Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NM 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 28 B #13

3a. Address: 2198 Bloomfield Hwy Farmington, NM 87401

3b. Phone No. (include area code): 505.325.6800

9. API Well No.: 30-039-30206

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

At surface: 1790' fsl, 1900' fel

At proposed prod. zone: 760' fsl, 760' fwl 'M'

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

11. Sec., T., R., M., or Blk. and Survey or Area: (J) S28, T32N, R4W

14. Distance in miles and direction from nearest town or post office*: Approximately 10.25 miles east southeast 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): 760'

16. No. of Acres in lease: 2480.00

17. Spacing Unit dedicated to this well: 320 W/2

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 50'

19. Proposed Depth: 6268' (MD)

20. BLM/BIA Bond No. on file: NM2707

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 7330' GL

22. Approximate date work will start*: 7/15/2007

23. Estimated duration: 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.

25. Signature: Nathan Smith | Name (*Printed/Typed*): Nathan Smith | Date: 2/13/07

Title: Drilling Engineer

Approved by (Signature): /s/ Manuel Gonzales | Name (*Printed/Typed*): | Date: 4/9/07

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 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.

(Instructions on page 2)

HOLD C104 FOR directional survey

submit new plat

NOTIFY AZTEC OCD 24 HRS PRIOR TO CASING & CEMENT

RECD APR12'07
OIL CONS. DIV.
DIST. 3

NMOCD

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

4/16/07

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

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

RCVD APR12'07

OIL CONS. DIV.

DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039- 30206	71629	BASIN FRUITLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
35665	CARRACAS 28B	13

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7330'

[10] Surface Location

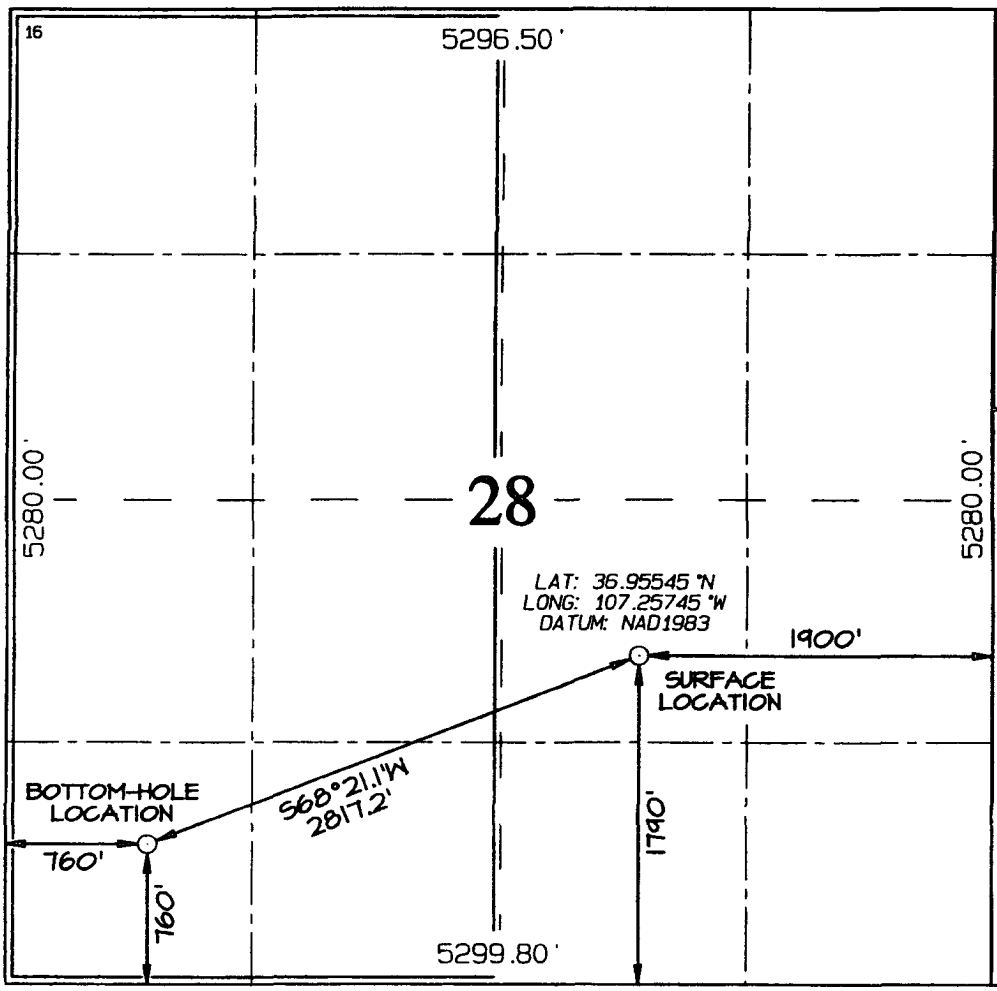
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	28	32N	4W		1790	SOUTH	1900	EAST	RIO ARRIBA

[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
M	28	32N	4W		760	SOUTH	760	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.0 Acres - (W/2)			

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



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Nathan Smith
Printed Name

Drilling Engineer
Title

2/13/07
Date

[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

Survey Date: NOVEMBER 16, 2005

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 87240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-103
May 27, 2004

WELL API NO. 30-039-30206

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Carracas 28 B

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

8. Well Number #13

2. Name of Operator: Energen Resources Corporation

9. OGRID Number 162928

3. Address of Operator: 2198 Bloomfield Hwy Farmington, NM 87401

10. Pool name or Wildcat: Basin Fruitland Coal

4. Well Location

Unit Letter J : 1790 feet from the South line and 1900 feet from the East line

Section 28 Township 32N Range 4W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 7330' GL

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type Drill Depth to Groundwater >100' Distance from nearest fresh water well >1000' Distance from nearest surface water >250'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST AND CEMENT JOB	☐		
OTHER: Build a drilling reserve pit	☒			OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Energen Resources plans to build a lined pit in accordance to 'OCD Pit and Below Grade Tank Guidelines' issued on November 1, 2004 and also plans to submit a C-144 for closure of such pit in accordance with BLM and 'OCD Pit and Below Grade Tank Guidelines'.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐

SIGNATURE _____ TITLE Drilling Engineer DATE 2/13/07

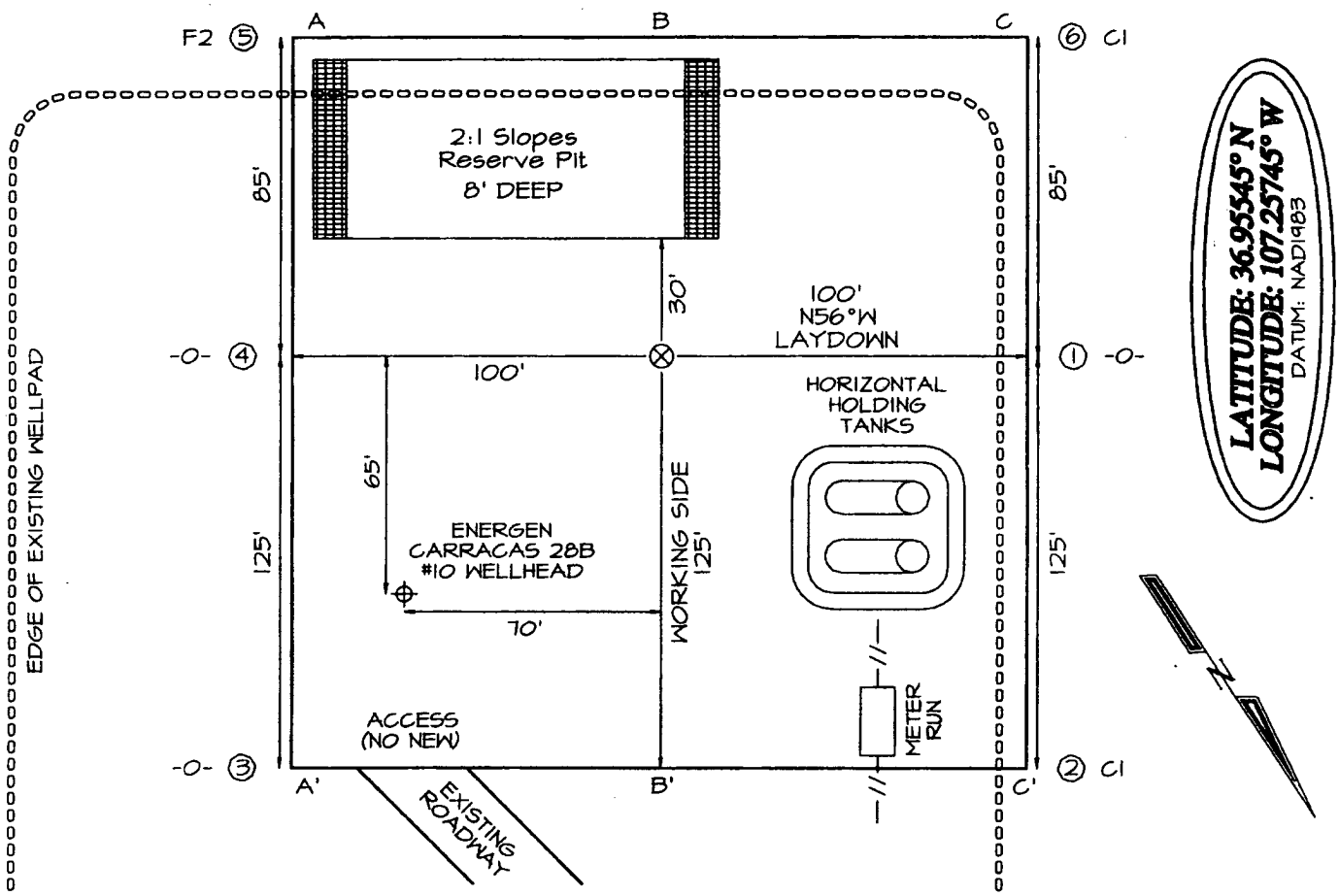
Type or print name Nathan Smith E-mail address: Telephone No. 505.325.6800

For State Use Only

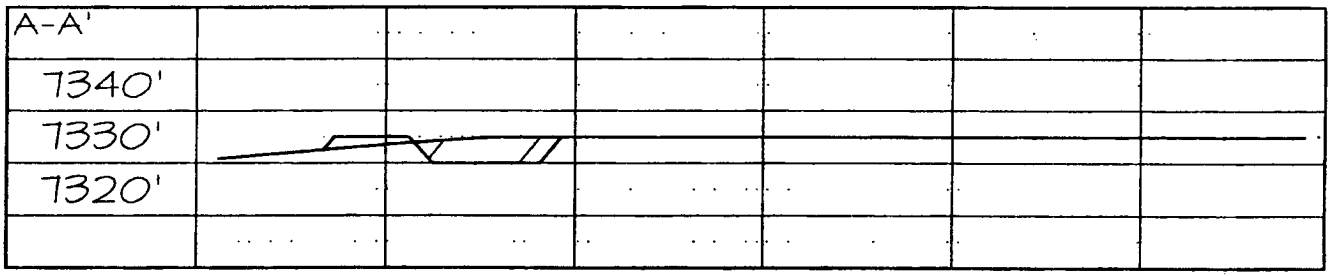
APPROVED BY _____ TITLE DEPUTY OIL & GAS INSPECTOR, DIST. ☐ DATE APR 16 2007

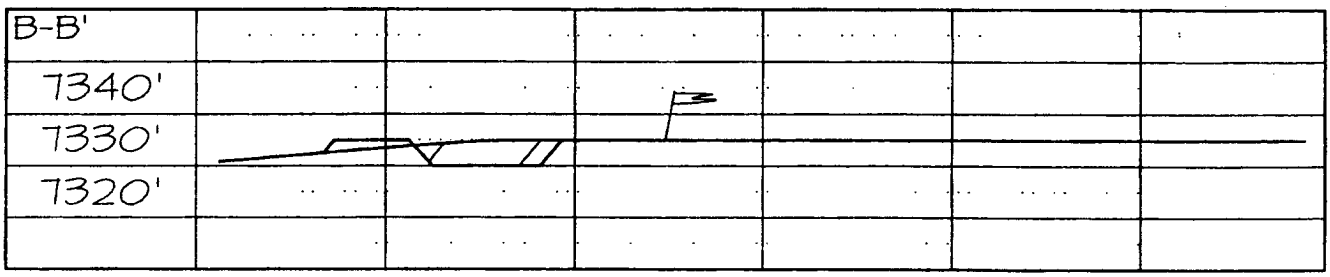
Conditions of Approval, if any:

