Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
JAN 22 2008
Bureau of Land Management
Farmington Field Office

FORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007

RCVD AUG 25 '08
OIL CONS. DIV.
DIST. 3

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM 30014

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.:

2. Name of Operator: Energen Resources Corporation

8. Lease Name and Well No.: Carracas 21 B #1

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

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

9. API Well No.: 30-039-30473

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

At surface: 1655 fnl, 1165 fwl

10. Field and Pool, or Exploratory: Basin Fruitland Coal

At proposed prod. zone: 760 fnl, 760 fel

11. Sec., T , R., M., or Blk. and Survey or Area: (E) Sec 21, T32N, R4W

14. Distance in miles and direction from nearest town or post office*: Approx 10 miles SE of Arboles, CO

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
760'	2480.00	320 N/2
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'	6892' (MD)	
21. Elevations (Show whether DF, KDB, RT, GL, etc.	**22. Approximate date work will start***	**23. Estimated duration**
7335' GL	6/1/08	25 days

24. Attachments

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

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 shall 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 authorized officer.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

25. Signature	Name (*Printed/Typed*)	Date
	Nathan Smith	1/11/08

Title: Drilling Engineer

Approved by (Signature)	Name (*Printed/Typed*)	Date
		8/22/08
Title AFM	**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 knowlingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

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

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

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

NMOCD

AUG 28 2008

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

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

RCVD AUG 25 '08

☐ AMENDED REPORT

OIL CONS. DIV.
DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-30473	71629	Basin Fruitland Coal

[4] Property Code	[5] Property Name	[6] Well Number
35661	CARRACAS 21B	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7335'

[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
E	21	32N	4W		1655'	NORTH	1165'	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
A	21	32N	4W		760'	NORTH	760'	EAST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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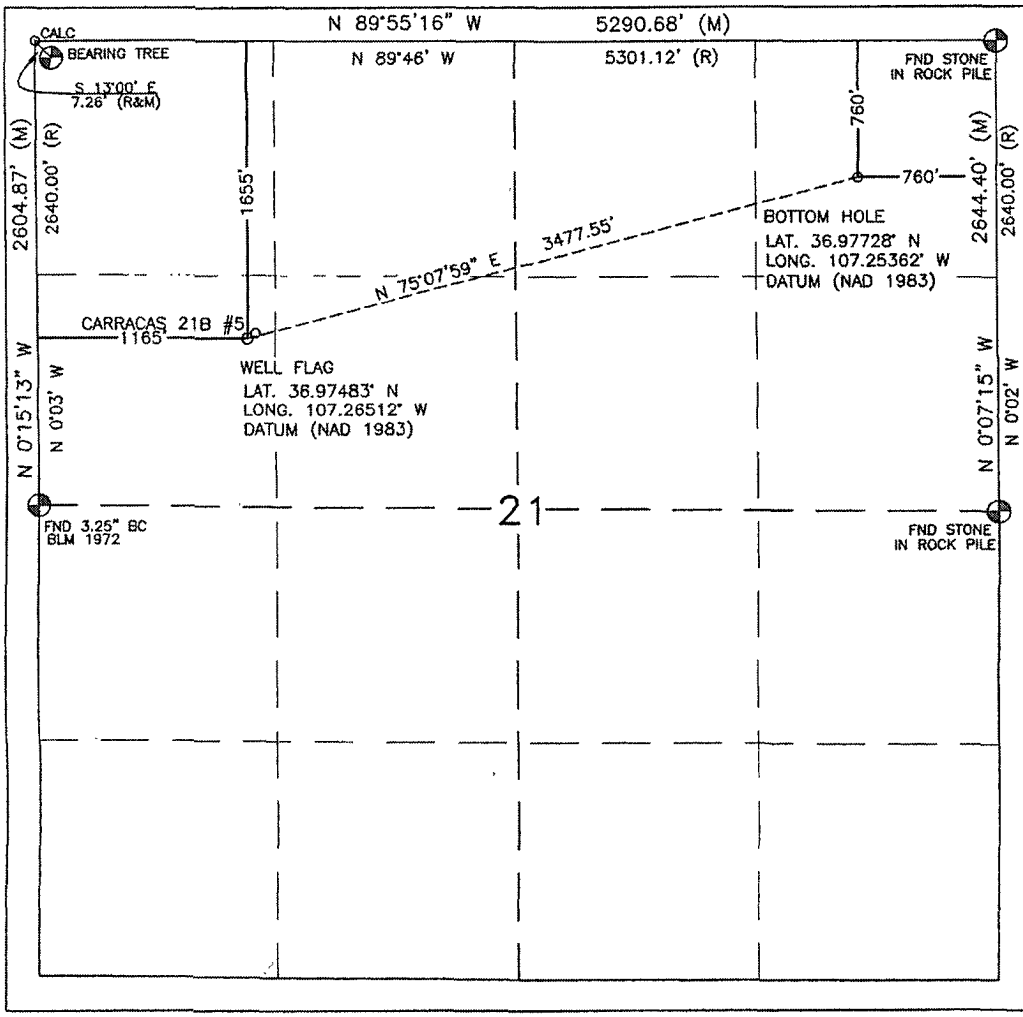


