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. NMNM-28277

1a. Type of Work: [X] DRILL [ ] REENTER — 2006 JUN 13 PM 2 02

6. If Indian, Allotee or Tribe Name

1b. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone — RECEIVED 070 FARMINGTON

7. Unit or CA Agreement Name and No.

2. Name of Operator: Energen Resources Corporation

8. Lease Name and Well No. Arboles 29A

3a. Address: 2198 Bloomfield Highway Farmington, New Mexico 87401

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

9. API Well No. 30-039-29954

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

At surface: 2260' fnl, 435' fel (H) S30 T32N R4W

At proposed prod. zone: 660' fnl, 1980' fwl (C) S29 T32N R4W

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

11. Sec., T., R., M., or Blk. and Survey or Area: H Sec. 30 T32N, R4W, N.M.P.M.

14. Distance in miles and direction from nearest town or post office*: 8.62 miles south east 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): 435'

16. No. of Acres in lease:

17. Spacing Unit dedicated to this well: 320 W/2 Sec 29

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 75'

19. Proposed Depth: 3950' (TVD), 6182' (MD)

20. BLM/BIA Bond No. on file

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 7221' GL

22. Approximate date work will start*: 10/2/06

23. Estimated duration: 30 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: 6/12/06

Title: Drilling Engineer

Approved by (Signature): /s/ Manuel Vargas — 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)

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT.
directional survey

H

NMOCD

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".

5/29/07

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
30-039-29954	71629	BASIN FRUITLAND COAL

4 Property Code	5 Property Name	6 Well Number
32948	Arboles ~~CARRACAS~~ 29A	11

7 OGRID No	8 Operator Name	9 Elevation
162928	ENERGEN RESOURCES CORPORATION	7221'

10 Surface Location

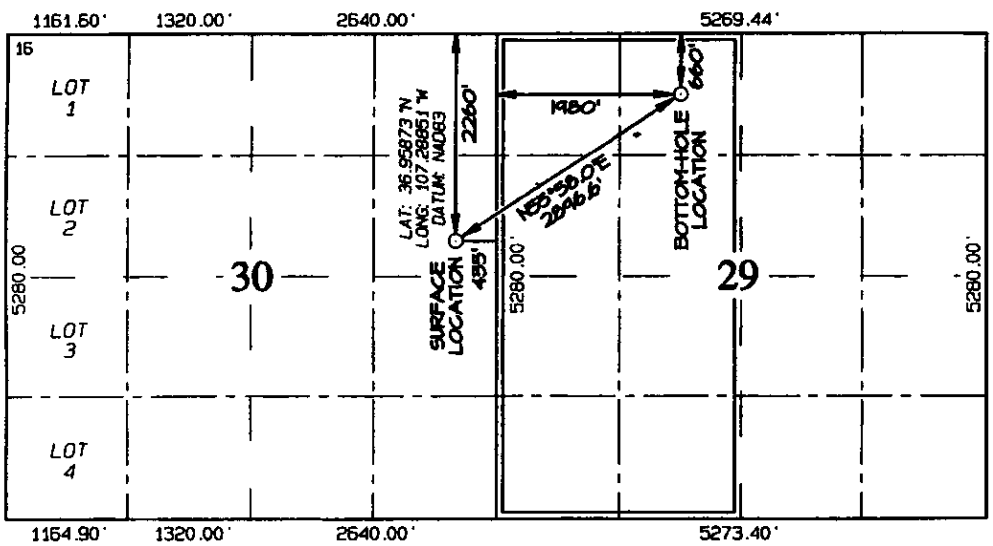
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	30	32N	4W		2260	NORTH	435	EAST	RIO ARRIBA

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
C	29	32N	4W		660	NORTH	1980	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

Nathan Smith
Signature

Nathan Smith
Printed Name

Drilling Engineer
Title

6/8/06
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: 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. 30-039-29954

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: Arboles 29A

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

8. Well Number 11

2. Name of Operator: Energen Resources Corporation

9. OGRID Number 162928

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

10. Pool name or Wildcat: Basin Fruitland Coal

4. Well Location

Unit Letter H : 2260 feet from the North line and 435 feet from the East line

Section 30 Township 32N Range 04W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 7221' 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 drilling 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 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 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 Nathan Smith TITLE Drilling Engineer DATE 06/09/06

E-mail address: nsmith@energen.com

Type or print name Nathan Smith Telephone No. 505.325.6800

For State Use Only

APPROVED BY _____ TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE MAY 29 2007

Conditions of Approval, if any:

PROPOSED PIPELINE FOR

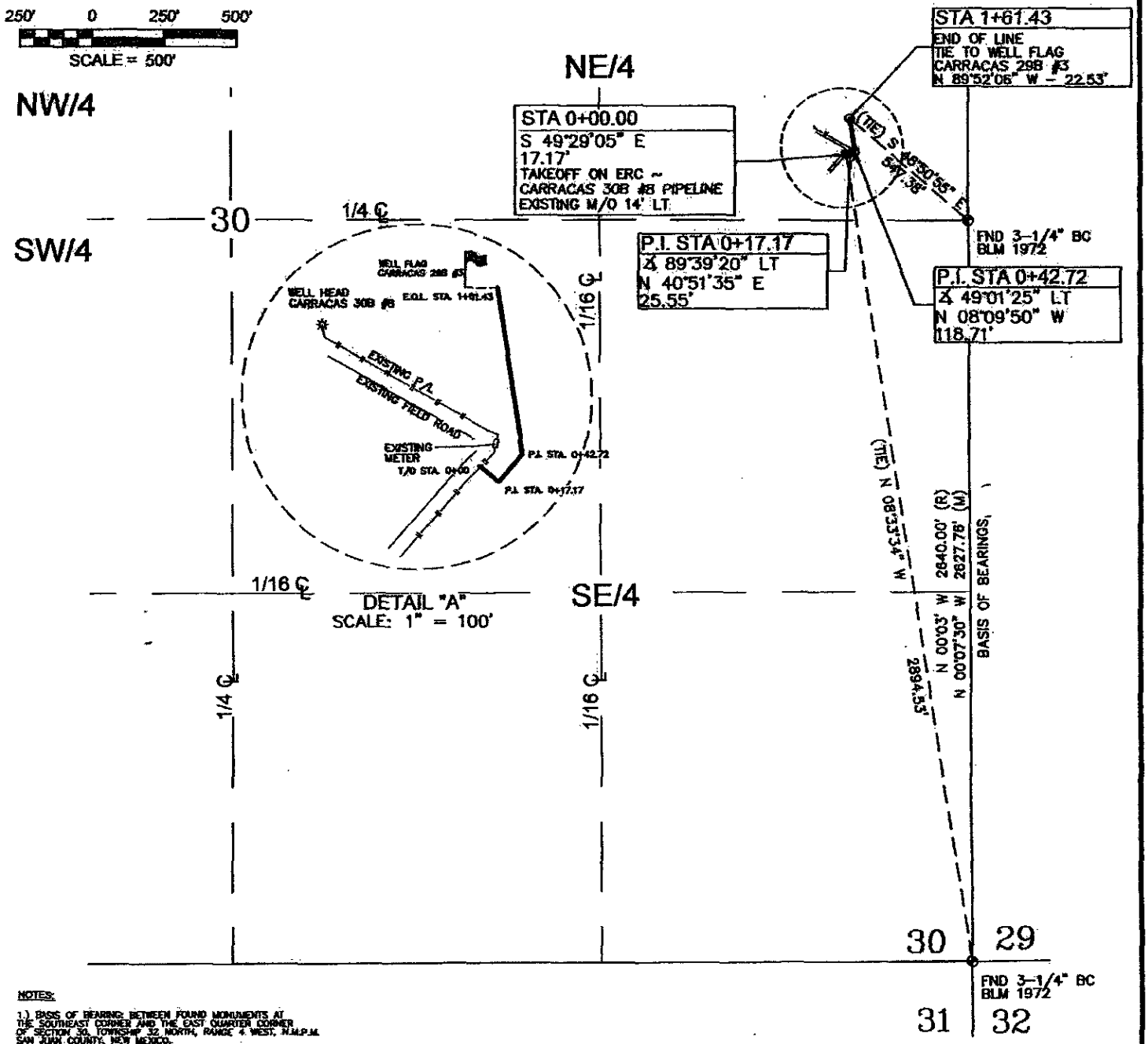
ENERGEN RECOURCES CORPORATION

CARRACAS 29 B #11

LOCATED IN THE SE/4 NE/4 OF SECTION 30,

T32N, R4W, N.M.P.M.,

RIO ARRIBA COUNTY, NEW MEXICO



NOTES:

1.) BASIS OF BEARING: BETWEEN FOUND MONUMENTS AT THE SOUTHEAST CORNER AND THE EAST QUARTER CORNER OF SECTION 30, TOWNSHIP 32 NORTH, RANGE 4 WEST, N.M.P.M. SAN JUAN COUNTY, NEW MEXICO. LINE BEARS: N 0°07'30" W A DISTANCE OF 2627.76 FEET AS MEASURED BY G.P.S.

2.) LOCATION OF UNDERGROUND UTILITIES DEPICTED ARE APPROXIMATE. PRIOR TO EXCAVATION UNDERGROUND UTILITIES SHOULD BE FIELD VERIFIED. ALL CONSTRUCTION ACTIVITIES SHOULD BE FIELD VERIFIED WITH NEW MEXICO ONE-CALL AUTHORITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

I, DAVID R. RUSSELL, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR, CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

DAVID R. RUSSELL, PLS
NEW MEXICO L.S. #10201

DATE: June 5, 2006

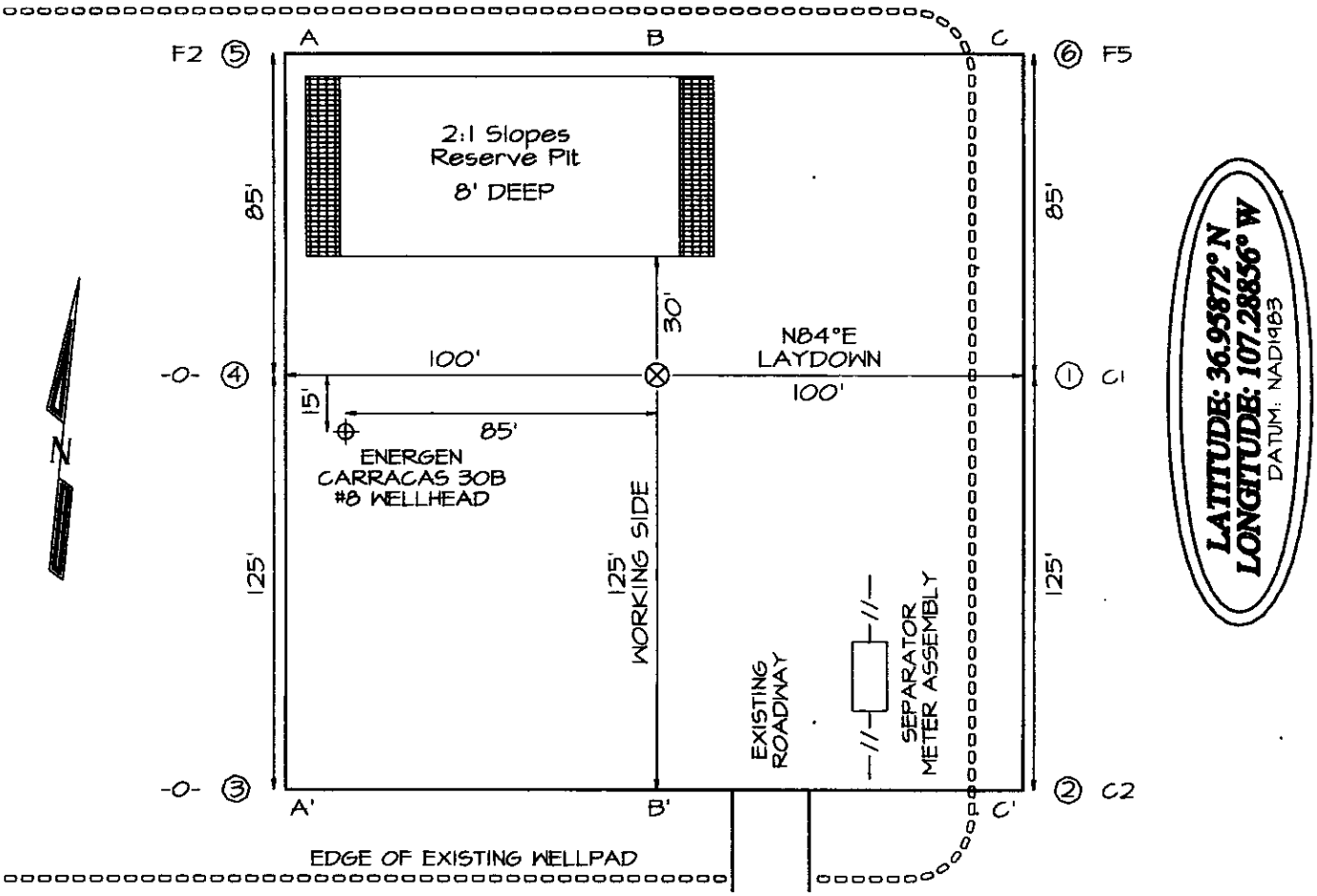
DAVID R. RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

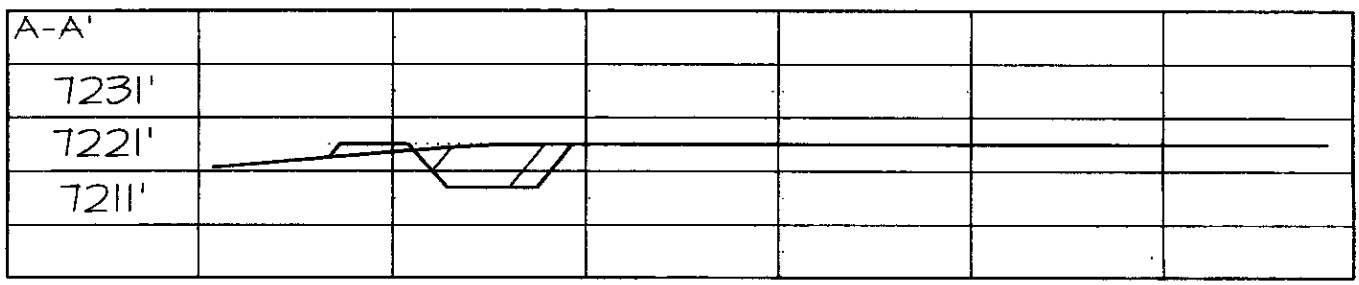
~ SURFACE OWNERSHIP ~ CARSON NATIONAL FOREST		
SE/4 NE/4 SECTION 30		
0+00.00 TO 1+61.43		
161.43 FT/ 9.78 RODS		
DATE OF SURVEY:	06/02/06	RR

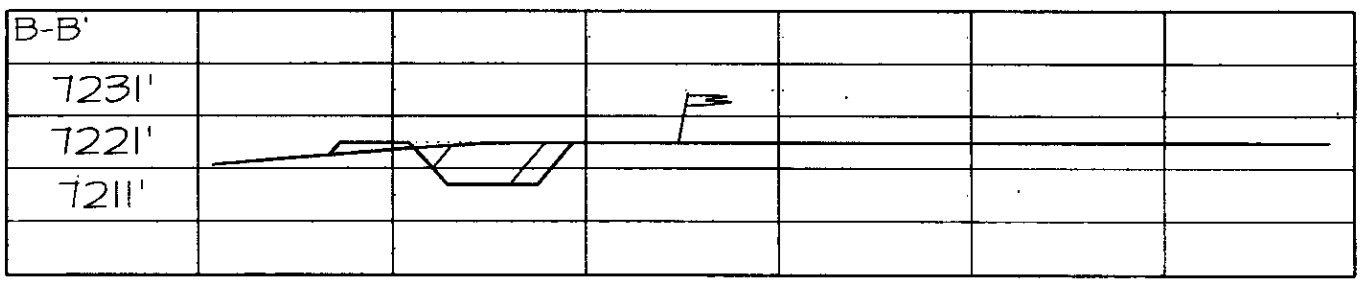
JOB No.: ERG114
DATE: 06/05/06

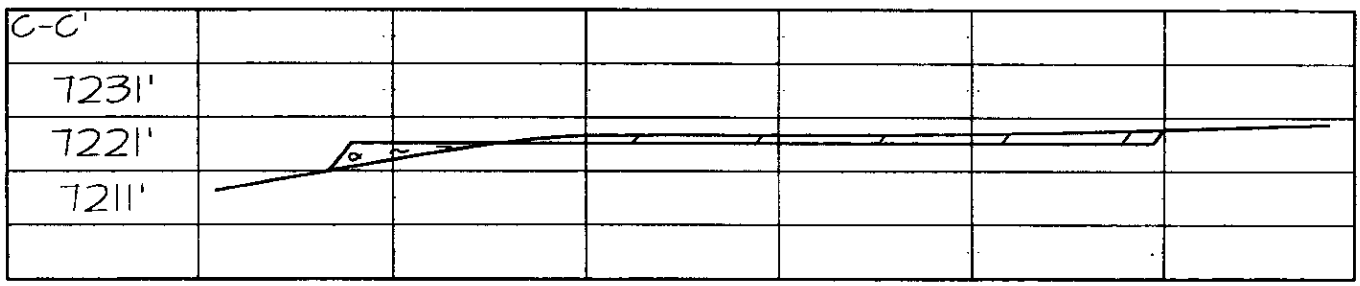
Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

ENERGEN RESOURCES CORPORATION CARRACAS 29B #11
2265' FNL & 450' FEL, SECTION 30, T32N, R4W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO GROUND ELEVATION: 7221'









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

June 8, 2006

Carracas 29 B #11

General Information

Location (will twin the Carracas 30B #8)	2260' fnl, 0435' fel at surface 0660' fnl, 1980' fwl at bottom sene S30, T32N, R4W Rio Arriba County, New Mexico
Elevations	7221' GL
Maximum Total Depth	6182' (MD), 3950' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

Nacimiento	Surface
Ojo Alamo Ss	3302' (TVD)
Kirtland Sh	3480' (TVD)
Fruitland Fm	3722' (TVD), 3984' (MD)
Top Coal	3930' (TVD), 4598' (MD)
Bottom Coal	3950' (TVD)
Total Depth	**3950' (TVD), 6182' (MD)**

Drilling

The 12 ¼" wellbore will be drilled with a fresh water spud 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. A starch polymer will be used as a viscosifier and fluid loss control agent.
Projected KOP is 2405' TVD with 3.7°/100' doglegs and an azimuth of 56.5°. The curve section is expected to be landed in the coal at 90°.
The 6 ¼" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics.
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 3722' (TVD), 3984' (MD) to 3950' (TVD), 6182' (MD).
Surveys: Surface and a minimum of every 250' for directional or 500' up to kickoff point

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'-3946' (TVD) 4900' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	3946'-3933' (TVD) 4870'-6182' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4870'		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. Excess cement returns will be pumped out of the cellar with a pump and discarded into the reserve pit

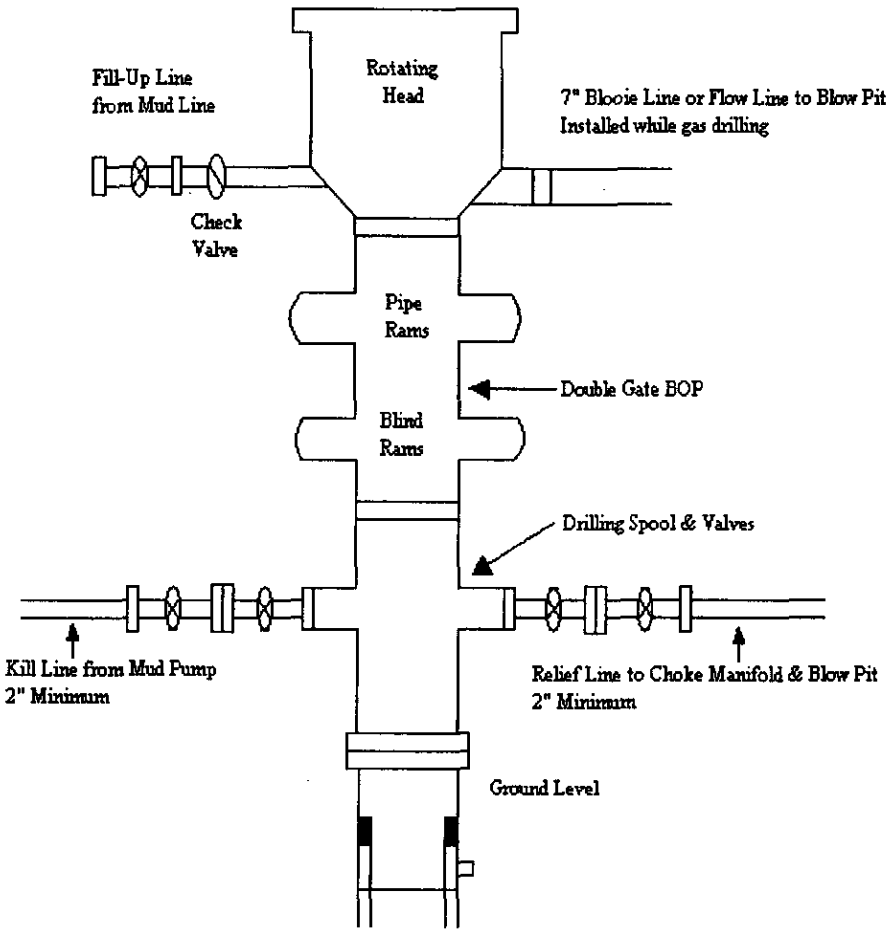
Intermediate Casing: Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 675 sks 65/35 Std (class B) with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft^3/sk) and a tail of 125 sks Sts (class B) with ¼ #/sk Flocele (15.4 ppg, 1.24ft^3/sk). 1478 1503 ft^3 of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min. Cement circulated to surface will be discarded into the reserve pit on location.

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.
5) Wellpad construction and other surface use is outlined in the Surface Use Plan of the APD package. Existing production facilites will be removed and the Carracas 30B #8 will be stripped to accommodate drilling operations of the Carracas 29B #11. A pad expansion will be required and is outlined in the Surface Use Plan and Cut and Fill Diagrams.

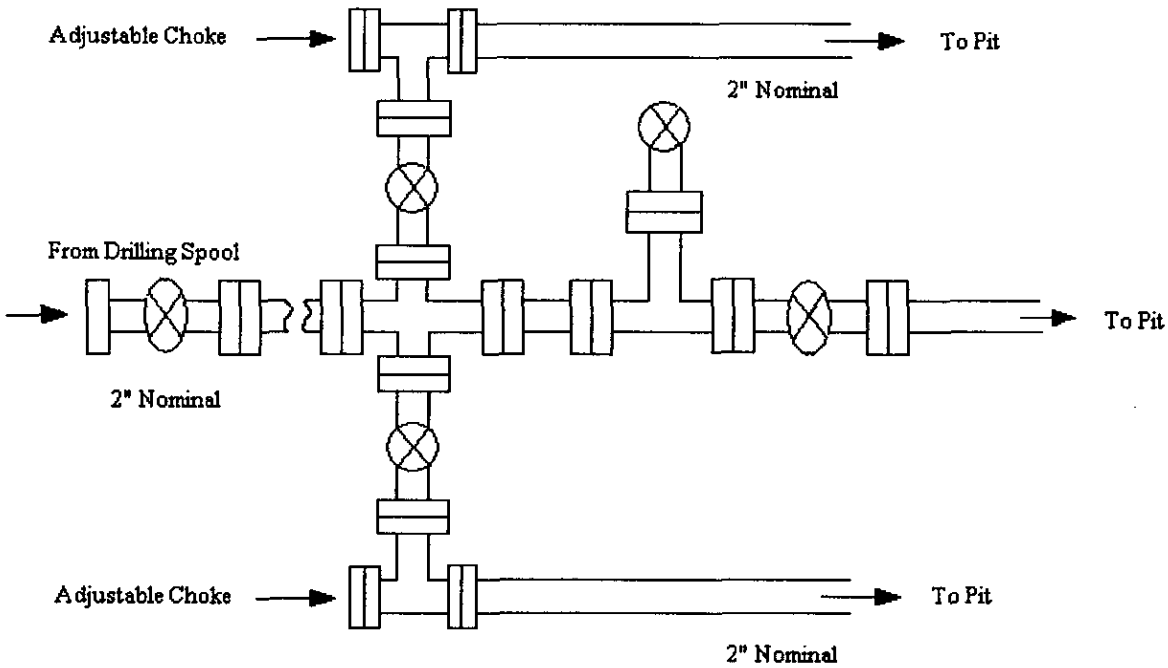
Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD