

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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

MAR 08 2009

APPLICATION FOR PERMIT TO DRILL OR REENTER

| | | | |
|---|--|---|--|
| 1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER | | 5. Lease Serial No. USA NMNM 30015 | |
| 1b. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone | | 6. If Indian, Allottee or Tribe Name | |
| 2. Name of Operator Energen Resources Corporation | | 7. Unit or CA Agreement Name and No. | |
| 3a. Address 2010 Afton Place, Farmington, New Mexico 87401 | | 8. Lease Name and Well No. Carracas 31B #16 | |
| 3b. Phone No. (include area code) (505)325-6800 | | 9. API Well No. 30-039-30701 | |
| 4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 970 FSL, 815 FEL At proposed prod. zone 760 FSL, 1880 FEL, 31-32N-4E | | 10. Field and Pool, or Exploratory Basin Fruitland Coal | |
| 14. Distance in miles and direction from nearest town or post office* 42 miles NE of Blanco, NM | | 11. Sec., T., R., M., or Blk. and Survey or Area P-Sec.30-T32N-R04W NMPM | |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 760' | | 12. County or Parish Rio Arriba | |
| 16. No. of Acres in lease 482.20 | | 13. State NM | |
| 17. Spacing Unit dedicated to this well 320 Acres - E 1/2 | | 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Approximatley 75' | |
| 19. Proposed Depth 8831' | | 20. BLM/BIA Bond No. on file NM2707 | |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7247' GL | | 22. Approximate date work will start* May 2009 | |
| 23. Estimated duration 22 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:

- | | |
|--|---|
| 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) Jason Kincaid | Date 3/2/09 |
| Title Drilling Engineer | | |
| Approved by (Signature) | Name (Printed/Typed) | Date 3/25/09 |
| Title Acting AFM Miner | | |

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)

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

Hold C104
for Directional Survey
and "As Drilled" plat

NOTIFY AZTEC OGD 24 HRS.
PRIOR TO CASING & CEMENT

HOLD C104 FOR

NMOCD

APR 01 2009

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

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

DISTRICT II
1301 E. 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

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

MAR 33 2009

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

Bureau of Land Management **AMENDED REPORT**
Farmington Field Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | | |
|--------------------------------|---|---------------------|------------------------------------|
| *API Number 30039.30701 | | *Pool Code 71629 | *Pool Name Basin Fruitland Coal |
| *Property Code —35597 35667 | *Property Name CARRACAS 31 B | | *Well Number 16 |
| *OGRID No. 162928 | *Operator Name ENERGEN RESOURCES CORPORATION | | *Elevation 7247' |

