

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

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>USA NM 29760</b>
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 <b>Energen Resources Corporation</b>		7. Unit or CA Agreement Name and No.
3a. Address <b>2198 Bloomfield Highway Farmington, New Mexico 87401</b>		8. Lease Name and Well No. <b>Carracas 13A #6</b>
3b. Phone No. (include area code) <b>(505) 325-6800</b>		9. API Well No. <b>30-039-29932</b>
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface <b>960' fnl, 725' fel (A) 14,32N,5W</b> At proposed prod. zone <b>1500' fnl, 1880' fw1 (F) 13,32N,5W</b>		10. Field and Pool, or Exploratory <b>Basin Fruitland Coal</b>
14. Distance in miles and direction from nearest town or post office* <b>Approximately 6 miles south east of Arboles, CO</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>A S14, T32N, R05W</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) <b>725'</b>	16. No. of Acres in lease <b>1440.81</b>	17. Spacing Unit dedicated to this well <b>W 1/2</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>75'</b>	19. Proposed Depth <b>4032' (TVD) , 6487' (MD)</b>	20. BLM/BIA Bond No. on file
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>GL 7381'</b>	22. Approximate date work will start* <b>10/05/06</b>	23. Estimated duration <b>30 days</b>

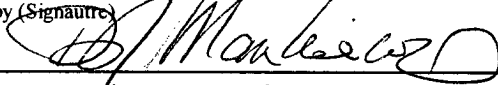
24. Attachments

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.  | 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 shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/Typed) <b>Nathan Smith</b>	Date <b>5/25/06</b>
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Title  
**Drilling Engineer**

Approved by (Signature) 	Name (Printed/Typed) <b>AFM</b>	Date <b>6/26/06</b>
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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.

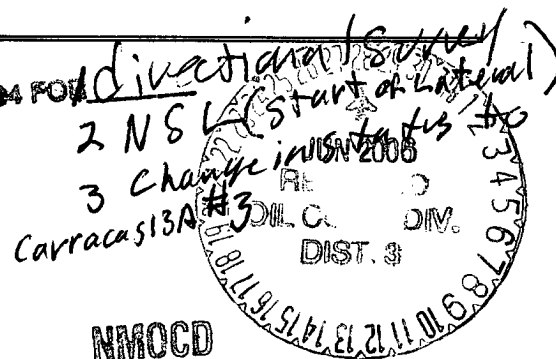
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

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

NMOC



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

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

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

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

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-29932	*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 35652	*Property Name CARRACAS 13A	*Well Number 6
*OGRID No. 162928	*Operator Name ENERGEN RESOURCES CORPORATION	*Elevation 7381'

### 10 Surface Location

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	14	32N	5W		960	NORTH	725	EAST	RIO ARRIBA

<sup>11</sup>Bottom Hole Location If Different From Surface

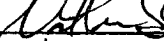
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	13	32N	5W		1500	NORTH	1880	WEST	RIO ABBIBA

