

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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FEB 13 2009


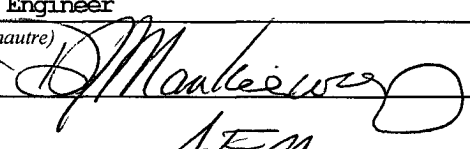
FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMSF 079486	
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 Energex Resources Corporation		7. Unit or CA Agreement Name and No.	
3a. Address 2010 Afton Place Farmington, New Mexico 87401		8. Lease Name and Well No. Carson #301	
3b. Phone No. (include area code) (505) 325-6800		9. API Well No. 30-039-30676	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1225' ENL 1050' FWL (NW NW) 34-30N-4W 0 At proposed prod zone 1100' FSL 760' FWL (NENE) 33-30N-4W 0		10. Field and Pool, or Exploratory Fruitland Coal	
14. Distance in miles and direction from nearest town or post office*		11. Sec., T., R., M., or Blk. and Survey or Area 0 Sec. 34 T 30N R 4W	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 1050'		12. County or Parish Rio Arriba	
16. No. of Acres in lease 320		13. State NM	
17. Spacing Unit dedicated to this well 300' APR 3 '09 N/2		20. BLM/BIA Bond No. on file OIL CONS. DIV. DIST. 3	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 76'		19. Proposed Depth 9058' MD	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7608' GL		22. Approximate date work will start* 6/1/2009	
23. Estimated duration 35 Days		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, must be attached to this form. *GENERAL REQUIREMENTS*.

- | | |
|--|---|
| 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) Devin Mills	Date 02/06/09
Title Drilling Engineer		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 4/1/09
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.

(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.

Hold C104
for Directional Survey
and "As Drilled" plat

NMOCD

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

APR 16 2009



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

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

DISTRICT III
1000 Rio Brazos Rd., Artesia, 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

RCVD APR 10 2009
OIL CONSERVATION DIV.
DISTRICT III

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30676	² Pool Code 71629	³ Pool Name FRUITLAND COAL
⁴ Property Code 21185	⁵ Property Name CARSON	⁶ Well Number 301
⁷ OGRD No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION	⁹ Elevation 7608'

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
D	34	30N	4W		1225'	NORTH	1050'	WEST	RIO ARriba

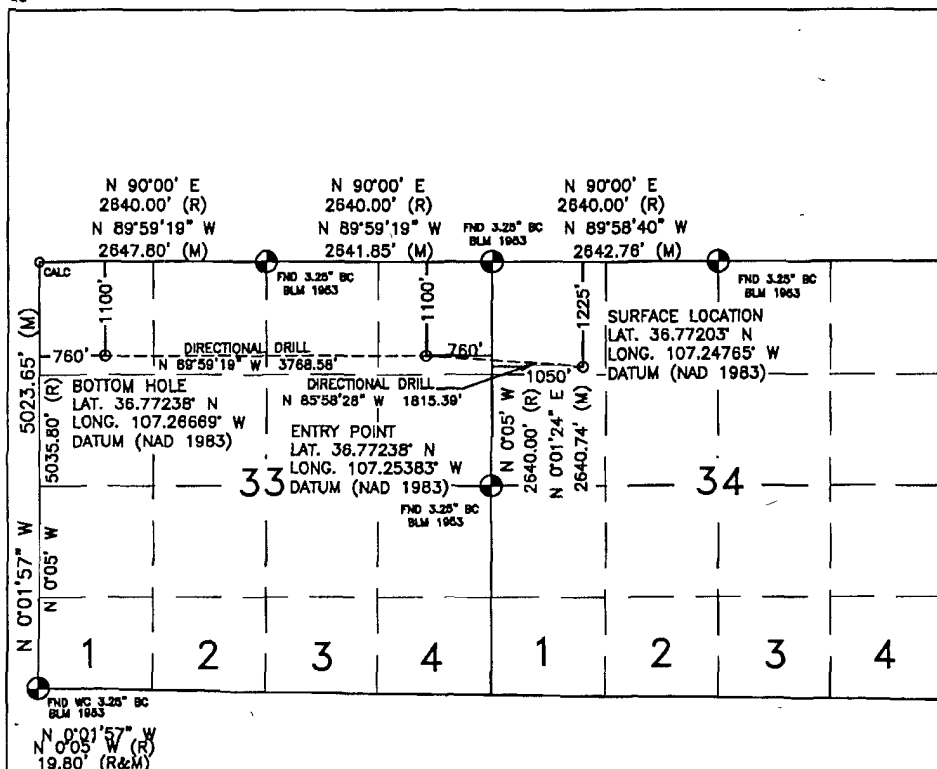
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	33	30N	4W		1100'	NORTH	760'	WEST	RIO ARriba

