

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

FEB 09 2011

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

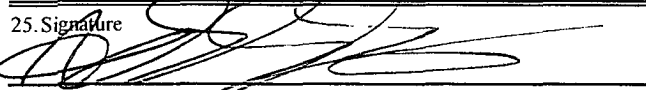
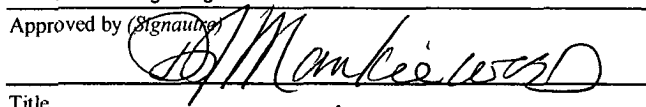
## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER			5. Lease Serial No. USA SF 077972		
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. NMNM118082		
3a. Address 2010 Afton Place Farmington, New Mexico 87401			8. Lease Name and Well No. Richardson #100S		
3b. Phone No. (include area code) (505)325-6800			9. App Well No. 30-045-35238		
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface (A) Sec. 2-T27N-R13W ; 1116'FNL, 984'FEL At proposed prod. zone			10. Field and Pool, or Exploratory Basin Fruitland Coal		
14. Distance in miles and direction from nearest town or post office* 5 miles south of Farmington, NM			11. Sec., T., R., M., or Blk. and Survey or Area Sec. 2-T27N-R13W		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 984'			12. County or Parish San Juan		
16. No. of Acres in lease 2278.2			13. State NM		
17. Spacing Unit dedicated to this well 319.79 acres (E/2)			18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 91'		
19. Proposed Depth 1678' MD			20. BLM/BIA Bond No. on file NM2707		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5966' GL			22. Approximate date work will start* 06/01/11		
23. Estimated duration 15 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) Andrew Soto	Date 1/26/11
Title Drilling Engineer		
Approved by (Signature) 	Name (Printed/Typed)	Date 11/16/11
Title AFM	Office FFD	

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.

RCVD NOV 23 '11

(Continued on page 2)

\*(Instructions on page 2)

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOCD PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

NOTIFY AZTEC OCD 24 HRS. OIL CONS. DIV.  
PRIOR TO CASING & CEMENT

This action is subject to the procedural review pursuant to 43 CFR 3165.9 and appeal pursuant to 43 CFR 3165.4

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

DEC 05 2011

NMOCD

DIST. 3  
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

District I  
1825 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

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

Form C-102  
Revised October 12, 2005

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 30.045-35238	<sup>2</sup> Pool Code 71629	<sup>3</sup> Pool Name FC
<sup>4</sup> Property Code 21370	<sup>5</sup> Property Name RICHARDSON	<sup>6</sup> Well Number #100s
<sup>7</sup> GRID No. 162928	<sup>8</sup> Operator Name ENERGEN RESOURCES	<sup>9</sup> Elevation 5966'

<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
A	2	27-N	13-W	1	1116'	NORTH	984'	EAST	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
A	2	27-N	13-W		1116'	NORTH	984'	EAST	SAN JUAN

<sup>12</sup> Dedicated Acres 319.79 #	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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RCVD DEC 1 '11

OIL CONS. DIV.  
DIST. 3

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

<sup>16</sup> FD 3 1/4 BRASS CAP GLO 1915 S89°59'45"W 2641.39'(M) WEST 80 Chains (R)	<sup>17</sup> FD 2 1/2 BRASS CAP GLO 1911 S89°55'38"W 2640.81'(M) ENERGEN RESOURCES RICHARDSON #100s LAT. 36.60845 N LONG. 108.18292 W	<sup>18</sup> FD 2 1/2 BRASS CAP GLO 1911 S0°04'22"E 2638.77'(M) S0°01'E 79.97 Chains (R)
<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, 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 of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <u>Andrew Sato</u> Date: <u>11-29-11</u> Printed Name: <u>Andrew Sato</u>		
<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: <u>6/27/09</u> Signature and Seal of Professional Surveyor: <u>WILLIAM E. MAHNKE II</u> Certificate Number: <u>8466</u>		

1/31/2011



### OPERATIONS PLAN

WELL NAME.....Richardson #100S  
JOB TYPE.....Vertical Fruitland Coal  
DEPT.....Drilling and Completions  
PREPARED BY.....Andrew Soto

### GENERAL INFORMATION

Surface Location	1,116' FNL & 984' FEL
S-T-R	(A) Sec.2-T27N-R13W
County, State	San Juan, New Mexico
Elevations	5,966' GL
Total Depth	1,678' +/- (MD)
Formation Objective	Basin Fruitland Coal

### FORMATION TOPS

Ojo Alamo Ss	188'
Kirtland Sh	298'
Fruitland Fm	1,208'
Top Coal	1,443'
Base Coal	1,478'
Pictured Cliffs	1,483'
<b>Total Depth</b>	<b>1,678'</b>

### DRILLING

The 12 1/4" wellbore will be drilled with a fresh water mud system.  
The 7 7/8" 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 8.3 ppg to 8.9 ppg.

#### Blowout Control Specifications:

A 2,000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. A 2" nominal, 2,000 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: 7 7/8" wellbore SLB Standard Platform Express  
Mudlogs: none  
Surveys: Surface and/or every 350' to TD.

1/31/2011



### CASING, TUBING & CASING EQUIPMENT

String	Start Depth	End Depth	Wellbore	Size	Wt	Grade
Surface	0	150	12 1/4"	8 5/8"	24.0 lb/ft	J-55 ST&C
Production	0	1,678	7 7/8"	5 1/2"	15.5 lb/ft	J-55 LT&C
Tubing	0	1,678		2 3/8"	4.7 lb/ft	J-55

#### **Casing Equipment:**

**Surface Casing:** Depending on wellbore conditions, a Texas Pattern Guide Shoe on first joint with and insert float valve on top. Run standard bow spring centralizers as follows: every other joint from TD to surface.

**Production 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 centralizers to optimize standoff. Turbolizers are to be placed in the base of the Ojo Alamo formation.

### WELLHEAD

9 5/8" x 5 1/2" weld/slip on casing head. 5 1/2" x 2 3/8" 2000 psi weld/slip on tubing head.

### CEMENTING

**Surface Casing:** 105 sks Type V with 2.0 % CaCl<sub>2</sub> and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 124 ft<sup>3</sup> of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min.

**Production Casing:** Before cementing, circulate hole at least 1 1/2 hole volume of mud and reduce funnel viscosity to minimum to aid in hole cleanout. Depending on wellbore conditions, cement may consist of 220 sks PRB II with 5.0 #/sk Gilsonite, and 1/4 #/sk Flocele (12.3 ppg, 2.24 ft<sup>3</sup>/sk) and a tail of 50 sks of PRB II cement with 5.0 #/sk Gilsonite, and 1/4 #/sk Flocele (13.5ppg, 1.81 ft<sup>3</sup>/sk). (582 ft<sup>3</sup> of slurry, circulate 100% excess to surface). The top of tail is designed to 1,156' FS.

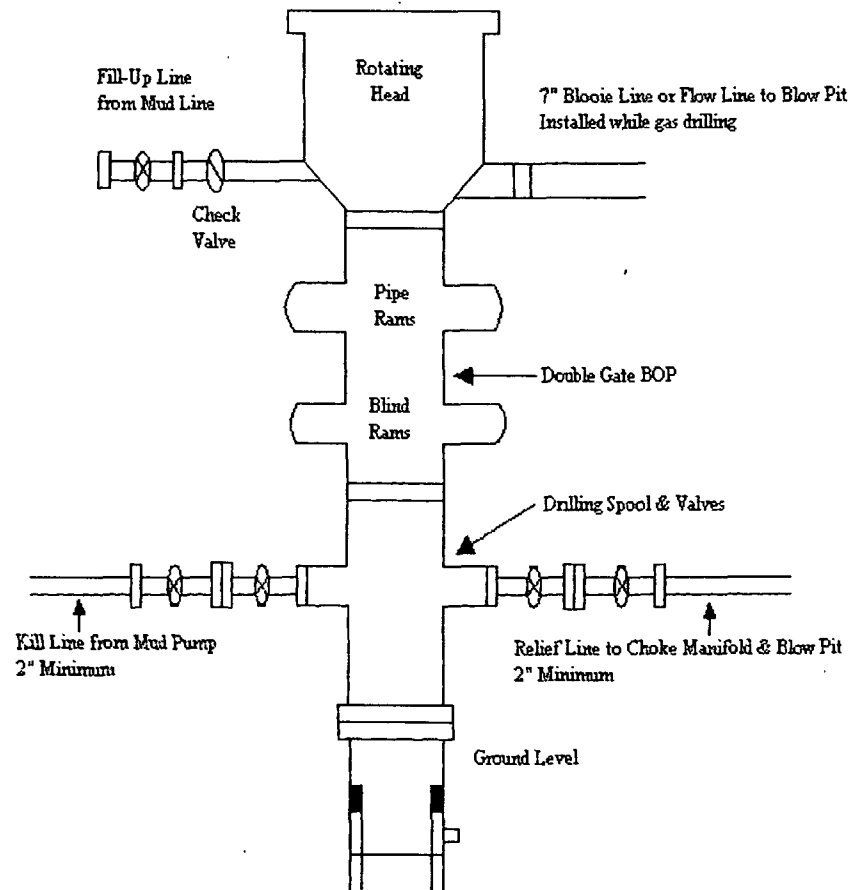
**Cement volumes are subject to change if caliper logs are run and dictate otherwise.**

### OTHER INFORMATION

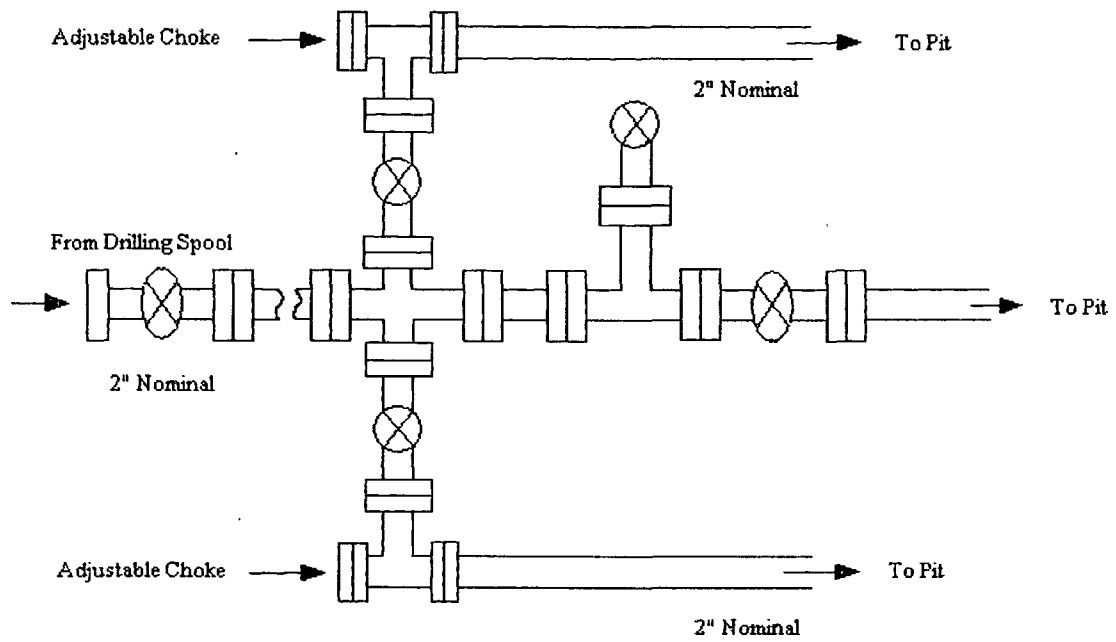
- 1) This well will be cased and the Basin Fruitland Coal fracture stimulated.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The production string may need to be cemented in multiple stages with a slurry design deviated from that listed 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. Anticipated pressure is 300 psi.
- 4) No abnormal temperatures or pressures are anticipated.
- 5) This gas is dedicated.

## 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

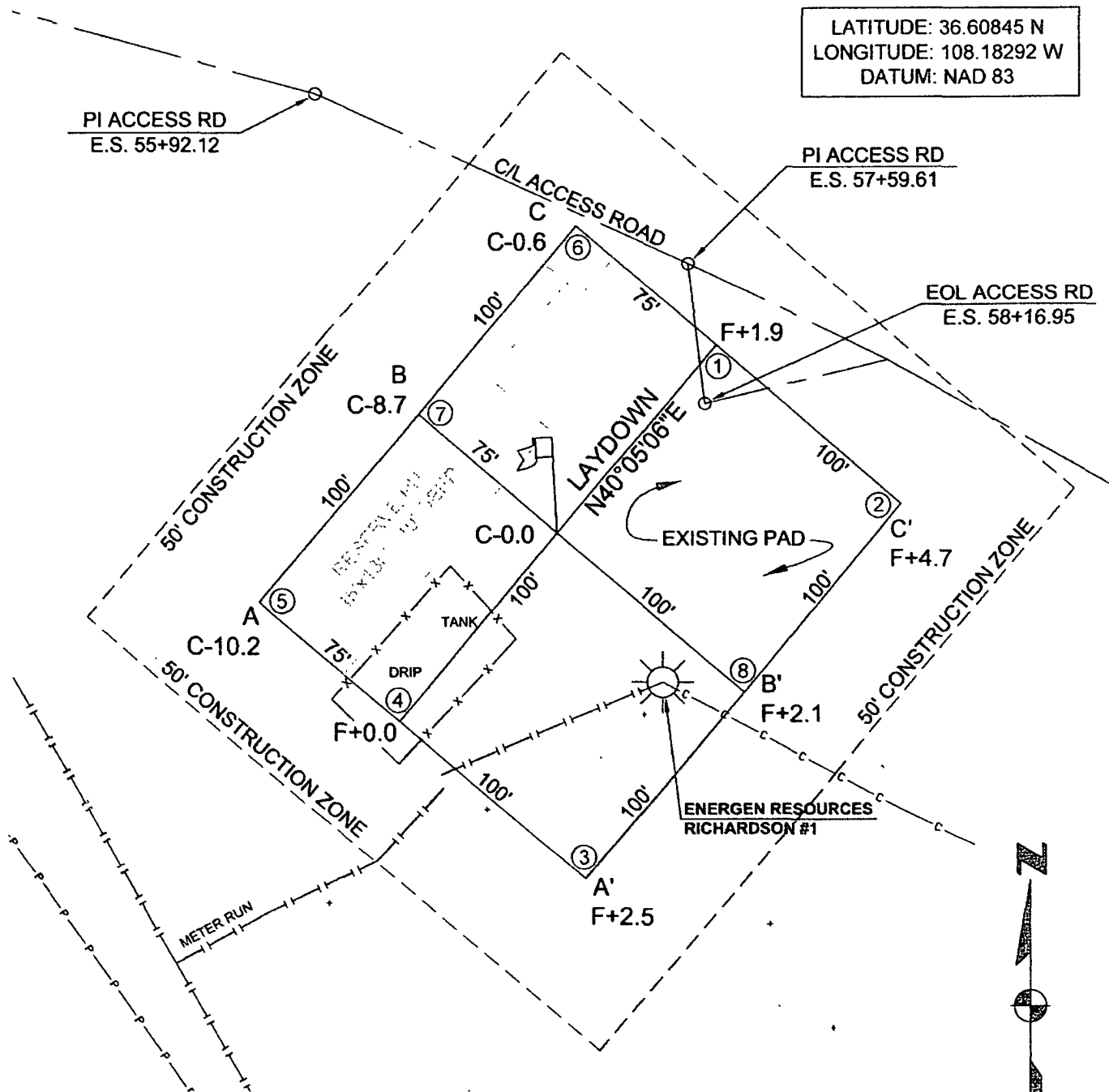
# ENERGEN RESOURCES CORPORATION

RICHARDSON #100S

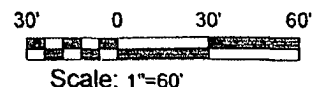
1116' FNL, 984' FEL

LOCATED IN THE NE/4 NE/4 OF SECTION 2, T27N, R13W, N.M.P.M.,  
SAN JUAN COUNTY, NEW MEXICO

LATITUDE: 36.60845 N  
LONGITUDE: 108.18292 W  
DATUM: NAD 83



TOTAL ACRES: 1.55+/-



**Red Skies Surveying & Mapping, Inc.**

A Native American Owned Company

101 Fauver Lane, Bloomfield, New Mexico 87413  
Phone/Fax: (505) 632-8906 Cell No: (505) 793-5325