¹⁰ Surface Location

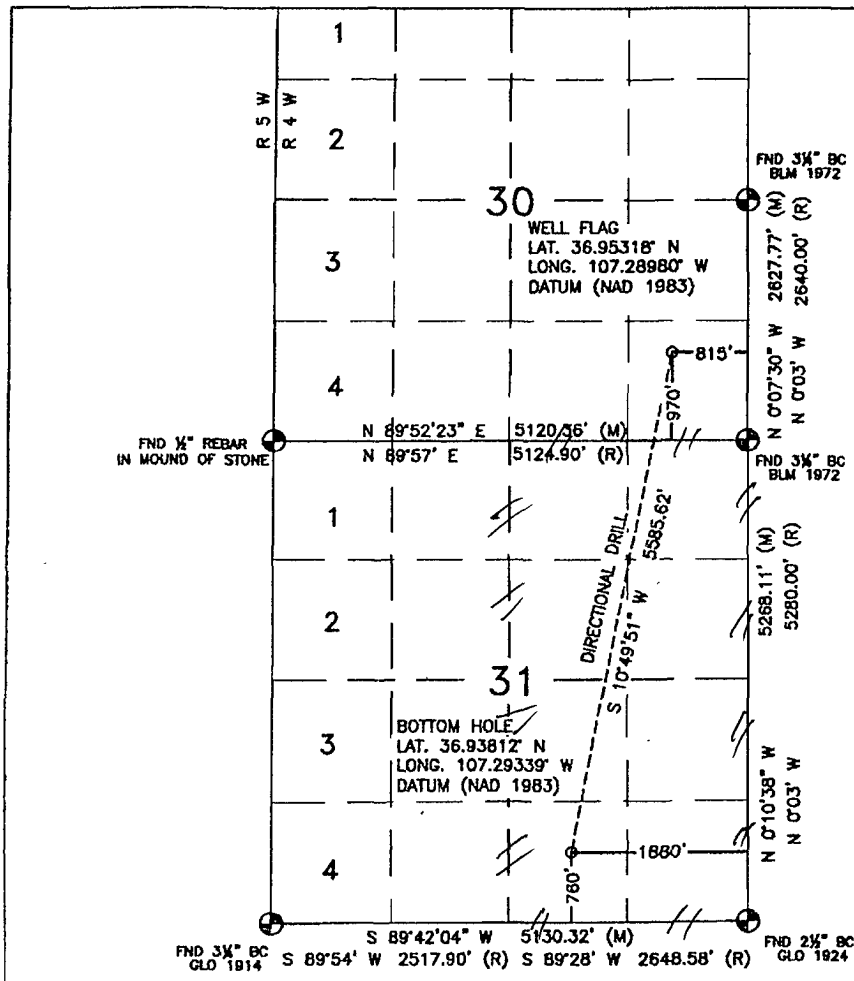
| | | | | | | | | | |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|------------|
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
| P | 30 | 32N | 4W | | 970' | SOUTH | 815' | EAST | RIO ARRIBA |

11 Bottom Hole Location If Different From Surface

| | | | | | | | | | |
|--------------------------------------|---------------|-----------------|--------------------------------------|---------|----------------------------------|---------------------------|-------------------------|------------------------|----------------------|
| UL or lot no. 0 | Section 31 | Township 32N | Range 4W | Lot Idn | Feet from the 760' | North/South line SOUTH | Feet from the 1880' | East/West line EAST | County RIO ARRIBA |
| ²² Dedicated Acres 320 | | | ²³ Joint or Infill E/2 | | ²⁴ Consolidation Code | | ²⁵ 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

18



| | |
|----|------------------------|
| 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] *KC* *3-7-09*
Signature Date
Jas. Kinard
Printed Name

18 SURVEYOR CERTIFICATION

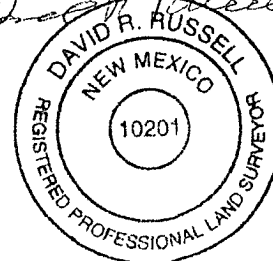
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JUNE 26, 2008

Date of Survey

Signature and Seal of Professional Surveyor:

John Russell
J. R. RUSS



DAVID RUSSELL

Certificate Number

10201

2/24/2009



OPERATIONS PLAN

WELL NAME.....Carracas 31B #16
JOB TYPE.....Horizontal OP FTC
DEPT.....Drilling and Completions
PREPARED BY.....Jason Kincaid

GENERAL INFORMATION

| | |
|----------------------|-----------------------------|
| Surface Location | 970 FSL 815 FEL |
| S-T-R | (P) Sec.30, T32N, R04W |
| Bottom Hole Location | 760 FSL 1880 FEL |
| S-T-R | (O) Sec.31, T32N, R04W |
| County, State | Rio Arriba, New Mexico |
| Elevations | 7247' GL |
| Total Depth | 8831' +/- (MD); 4002' (TVD) |
| Formation Objective | Basin Fruitland Coal |

FORMATION TOPS

| | |
|------------------|-------------------------|
| San Jose | Surface |
| Nacimiento | 2282' (TVD) |
| Ojo Alamo Ss | 3358' (TVD) |
| Kirtland Sh | 3479' (TVD) |
| Fruitland Fm | 3602' (TVD) |
| Top Target Coal | 3992' (TVD) |
| Base Target Coal | 4013' (TVD) |
| Pictured Cliffs | 4058' (TVD) |
| Total Depth | 4002' (TVD), 8831' (MD) |

DRILLING

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 8.5 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 1100 psi.