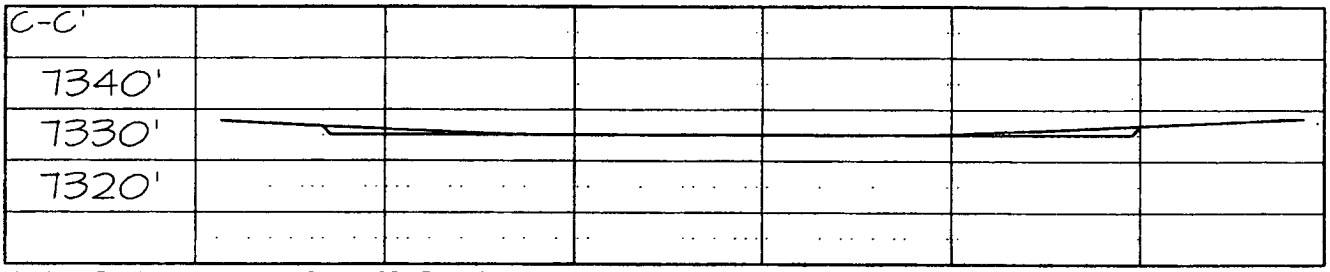
ENERGEN RESOURCES CORPORATION CARRACAS 28B #13
1790' FSL & 1900' FEL, SECTION 28, T32N, R4W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO GROUND ELEVATION: 7330'



LATITUDE: 36.95345° N
LONGITUDE: 107.25745° W
DATUM: NAD1983







Note: Contractor should call One-Call for location of any marked or unmarked buried pipelines or cables on well pad and/or access road at least two (2) working days prior to construction

Operations Plan

February 13, 2007

Carracas 28 B #13

General Information

Location	1790' fsl, 1900' fel at surface 760' fsl, 760' fwl at bottom swsw S28, T32N, R4W Rio Arriba County, New Mexico
Elevations	7330' GL
Total Depth	6268' (MD), 4150' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2335' (TVD)
Ojo Alamo Ss	3545' (TVD), 3633' (MD)
Kirtland Sh	3665' (TVD), 3796' (MD)
Fruitland Fm	3775' (TVD), 3962' (MD)
Top Coal	4140' (TVD), 4955' (MD)
Bottom Coal	4160' (TVD)
Total Depth	**4150' (TVD), 6268' (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 2500' TVD with 3.50°/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 3775' (TVD), 3962' (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'	12 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4150' (TVD) 5125' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	4140'-4150' (TVD) 4095'-6268' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4800' (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 750 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 720 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 Sks Type V with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (1537 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-S28, T32N, R4W
Site: Carracas Mesa
Well: Carracas 28 B #13
Wellbore: Preliminary Plan
Plan: Plan #1 (Carracas 28 B #13/Preliminary Plan)