¹² Dedicated Acres	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

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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: *Devon Mills* Date: 9/10/09
Printed Name: Devon Mills

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:

David Russell
DAVID R. RUSSELL
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
10201

DAVID RUSSELL

Certificate Number

10201

Operations Plan

February 6, 2009

Carson #301

General Information

Location	1225' fnl, 1050 fwl at surface 1100 fnl, 760 fwl at bottom nwnw S34, T30N, R4W Rio Arriba County, New Mexico
Elevations	7608' GL
Total Depth	9058' (MD), 4271' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	2624' (TVD)
Ojo Alamo Ss	3612' (TVD), 3121' (MD)
Kirtland Sh	3723' (TVD), 3873' (MD)
Fruitland Fm	3789' (TVD), 3970' (MD)
Top Coal	4251' (TVD), 5291' (MD)
Total Depth	4271' (TVD), 9058' (MD)

Drilling

The 17 1/2" wellbore will be drilled with a fresh water mud system.

The 12 1/4" 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 2100' TVD with a BUR of 3.13"/100'.

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

The 6 1/8" wellbore will be drilled with a treated fresh-water/synthetic polymer system with a density range of 8.5 – 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 3789' (TVD), 3970' (MD) to TD. (Top of Fruitland 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'	17 1/2"	13 3/8"	48.0 ppf	H-40 ST&C
Intermediate	0'-2000' (TVD) 2000' (MD)	12 1/4"	9 5/8"	36.0 ppf	J-55 LT&C
2 nd Intermediate	1800'-4251' (TVD) 5291' (MD)	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	4251'-4271' (TVD) 5091'-9058' (MD)	6 1/4"	4 1/2"	11.6 ppf	L-80 LT&C
Tubing	0'-4980' (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.

2nd 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. The liner will be hung off in the 9 5/8" casing and use a liner top packer.

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 13 3/8" casing head. 11" x 9 5/8" x 4 1/2" 3000 psi Flanged Wellhead.

Cementing

Surface Casing: 135 sks of class "G" with 2.0 % CaCl₂ and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft³/sk, 158 ft³ of slurry, 20% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min. Test BOP to 250 psi for 15 min and 1200 psi for 15 min.

Intermediate Casing: Depending on wellbore conditions, cement may consist of 352 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.93 ft³/sk) and a tail of 64 sks Sks of class "G" with 1/4 #/sk Flocele (15.4 ppg, 1.18 ft³/sk). (754 ft³ of slurry, 20% excess to circulate to surface). Test casing to 1200 psi for 30 min.

2nd Intermediate Casing: Depending on wellbore conditions, cement may consist of 529 sks of class "G" with 1/4 pps of Flocele (15.6 ppg, 1.18 ft³/sk, 624 ft³ of slurry with 20% excess)

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.

Energen APD REPORT

Company: Energen Resources
Project: 30-4
Site: Sec. 34 T 30N r 4W
Well: Carson #301
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Carson #301
TVD Reference: WELL @ 7623.0ft (Original Well Elev)
MD Reference: WELL @ 7623.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (azimuth) (°)	Build (°/100ft)	V. Sec (ft)	Northing (ft)	Easting (ft)
8,800.0	4,269.6	89.70	270.01	0.00	5,320.2	2,102,008.99	1,342,910.94
8,900.0	4,270.2	89.70	270.01	0.00	5,420.2	2,102,010.05	1,342,810.95
9,000.0	4,270.7	89.70	270.01	0.00	5,520.2	2,102,011.10	1,342,710.96
9,058.0	4,271.0	89.70	270.01	0.00	5,578.2	2,102,011.71	1,342,652.96
Lower Coal - 4 1/2"							
9,058.1	4,271.0	89.70	270.01	0.00	5,578.3	2,102,011.71	1,342,652.82


Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
9,058.0	4,271.0	4 1/2"	4-1/2	6-1/4
5,291.0	4,251.0	7"	7	8-3/4
2,000.0	2,000.0	9 5/8"	9-5/8	12-1/4
200.0	200.0	13 3/8"	13-3/8	17-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,625.0	2,623.5	Nacimiento	shale	0.00	
2,625.0	2,623.5	Nacimiento	Shale	0.00	
3,873.0	3,723.1	Kirtland	shale	0.00	
3,873.0	3,723.1	Kirtland	Shale	0.00	
5,291.0	4,251.0	Upper Coal	coal	0.00	
5,291.0	4,251.0	Upper Coal	Coal	0.00	
3,970.0	3,789.3	Fruitland	Sand/Shale	0.00	
9,058.0	4,271.0	Lower Coal	coal	0.00	
9,058.0	4,271.0	Lower Coal	Coal	0.00	
3,721.0	3,612.1	Ojo Alamo	sandstone	0.00	
3,721.0	3,612.1	Ojo Alamo	Sandstone	0.00	

Checked By: _____

Approved By: 

Date: 2/6/09



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

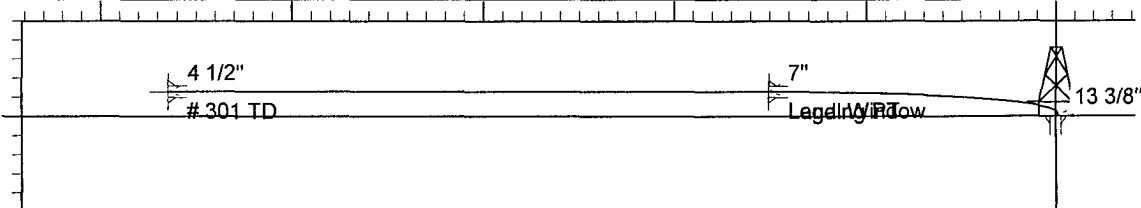


Azimuths to True North
Magnetic North: 9.95°
Magnetic Field
Strength: 51074.1snT
Dip Angle: 63.66°
Date: 2/4/2009
Model: IGRF200510

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	2100.0	0.00	0.00	2100.0	0.0	0.0	0.00	0.00	0.0	
3	2281.4	5.67	51.32	2281.1	5.6	7.0	3.13	51.32	-6.9	
4	5291.4	89.70	270.01	4251.0	127.5	-1810.1	3.13	-141.20	1812.6	Landing PT
5	9058.1	89.70	270.01	4271.0	128.0	-5576.8	0.00	0.00	5578.3	# 301 TD

South(-)/North(+) (1000 ft/in)



Legal Window

Landing PT

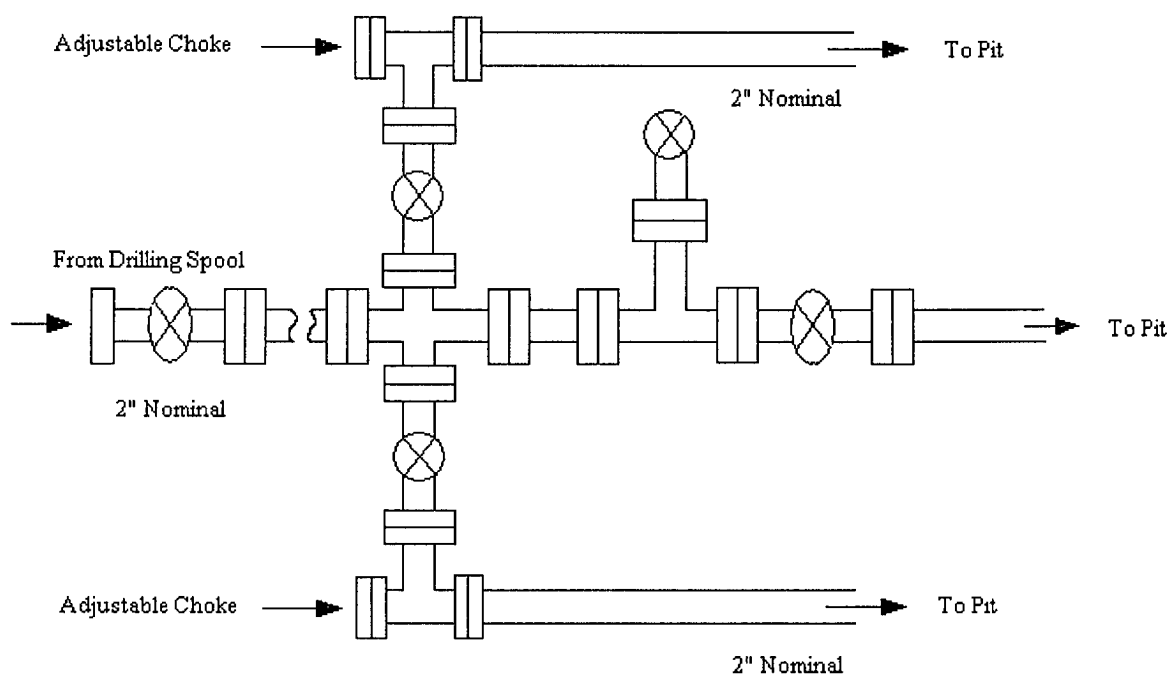
301 TD

7"

4 1/2"

Vertical Section at 271.31° (1000 ft/in)

Energen Resources Corporation
Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD

Energen Resources Corporation

Typical BOP Configuration for Gas Drilling