Projected KOP is 2240' TVD with 3.25°/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: None

Mudlogs: 3602' TVD, 3796' MD to TD

Surveys: Surface to KOP every 500' and a minimum of every 200' for directional.

2/24/2009



CASING, TUBING & CASING EQUIPMENT

| String | Start Depth | End Depth | Wellbore | Size | Wt | Grade |
|--------------|-------------|--------------------|----------|--------|------------|-----------|
| Surface | 0 | 320-200 | 12-1/4" | 9-5/8" | 32.3 lb/ft | H-40 ST&C |
| Intermediate | 0 | 5008 | 8-3/4" | 7" | 23 lb/ft | J-55 LT&C |
| TVD | 0 | 4002 | | | | |
| Prod. Liner | 4950 | 8831 | 6-1/4" | 4-1/2" | 11.6 lb/ft | J-55 LT&C |
| TVD | 4000 | 4002 | | | | |
| Tubing | 0 | 4900 | none | 2-3/8" | 4.7 lb/ft | J-55 |

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

- Adjust to 320'
Surface Casing: 125 sks Type V with 2.0 % CaCl₂ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk 148 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min.

Intermediate Casing: Depending on wellbore conditions, cement may consist of 690 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft³/sk) and a tail of 150 sks Class G with ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1507 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Test casing to 1200 psi for 30 min.

Production Liner: NO CEMENT, Open Hole Completion

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.

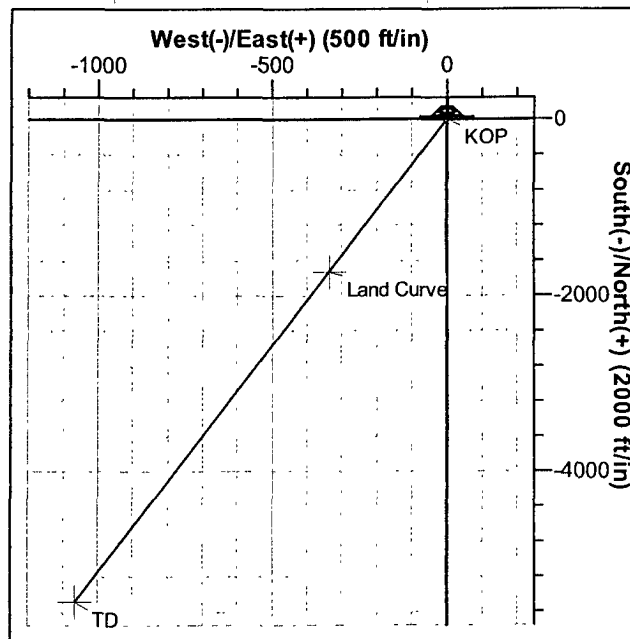
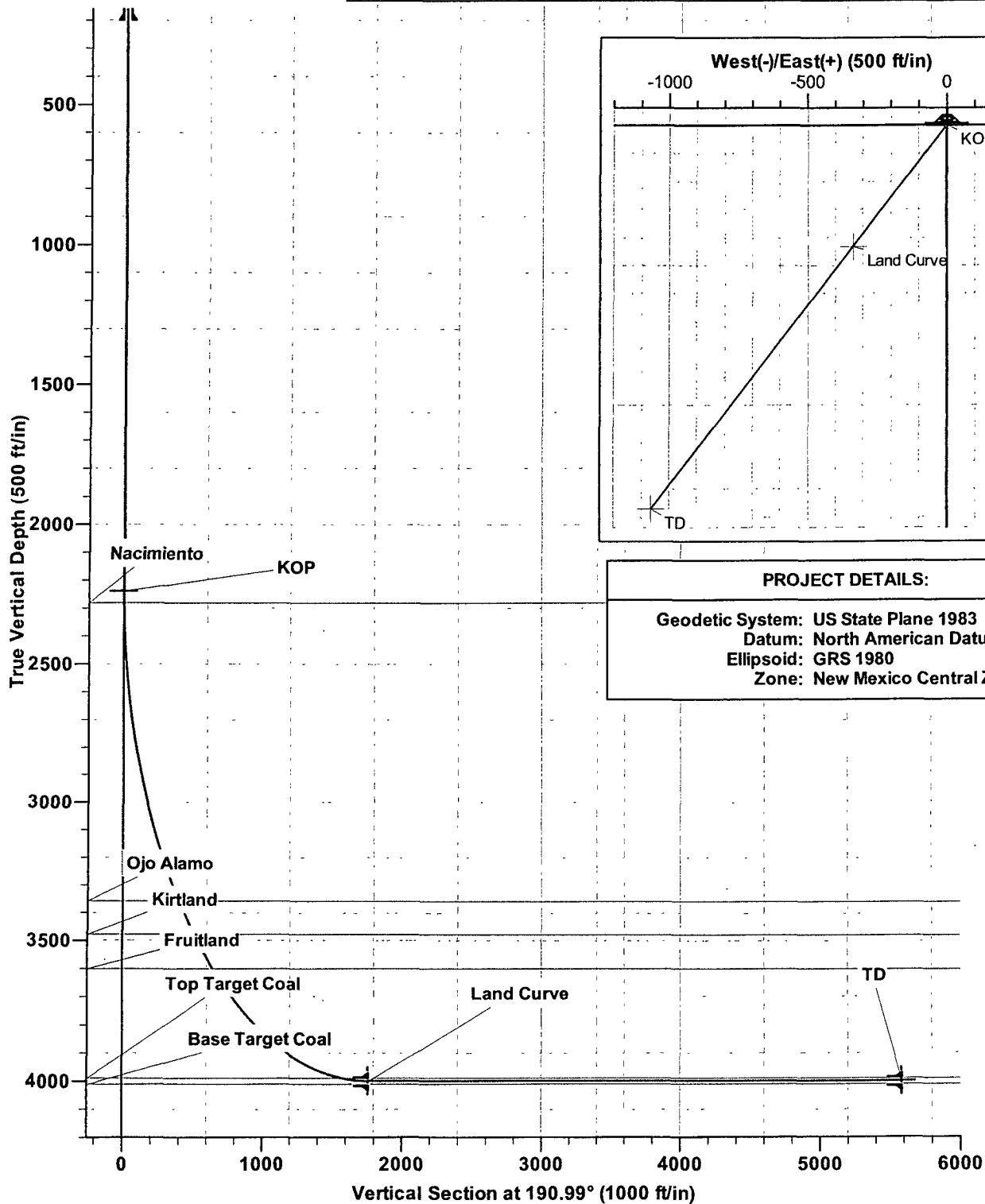


Azimuths to True North
Magnetic North: 9.99°

Magnetic Field
Strength: 51170.0snT
Dip Angle: 63.80°
Date: 2/23/2009
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 | 2240.0 | 0.00 | 0.00 | 2240.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | KOP |
| 3 | 5008.1 | 90.01 | 190.99 | 4002.0 | -1730.0 | -336.0 | 3.25 | 190.99 | 1762.3 | Land Curve |
| 4 | 8831.4 | 89.99 | 190.99 | 4002.0 | -5483.2 | -1065.0 | 0.00 | 174.90 | 5585.6 | TD |



PROJECT DETAILS:

Geodetic System: US State Plane 1983

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Zone: New Mexico Central Zone

Company: Energen Resources
Project: Carson National Forest: Sec.30-T32N-R04W
Site: Carracas: Forest Rd 218C
Well: Carracas 31B #16
Wellbore: Horizontal OP FTC
Design: Preliminary Plan

Local Co-ordinate Reference: Well Carracas 31B #16
TVD Reference: KB @ 7262.0ft (Drilling Rig 15' KB)
MD Reference: KB @ 7262.0ft (Drilling Rig 15' KB)
North Reference: True
Survey Calculation Method: Minimum Curvature
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) |
|------------|-------------|------------|------------|--------------------|-------------|-------------|----------------|
| 8,831.4 | 4,002.0 | 89.99 | 190.99 | 0.00 | -5,483.2 | -1,065.0 | 5,585.6 |

TD

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 | 2,240.0 | 0.0 | 0.0 | 2,167,908.53 | 1,336,600.95 | 36° 57' 11.448 N | 107° 17' 23.280 W |
| TD - plan hits target - Point | 0.00 | 0.00 | 4,002.0 | -5,483.2 | -1,065.0 | 2,162,437.32 | 1,335,476.19 | 36° 56' 17.233 N | 107° 17' 36.398 W |
| Land Curve - plan hits target - Point | 0.00 | 0.00 | 4,002.0 | -1,730.0 | -336.0 | 2,166,182.29 | 1,336,246.09 | 36° 56' 54.343 N | 107° 17' 27.419 W |

Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---------------------------|---------------------------|--------------|---------------------------|-------------------------|
| 200.0 | 200.0 | Surface | 9-5/8 | 12-1/4 |
| 5,008.0 | 4,002.0 | Intermediate | 7 | 8-3/4 |
| 8,831.0 | 4,002.0 | Liner | 4-1/2 | 6-1/4 |

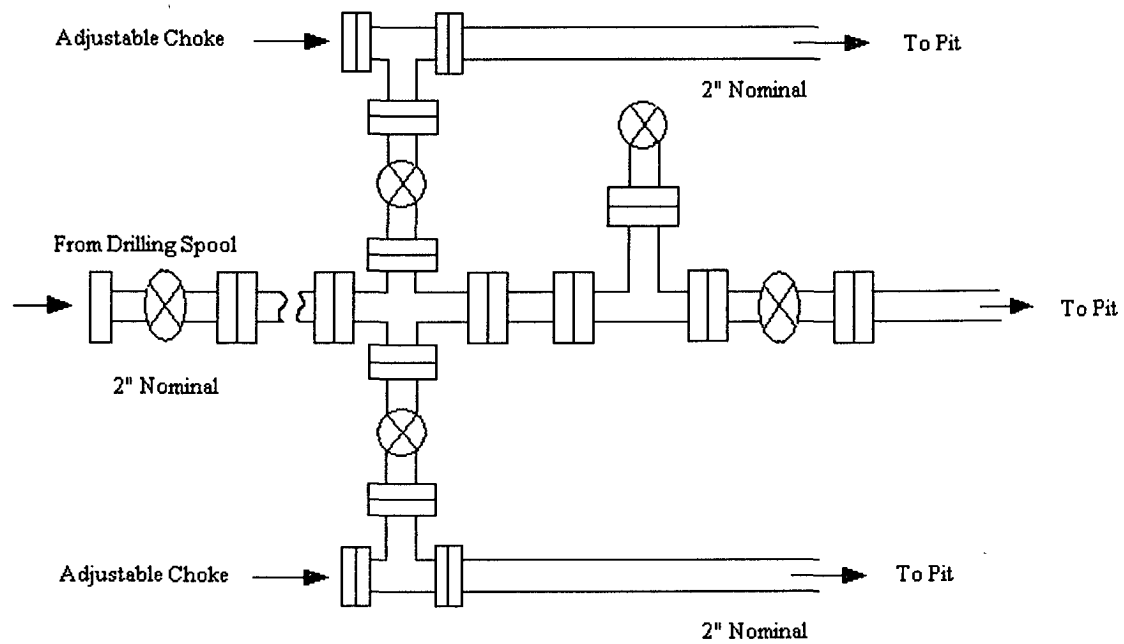
Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------------|---------------------------|------------------|-----------|------------|-------------------------|
| 4,819.9 | 3,992.0 | Top Target Coal | | 0.00 | |
| 3,451.1 | 3,358.0 | Ojo Alamo | | 0.00 | |
| 3,614.1 | 3,479.0 | Kirtland | | 0.00 | |
| 3,796.8 | 3,602.0 | Fruitland | | 0.00 | |
| 2,282.0 | 2,282.0 | Nacimiento | | 0.00 | |
| 6,263.0 | 4,013.0 | Base Target Coal | | 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