T G M

Azimuths to Grid North
True North: -0.35°
Magnetic North: 9.88°

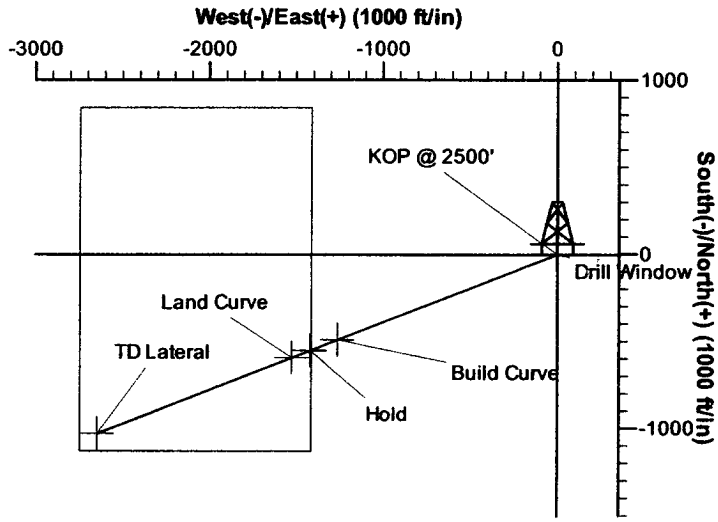
Magnetic Field
Strength: 51369.8snT
Dip Angle: 63.85°
Date: 2/13/2007
Model: IGRF200510

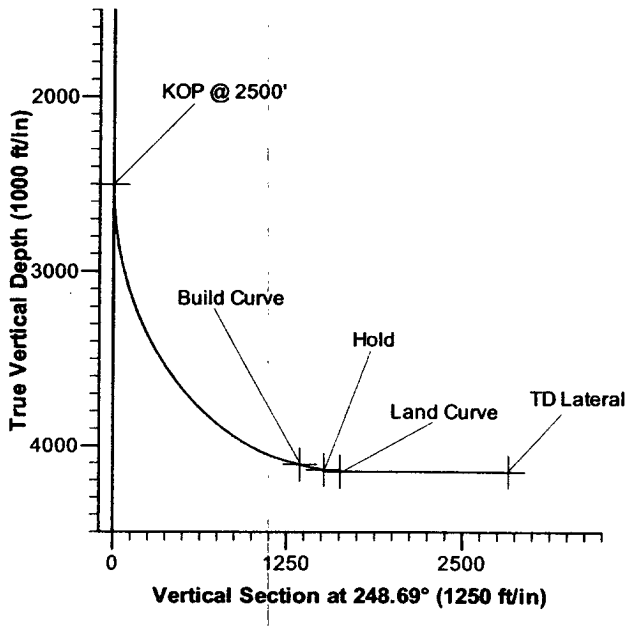
PROJECT DETAILS: Carson Nat'l Forest-S28, T32N, R4W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Western Zone
System Datum:	Mean Sea Level

SURFACE LOCATION	
Easting:	2891353.13
Northing:	2167622.05

SECTION DETAILS

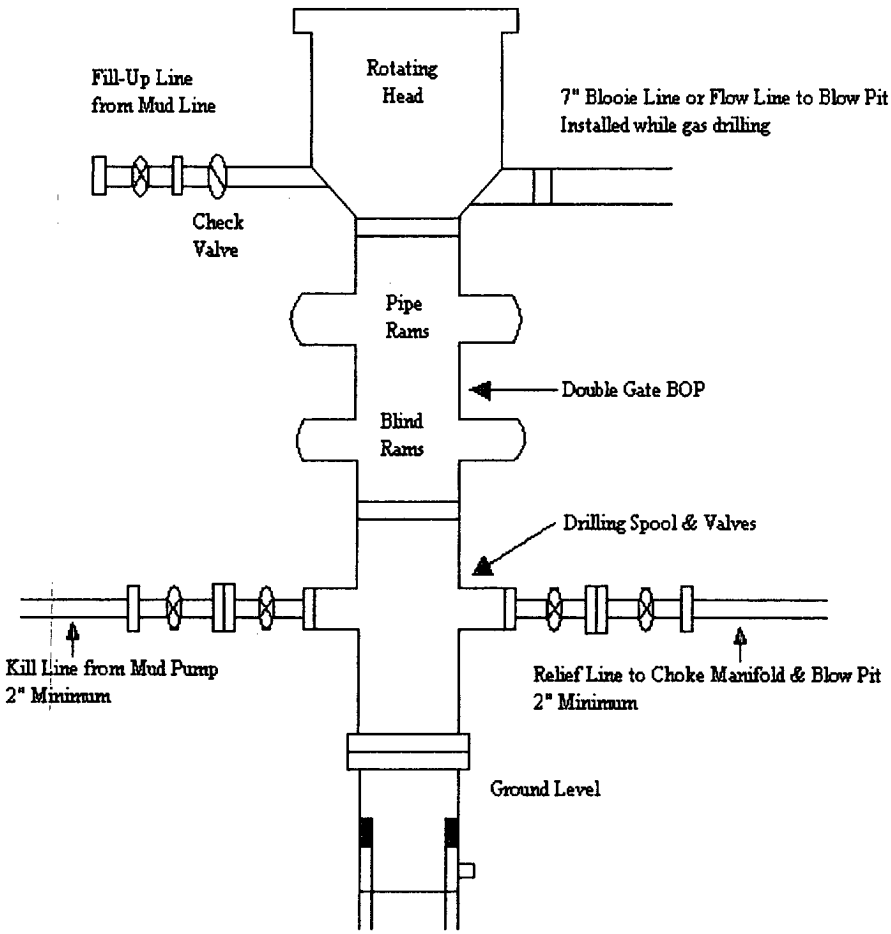
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0	KOP @ 2500'
3	4782.7	80.00	248.69	4110.0	-491.0	-1258.6	3.50	248.69	1351.0	Build Curve
4	4955.4	79.99	248.69	4140.0	-552.8	-1417.1	0.00	0.00	1521.1	Hold
5	5070.3	90.01	248.69	4150.0	-594.3	-1523.6	8.72	0.00	1635.4	Land Curve
6	6267.9	89.99	248.69	4150.0	-1029.6	-2639.3	0.00	180.00	2833.0	TD Lateral





