062 sks Type V with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk ~~500~~ 1250 ft^3 of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min.

ENERGEN RESOURCES

Intermediate Casing: Circulate hole at least 1-1/2 hole volumes of mud and reduce funnel viscosity to aid in hole cleanout. Stage 1 to begin at 4152'-5638'.

First Stage: Lead with 69 sks 50/50 with 2.0% Bentonite, 0.30 % Halad – 344, 0.10 % CFR – 3, 5 #/sk Gilsonite, ¼ #/sk Flocele. (13.0 ppg, 1.35 ft^3/sk, 519.8 ft^3) and a tail of 150 sks Class G with 1.0 % $CaCl_2$ and ¼ #/sk Flocele. (15.6 ppg, 1.18 ft^3/sk, 177 ft^3) (697 ft^3 of slurry to circulate off the stage tool). Circulated 4-5 hours between stages at time plug down on first stage.

Second Stage: Lead with 350 sks 65/35 with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft^3/sk) and a tail of 75 sks Class G with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). WOC 12 hours. Test BOP as outlined in 'Drilling' section. Test manifold as outlined in 'Drilling' section. Test casing to 1500 psi for 30 min.

Production Liner: NO CEMENT

Set slips with full string weight
If cement does not circulate, run temperature survey in 8 hrs. to determine TOC.

OTHER INFORMATION

1) This well will be an open hole completion lined with an uncemented pre-drilled liner.
2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The intermediate string may need to be cemented in multiple stages with a slurry design deviated from that listed above.
3) If high reservoir pressures or water flows are encountered slurry design may need to be deviated to from those listed above to satisfy wellbore and formation conditions.
4) No abnormal temperatures or pressures are anticipated.
5) This gas is dedicated.

ENERGEN RESOURCES

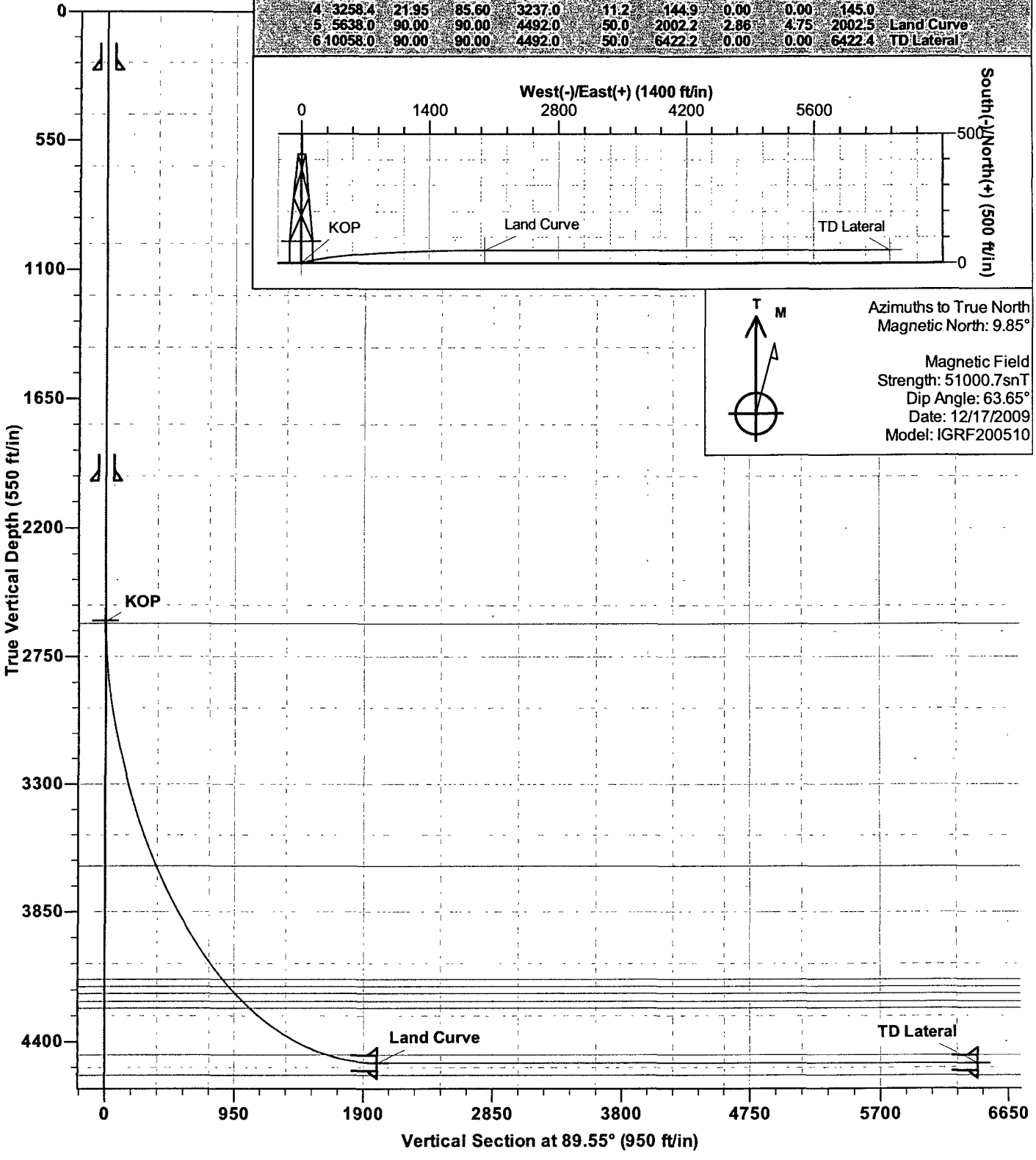
Project: Carson National Forest Sec. 21-T30N-R04W
Site: Manual Canyon
Well: San Juan 30-4 Unit #64
Wellbore: Horizontal PC Lower Sand

