

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0137  
Expires March 31, 2007

## 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.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

## 1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

## 2. Name of Operator

ENERGEN RESOURCES CORPORATION

## 3a. Address

2198 Bloomfield Highway, Farmington, NM 87401

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

780' FNL, 2600' FEL, Sec. 24, T32N, R06W, N.M.P.M.

(B) NW/NE

## 5. Lease Serial No.

NMSF 079090

## 6. If Indian, Allottee or Tribe Name

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

OIL CONS. DIV.

## 8. Well Name and No.

Navajo Lake # 103

## 9. API Well No.

30-039-29891

## 10. Field and Pool, or Exploratory Area

Basin Fruitland Coal

## 11. County or Parish, State

Rio Arriba NM

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

## TYPE OF SUBMISSION

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice

## TYPE OF ACTION

☐ Acidize☐ Alter Casing☐ Casing Repair☒ Change Plans☐ Convert to Injection☐ Deepen☐ Fracture Treat☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other Change BHLand measured depthTD

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 final site is ready for final inspection.)

Energen Resources would like to change the BHL to 760 fnl, 1000 fwl to more effectively drain the dedicated acreage in the drill block. This change is indicated on the revised C-102 form, directional drilling plan, and operations plan. ✓

The new TD will be 8276' MD. A single lateral will be drilled in the upper coal between 3265' and 3285' TVD. The 8 3/4" wellbore curve will be landed at 3275' TVD, 4250' MD. The 7" intermediate casing will be set to this depth and cemented with 580 sks lead followed by 150 sks tail. The production liner is expected to be set from 4160' - 8276' MD and will remain uncemented in the production lateral wellbore. ✓

## CONDITIONS OF APPROVAL

Adhere to previously issued stipulations.

HOLD C104 FOR directional survey  
And as drilled C-102 form

14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

Nathan Smith

## Title

Drilling Engineer

Date 10/22/2007

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

## Approved by

Troy L. Salyers

## Title

Petroleum Engineer

## Date

10/29/2007

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

FFO

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, 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.

NMOCD 96

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 & 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**

API Number		Pool Code 71629	Pool Name Basin Fruitland Coal
Property Code	Property Name Navajo Lake		Well Number #103
OGRID No. 162928	Operator Name Energen Resources Corporation		Elevation 6652

<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
B	24	32N	6W		780	North	2600	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
D	13	32N	6W		760	North	1000	West	Rio Arriba

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
321.61 - W/2			

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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.

5293.5' (R)

DIST. 3

<p>16</p> <p>2658.48' (R)</p> <p>1000'</p> <p>760'</p> <p>2624.16' (R)</p>	<p>2614.92' (R)</p>		<p><sup>17</sup> OPERATOR CERTIFICATION</p> <p>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</p> <p><i>Nathan Smith</i> 10/22/2007 Signature Date</p> <p>Nathan Smith Printed Name</p>	
	<p>13</p> <p>2603.70' (R)</p>			<p><sup>18</sup> SURVEYOR CERTIFICATION</p> <p>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.</p> <p>February 20, 2006 Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p> <p>Original surveyed and recorded by David R. Russell.</p> <p>10201 Certificate Number</p>
	<p>2660.61' (M)</p>			
	<p>2674.32' (R)</p> <p>2674.32' (R)</p> <p>2600'</p> <p>24</p>			

**Operations Plan**  
Revised October 22, 2007

**Navajo Lake #103**

**General Information**

Location	780' fnl, 2600' fel at surface 760' fnl, 1000' fwl at bottom nwne S24, T32N, R6W at surface S13, T32N, R6W at bottom Rio Arriba County, New Mexico
Elevations	6652' GL
Total Depth	8276' +/- (MD); 3275' +/- (TVD)
Formation Objective	Basin Fruitland Coal

**Formation Tops**

San Jose	Surface
Nacimiento	1182' (TVD)
Ojo Alamo Ss	2552' (TVD), 2606' (MD)
Kirtland Sh	2662' (TVD), 2743' (MD)
Fruitland Fm	3112' (TVD), 3469' (MD)
Top Coal	3241 (TVD), 3870 (MD)
Target Coal Top (1)	3265' (TVD), 4000' (MD)
Target Coal Base (1)	3285' (TVD)
Pictured Cliffs Ss	3326' (TVD)
Total Depth	3275' (TVD), 8276'(MD)

**Drilling**

The 12 1/4" wellbore will be drilled with a fresh water mud system.

The 8 3/4" 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. Kick off point is anticipated to be at 1650 ft (TVD). TD is at 3276' (TVD), 8276' (MD).

The 6 1/4" wellbore will be drilled with a fresh water system or CaCl<sub>2</sub> brine as wellbore and formation pressures dictate.

Blowout Control Specifications:

A 2000 psi minimum double ram or annulus BOP stack (figure 1) will be used following nipple up of casing head. 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: mud logs.

Surveys: Surface and every 500' for vertical/200' for deviated portions of wellbore to TD.

## Tubulars

### Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-227	12 ¼"	9 5/8"	32.3 ppf	H-40 STC
Intermediate	227'-4250' (MD) 3275' (TVD)	8 ¾"	7"	23.0 ppf	J-55 LTC & FJ
Production	4160'-8276' (MD) 3265'-3285' (TVD)	6 ¼"	4 ½"	11.6 ppf	J-55 LTC
Tubing	0'-3260' (TVD) 4150' (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 centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

## Wellhead

11" 3000 x 9 5/8" casing head. 11" 3000 x 7 1/16" Christmas Tree..

## Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % CaCl<sub>2</sub> and ¼ #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 148 ft<sup>3</sup> of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 1000 psi for 30 min. \*\*\*\*\*Previously Cemented in May 2007\*\*\*\*\*. ✓

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 580 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl<sub>2</sub>, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft<sup>3</sup>/sk) and a tail of 150 sks of Standard (Class B) cement with 5.0 #/sk Gilsonite, and ¼ #/sk Flocele (15.2ppg, 1.24 ft<sup>3</sup>/sk). (1356 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface). ✓

Production Liner – pre-drilled liner with open hole completion, NO CEMENT.

## Other Information

- 1) This well will be an open hole completion with pre-drilled liners.
- 2) If lost circulation is encountered, LCM will be added to the mud system to maintain well control.
- 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 are expected. Expected BHP is 1200 psi.
- 5) This gas is dedicated.

# **Energen Resources**

**Navajo Lake - NW S14, T32N, R6W**

**Eul Canyon**

**Navajo Lake #103**

**Preliminary Design**

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OIL CONS. DIV.

DIST. 3


**Plan: Revised Plan #1**

## **Planned Wellpath**

**22 October, 2007**

**Project:** Navajo Lake - NW S14, T32N, R6W  
**Site:** Eul Canyon  
**Well:** Navajo Lake #103  
**Wellbore:** Preliminary Design  
**Plan:** Revised Plan #1 (Navajo Lake #103/Preliminary Design)

<b>PROJECT DETAILS:</b> Navajo Lake - NW S14, T32N, R6W
<b>Geodetic System:</b> US State Plane 1983 <b>Datum:</b> North American Datum 1983 <b>Ellipsoid:</b> GRS 1980 <b>Zone:</b> New Mexico Central Zone
<b>System Datum:</b> Mean Sea Level

	<b>Azimuths to True North</b> Magnetic North: 10.20°  <b>Magnetic Field</b> Strength: 51297.4snT Dip Angle: 63.82° Date: 10/22/2007 Model: IGRF200510
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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	1650.0	0.00	0.00	1650.0	0.0	0.0	0.00	0.00	0.0	KOP	
3	4202.6	90.00	333.10	3275.0	1449.2	-735.2	3.53	333.10	1605.7	Land Curve	
4	8276.4	90.00	357.87	3275.0	5362.4	-1748.3	0.61	90.00	5640.2	TD Lateral	