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

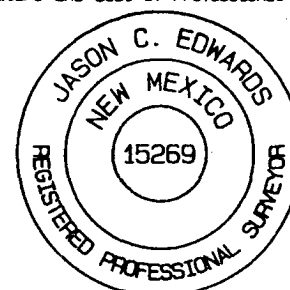
5/25/06  
Date

**18 SURVEYOR CERTIFICATION**

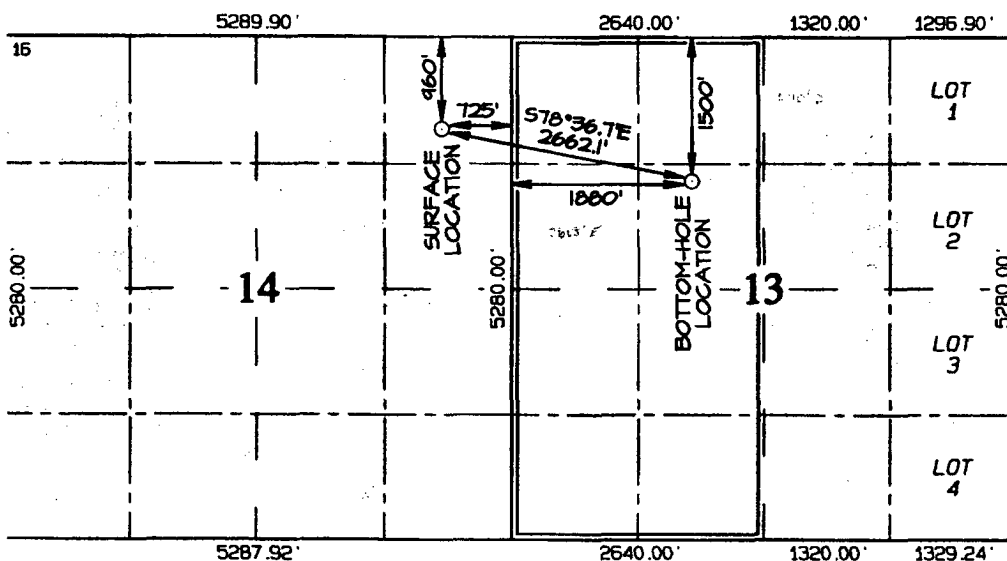
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Survey Date: SEPTEMBER 12, 2005

Signature and Seal of 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

Form C-103  
May 27, 2004

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

WELL API NO. <u>30-039-27932</u>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name: <u>Caarracas 13A</u>
8. Well Number <u>6</u>
9. OGRID Number <u>162928</u>
10. Pool name or Wildcat <u>Basin Fruitland Coal</u>

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.)

1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>7381' GL</u>
2. Name of Operator <u>Energen Resources Corporation</u>	
3. Address of Operator <u>2198 Bloomfield Highway, Farmington, NM 87401</u>	
4. Well Location Unit Letter <u>A</u> : <u>960</u> feet from the <u>North</u> line and <u>725</u> feet from the <u>East</u> line Section <u>14</u> Township <u>32N</u> Range <u>05W</u> NMPM County <u>Rio Arriba</u>	
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/> Pit type <u>Drill</u> Depth to Groundwater <u>&gt;100'</u> Distance from nearest fresh water well <u>1000'</u> Distance from nearest surface water <u>250'</u> Pit Liner Thickness: <u>12</u> 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:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPLETION ☐  
OTHER: Build drilling pit ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐  
CASING TEST AND CEMENT JOB ☐  
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 according to "OCD Pit and Below-grade Tank Guidelines", as issued on November 1, 2004. Energen anticipates the submittal of a C-144 for closure of this pit in accordance with RLM 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 NMOC guidelines ☒ , a general permit ☐ or an (attached) alternative OCD-approved plan ☐

SIGNATURE Nathan Smith TITLE Drilling Engineer DATE 05/25/06

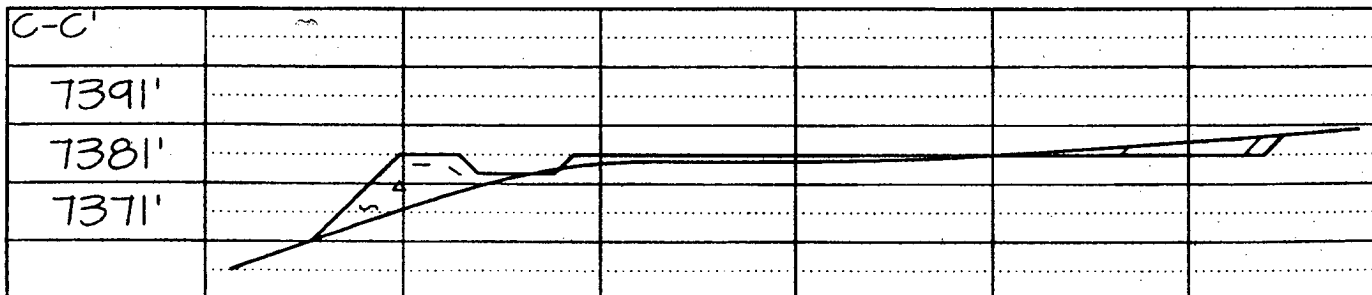
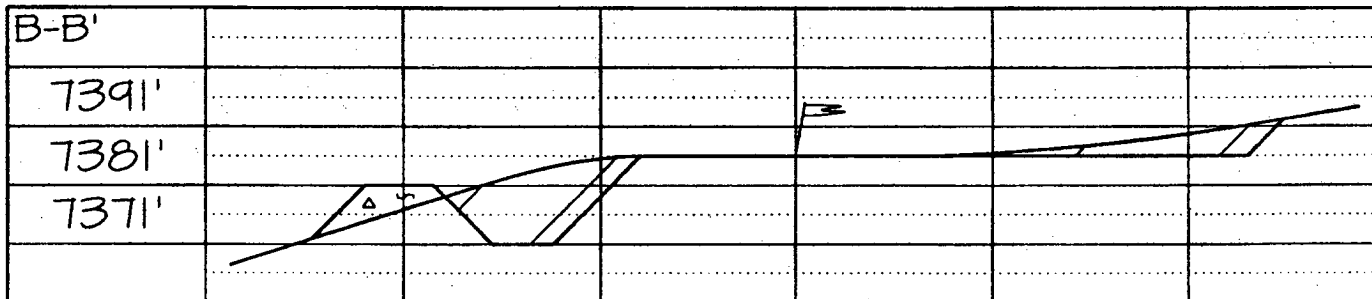
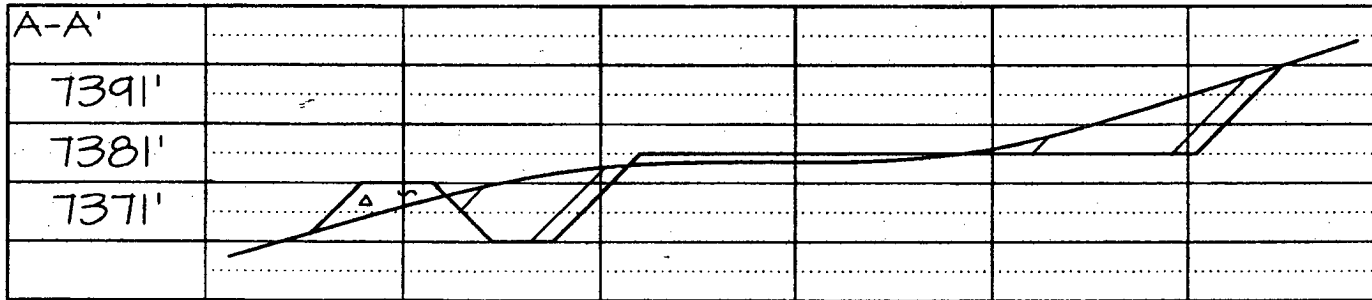
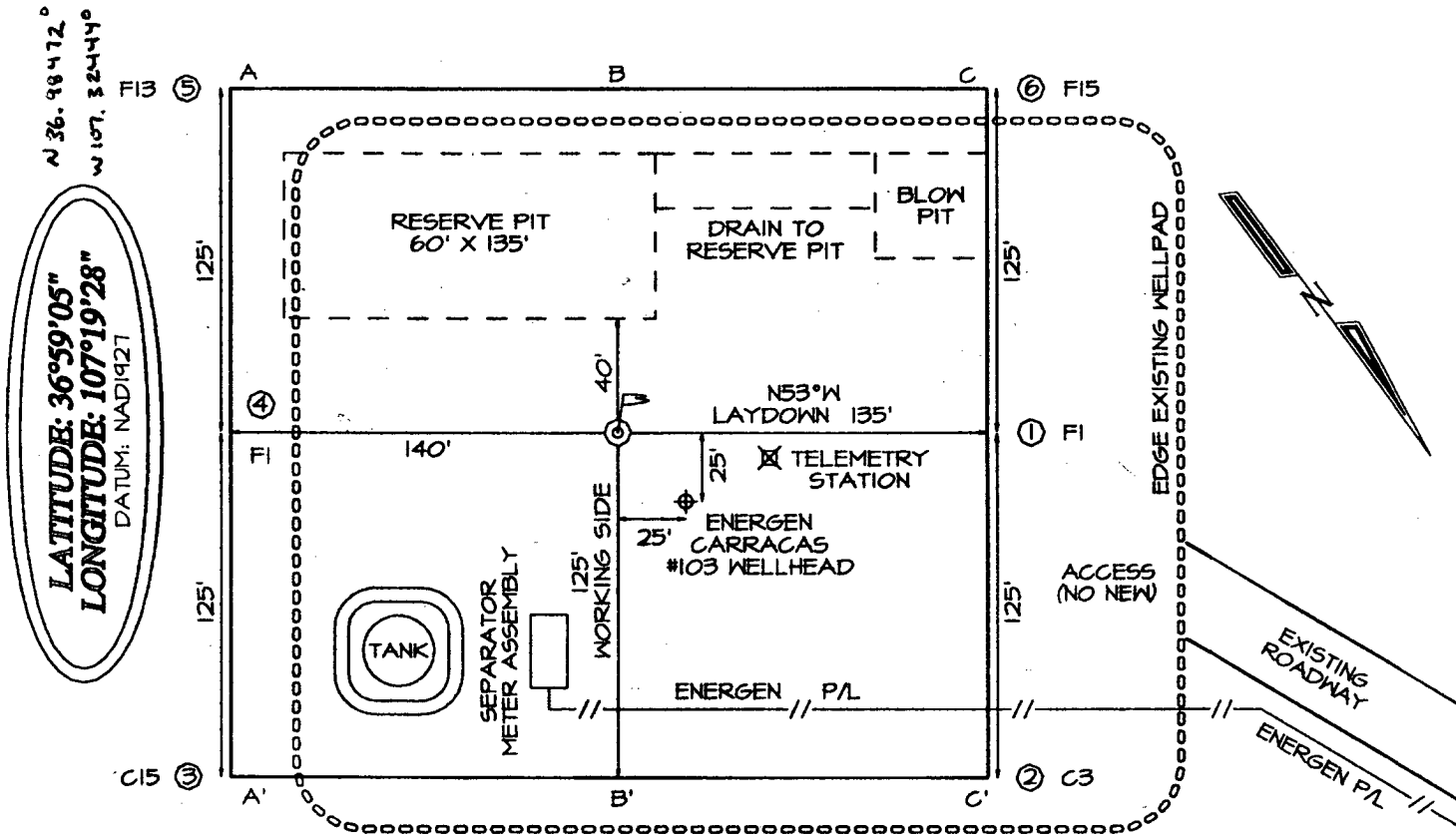
Type or print name Nathan Smith E-mail address: nsmith@energen.com Telephone No. 505.325.6800

For State Use Only

APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 4 DATE JUN 28 2006

Conditions of Approval, if any:

**ENERGEN RESOURCES CORPORATION CARRACAS 13A #6**  
**960' FNL & 725' FEL, SECTION 14, T32N, R5W, NMPM**  
**RIO ARriba COUNTY, NEW MEXICO GROUND ELEVATION: 7381'**



## Operations Plan

May 24, 2006

### Carracas # 13A-6

#### General Information

Location	960' fml, 725' fel at surface 1500' fml, 1880' fwl at bottom senw S13, T32N, R5W Rio Arriba County, New Mexico
Elevations	7381' GL
Total Depth	6487' (MD), 4032' (TVD)
Formation Objective	Basin Fruitland Coal

#### Formation Tops

San Jose	Surface
Nacimiento	1914'
Ojo Alamo Ss	3344'
Kirtland Sh	3484'
Fruitland Fm	3894' (TVD), 3935' (MD)
Top Coal	4014' (TVD), 4175' (MD)
Bottom Coal	4034' (TVD), 4315' (MD)
Pictured Cliffs Ss	4084'
Total Depth	4032' (TVD), 6487' (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.

**Anticipated kickoff point is at 3555' (TVD) with 12°/100 ft build rate and an azimuth of 101.71°.**

**Build rate may need to be changed based on production method, which may be 9°/100 ft build rates, raising the kickoff point.**

The 6 ¼" wellbore will be drilled with a fruitland coal produced water and low polymer system.

Blowout Control Specifications:

An 11" 2000 psi minimum double gate BOP stack (figure 1) 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 stack. A 2" nominal, 2000 psi minimum choke manifold will also be used. An upper Kelly Cock valve handle available and drill string valve to fit each drill string will be available on the rig floor during drilling operations.

Logging Program:

Open hole logs: None

Mud logs: From 3894' (TVD, 3935' (MD) to 4032' (TVD), 6487' (MD)

Surveys: Every 500' from surface to the kickoff point and every 200' minimum while drilling directionally.

## Tubulars

### Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-200'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4400' (MD) 0-4031' (TVD)	8 3/4"	7"	23.0 ppf	J-55 ST&C
Production	4370'-6487' (MD) 4016'-4031' (TVD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-4370'		2 3/8"	4.7 ppf	J-55
Casing Equipment:					

Surface Casing: Texas Pattern Guide Shoe on bottom. 4 bow spring centralizers spaced every other joint from bottom.

Intermediate Casing: Cement nose guide shoe with self fill insert float collar on top of bottom joint. 10 bow spring centralizers spaced every 2<sup>nd</sup> joint off bottom. Two turbolating centralizers at the base of the Ojo Alamo.

Liner: Cement nose guide shoe with self fill insert float collar on bottom joint. No centralizers.

## Wellhead

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

## Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % CaCl<sub>2</sub> and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 148ft<sup>3</sup> of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 1200 psi for 30 min.

Intermediate Casing: Before cementing, circulate hole at least 1 1/2 hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 600 sks 65/35 Std (class B) with 6.0 % Bentonite, 2.0 % CaCl<sub>2</sub>, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.96 ft<sup>3</sup>/sk) and a tail of 125 sks Sts (class B) with 1/4 #/sk Flocele (15.4 ppg, 1.24 ft<sup>3</sup>/sk). (1331 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface).

Liner: Open hole completion, no cement.

## Other Information

- 1) This well will be an open hole completion with a predrilled 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 anticipated. Expected BHP is 1000 psi.
- 5) This gas is dedicated.

# Energen Resources Corporation

Field: Carracas Canyon

Site: Carracas 13A-6

Well: Carracas 13A-6

Wellpath: Original Hole

Plan: Plan #1 5-24-06

PATHFINDER

## SECTION DETAILS

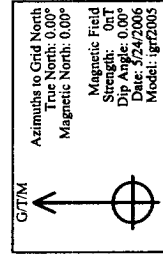
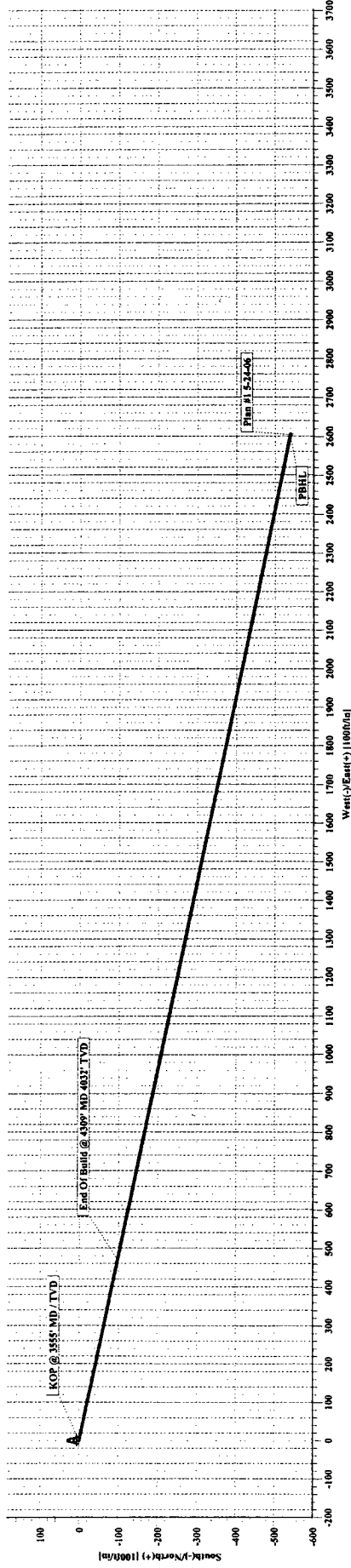
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	101.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	3555.50	0.00	101.71	3555.50	0.00	0.00	0.00	101.71	0.00	0.00
3	4309.00	90.42	101.71	4032.00	-97.63	471.00	12.00	101.71	48	0.00
4	6487.50	90.42	101.71	4016.00	-540.00	2605.00	0.00	66.35	2660.38	PBHL

## WELLPATH DETAILS

Original Hole	Mean Sea Level	0.00ft
Rig:		
Ref. Datum:	Origin	Starting
V. Section	+N/-S	From TVD
Angle	+E/-W	
101.71°	0.00	0.00

## ANNOTATIONS

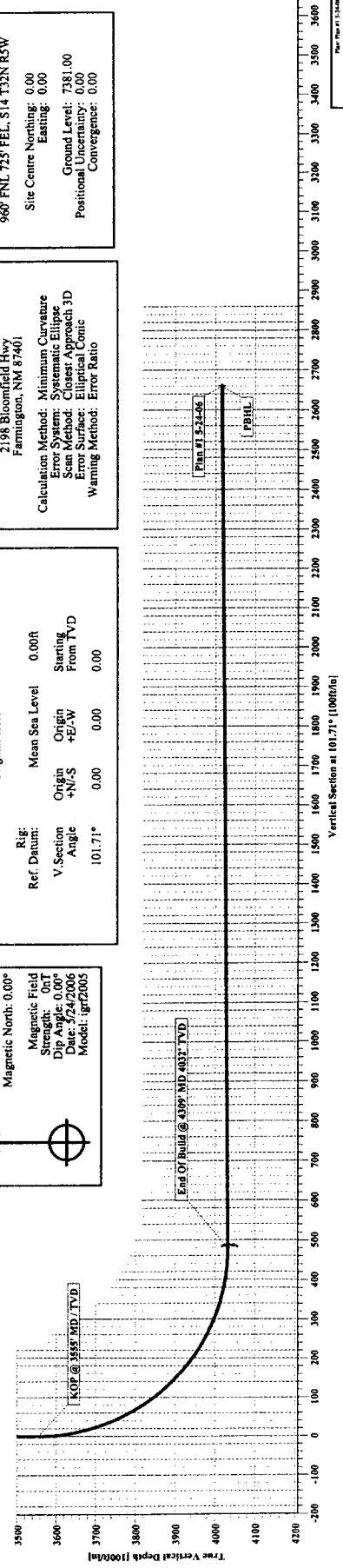
No.	TVD	MD	Annotation
1	3555.00	KOP @ 3555' MD / TVD	
2	4031.99	End Of Build @ 4309' MD 4032' TVD	



Original Hole	Mean Sea Level	0.00ft
Rig:		
Ref. Datum:	Origin	Starting
V. Section	+N/-S	From TVD
Angle	+E/-W	
101.71°	0.00	0.00

**COMPANY DETAILS**  
Energen Resources Corporation  
2198 Bloomfield Hwy  
Farmington, NM 87401  
Calculation Method: Minimum Curvature  
Error System: Systematic Ellipse  
Scan Method: Closest Approach 3D  
Error Surface: Elliptical Conic  
Warning Method: Error Ratio

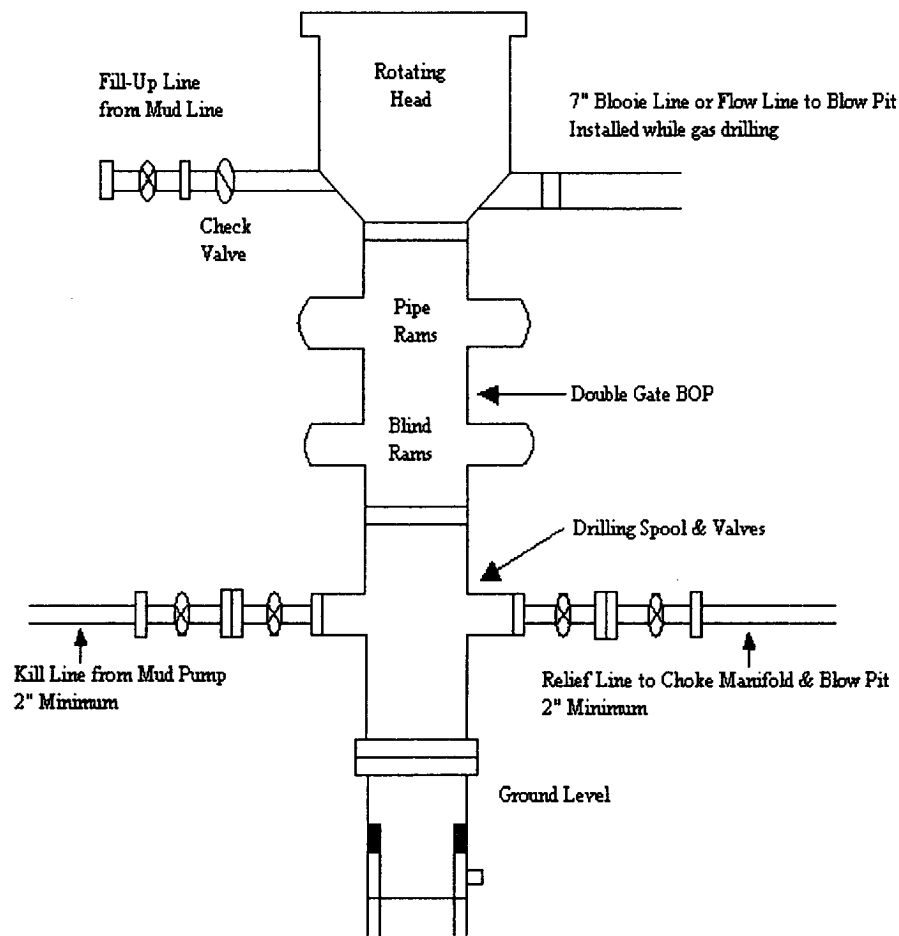
**SITE DETAILS**  
Carracas 13A-6  
960' FNL 725' FEL S14 T32N R5W  
Site Centre Northing: 0.00  
Easting: 0.00  
Ground Level: 7381.00  
Positional Uncertainty: 0.00  
Convergence: 0.00