PROJECT DETAILS:

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2600.0	0.00	0.00	2600.0	0.0	0.0	0.00	0.00	0.0	KOP
3	3145.9	21.95	85.60	3132.6	7.9	103.0	4.02	85.60	103.0	
4	3258.4	21.95	85.60	3237.0	11.2	144.9	0.00	0.00	145.0	
5	5638.0	90.00	90.00	4492.0	50.0	2002.2	2.86	4.75	2002.5	Land Curve
6	10058.0	90.00	90.00	4492.0	50.0	6422.2	0.00	0.00	6422.4	TD Lateral



Energen

DIRECTIONAL PLAN

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well San Juan 30-4 Unit #64
Project:	Carson National Forest Sec. 21-T30N-R04W	**TVD Reference:**	KB @ 7567.0ft (KB)
Site:	Manual Canyon	**MD Reference:**	KB @ 7567.0ft (KB)
Well:	San Juan 30-4 Unit #64	**North Reference:**	True
Wellbore:	Horizontal PC Lower Sand	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	N/S (ft)	E/W (ft)	V. Sec (ft)
4,537.2	4,197.0	58.51	88.91	2.86	40.9	956.1	956.4
			Top Fruitland Coal				
4,600.0	4,229.0	60.30	88.99	2.86	41.9	1,010.1	1,010.4
4,604.1	4,231.0	60.42	88.99	2.86	41.9	1,013.7	1,014.0
			Base Fruitland Coal				
4,662.4	4,259.0	62.09	89.06	2.86	42.8	1,064.7	1,065.0
			Pictured Cliffs				
4,700.0	4,276.3	63.16	89.10	2.86	43.3	1,098.2	1,098.5
4,800.0	4,319.2	66.02	89.21	2.86	44.7	1,188.5	1,188.8
4,900.0	4,357.5	68.88	89.32	2.86	45.8	1,280.8	1,281.1
5,000.0	4,391.2	71.75	89.42	2.86	46.9	1,374.9	1,375.3
5,100.0	4,420.2	74.61	89.51	2.86	47.8	1,470.7	1,471.0
5,200.0	4,444.3	77.47	89.61	2.86	48.5	1,567.7	1,568.0
5,263.0	4,457.0	79.27	89.66	2.86	48.9	1,629.4	1,629.7
			Top Target PC				
5,300.0	4,463.5	80.33	89.70	2.86	49.1	1,665.8	1,666.1
5,400.0	4,477.9	83.19	89.79	2.86	49.6	1,764.8	1,765.1
5,500.0	4,487.2	86.05	89.88	2.86	49.9	1,864.3	1,864.6
5,600.0	4,491.6	88.91	89.97	2.86	50.0	1,964.2	1,964.5
5,638.0	4,492.0	90.00	90.00	2.86	50.0	2,002.2	2,002.5
			Land Curve				
5,700.0	4,492.0	90.00	90.00	0.00	50.0	2,064.2	2,064.5
5,800.0	4,492.0	90.00	90.00	0.00	50.0	2,164.2	2,164.5
5,900.0	4,492.0	90.00	90.00	0.00	50 0	2,264.2	2,264.5
6,000.0	4,492.0	90.00	90.00	0.00	50.0	2,364.2	2,364.5
6,100.0	4,492.0	90.00	90.00	0.00	50.0	2,464.2	2,464.5
6,200.0	4,492.0	90.00	90.00	0.00	50.0	2,564.2	2,564.5
6,300.0	4,492.0	90.00	90.00	0.00	50.0	2,664.2	2,664.5
6,400.0	4,492.0	90.00	90.00	0.00	50.0	2,764.2	2,764.5
6,500.0	4,492.0	90.00	90.00	0.00	50.0	2,864.2	2,864.5
6,600.0	4,492.0	90.00	90.00	0.00	50.0	2,964.2	2,964.5
6,700.0	4,492.0	90.00	90.00	0.00	50.0	3,064.2	3,064.5
6,800.0	4,492.0	90.00	90.00	0.00	50.0	3,164.2	3,164.5
6,900.0	4,492.0	90.00	90.00	0.00	50.0	3,264.2	3,264.5
7,000.0	4,492.0	90.00	90.00	0.00	50.0	3,364.2	3,364.5
7,100.0	4,492.0	90.00	90.00	0.00	50.0	3,464.2	3,464.5
7,200.0	4,492.0	90.00	90.00	0.00	50.0	3,564.2	3,564.5
7,300.0	4,492.0	90.00	90.00	0.00	50.0	3,664.2	3,664.5
7,400.0	4,492.0	90.00	90.00	0.00	50.0	3,764.2	3,764.5
7,500.0	4,492.0	90.00	90.00	0.00	50.0	3,864.2	3,864.5
7,600.0	4,492.0	90.00	90.00	0.00	50.0	3,964.2	3,964.5
7,700.0	4,492.0	90.00	90.00	0.00	50.0	4,064.2	4,064.5
7,800.0	4,492.0	90.00	90.00	0.00	50.0	4,164 2	4,164.5
7,900.0	4,492.0	90.00	90.00	0.00	50.0	4,264.2	4,264.5
8,000.0	4,492.0	90.00	90.00	0.00	50.0	4,364.2	4,364.5

Energen

DIRECTIONAL PLAN

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well San Juan 30-4 Unit #64
Project:	Carson National Forest Sec. 21-T30N-R04W	**TVD Reference:**	KB @ 7567.0ft (KB)
Site:	Manual Canyon	**MD Reference:**	KB @ 7567.0ft (KB)
Well:	San Juan 30-4 Unit #64	**North Reference:**	True
Wellbore:	Horizontal PC Lower Sand	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
KOP - plan hits target - Point	0.00	0.00	2,600.0	0.0	0.0	2,109,133.34	1,343,366.89	36° 47' 31.056 N	107° 15' 52.236 W
Land Curve - plan hits target - Point	0.00	0.00	4,492.0	50.0	2,002.2	2,109,162.11	1,345,369.47	36° 47' 31.550 N	107° 15' 27.621 W
TD Lateral - plan hits target - Point	0.00	0.00	4,492.0	50.0	6,422.2	2,109,115.23	1,349,789.22	36° 47' 31.543 N	107° 14' 33.282 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
250.0	250.0	Conductor	13-3/8	17-1/2
2,000.0	2,000.0	Surface	9-5/8	12-1/4
5,638.0	4,492.0	Intermediate	7	8-3/4
10,058.0	4,492.0	Liner	4-1/2	6-1/4

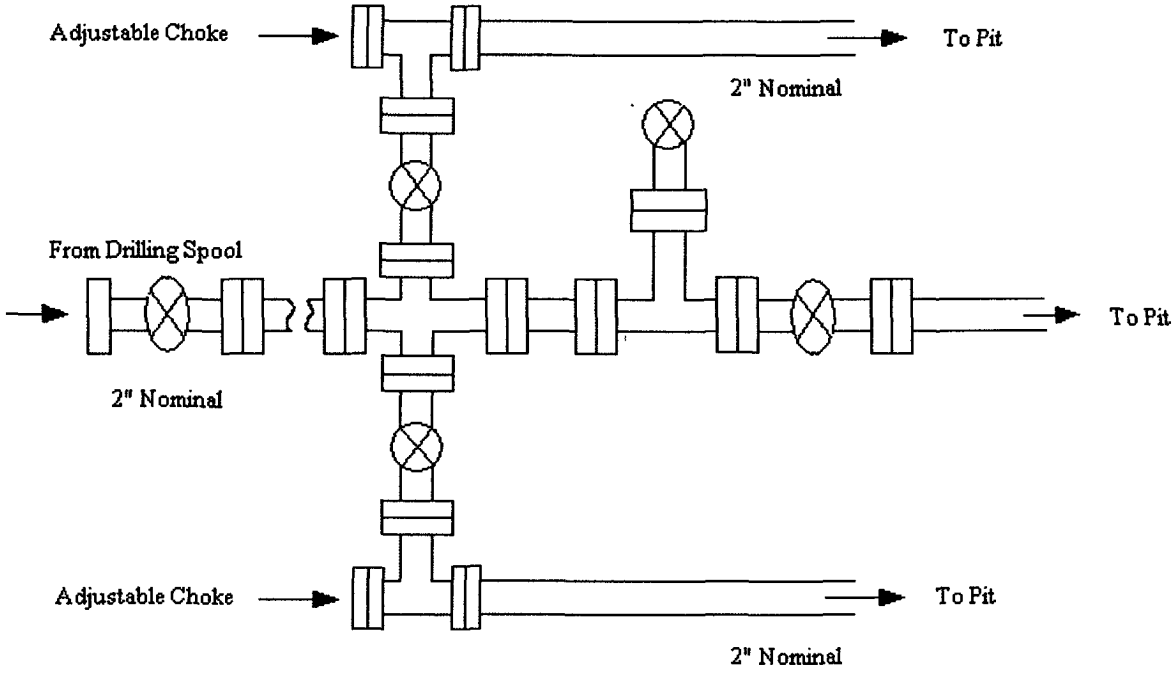
Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,263.0	4,457.0	Top Target PC		0.00	
4,662.4	4,259.0	Pictured Cliffs		0.00	
2,610.0	2,610.0	Nacimiento		0.00	
4,427.2	4,137.0	Kirtland Sh		0.00	
4,537.2	4,197.0	Top Fruitland Coal		0.00	
	4,543.0	Base Target PC		0.00	
4,604.1	4,231.0	Base Fruitland Coal		0.00	
3,732.7	3,652.0	Ojo Alamo SS		0.00	
4,481.1	4,167.0	Fruitland Fm		0.00	

Checked By: _____ Approved By: _____ Date: _____

Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD

Energen Resources Corporation

Typical BOP Configuration for Gas Drilling