

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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

SUNDRY NOTICES AND REPORTS ON WELLS

OCT 15 2008

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

Lease Serial No.
NMNM 30351
Bureau of Land Management
Farmington Field Office
If Indian, Allottee or Tribe Name
Office
7. If Unit or CA/Agreement, Name and/or No.
8. Well Name and No.
Carracas 21A # 1
9. API Well No.
30-039-30167
10. Field and Pool, or Exploratory Area
Basin Fruitland Coal
11. County or Parish, State
Rio Arriba NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator
Energen Resources Corporation
3a. Address
2010 Afton Place, Farmington, NM 87401
3b. Phone No. (include area code)
(505) 325-6800
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
690 FSL, 2020 FEL Sec.21, T32N., R05W
(O) SW/SE

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

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 recompleate 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 recompleation 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 make the following changes to the Carracas 21 A #1:

-Change the setting depth of the 7" intermediate casing from 4055' MD to 4398' MD and enter the Fruitland Coal with footages of 1521 fsl, 1683 fel. The 7" will be cemented with 600 sks 65/35 with additives followed by 125 sks Class G cement with additives.

-Change the KOP from 2950' TVD to 2850' TVD

-Change the 4 1/2" production liner setting depths from 4000' - 7375' MD to 4348'-7363' MD.

-Forms will be filed to change the status of the Carracas 21 A #15 to a Pressure Observation Well (POW) prior to turning the well onto production.

NOTIFY AZTEC OCD 24 HRS.

PRIOR TO CASING & CEMENT

Hold C104
for Directional Survey
and "As Drilled" plat

RCVD OCT 22 '08

OIL CONS. DIV.

DIST. 3

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations.

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

Jason Kincaid

Title Drilling Engineer

Signature

Date 10/15/08

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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

NMOC

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.

Operations Plan

October 15, 2008

Carracas 21 A #1

General Information

Location	690 fsl, 2020 fel at surface 760' fnl, 760' fel at bottom nene S21, T32N, R5W Rio Arriba County, New Mexico
Elevations	7065' GL
Total Depth	7363' (MD), 3742' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	1752' (TVD)
Ojo Alamo Ss	3110' (TVD)
Kirtland Sh	3222' (TVD), 3235' (MD)
Fruitland Fm	3300' (TVD), 3325' (MD)
Top Coal	3732' (TVD), 4234' (MD)
Bottom Coal	3757' (TVD)
Total Depth	3742' (TVD), 7363' (MD)

Drilling

The 12 ¼" wellbore will be drilled with a fresh water mud system.

The 8 ¾" 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 4315°/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 3000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. Test BOP to 250 psi for 15 min and 1500 psi for 15 min. A 2" nominal, 2000 psi minimum choke manifold will also be used. Test choke manifold to 1500 psi for 30 min. 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 3321' (TVD), 3341' (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'-200'	12 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-3742' (TVD) 4398' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	3741'-3742' (TVD) 4348'-7363' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4300' (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" Slip On Casing Head. 9 5/8" x 7"x 2 3/8" 3000 psi Flanged Wellhead .

Cementing

Surface Casing: 125 sks Std (Type V) 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: 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 600 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 125 sks Sks with ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1305 ft³ of slurry, 100 % excess to circulate to surface). Test casing to 1200 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.

Energen Resources Corporation

Carson Natl Forest Sec.21, T32N, R5W

Middle Mesa

Carracas 21A #1

Horizontal CBM

Plan: Revised Plan

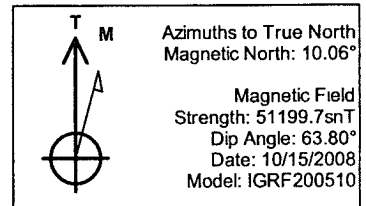
Plan Design

15 October, 2008

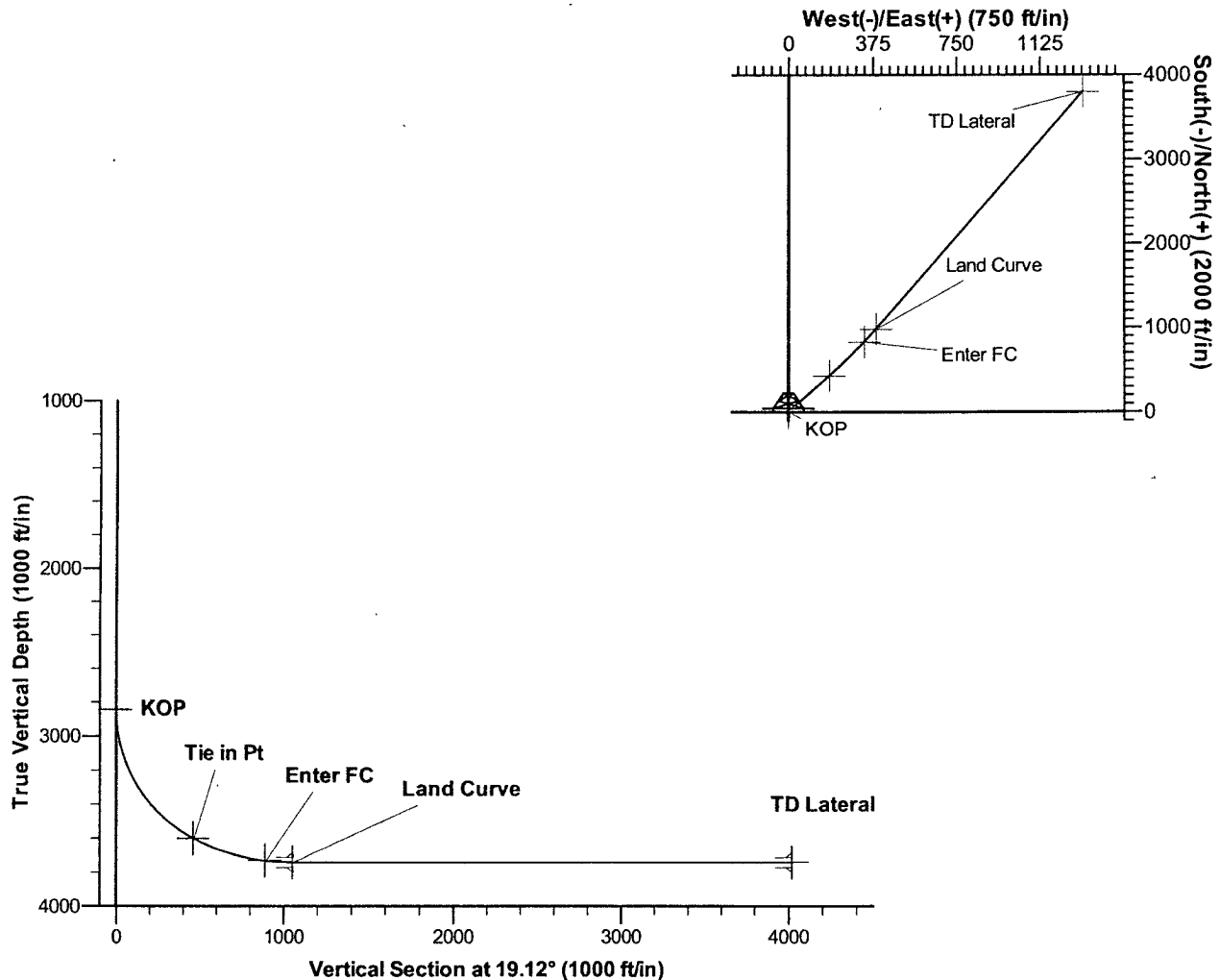


Project: Carson Natl Forest Sec.21, T32N, R5W
 Site: Middle Mesa
 Well: Carracas 21A #1
 Wellbore: Horizontal CBM
 Plan: Revised Plan (Carracas 21A #1/Horizontal CBM)

PROJECT DETAILS: Carson Natl Forest Sec.21, T32N, R5W										
Geodetic System: US State Plane 1983										
Datum: North American Datum 1983										
Ellipsoid: GRS 1980										
Zone: New Mexico Central Zone										
System Datum: Mean Sea Level										



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	KOP
3	3781.3	63.50	22.97	3602.0	428.5	181.6	6.82	22.97	464.3	Tie in Pt
4	4234.3	82.98	19.43	3732.0	831.1	337.0	4.36	-10.44	895.6	Enter FC
5	4397.6	89.99	18.25	3742.0	985.3	389.6	4.35	-9.58	1058.6	Land Curve
6	7362.5	90.01	18.25	3742.0	3801.1	1318.1	0.00	23.29	4023.2	TD Lateral



Energen

Plan Design

Company: Energen Resources Corporation
Project: Carson Natl Forest Sec.21, T32N, R5W
Site: Middle Mesa
Well: Carracas 21A #1
Wellbore: Horizontal CBM
Design: Revised Plan

Local Co-ordinate Reference: Well Carracas 21A #1
TVD Reference: KB @ 7082.0ft (L&W #1)
MD Reference: KB @ 7082.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Project Carson Natl Forest Sec.21, T32N, R5W

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Central Zone

System Datum: Mean Sea Level

Site Middle Mesa

Site Position:
From: Lat/Long
Position Uncertainty: 0.0 ft
Northing: 2,170,795.00 ft
Easting: 1,314,477.46 ft
Slot Radius: "
Latitude: 36° 57' 37.512 N
Longitude: 107° 21' 56.232 W
Grid Convergence: -0.67 °

Well Carracas 21A #1

Well Position +N/-S 0.0 ft **Northing:** 2,170,795.00 ft **Latitude:** 36° 57' 37.512 N
 +E/-W 0.0 ft **Easting:** 1,314,477.46 ft **Longitude:** 107° 21' 56.232 W
Position Uncertainty 0.0 ft **Wellhead Elevation:** 7,065.0 ft **Ground Level:** 7,065.0 ft

Wellbore Horizontal CBM

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/15/2008	10.06	63.80	51,200

Design Revised Plan

Audit Notes:

Version: **Phase:** PROTOTYPE **Tie On Depth:** 0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	19.12

Survey Tool Program **Date** 10/15/2008

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,362.5	Revised Plan (Horizontal CBM)		

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	N/S (ft)	E/W (ft)	V. Sec (ft)
0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
100.0	100.0	0.00	0.00	0.00	0.0	0.0	0.0
200.0	200.0	0.00	0.00	0.00	0.0	0.0	0.0
Surface Casing							
300.0	300.0	0.00	0.00	0.00	0.0	0.0	0.0
400.0	400.0	0.00	0.00	0.00	0.0	0.0	0.0
500.0	500.0	0.00	0.00	0.00	0.0	0.0	0.0
600.0	600.0	0.00	0.00	0.00	0.0	0.0	0.0
700.0	700.0	0.00	0.00	0.00	0.0	0.0	0.0
800.0	800.0	0.00	0.00	0.00	0.0	0.0	0.0
900.0	900.0	0.00	0.00	0.00	0.0	0.0	0.0
1,000.0	1,000.0	0.00	0.00	0.00	0.0	0.0	0.0

Energen

Plan Design

Company: Energen Resources Corporation
Project: Carson Natl Forest Sec.21, T32N, R5W
Site: Middle Mesa
Well: Carracas 21A #1
Wellbore: Horizontal CBM
Design: Revised Plan

Local Co-ordinate Reference: Well Carracas 21A #1
TVD Reference: KB @ 7082.0ft (L&W #1)
MD Reference: KB @ 7082.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	N/S (ft)	E/W (ft)	V. Sec (ft)
1,100.0	1,100.0	0.00	0.00	0.00	0.0	0.0	0.0
1,200.0	1,200.0	0.00	0.00	0.00	0.0	0.0	0.0
1,300.0	1,300.0	0.00	0.00	0.00	0.0	0.0	0.0
1,400.0	1,400.0	0.00	0.00	0.00	0.0	0.0	0.0
1,500.0	1,500.0	0.00	0.00	0.00	0.0	0.0	0.0
1,600.0	1,600.0	0.00	0.00	0.00	0.0	0.0	0.0
1,700.0	1,700.0	0.00	0.00	0.00	0.0	0.0	0.0
1,800.0	1,800.0	0.00	0.00	0.00	0.0	0.0	0.0
1,900.0	1,900.0	0.00	0.00	0.00	0.0	0.0	0.0
2,000.0	2,000.0	0.00	0.00	0.00	0.0	0.0	0.0
2,100.0	2,100.0	0.00	0.00	0.00	0.0	0.0	0.0
2,200.0	2,200.0	0.00	0.00	0.00	0.0	0.0	0.0
2,300.0	2,300.0	0.00	0.00	0.00	0.0	0.0	0.0
2,400.0	2,400.0	0.00	0.00	0.00	0.0	0.0	0.0
2,500.0	2,500.0	0.00	0.00	0.00	0.0	0.0	0.0
2,600.0	2,600.0	0.00	0.00	0.00	0.0	0.0	0.0
2,700.0	2,700.0	0.00	0.00	0.00	0.0	0.0	0.0
2,800.0	2,800.0	0.00	0.00	0.00	0.0	0.0	0.0
2,850.0	2,850.0	0.00	0.00	0.00	0.0	0.0	0.0
KOP							
2,900.0	2,900.0	3.41	22.97	6.82	1.4	0.6	1.5
2,950.0	2,949.8	6.82	22.97	6.82	5.5	2.3	5.9
3,000.0	2,999.2	10.23	22.97	6.82	12.3	5.2	13.3
3,050.0	3,048.1	13.64	22.97	6.82	21.8	9.2	23.6
3,100.0	3,096.3	17.05	22.97	6.82	34.0	14.4	36.8
3,150.0	3,143.7	20.46	22.97	6.82	48.8	20.7	52.9
3,200.0	3,190.0	23.87	22.97	6.82	66.2	28.0	71.7
3,250.0	3,235.1	27.28	22.97	6.82	86.0	36.5	93.2
3,300.0	3,278.8	30.68	22.97	6.82	108.3	45.9	117.4
3,350.0	3,321.0	34.09	22.97	6.82	133.0	56.4	144.1
3,400.0	3,361.6	37.50	22.97	6.82	159.9	67.8	173.3
3,450.0	3,400.3	40.91	22.97	6.82	189.0	80.1	204.8
3,500.0	3,437.1	44.32	22.97	6.82	220.2	93.3	238.6
3,550.0	3,471.8	47.73	22.97	6.82	253.3	107.3	274.5
3,600.0	3,504.3	51.14	22.97	6.82	288.3	122.2	312.4
3,650.0	3,534.5	54.55	22.97	6.82	324.9	137.7	352.1
3,700.0	3,562.3	57.96	22.97	6.82	363.2	153.9	393.6
3,750.0	3,587.5	61.37	22.97	6.82	402.9	170.8	436.7
3,781.3	3,602.0	63.50	22.97	6.82	428.5	181.6	464.3
Tie in Pt							
3,800.0	3,610.2	64.31	22.80	4.29	444.0	188.1	481.1
3,900.0	3,650.2	68.60	21.96	4.30	528.7	223.0	572.6
4,000.0	3,683.1	72.90	21.17	4.30	616.5	257.7	666.9
4,100.0	3,708.9	77.20	20.41	4.30	706.8	292.0	763.5
4,200.0	3,727.4	81.51	19.67	4.30	799.1	325.6	861.7

Energen

Plan Design

Company: Energen Resources Corporation
Project: Carson Natl Forest Sec.21, T32N, R5W
Site: Middle Mesa
Well: Carracas 21A #1
Wellbore: Horizontal CBM
Design: Revised Plan

Local Co-ordinate Reference: Well Carracas 21A #1
TVD Reference: KB @ 7082.0ft (L&W #1)
MD Reference: KB @ 7082.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	N/S (ft)	E/W (ft)	V. Sec (ft)
4,234.3	3,732.0	82.98	19.43	4.31	831.1	337.0	895.6
Enter FC							
4,300.0	3,738.4	85.80	18.95	4.29	892.9	358.5	961.1
4,397.6	3,742.0	89.99	18.25	4.29	985.3	389.6	1,058.6
Land Curve							
4,398.0	3,742.0	89.99	18.25	0.00	985.7	389.7	1,059.0
Intermediate Casing							
4,400.0	3,742.0	89.99	18.25	0.00	987.6	390.4	1,061.0
4,500.0	3,742.0	89.99	18.25	0.00	1,082.6	421.7	1,161.0
4,600.0	3,742.0	89.99	18.25	0.00	1,177.5	453.0	1,260.9
4,700.0	3,742.0	90.00	18.25	0.00	1,272.5	484.3	1,360.9
4,800.0	3,742.0	90.00	18.25	0.00	1,367.5	515.6	1,460.9
4,900.0	3,742.0	90.00	18.25	0.00	1,462.4	546.9	1,560.9
5,000.0	3,742.1	90.00	18.25	0.00	1,557.4	578.2	1,660.9
5,100.0	3,742.1	90.00	18.25	0.00	1,652.4	609.5	1,760.9
5,200.0	3,742.1	90.00	18.25	0.00	1,747.4	640.9	1,860.9
5,300.0	3,742.1	90.00	18.25	0.00	1,842.3	672.2	1,960.9
5,400.0	3,742.1	90.00	18.25	0.00	1,937.3	703.5	2,060.9
5,500.0	3,742.1	90.00	18.25	0.00	2,032.3	734.8	2,160.8
5,600.0	3,742.1	90.00	18.25	0.00	2,127.2	766.1	2,260.8
5,700.0	3,742.1	90.00	18.25	0.00	2,222.2	797.4	2,360.8
5,800.0	3,742.1	90.00	18.25	0.00	2,317.2	828.7	2,460.8
5,900.0	3,742.1	90.00	18.25	0.00	2,412.2	860.1	2,560.8
6,000.0	3,742.1	90.00	18.25	0.00	2,507.1	891.4	2,660.8
6,100.0	3,742.1	90.00	18.25	0.00	2,602.1	922.7	2,760.8
6,200.0	3,742.1	90.00	18.25	0.00	2,697.1	954.0	2,860.8
6,300.0	3,742.1	90.00	18.25	0.00	2,792.0	985.3	2,960.8
6,400.0	3,742.1	90.00	18.25	0.00	2,887.0	1,016.6	3,060.7
6,500.0	3,742.1	90.00	18.25	0.00	2,982.0	1,048.0	3,160.7
6,600.0	3,742.1	90.00	18.25	0.00	3,076.9	1,079.3	3,260.7
6,700.0	3,742.1	90.00	18.25	0.00	3,171.9	1,110.6	3,360.7
6,800.0	3,742.0	90.00	18.25	0.00	3,266.9	1,141.9	3,460.7
6,900.0	3,742.0	90.00	18.25	0.00	3,361.8	1,173.2	3,560.7
7,000.0	3,742.0	90.00	18.25	0.00	3,456.8	1,204.6	3,660.7
7,100.0	3,742.0	90.00	18.25	0.00	3,551.8	1,235.9	3,760.7
7,200.0	3,742.0	90.01	18.25	0.00	3,646.8	1,267.2	3,860.6
7,300.0	3,742.0	90.01	18.25	0.00	3,741.7	1,298.5	3,960.6
7,362.0	3,742.0	90.01	18.25	0.00	3,800.6	1,317.9	4,022.6
Production Liner							
7,362.5	3,742.0	90.01	18.25	0.05	3,801.1	1,318.1	4,023.2
TD Lateral							

Energen

Plan Design

Company: Energen Resources Corporation
Project: Carson Natl Forest Sec.21, T32N, R5W
Site: Middle Mesa
Well: Carracas 21A #1
Wellbore: Horizontal CBM
Design: Revised Plan

Local Co-ordinate Reference: Well Carracas 21A #1
TVD Reference: KB @ 7082.0ft (L&W #1)
MD Reference: KB @ 7082.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TD Lateral - plan hits target - Point	0.00	0.00	3,742.0	3,801.1	1,318.1	2,174,580.41	1,315,839.97	36° 58' 15.094 N	107° 21' 39.990 W
KOP - plan hits target - Point	0.00	0.00	2,850.0	0.0	0.0	2,170,795.00	1,314,477.46	36° 57' 37.512 N	107° 21' 56.232 W
Land Curve - plan hits target - Point	0.00	0.00	3,742.0	985.3	389.6	2,171,775.67	1,314,878.57	36° 57' 47.254 N	107° 21' 51.432 W
Enter FC - plan hits target - Point	0.00	0.00	3,732.0	831.1	337.0	2,171,622.10	1,314,824.17	36° 57' 45.729 N	107° 21' 52.080 W
Tie in Pt - plan hits target - Point	0.00	0.00	3,602.0	428.5	181.6	2,171,221.35	1,314,664.06	36° 57' 41.749 N	107° 21' 53.995 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
200.0	200.0	Surface Casing	9-5/8	12-1/4
4,398.0	3,742.0	Intermediate Casing	7	8-3/4
7,362.0	3,742.0	Production Liner	4-1/2	6-1/4

Checked By: _____ Approved By: _____ Date: _____