Form 3160-5 (August 2007)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

RECEN	FORM APPROVED OMB NO. 1004-0137 Expires July 31, 2010
The second secon	5. Lease Serial No

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:

JUL 0 7 21 NMM 30014
6 Jif Indian, Allottee or Tribe Name

abandoned well. Use Fort	n 3160-3 (APD) for s	uch proposals ട	au of Land Mai	ragement
SUBMIT IN TRIPLICAT		·		7/11 funit or CA/Agreement, Name and/or No
1. Type of Well Oil Well X Gas Well Other	8 Well Name and No. Carracas 16B # 1			
2. Name of Operator				
Energen Resources Corporation 3a. Address		Bb. Phone No. (include ar	rag code)	9 API Well No.
2010 Afton Place, Farmington, NM 8	1	(505) 325–680		30-039-30465 10. Field and Pool, or Exploratory Area
4 Location of Well (Footage, Sec., T, R, M, or Survey I	Description)	(303) 323 000	<u> </u>	10. Field and Foot, of Exploratory Area
SHL: (F) Sec.16, T32N, R4W 1385'FNL				Basin Fruitland Coal
BHL: (A) Sec.16, T32N, R4W 600'FNL	& 110'FEL			11. County or Parish, State
				Rio Arriba NM
12. CHECK APPROPRIATE	E BOX(ES) TO INDI	CATE NATURE OF 1	NOTICE, REPO	RT, OR OTHER DATA
TYPE OF SUBMISSION		TY	PE OF ACTION	
X Notice of Intent	Acidize	Deepen	Production	(Start/Resume) Water Shut-Off
	Alter Casing	Fracture Treat	Reclamation	on Well Integrity
Subsequent Report	Casing Repair	New Construction	Recomplet	e Other
\mathcal{M}	X Change Plans	Plug and Abandon	Temporaril	ly Abandon
Final Abandonment Notice	Convert to Injection	Plug Back	Water Disp	
	Convert to injection	Flug Back	water Disp	OSAL
<pre>the training to the landing point of the landing point to the landing point of the Change kick-off point to 2451' the Change int. casing setting meat 115 sks tail. the Change the TD of the well to 6 of 4400' (MD). the Change the bottom hole footage Attached is a revised directional the changes made reflect NMOCD approximately appro</pre>	ake the following of the 7" int. case MD Sured depth (MD) 891' (MD) and run location to 600' drilling and ope	sing and the BHL: TD to 4460' MD at the 4 1/2" line FNL 110'FEL erations plan.	nd cement wir to this de acas Canyon.	eth 584 sks lead followed by spth with a new liner top RCVD JUL 14'03 OIL CONS. DIV.
14. I hereby certify that the foregoing is true and correct				
Name (Printed/Typed) Devin Mills		Title Dril	ling Engine	er
Signature Signature		Date 7/6/200		
THIS	SPACE FOR FEDE			
Approved by		Title	.	Date
Conditions of approval, if any, are attached Approval of this not the applicant holds legal or equitable title to those rights in the sul entitle the applicant to conduct operations thereon		that Office	m Enginee	7/13/2009
Title 18 U S C Section 1001, and Title 43 U S C Section 1212, i	nakes it a crime for any perso		make to any departm	ent or agency of the United States any false,

fictitious or fraudulent statements or representations as to any matter within its jurisdiction

State of them intexico

1 01111 0-102

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

Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

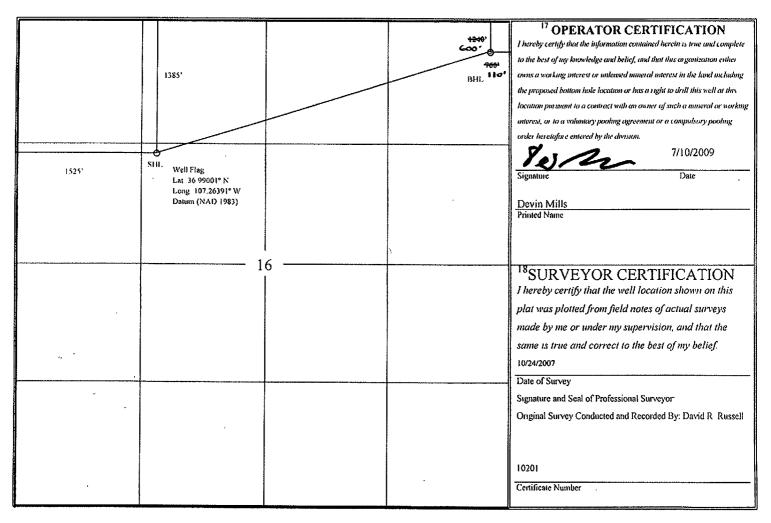
Revised October 12, 2005 Submit to Appropriate District Office State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LUCATION AND	ACKEAGE DEDICATION PLAT
² Paul Code	3 Pool Name

	API Numbe 10-039-30465			² Pool Code 71629	e	³ Pool Name Basin Fruitland Coal				
Property (Code	w			5 Property	⁵ Property Name				
	1				Carracas	16B			#1	
'OGRID	No.				8 Operator	Name			9 Elevation	
162928	·				Energen Resource	s Corporation			6860' GL	
					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	
F	16	32N	4W		1385	North	1525	West	Rio Arriba	
			п В	ottom Ho	le Location I	f Different From	m Surface			
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
A	16	32N	4W		600	North	110	East	Rio Arriba	
Dedicated Acres	S Joint o	r Infill 14 C	onsolidation	Code 15 O1	rder No.	1	I	· · · · · · · · · · · · · · · · · · ·	1	
320 N/2				İ	R-13119					

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.



Operations Plan

June 26, 2009

Carracas 16 B 1

General Information

Location 1385' fnl, 1525' fwl at surface

600' fnl, 110' fel at bottom

SHL! (SWNW) sene 16, T32N, R4W

Rio Arriba County, New Mexico

Elevations 6860' GL

Total Depth 6891' (MD), 3723' (TVD)
Formation Objective Basin Fruitland Coal

Formation Tops

 San Jose
 Surface

 Nacimiento
 1897' (TVD), 1897' (MD)

 Ojo Alamo Ss
 3052' (TVD), 3077' (M)D

 Kirtland Sh
 3177' (TVD), 3224' (MD)

 Fruitland Fm
 3477' (TVD), 3645' (MD)

Top Coal 3723' (TVD), 4449' (MD)

Bottom Coal 3749' (TVD)

Total Depth 3723' (TVD), 6891' (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 8.5 ppg to 8.8 ppg.

Projected KOP is 2451' TVD with 4.5°/100' doglegs.

The 6 ¼" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics. Anticipated BHP can be as high as 1100 psi.

Blowout Control Specifications:

A 2000 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.

Logging Program:

Open hole logs: None

Mud logs: From 3477' (TVD), 3645' (MD) to TD.

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'-300'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-3723'(TVD) 4460' (MD)	8 ¾	7"	23.0 ppf	J-55 LT&C
Production	3722'-3723' (T' 4400'-6892' (M		4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4220'(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 and rigid centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Liner: Bull nose guide shoe on bottom of first joint, H-Latch liner drop off tool on top of last joint.

Wellhead

3000 psi 11" x 9 5/8" casing head. 9 5/8" x 7"x 2 3/8" 3000 psi Flanged Wellhead .

Cementing 240 Ft3

Surface Casing: 203 sks Std (class B) with 2.0 % CaCl₂ and $\frac{1}{4}$ #/sk Flocele (15.6 ppg, 1.18 ft³/sk $\frac{148 \cdot \text{ft}}{3}$ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min. \checkmark

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 584 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft³/sk) and a tail of 115 sks Type V with ½ #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (878ft³ of slurry, $\frac{20\%}{20\%}$ excess to circulate to surface). Test casing to 1500 psi for 30 min.

Other Information

- 1) This well will be an open hole completion lined with an uncemented pre-drilled liner.
- 2) 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.
- 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 or pressures are anticipated. This gas is dedicated.
- 5) 16 B 6: Assumed vertical from 1450' fnl, 1480' fwl.

Energen ResourcesCarson National Forest

Carson National Forest 16B: Sec 16 T32N 4W Carracas 16B #1 Wellbore #1

Plan: Design #개 그

APD REPORT

07 July, 2009

Energen

APD REPORT

Company: Project:

Site:

Energen Resources **Carson National Forest**

Well: Wellbore: Design:

16B: Sec 16 T32N 4W Carracas 16B #1 Wellbore #1 Design #1

Local Co-ordinate Reference:

TVD Reference: 🍀 🔑 💛 MD Reference:

North Reference:

Survey Calculation Method:

Well Carracas 16B #1

WELL @ 6877.0ft (Original Well Elev) WELL @ 6877.0ft (Original Well Elev)

Minimum Curvature

EDM 2003 21 Single User Db

Project

Carson National Forest

Map System: Geo Datum:

US State Plane 1983 North American Datum 1983 System Datum:

Mean Sea Level

Map Zone:

New Mexico Central Zone

16B: Sec 16 T32N 4W

Site Position: From:

Lat/Long

Northing: Easting:

2,181,235.96ft

Latitude:

36° 59' 24.036 N

Position Uncertainty:

0.0 ft

Slot Radius:

1,344,308.61ft

Longitude: **Grid Convergence:** 107° 15' 50.076 W

-0.61°

Well Carracas 16B #1

Well Position

+N/-S +E/-W

0.0 ft 0 0 ft Northing: Easting:

2,181,235.96 ft 1,344,308.61ft

Latitude: Longitude: 36° 59' 24.036 N

Position Uncertainty

0.0 ft

Wellhead Elevation:

Ground Level:

107° 15' 50.076 W 6,860.0ft

Wellbore

Wellbore #1

Magnetics

Model Name

Sample Date

6/26/2009

Declination

Dip Angle

Field Strength

(ñT) · , , ,

51,165

IGRF200510

Design **Audit Notes:**

Version: Vertical Section: Phase:

Depth From (TVD)

(ft) 0.0

PROTOTYPE

Ö.Ó

Tie On Depth:

0.0

0.0

Direction % (°) 78.20

Survey Tool Program Date 6/26/2009

From

Survey (Wellbore) 6,891.0 Design #1 (Wellbore #1)

Tool Name MWD

Description MWD - Standard

Planned Survey

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MD	TVD	Inc Azi (a	aziműth)	Build V: S	Sec 💢 🖠	Northing	Easting
(ft), **	(ft)	. (°)	(°)	_(°/100ft) 🦠 🖟 🔭 (f	t)		(ft)
0.0	0.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
100.0	100.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
200.0	200.0	0.00	0.00	0.00	0 0	2,181,235 96	1,344,308.61
300.0	300 0	0.00	0.00	0 00	0.0	2,181,235.96	1,344,308 61
400.0	400.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308 61
500 0	500.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
600.0	600.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308 61
700.0	700.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
0.008	800.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
900.0	900 0	0 00	0.00	0 00	0.0	2,181,235.96	1,344,308.61
1,000 0	1,000.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,100.0	1,100.0	0.00	0 00	0.00	0.0	2,181,235.96	1,344,308.61

Energen APD REPORT

Company: Project: Site:

Energen Resources Carson National Forest 16B: Sec 16 T32N 4W Carracas 16B #1

Well: Wellbore: Wellbore #1 Design: ⊕Design #1

Local Co-ordinate Reference: Well Carracas 16B #1

TVD Reference: WELL @ 6877.0ft (Original Well Elev)

MD Reference: WELL @ 6877.0ft (Original Well Elev)

North Reference: True

Survey Calculation Method: Minimum Curvature

Database:

EDM 2003 21 Single User Db

Planned Survey			and the state of t				
MD	TVD	Inc	Azi (azimuth)	Build	V. Sec	Northing	Easting
(ft)	(m) (ft)	(°)	(°).	(°/100ft)	, (ft)	(ft)	(ft)
1,200.0	1,200 0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,300.0	1,300.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,400.0	1,400.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,500.0	1,500.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,600.0	1,600.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,700.0	1,700.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,800.0	1,800.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
1,900.0	1,900.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
2,000 0	2,000.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
2,100 0	2,100.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
2,200.0	2,200.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
2,300.0	2,300.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
2,400.0	2,400.0	0.00	0 00	0.00	0.0	2,181,235.96	1,344,308.61
2,451.0	2,451.0	0.00	0.00	0.00	0.0	2,181,235.96	1,344,308.61
2,500.0	2,500.0	2.21	78.20	4.50	0.9	2,181,236.15	1,344,309.54
2,600.0	2,599.7	6.71	78.20	4.50	8.7	2,181,237.66	1,344,317.16
2,700.0	2,698.4	11.22	78.20	4.50	24.3	2,181,240.68	1,344,332.44
2,800.0	2,795.6	15.72	78.20	4.50	47.6	2,181,245 20	1,344,355 28
2,900 0	2,890.7	20.22	78.20	4.50	78 4	2,181,251.18	1,344,385.54
3,000.0	2,983.1	24.73	78.20	4.50	116.6	2,181,258.60	1,344,423.04
3,100.0	3,072.2	29.23	78.20	4.50	162.0	2,181,267.40	1,344,467.54
3,200.0	3,157.5	33.74	78.20	4.50	214.2	2,181,277.54	1,344,518.76
3,300.0	3,238.4	38 24	78.20	4.50	273.0	2,181,288.94	1,344,576.39
3,400 0	3,314.4	42.75	78.20	4 50	337.9	2,181,301.54	1,344,640 08
3,500.0	3,385.1	47.25	78.20	4.50	408.6	2,181,315 25	1,344,709.42
3,600 0	3,450.0	51.76	78.20	4.50	484.6	2,181,330.01	1,344,784.00
3,700.0	3,508.7	56.26	78.20	4.50	565 5	2,181,345.70	1,344,863.35
3,800 0	3,561.0	60.76	78.20	4.50	650.7	2,181,362.25	1,344,946.99
3,900.0	3,606.3	65.27	78.20	4.50	739.8	2,181,379 54	1,345,034.38
4,000.0	3,644.6	69 77	78.20	4.50	832.2	2,181,397.46	1,345,125 00
4,100 0	3,675.4	74 28	78.20	4.50	927.3	2,181,415.92	1,345,218.29
4,200.0 4,300 0	3,698.7	78.78	78.20 78 20	4.50	1,024.5 1,123.3	2,181,434.79 2,181,453.95	1,345,313.67
·	3,714.3	83.29		4.50			1,345,410.54
4,400.0	3,722.1	87.79	78.20	4.50	1,223.0	2,181,473.29	1,345,508.32
4,449.1	3,723.0	90.00	78.20	4.50	1,272.0	2,181,482.81	1,345,556.43
4,500.0	3,723.0	90.00	78.20	0.00	1,322.9	2,181,492.70	1,345,606.40
4,600.0	3,723.0	90.00	78.20	0.00	1,422.9	2,181,512.10	1,345,704.50
4,700 0	3,723.0	90.00	78.20	0.00	1,522.9	2,181,531.51	1,345,802.60
4,800 0	3,723 0	90.00	78 20	0.00	1,622.9	2,181,550.91	1,345,900.70
4,900 0	3,723 0	90 00	78.20	0 00	1,722.9	2,181,570.32	1,345,998.80
5,000 0	3,723.0	90.00	78.20	0.00	1,822.9	2,181,589.73	1,346,096 90
5,100.0	3,723.0	90.00	78.20	0.00	1,922.9	2,181,609.13	1,346,195.00
5,200.0	3,723.0	90.00	78.20	0.00	2,022.9	2,181,628.54	1,346,293 10
5,300.0	3,723.0	90.00	78.20	0.00	2,122.9	2,181,647.94	1,346,391 19

Energen

APD REPORT

Company: Energen Resources
Project: Carson National Forest
16B: Sec 16 T32N 4W
Well: Carracas 16B #1
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Carracas 16B #1

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Database:

Section of the sectio

WELL @ 6877 Oft (Original Well Elev) WELL @ 6877.0ft (Original Well Elev)

:- True

Minimum Curvature

EDM 2003.21 Single User Db

Planned Survey	7,5	* * * * / .	y \1680°, "\$m A 3	V V V V V V V V V V V V V V V V V V V	84 / / /	\$	3 .
MD	ŤVĎ	Inc Azi	(azimuth)	Build 🔌 💘	V. Sec	Northing	Easting
(ft)	(ft) **	(°) 🐉 🖟 💯	^ (°) 🏖 🚉	(°/100ft)	(ft)	(ft)	(ft)
5,400.0	3,723.0	90.00	78.20	0.00	2,222.9	2,181,667.35	1,346,489.29
5,500.0	3,723.0	90.00	78.20	0.00	2,322.9	2,181,686.76	1,346,587.39
5,600 0	3,723.0	90.00	78.20	0.00	2,422.9	2,181,706.16	1,346,685 49
5,700.0	3,723.0	90.00	78.20	0.00	2,522.9	2,181,725.57	1,346,783 59
5,800.0	3,723.0	90.00	78.20	0.00	2,622.9	2,181,744 98	1,346,881.69
5,900.0	3,723.0	90 00	78.20	0.00	2,722 9	2,181,764.38	1,346,979.79
6,000.0	3,723.0	90.00	78.20	0.00	2,822.9	2,181,783.79	1,347,077.89
6,100.0	3,723.0	90.00	78.20	0.00	2,922.9	2,181,803.19	1,347,175.98
6,200.0	3,723.0	90.00	78.20	0.00	3,022 9	2,181,822.60	1,347,274 08
6,300.0	3,723 0	90 00	78.20	0.00	3,122.9	2,181,842.01	1,347,372.18
6,400.0	3,723 0	90.00	78 20	0.00	3,222.9	2,181,861.41	1,347,470 28
6,500.0	3,723.0	90.00	78.20	0.00	3,322.9	2,181,880.82	1,347,568.38
6,600.0	3,723.0	90.00	78.20	0.00	3,422.9	2,181,900 22	1,347,666.48
6,700 0	3,723 0	90.00	78.20	0.00	3,522.9	2,181,919.63	1,347,764.58
6,800.0	3,723.0	90.00	78.20	0.00	3,622.9	2,181,939 04	1,347,862.68
6,891.0	3,723.0	90.00	78.20	0.00	3,713.9	2,181,956.70	1,347,951.95

Checked By:	Approved By:	Date:
· ·		

