

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

JUN 17 2008

FORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

Bureau of Land Management
Farmington Field Office

15. Lease Serial No.

NMSE 079486

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		6. If Indian, Allottee or Tribe Name	
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		7. Unit or CA Agreement Name and No.	
2. Name of Operator Energen Resources Corporation		8. Lease Name and Well No. Carson #408	
3a. Address 2010 Afton Place Farmington, New Mexico 87401		9. API Well No. 30-039-30555	
3b. Phone No. (include area code) (505) 325-6800		10. Field and Pool, or Exploratory w Pictured Cliffs	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1680' FNL 895' FWL E Sec 35 At proposed prod. zone 1880' FSL 760' FWL L Sec 34		11. Sec., T., R., M., or Blk. and Survey or Area E Sec. 35 T 30N R 4W	
14. Distance in miles and direction from nearest town or post office*		12. County or Parish Rio Arriba	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 895'		13. State NM	
16. No. of Acres in lease 640		17. Spacing Unit dedicated to this well Projected area: 302.56 5/2 Sec 34 320.62	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 75'		19. Proposed Depth 9761' MD	
20. BLM/BIA Bond No. on file NM 2707		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7156' GL	
22. Approximate date work will start* 7/20/2008		23. Estimated duration 30 Days	

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

24. Attachments

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

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification.
- Such other site specific information and/or plans as may be required by the authorized officer.

RCVD MAR 5 '09
OIL CONS. DIV.
DIST. 3

25. Signature 	Name (Printed/Typed) Devin Mills	Date 6/16/08
Title Drilling Engineer		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 3/3/09
Title 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)

H₂S POTENTIAL EXIST

Hold C104

for Directional Survey
and "As Drilled" plat

MAR 09 2009

NMOCD

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

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT
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 LANDSDRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"

RECEIVED

JUL 15 2008

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

State of New Mexico
Energy, Minerals & Natural Resources Department
Bureau of Land Management
Farmington Field Office

Form C-102
Revised October 12, 2005

DISTRICT II
1301 W. Grand Avenue, Artesia, N.M. 88210

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

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

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30039-30555		*Pool Code 72400	*Pool Name E. Blanco PICTURED CLIFF
*Property Code 21185	*Property Name CARSON		*Well Number 408
*OGRD No. 162928	*Operator Name ENERGEN RESOURCES CORPORATION		*Elevation 7156'

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
E	35	30N	4W		1680'	NORTH	895'	WEST	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
L	34	30N	4W		1880'	SOUTH	760'	WEST	RIO ARRIBA

¹² Dedicated Acres 320.00 AC. - S/2 302.56 PROJECT AREA	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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, 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 or a compulsory pooling order heretofore entered by the division.

[Signature] 7/15/08
Signature Date
DAVIN MILLS
Printed Name

¹⁸ SURVEYOR CERTIFICATION

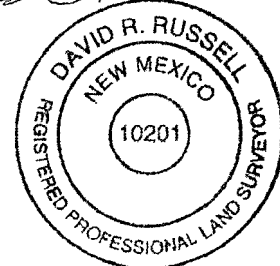
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

OCTOBER 31, 2007

Date of Survey

Signature and Seal of Professional Surveyor:

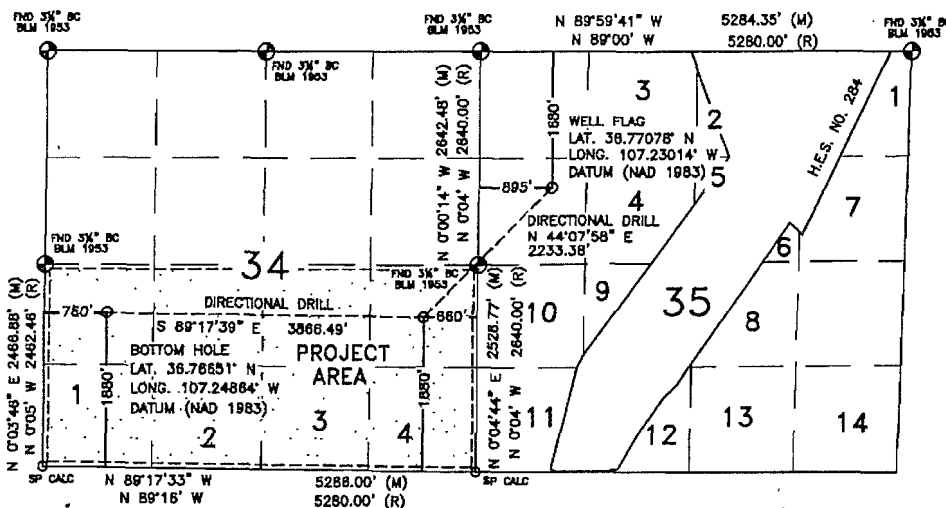
[Signature]



DAVID RUSSELL

Certificate Number

10201



Operations Plan

Revised May 7, 2008

Carson #408

General Information

Location	1680 fsl, 895 fel at surface 1880 fsl, 760 fel at bottom swnw S35, T30N, R4W Rio Arriba County, New Mexico
Elevations	7156' GL
Total Depth	9761' (MD), 4115' (TVD)
Formation Objective	East Blanco Pictured Cliffs

Formation Tops

San Jose	Surface
Nacimiento	2384' (TVD)
Ojo Alamo Ss	3384' (TVD), 3404' (MD)
Kirtland Sh	3434' (TVD), 3461' (MD)
Fruitland Fm	3638' (TVD), 3713' (MD)
Top Coal	3750' (TVD), 3875' (MD)
Upper Pictured Cliffs Ss	3823' (TVD), 3996' (MD)
Lower Pictured Cliffs Ss	4049' (TVD), 5900' (MD)
Total Depth	4115' (TVD), 9761' (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 8.9 ppg to 9.5 ppg.

Projected KOP is 2850' TVD with a BUR of 4.87°/100'.

The 6 1/4" wellbore will be drilled with a treated fresh water/synthetic polymer system with a density range of 8.5 to 8.8 ppg. Anticipated BHP can be as high as 750 psi.

Blowout Control Specifications:

A 3000 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. Test Choke Manifold to 1200 psi.

Logging Program:

Open hole logs: None

Mud logs: From 3823' (TVD), 3996' (MD) to TD. (Top of Pictured Cliffs Fm)

Surveys: Surface to KOP every 500' and a minimum of every 250' for directional.

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'-4050' (TVD) 5950' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	4046'-4115' (TVD) 5750'-9761' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4500' (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: An auto fill float shoe with auto fill insert float collar on the bottom and top of the first joint respectively 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: An auto fill float shoe with an auto fill float two joints above it will make up the shoe. Casing centralization will be done with standard bow spring and rigid centralizers to optimize standoff. The liner will be hung off in the 7" casing and use a liner top packer.

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: 118 sks with 2.0 % CaCl₂ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk 148 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min.

Intermediate Casing: Depending on wellbore conditions, cement may consist of 617 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft³/sk) and a tail of 505 sks Sk with ¼ #/sk Flocele (15.4 ppg, 1.18 ft³/sk). (1787 ft³ of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min. Test BOP to 250 psi for 15 min and 1200 psi for 15 min.

Production Casing: Will not be cemented.

Other Information

- 1) 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.
- 2) 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.
- 3) No abnormal temperatures or pressures are anticipated. This gas is dedicated.

Project: 30-4
 Site: Sec. 35 T 30N R 4W
 Well: Carson #408
 Wellbore: MotherBore
 Plan: Design #1 (Carson #408/MotherBore)

PROJECT DETAILS: 30-4

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Central Zone
 System Datum: Mean Sea Level



Azimuths to True North
 Magnetic North: 10.03°

Magnetic Field
 Strength: 51145.3snT
 Dip Angle: 63.67°
 Date: 5/28/2008
 Model: IGRF200510

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	2850.0	0.00	0.00	2850.0	0.0	0.0	0.00	0.00	0.0	
3	4674.8	88.96	208.79	4025.2	-1011.3	-555.7	4.87	208.79	835.8	
4	5899.8	89.02	268.52	4049.0	-1620.0	-1555.0	4.87	90.52	1972.5	Top Target LL 408
5	9761.7	89.02	268.52	4115.0	-1720.0	-5415.0	0.00	0.00	5681.6	Bottom Target LL 408