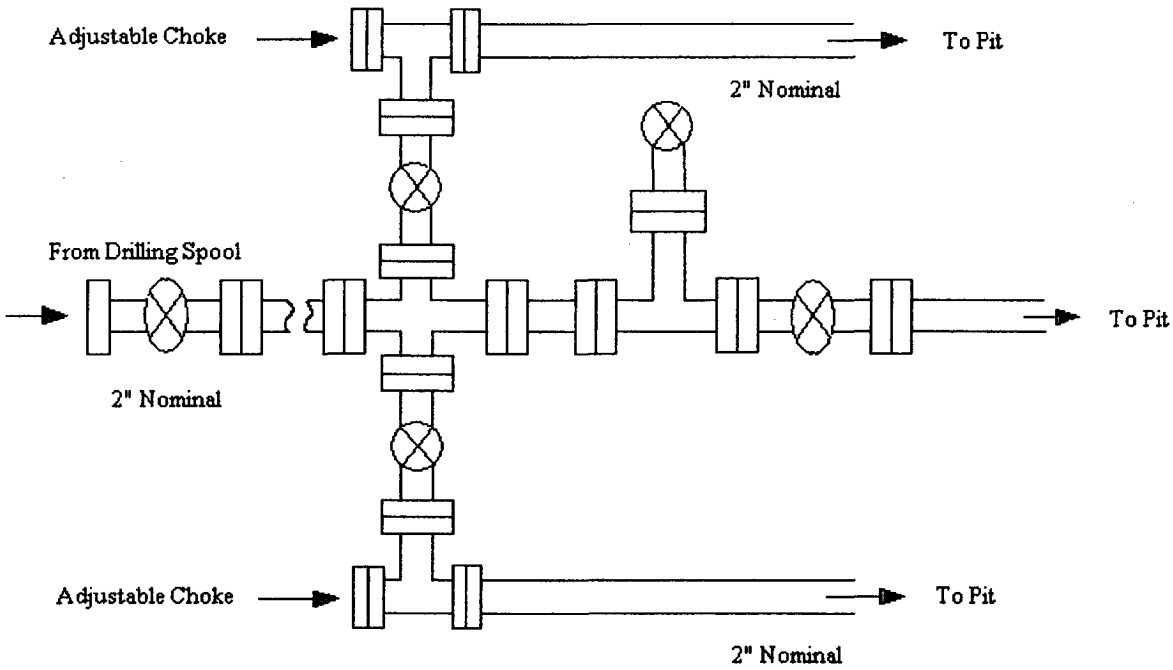
Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD