

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

2004 SEP 8 AM 10 31

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK <b>DRILL</b> <input checked="" type="checkbox"/> <b>DEEPEN</b> <input type="checkbox"/>		1b. TYPE OF WELL <b>OIL</b> <input type="checkbox"/> <b>GAS</b> <input checked="" type="checkbox"/> <b>OTHER</b> <input type="checkbox"/> <b>SINGLE</b> <input checked="" type="checkbox"/> <b>ZONE</b> <input type="checkbox"/> <b>MULTIPLE</b> <input type="checkbox"/> <b>ZONE</b> <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. <b>USA-NM-6894</b>	
2. NAME OF OPERATOR <b>Energen Resources Corporation</b>		3. ADDRESS OF OPERATOR <b>c/o Walsh Engineering 7415 E. Main St., Farmington, NM 87402 (505) 327-4892</b>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. *) <b>At Surface 660' FSL and 1920' FWL</b> <b>At proposed Prod. Zone</b>		10. FIELD AND POOL OR WILDCAT <b>Basin Fruitland Coal</b>		7. UNIT AGREEMENT NAME	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* <b>~ 17 miles North of Navajo Dam, NM</b>		12. COUNTY OR PARISH <b>San Juan County</b>		13. STATE <b>NM</b>	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) <b>660'</b>		16. NO. OF ACRES IN LEASE <b>640</b>		17. NO. OF ACRES ASSIGNED TO THIS WELL <b>320 w/p</b>	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT. <b>1320'</b>		19. PROPOSED DEPTH <b>3871' 3811'</b>		20. ROTARY OR CABLE TOOLS <b>Rotary</b>	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) <b>6874' GR</b>		22. APPROX. DATE WORK WILL START* <b>As soon as permitted</b>			
23. PROPOSED CASING AND CEMENTING PROGRAM					
SIZE OF HOLE		SIZE OF CASING		WEIGHT/FOOT	
12-1/4"		9-5/8"		32.3#	
8-3/4"		7"		23#	
6-1/4"		5-1/2"		15.5#	
SETTING DEPTH		QUANTITY OF CEMENT			
+/- 240'		~153 cu.ft. Class "B" w/ 1/4# CF & 2% C			
+/- 3541'		~1051 cf Lightwt & ~129 cf Class "B"			
+/- 3871'		Open hole completion - No Cement			

Energen Resources Corporation proposes to drill a vertical well to develop the Fruitland Coal formation at the above described location in accordance with the attached drilling and surface use plans. The surface is under the jurisdiction of the Bureau of Land Management.

This location has been archaeologically surveyed by DCA (Division of Conservation Archaeology - Salmon Ruins) Copies of their report have been submitted directly to your office.

This APD also is serving as an application to obtain road and pipeline right-of-ways. This well will require approximately 920' of new access road (see Pipeline & Well Plats #3 & #4).

**HOLD C104 FOR** *Change in status to Federal 32-8-26 #2*

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM - If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

TITLE **John C. Thompson, Agent**

DATE

**9/7/2004**

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

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:

APPROVED BY

**Original Signed: Stephen Mason**

TITLE

DATE

**SEP 27 2004****\*See Instructions On Reverse Side**

Title 18 U.S.C. Section 1001, makes 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.

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

**NMOCD**

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

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Avenue, 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 &amp; Natural Resources Department

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised June 10, 2003

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045-32571		<sup>2</sup> Pool Code 71629	<sup>3</sup> Pool Name Basin Fruitland Coal
<sup>4</sup> Property Code 300460	<sup>5</sup> Property Name Federal # 32-8-26		<sup>6</sup> Well Number 2R
<sup>7</sup> OGRID No. 162928	<sup>8</sup> Operator Name Energen Resources Corporation		<sup>9</sup> Elevation 6874'

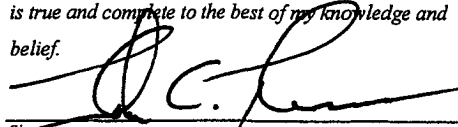
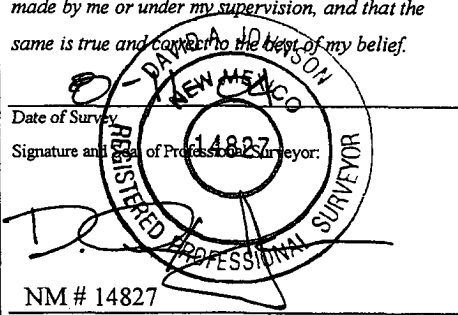
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	26	32N	8W		660	South	1920	West	San Juan

<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
<sup>12</sup> Dedicated Acres 320 W/2		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> 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

<sup>10</sup> S 88-45-22 E 2,601.40' (Measured) N 01-07-32 W 2,641.36' (Measured) 3 1/4" Brass Cap BLM 1962 1920' N 00-49-35 W 2,644.71' (Measured) 3 1/4" Brass Cap BLM 1962 S 89-01-12 E 2,579.96' (Measured)		26 660' S 88-47-16 E 2,604.00' (Measured)	<sup>17</sup> OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature John C. Thompson Printed Name Engineer/Agent john@walsheng.net Title and E-mail Address 8/25/04 Date <sup>18</sup> 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.  Date of Survey Signature and Seal of Professional Surveyor NM # 14827 Certificate Number
S 00-30-57 E 2,631.43' (Measured) S 00-26-42 E 2,629.73' (Measured)			

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB NO. 1004-0135  
Expires: November 30, 2000

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.**

5. Lease Serial No.  
NMNM6894

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other: COAL BED METHANE

8. Well Name and No.  
FEDERAL 26 2R

2. Name of Operator  
ENERGEN RESOURCES CORPORATION

Contact: VICKI DONAGHEY  
E-Mail: vdonaghe@energen.com

9. API Well No.  
30-045-32571-00-X1

3a. Address  
2198 BLOOMFIELD HIGHWAY  
FARMINGTON, NM 87401

3b. Phone No. (include area code)  
Ph: 505.325.6800 Ext: 238  
Fx: 505.326.6112

10. Field and Pool, or Exploratory  
BASIN FRUITLAND COAL

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 26 T32N R8W SESW 660FSL 1920FWL

11. County or Parish, and State

SAN JUAN COUNTY, NM

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Total depth has been revised and will not penetrate the Pictured Cliffs.  
New TD: 3811'

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #36165 verified by the BLM Well Information System  
For ENERGEN RESOURCES CORPORATION, sent to the Farmington  
Committed to AFMSS for processing by ADRIENNE BRUMLEY on 09/17/2004 (04AXB3391SE)**

Name (Printed/Typed) VICKI DONAGHEY

Title PRODUCTION ASSISTANT

Signature (Electronic Submission)

Date 09/15/2004

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By

**Original Signed: Stephen Mason**

Title

Date **SEP 27 2004**

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

**NMOC**

# ENERGEN RESOURCES CORPORATION

FEDERAL 26-2R

660' FSL & 1920 FWL

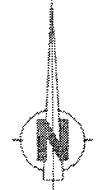
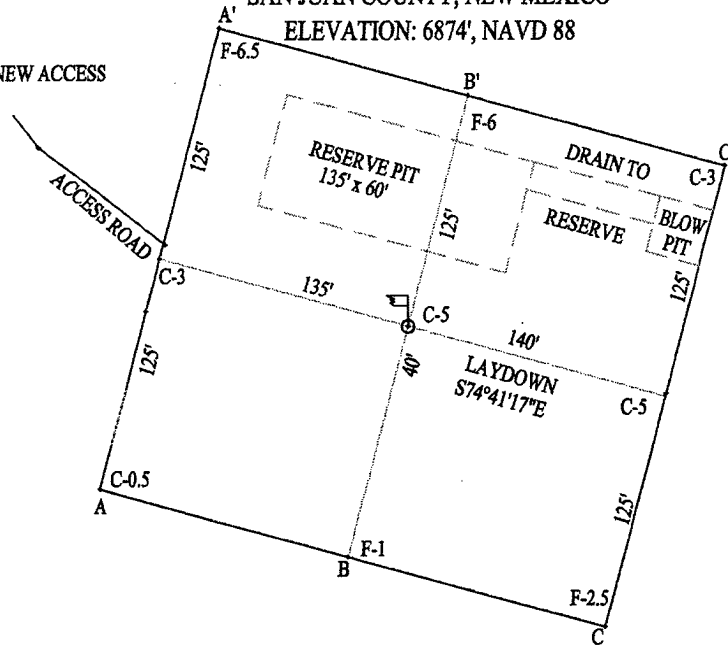
LOCATED IN THE SE/4 SW/4 OF SECTION 26, T32N, R8W, N.M.P.M,

SAN JUAN COUNTY, NEW MEXICO

ELEVATION: 6874', NAVD 88

920' ± NEW ACCESS

Plat #2



LATITUDE 36°56'57"N  
LONGITUDE 107°38'49"W  
DATUM: NAD 83

A - A'						
6885						
6875						
6865						

B - B'						
6885						
6875						
6865						

C - C'						
6885						
6875						
6865						

# **Energen Resources Corporation**

## **Operations Plan**

### **Federal 26 No. 2R**

*(Note: The following may be adjusted on site based upon actual conditions)*

#### **1. Location**

Location : 660' fsl & 1920' fwl (se sw)  
Sec 26, T32N, R8W  
San Juan County, New Mexico

Elevations : 6874' GL

Total Depth : 3871' MD RKB

Well Objective : Basin Fruitland Formation

#### **2. Formation Tops**

<b>A. <u>Formation</u></b>	<b><u>Depth-KB</u></b>
San Jose Fm.	Surface
Nacimiento Fm.	1006'
Ojo Alamo Ss.	2561'
Kirtland Sh.	2631'
Fruitland Fm.	3366'
Top Coal	3461'
Base Coal	3811'
Pictured Cliffs Ss.	3811'
<b>Total Depth</b>	<del>3871'</del> 3811'

Estimated depths of anticipated water, oil, gas and other mineral bearing formations which are expected to be encountered:

Water and gas: 2631' – 3811'

B. Logging program: Induction/GR and Density logs at TD

#### **3. Hazards**

##### **Overpressuring/H2S**

The Fruitland Coal in this area can be overpressured. Because of this, intermediate casing will be set above the main coal section. If excessive pressure is encountered before the intermediate casing setting depth, the mud system shall be sufficiently weighted to keep well from flowing.

Maximum expected BHP: 1500 psig.

No known H2S zones will be penetrated in this well.

## Lost Circulation

Lost circulation is not expected to be a problem. However, in the event lost circulation zones are encountered or hole stability problems develop, lost circulation material (LCM) will be on location to be used with any mud systems that may be needed to address the lost circulation zones. Also, lost circulation material will be used in the intermediate cement in attempt to minimize any lost circulation zones/problems that may be encountered during cementing of the intermediate string.

## 4. Drilling

A. Contractor: Aztec Well Service

B. Mud Program:

The surface hole will be drilled with a fresh water mud system.

The production hole will be drilled with a fresh water/polymer mud system. The weighting material will be drill solids or if conditions dictate, barite. The maximum weight expected is 9.5 ppg.

C. Minimum Blowout Control Specifications

Double ram type or annular type 2000 psi working pressure BOP with a rotating head will be utilized. See the attached Exhibits #1 for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1000 psi.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

## 4. Casing & Materials

A. Casing

<u>String</u>	<u>Interval</u>	<u>Hole Size</u>	<u>Csg OD</u>	<u>Wt lb/ft</u>	<u>Grade</u>
➤ Surface	0'-240'	12-1/4"	9-5/8"	32.3	J-55/ST&C
➤ Intermediate	0'-3541'	8-3/4"	7"	23.0	J-55/ST&C
➤ Production	3451'-3871'	6-1/4"	5-1/2"	15.5	J-55/LT&C

3811

B. Float equipment

I) Surface Casing: Texas Pattern Guide shoe on bottom. 3 bow type centralizers, spaced every other joint from bottom.

II) Intermediate Casing: 7" cement nose guide shoe with a 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.

II) Liner: 5-1/2": 5-1/2" cement guide shoe w/ insert float, run on bottom joint. No centralizers – open hole completion, no cement.

## 5. Cementing

Surface Casing: 9-5/8" – Use 130 sx (153 cu.ft.) of Class "B" with 1/4#/sk celloflake and 2% CaCl<sub>2</sub>. (yield: 1.18 cu.ft./sk; slurry weight: 15.6 ppg). Use 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 1000 psi for 30 min.

Intermediate Casing: 7" – Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 20 bbls of fresh water. Lead with 510 sx (1051 cu.ft.) of Class "B" with 2% SMS (sodium metasilicate) and 1/4#/sk celloflake. (yield: 2.06 cu.ft./sk; slurry weight: 12.5 ppg). Tail with 110 sx (129 cu.ft.) of Class "B" with 1/4#/sk celloflake (yield: 1.18 cu.ft./sk; slurry weight: 15.6 ppg). Total cement/hole volume is 1164 cu.ft. (use 100% excess to circulate cement to surface).

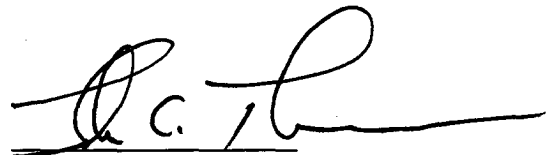
Liner: 5-1/2" – Open hole completion, no cement.

## 6. Completion

Well will be cavitaged. Surge well with air/gas and water/soap then flow back. Rotate and reciprocate drill string while pumping air/mist to clean out after surges. Repeat process until flow rates stabilize (no further increase). After the 5-1/2" liner is set the well will be selectively perforated and tested for production. If productive the well will be produced thru 2-3/8" tubing.

## 7. Surface Facilities

1. If well is productive, set separator, production tank (or water lines) and any related production equipment.
2. Set meter and tie well into pipeline.
3. Turn wellover to production department.
4. Rehabilitate as per the managing surface agency request.



John C. Thompson  
Engineer

# Energen Resources Corp.

## Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

### Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 24, 2004

By: John Thompson (Walsh E&P)