[17] OPERATOR CERTIFICATION

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

Signature — Date: 8/22/08

Printed Name: Nathan Smith

[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.

JUNE 27, 2007
Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell

DAVID R. RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201

Operations Plan
January 11, 2008

Carracas 21 B #1

General Information

Location	1655 fnl, 1165 fwl at surface 760 fnl, 760 fel at bottom ne¼e 21, T32N, R4W Rio Arriba County, New Mexico
Elevations	7335' GL
Total Depth	6892' (MD), 4075' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2320' (TVD)
Ojo Alamo Ss	3514' (TVD), 3598' (MD)
Kirtland Sh	3667' (TVD), 3808' (MD)
Fruitland Fm	3766' (TVD), 3964' (MD)
Top Coal	4060' (TVD), 4744' (MD)
Bottom Coal	4084' (TVD)
Total Depth	**4084' (TVD), 6892' (MD)**

Drilling

The 12 ¼" wellbore will be drilled with a fresh water mud system.
The 8 ¾" wellbore will be drilled with a low solids fresh water/polymer mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.9 ppg to 9.5 ppg.
Projected KOP is 2525' TVD with 3.70°/100' doglegs.
The 6 ¼" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics. Anticipated BHP can be as high as 1100 psi.
Blowout Control Specifications:

A 2000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. During air drilling operations, a Shaffer Type 50 or equivalent rotating head will be installed on top of the stack. 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.

Logging Program:

Open hole logs: None
Mud logs: From 3766' (TVD), 3964' (MD) to TD.
Surveys: Surface to KOP every 500' and a minimum of every 250' for directional.

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-~~200'~~ 320	12 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4075'(TVD) 5000' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	4060'-4084' (TVD) 4950'-6892' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4900'(MD)		2 3/8"	4.7 ppf	J-55

Casing Equipment:

Surface Casing: Depending on wellbore conditions, a Texas Pattern Guide Shoe on bottom. Casing centralization with standard bow spring centralizers to achieve optimal standoff.

Intermediate Casing: Depending on wellbore conditions, a Cement nose guide shoe with self fill insert float collar on top of bottom joint and casing centralization with standard bow spring and rigid centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

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

Wellhead

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

Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 148 ft^3 of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

Intermediate Casing: Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 700 sks 65/35 with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft^3/sk) and a tail of 125 sks Type V with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (1500 ft^3 of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min.

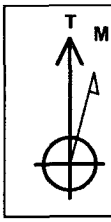
Other Information

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. This gas is dedicated.

ENERGEN RESOURCES

Project: Carson Nat'l Forest - NE S21, T32N, R4W
Site: Carracas Mesa
Well: Carracas 21 B #1
Wellbore: Preliminary Plan
Plan: Plan #1 (Carracas 21 B #1/Preliminary Plan)

PROJECT DETAILS: Carson Nat'l Forest - NE S21, T32N, R4W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Central Zone
System Datum:	Mean Sea Level

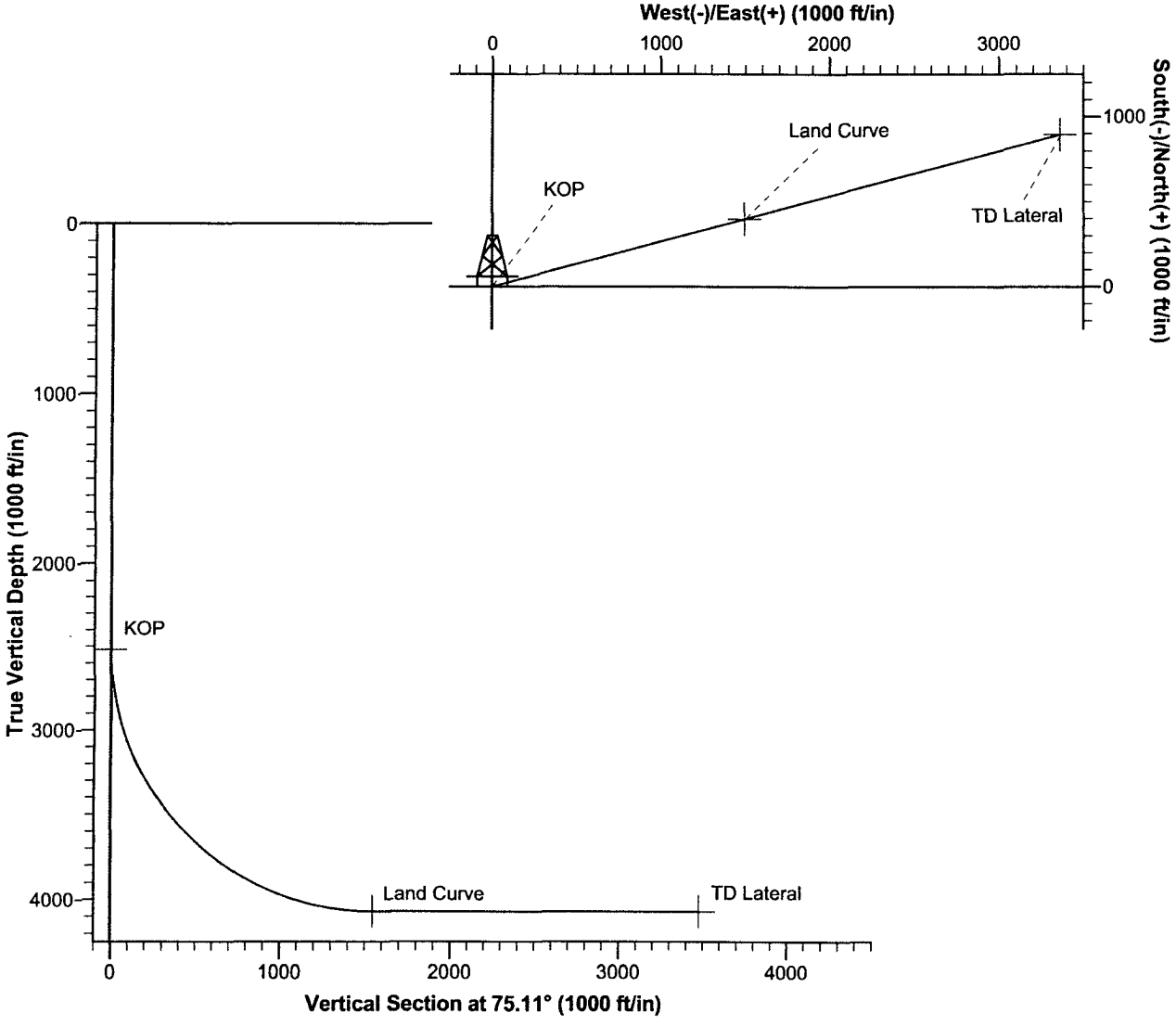


Azimuths to True North
Magnetic North: 10.12°

Magnetic Field
Strength: 51292.4snT
Dip Angle: 63.85°
Date: 1/11/2008
Model: IGRF200510

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	2525.0	0.00	0.00	2525.0	0.0	0.0	0.00	0.00	0.0	KOP
3	4961.8	90.08	75.11	4075.0	398.8	1500.0	3.70	75.11	1552.1	Land Curve
4	6892.7	89.92	75.11	4075.0	895.0	3366.0	0.01	-178.04	3483.0	TD Lateral



Energen

Planned Wellpath

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 21 B #1
Project:	Carson Nat'l Forest - NE S21, T32N, R4W	**TVD Reference:**	KB @ 7348.0ft (Drilling Rig)
Site:	Carracas Mesa	**MD Reference:**	KB @ 7348.0ft (Drilling Rig)
Well:	Carracas 21 B #1	**North Reference:**	True
Wellbore:	Preliminary Plan	**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)	V. Sec (ft)	N/S (ft)	E/W (ft)
4,600.0	4,033.4	76.70	75.11	3.70	1,193.5	306.7	1,153.4
4,700.0	4,053.3	80.40	75.11	3.70	1,291.5	331.8	1,248.1
4,743.9	4,060.0	82.02	75.11	3.70	1,334.9	343.0	1,290.1
Coal Top							
4,800.0	4,066.8	84.10	75.11	3.70	1,390.5	357.3	1,343.9
4,900.0	4,073.9	87.79	75.11	3.70	1,490.3	382.9	1,440.2
4,961.8	4,075.0	90.08	75.11	3.70	1,552.1	398.8	1,500.0
Land Curve							
5,000.0	4,074.9	90.07	75.11	-0.01	1,590.3	408.6	1,536.9
5,100.0	4,074.8	90.07	75.11	-0.01	1,690.3	434.3	1,633.5
5,200.0	4,074.7	90.06	75.11	-0.01	1,790.3	460.0	1,730.2
5,300.0	4,074.6	90.05	75.11	-0.01	1,890.3	485.7	1,826.8
5,400.0	4,074.5	90.04	75.11	-0.01	1,990.3	511.4	1,923.4
5,500.0	4,074.5	90.03	75.11	-0.01	2,090.3	537.1	2,020.1
5,600.0	4,074.4	90.03	75.11	-0.01	2,190.3	562.8	2,116.7
5,700.0	4,074.4	90.02	75.11	-0.01	2,290.3	588.5	2,213.4
5,800.0	4,074.4	90.01	75.11	-0.01	2,390.3	614.2	2,310.0
5,900.0	4,074.3	90.00	75.11	-0.01	2,490.3	639.9	2,406.7
6,000.0	4,074.3	89.99	75.11	-0.01	2,590.3	665.6	2,503.3
6,100.0	4,074.4	89.99	75.11	-0.01	2,690.3	691.3	2,599.9
6,200.0	4,074.4	89.98	75.11	-0.01	2,790.3	717.0	2,696.6
6,300.0	4,074.4	89.97	75.11	-0.01	2,890.3	742.7	2,793.2
6,400.0	4,074.5	89.96	75.11	-0.01	2,990.3	768.4	2,889.9
6,500.0	4,074.6	89.95	75.11	-0.01	3,090.3	794.1	2,986.5
6,600.0	4,074.7	89.95	75.11	-0.01	3,190.3	819.8	3,083.1
6,700.0	4,074.8	89.94	75.11	-0.01	3,290.3	845.5	3,179.8
6,800.0	4,074.9	89.93	75.11	-0.01	3,390.3	871.2	3,276.4
6,892.7	4,075.0	89.92	75.11	-0.01	3,483.0	895.0	3,366.0
TD Lateral							

Energen

Planned Wellpath

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Site:	Carracas Mesa	**MD Reference:**	KB @ 7348.0ft (Drilling Rig)
Well:	Carracas 21 B #1	**North Reference:**	True
Wellbore:	Preliminary Plan	**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	2,525.0	0.0	0.0	2,175,713.03	1,343,896.31	36° 58' 29.388 N	107° 15' 54.432 W
TD Lateral - plan hits target - Point	0.00	0.00	4,075.0	895.0	3,366.0	2,176,572.11	1,347,271.66	36° 58' 38.235 N	107° 15' 12.950 W
Land Curve - plan hits target - Point	0.00	0.00	4,075.0	398.8	1,500.0	2,176,095.82	1,345,400.48	36° 58' 33.331 N	107° 15' 35.947 W

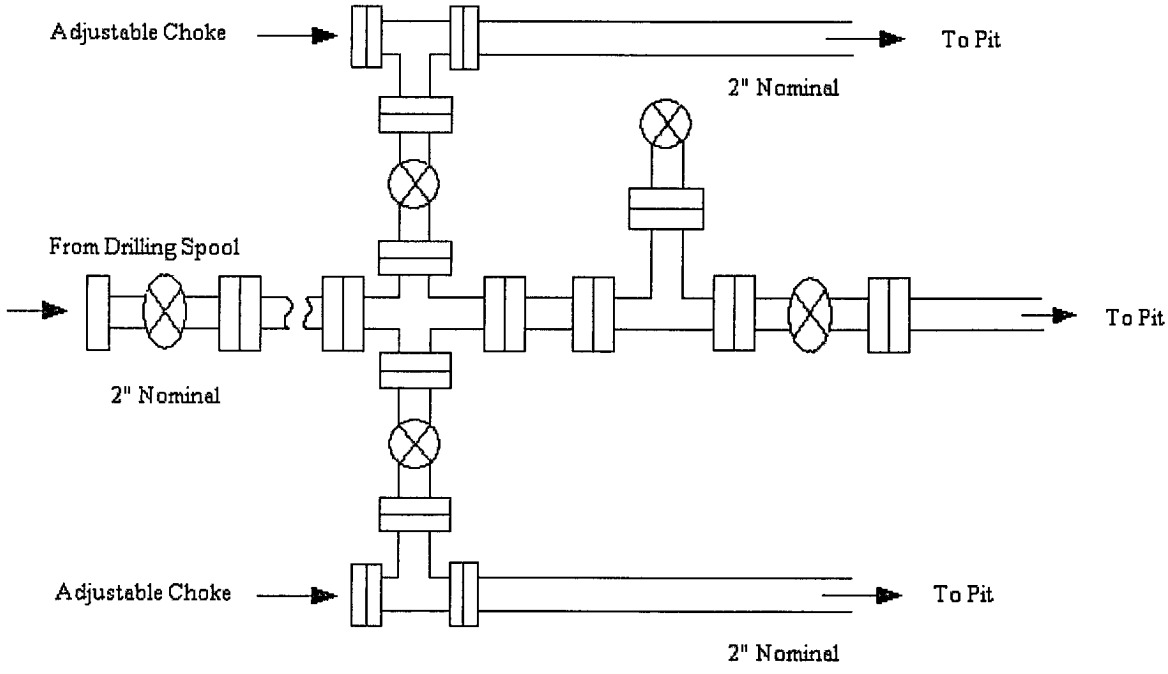
Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,964.0	3,766.0	Fruitland Fm		0.00	
3,597.6	3,514.0	Ojo Alamo Ss		0.00	
0.0	0.0	San Jose		0.00	
3,808.8	3,667.0	Kirtland Shale		0.00	
4,743.9	4,060.0	Coal Top		0.00	
2,320.0	2,320.0	Nacimiento		0.00	
	4,084.0	Coal Base		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