Vertical Section at 101.71° [1000ft]

**Energen Resources Corporation**

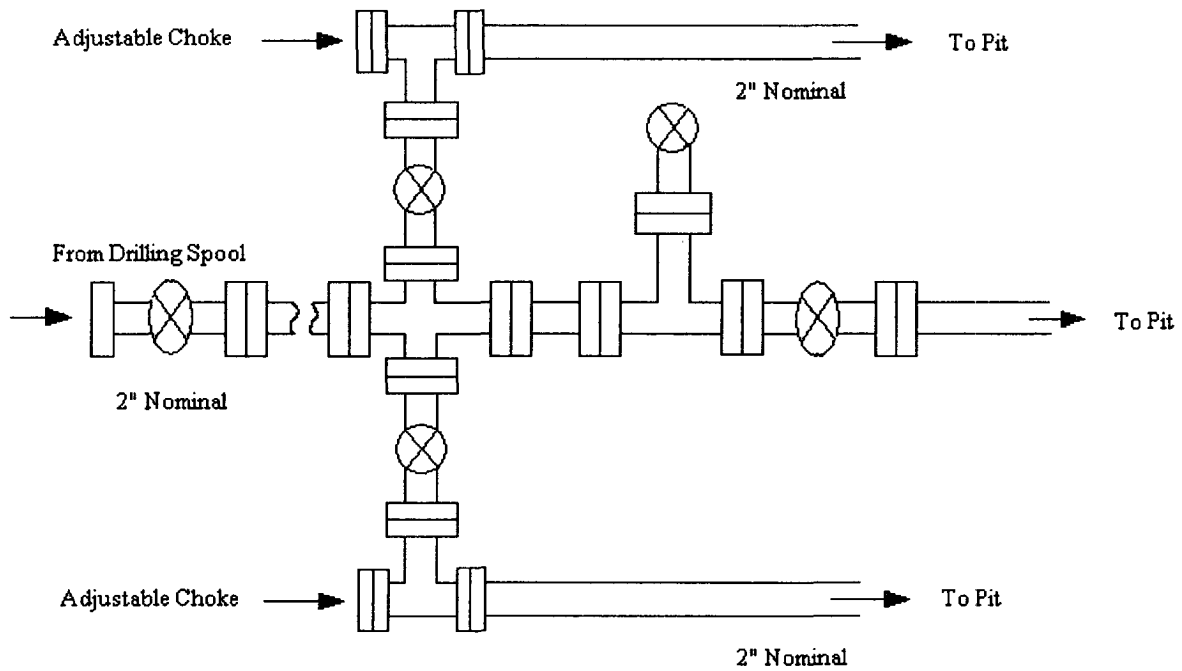
**Typical BOP Configuration for Gas Drilling**





## Energen Resources Corporation

### Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD