

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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 page 2

RECEIVED

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

JUL 06 2010

2. Name of Operator

Energen Resources Corporation

Bureau of Land Management

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)

SHL: 1939' FSL, 497' FEL Sec.12, T32N, R05W (I)

BHL: 760' FNL 760' FWL SEC 12-T32N-R05W (E)

5. Lease Serial No.

NMNM 29342

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

Carracas 12A # 2H

9. API Well No.

30-039-30826

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 | ☐ 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 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 plans to make the following changes to the Carracas 12A #2H well:

* The geologic prognosis has changed and because of that several aspects of the well plan has changed also.

* The TVD has changed from 4208' to 4195' and the total depth has changed from 8566' to 9175'MD.

* The depth change has caused the casing setting depths to change also:

Surface Casing - Set @ 200'.....no change

Intermediate Casing - Set @ 5505'MD, 4195'TVD.....changed from 5801'MD, 4208'TVD

Production Liner - Set @ 9175'MD.....changed from 8566'MD

Tubing - Set @ 4950'MD, 4195'TVD.....changed from 5205'MD, 4208'TVD

* This change in setting depths has caused the cement volumes to change:

Surface - no change

Intermediate - 680sk lead/150sk tail.....changed from 810sk lead/150sk tail

* The top of the liner will now be at 5405'MD.....changed from 5701'MD

* All these changes are reflected in the revised Operations and Directional Plans attached.

RCVD JUL 22 '10
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)

Stephen Byers

Title Drilling Engineer

Signature

Stephen Byers

Date 07/02/10

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Troy L. Salyers

Title

Petroleum Engineer

Date

7/21/2010

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.

RECEIVED

JUL 19 2010

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

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30926	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code	⁵ Property Name CARRACAS 12A	⁶ Well Number 2H
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION	⁹ Elevation 7437'

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
1	12	32N	5W	6	1939'	SOUTH	497'	EAST	RIO ARRIBA

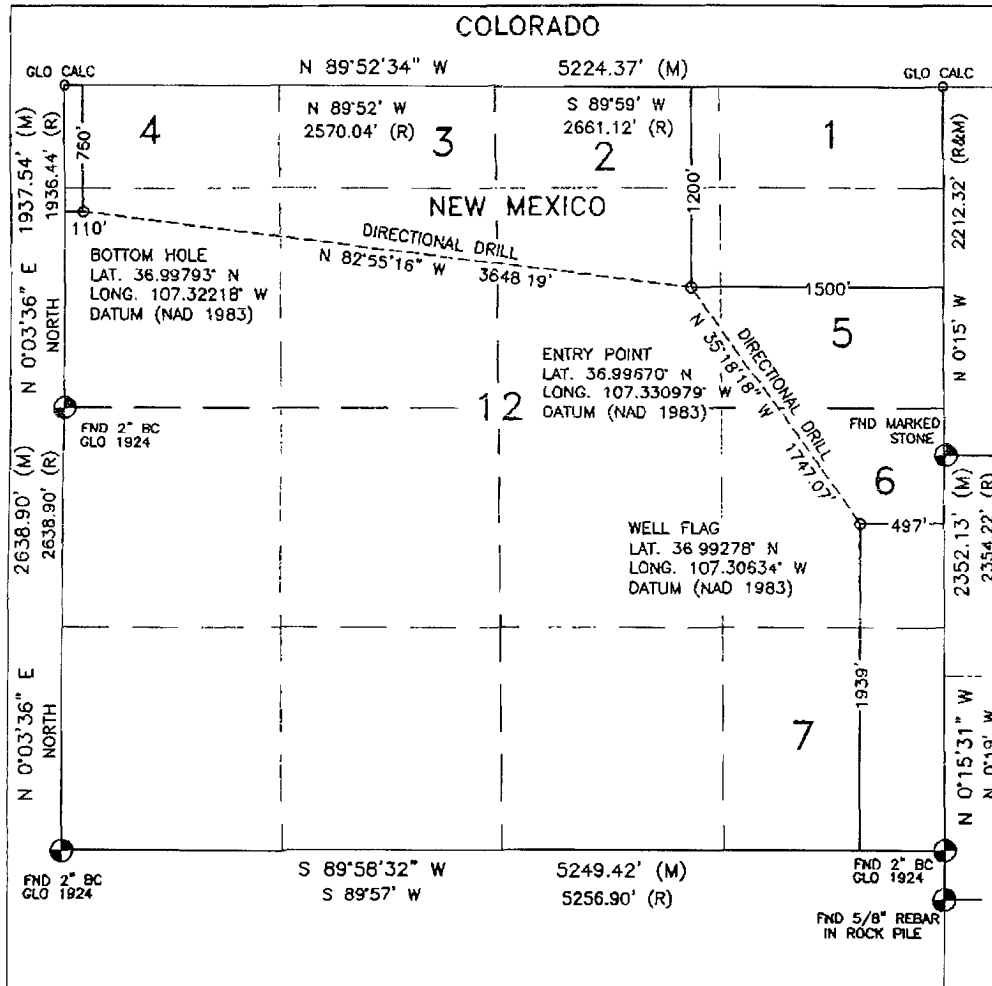
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	12	32N	5W		760'	NORTH	110'	WEST	RIO ARRIBA

¹² Dedicated Acres 232.21 N/2	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13119
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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

18



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 _____ Date _____

Printed Name _____

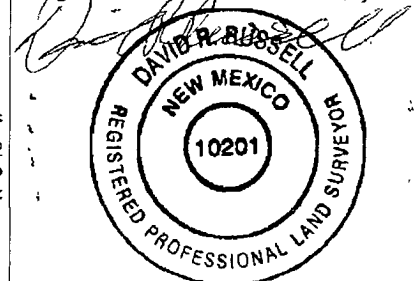
18 SURVEYOR CERTIFICATION

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 2, 2008

Date of Survey

Signature and Seal of Professional Surveyor:



DAVID RUSSELL

Certificate Number

10201

7/2/2010



OPERATIONS PLAN

WELL NAME.....Carracas 12A #2
JOB TYPE.....Horizontal OPE FTC
DEPT.....Drilling and Completions
PREPARED BY.....Stephen Byers

GENERAL INFORMATION

Surface Location	1939 FSL 497 FEL
S-T-R	(I) Sec.12, T32N, R05W
Bottom Hole Location	760 FNL 760 FWL
S-T-R	(E) Sec.12, T32N, R05W
County, State	Rio Arriba, New Mexico
Elevations	7437' GL
Total Depth	9175' +/- (MD); 4195' (TVD)
Formation Objective	Basin Fruitland Coal

FORMATION TOPS

San Jose	Surface
Nacimiento	2250' (TVD)
Ojo Alamo Ss	3450' (TVD)
Kirtland Sh	3597' (TVD)
Fruitland Fm	4055' (TVD) 4579'MD
Top Target Coal	4180' (TVD) 5211'MD
Base Target Coal	4213' (TVD)
Total Depth	4195' (TVD), 9175' (MD)

DRILLING

Surface: 12-1/4" wellbore will be drilled with a fresh water mud system (spud mud).

Intermediate: 8-3/4" wellbore will be drilled with a LSND mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.4 ppg to 9.0 ppg.

Production: 6-1/8" 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.

Projected KOP is 3000' TVD with 5.75°/100' doglegs.

Blowout Control Specifications:

A 3000 psi minimum double ram or annulus BOP stack 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. **Pressure test BOP to 250 psi for 15 min and 2000 psi for 15 min.**

Logging Program:

Open hole logs: None

Mudlogs: 3969' TVD, 4300' MD to TD

Surveys: Surface to KOP every 500' and a minimum of every 200' for directional.

7/2/2010

CASING, TUBING & CASING EQUIPMENT

String	Start Depth	End Depth	Wellbore	Size	Wt	Grade
Surface	0	200 320	12-1/4"	9-5/8"	32.3 lb/ft	H-40 ST&C
Intermediate	0	5505	8-3/4"	7"	23 lb/ft	J-55 LT&C
TVD	0	4195				
Prod. Liner	5405	9175	6-1/4"	4-1/2"	11.6 lb/ft	J-55 LT&C
TVD	4193	4195				
Tubing	0	4950	none	2-3/8"	4.7 lb/ft	J-55

Surface Casing: Texas Pattern Guide Shoe on bottom of first joint and an insert float valve on top of first joint. Casing centralization with a minimum of 3 standard bow spring centralizers to achieve optimal standoff.

Intermediate Casing: Self fill float shoe with self fill float collar on bottom and top of first joint. Casing centralization with double bow spring and centralizers to optimize standoff.

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

WELLHEAD

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

CEMENTING

Recalculate for 320'

Surface Casing: 125 sks 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: Depending on wellbore conditions, cement may consist of 680 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 150 sks Class G with ¼ #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1487 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Test casing to 1500 psi for 30 min.

Production Liner: NO CEMENT, Open Hole Completion

Set slips with full string weight

If cement does not circulate, run temperature survey in 8 hrs. to determine TOC.

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.
- 5) This gas is dedicated.



Energen Resources Corp.

Carson National Forest Sec.12-T32N-R05W

Carracas Mesa

Carracas 12A #2H

Horizontal OPE FTC

Plan: Preliminary Plan #2

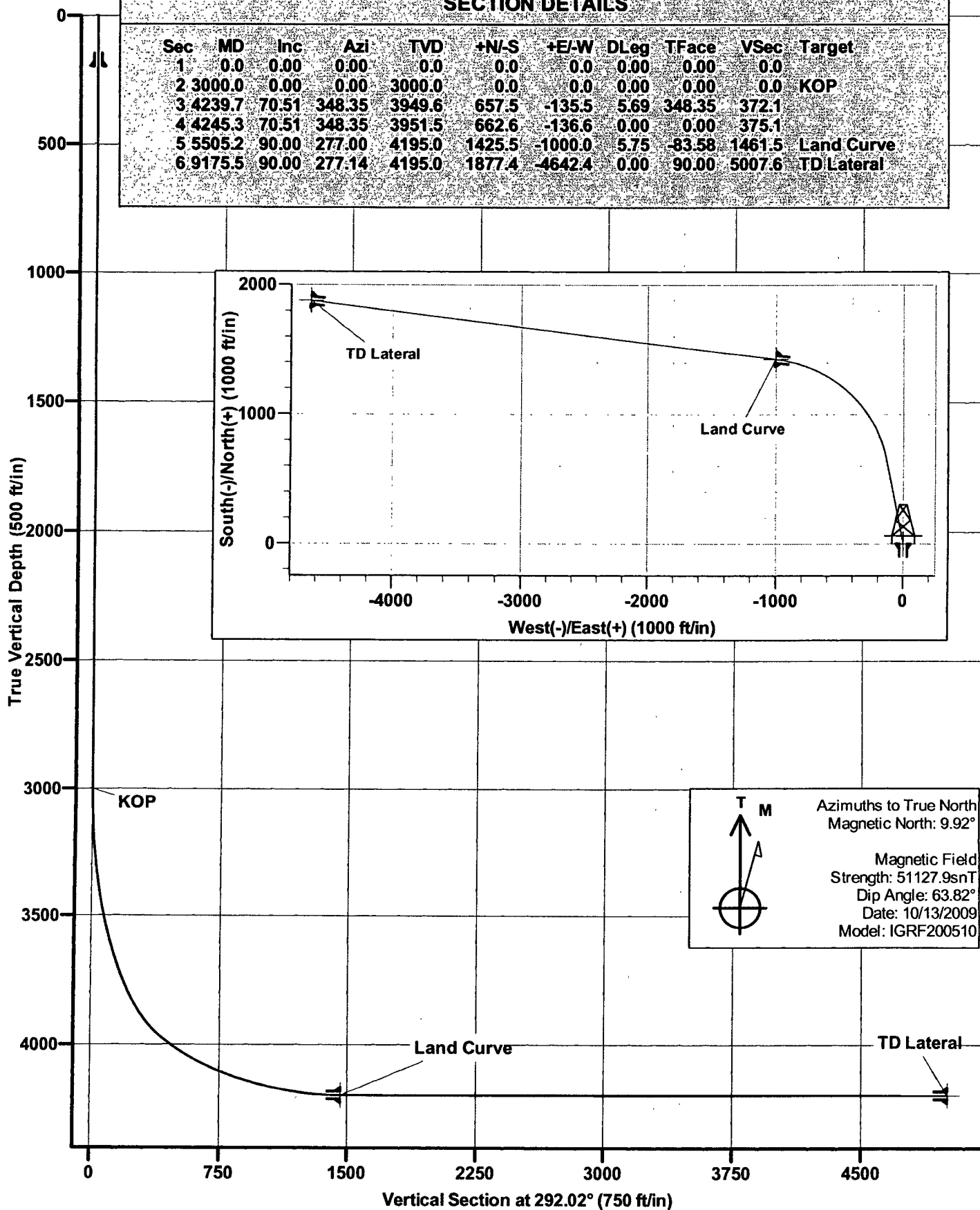
Directional Plan

25 June, 2010

Prepared By: Jason L. Kincaid

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	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	KOP
3	4239.7	70.51	348.35	3949.6	657.5	-135.5	5.69	348.35	372.1	
4	4245.3	70.51	348.35	3951.5	662.6	-136.6	0.00	0.00	375.1	
5	5505.2	90.00	277.00	4195.0	1425.5	-1000.0	5.75	-83.58	1461.5	Land Curve
6	9175.5	90.00	277.14	4195.0	1877.4	-4642.4	0.00	90.00	5007.6	TD Lateral



Company: Energen Resources Corp.
Project: Carson National Forest Sec.12-T32N-R05W
Site: Carracas Mesa
Well: Carracas 12A #2H
Wellbore: Horizontal OPE FTC
Design: Preliminary Plan #2

Local Co-ordinate Reference: Well Carracas 12A #2H
TVD Reference: KB @ 7452.0ft (Drilling Rig)
MD Reference: KB @ 7452.0ft (Drilling Rig)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Project Carson National Forest Sec.12-T32N-R05W

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

System Datum: Mean Sea Level

Site Carracas Mesa

Site Position:
From: Lat/Long
Position Uncertainty: 0.0 ft

Northing: 2,182,379.18 ft
Easting: 1,331,927.92 ft
Slot Radius: "

Latitude: 36° 59' 34.008 N
Longitude: 107° 18' 22.824 W
Grid Convergence: -0.64 °

Well Carracas 12A #2H

Well Position +N/-S 0.0 ft
 +E/-W 0.0 ft
Position Uncertainty 0.0 ft

Northing: 2,182,379.18 ft
Easting: 1,331,927.92 ft
Wellhead Elevation: 7,437.0 ft

Latitude: 36° 59' 34.008 N
Longitude: 107° 18' 22.824 W
Ground Level: 7,437.0 ft

Wellbore Horizontal OPE FTC

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/13/2009	9.92	63.82	51,128

Design Preliminary Plan #2

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 0.0 292.02

Survey Tool Program Date 6/25/2010

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	9,175.5	Preliminary Plan #2 (Horizontal OPE FTC)	MWD	MWD - Standard

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
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
1,100.0	1,100.0	0.00	0.00	0.00	0.0	0.0	0.0

Company: Energen Resources Corp.
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Local Co-ordinate Reference: Well Carracas 12A #2H
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MD Reference: KB @ 7452.0ft (Drilling Rig)
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)
1,200.0	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
2,250.0	2,250.0	0.00	0.00	0.00	0.0	0.0	0.0
Nacimiento							
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
2,900.0	2,900.0	0.00	0.00	0.00	0.0	0.0	0.0
3,000.0	3,000.0	0.00	0.00	0.00	0.0	0.0	0.0
KOP							
3,100.0	3,099.8	5.69	348.35	5.69	4.9	-1.0	2.7
3,200.0	3,198.7	11.38	348.35	5.69	19.4	-4.0	11.0
3,300.0	3,295.6	17.06	348.35	5.69	43.4	-9.0	24.6
3,400.0	3,389.6	22.75	348.35	5.69	76.8	-15.8	43.5
3,466.5	3,450.0	26.53	348.35	5.69	103.9	-21.4	58.8
Ojo Alamo							
3,500.0	3,479.7	28.44	348.35	5.69	119.1	-24.5	67.4
3,600.0	3,565.1	34.13	348.35	5.69	169.9	-35.0	96.2
3,639.0	3,597.0	36.35	348.35	5.69	191.9	-39.6	108.6
Kirtland							
3,700.0	3,645.0	39.81	348.35	5.69	228.8	-47.2	129.5
3,800.0	3,718.5	45.50	348.35	5.69	295.1	-60.8	167.0
3,900.0	3,785.0	51.19	348.35	5.69	368.3	-75.9	208.4
4,000.0	3,843.7	56.88	348.35	5.69	447.5	-92.3	253.3
4,100.0	3,894.1	62.57	348.35	5.69	532.0	-109.7	301.2
4,200.0	3,935.7	68.25	348.35	5.69	621.1	-128.0	351.5
4,239.7	3,949.6	70.51	348.35	5.69	657.5	-135.5	372.1
4,245.3	3,951.5	70.51	348.35	0.00	662.6	-136.6	375.1
4,250.0	3,953.1	70.54	348.07	0.65	667.0	-137.5	377.5
4,300.0	3,969.6	70.89	345.04	0.70	712.9	-148.5	404.9
4,350.0	3,985.8	71.29	342.03	0.80	758.2	-161.9	434.3
4,400.0	4,001.6	71.74	339.04	0.90	802.9	-177.7	465.8
4,450.0	4,017.1	72.24	336.06	0.99	846.9	-195.8	499.1

Company: Energen Resources Corp.
Project: Carson National Forest Sec.12-T32N-R05W
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Wellbore: Horizontal OPE FTC
Design: Preliminary Plan #2

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MD Reference: KB @ 7452.0ft (Drilling Rig)
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)
4,500.0	4,032.1	72.78	333.10	1.08	889.9	-216.3	534.2
4,550.0	4,046.7	73.36	330.15	1.16	932.0	-239.0	571.0
4,579.3	4,055.0	73.72	328.44	1.23	956.2	-253.4	593.4
Fruitland							
4,600.0	4,060.8	73.98	327.23	1.27	973.0	-264.0	609.5
4,650.0	4,074.3	74.65	324.32	1.33	1,012.8	-291.1	649.5
4,700.0	4,087.2	75.35	321.44	1.40	1,051.3	-320.2	691.0
4,750.0	4,099.6	76.08	318.57	1.47	1,088.4	-351.3	733.8
4,800.0	4,111.3	76.85	315.72	1.54	1,124.0	-384.4	777.8
4,850.0	4,122.3	77.65	312.89	1.60	1,158.1	-419.3	822.9
4,900.0	4,132.6	78.48	310.07	1.66	1,190.5	-455.9	869.0
4,950.0	4,142.3	79.34	307.27	1.71	1,221.1	-494.2	916.0
5,000.0	4,151.1	80.22	304.49	1.76	1,250.0	-534.1	963.8
5,050.0	4,159.2	81.12	301.73	1.81	1,276.9	-575.4	1,012.2
5,100.0	4,166.6	82.04	298.97	1.85	1,301.9	-618.1	1,061.1
5,150.0	4,173.1	82.99	296.23	1.88	1,324.9	-662.0	1,110.5
5,200.0	4,178.8	83.94	293.50	1.91	1,345.8	-707.1	1,160.1
5,211.8	4,180.0	84.17	292.86	1.93	1,350.4	-717.9	1,171.8
Top Target Coal							
5,250.0	4,183.6	84.91	290.78	1.95	1,364.5	-753.2	1,209.8
5,300.0	4,187.6	85.90	288.07	1.96	1,381.1	-800.2	1,259.6
5,350.0	4,190.8	86.89	285.37	1.98	1,395.5	-848.0	1,309.3
5,400.0	4,193.1	87.89	282.67	2.00	1,407.5	-896.4	1,358.8
5,450.0	4,194.5	88.89	279.97	2.01	1,417.4	-945.4	1,407.9
5,500.0	4,195.0	89.90	277.28	2.01	1,424.9	-994.9	1,456.5
5,505.2	4,195.0	90.00	277.00	2.01	1,425.5	-1,000.0	1,461.5
Land Curve							
5,600.0	4,195.0	90.00	277.00	0.00	1,437.1	-1,094.1	1,553.1
5,700.0	4,195.0	90.00	277.01	0.00	1,449.3	-1,193.4	1,649.7
5,800.0	4,195.0	90.00	277.01	0.00	1,461.5	-1,292.6	1,746.3
5,900.0	4,195.0	90.00	277.02	0.00	1,473.7	-1,391.9	1,842.8
6,000.0	4,195.0	90.00	277.02	0.00	1,485.9	-1,491.1	1,939.4
6,100.0	4,195.0	90.00	277.02	0.00	1,498.1	-1,590.4	2,036.0
6,200.0	4,195.0	90.00	277.03	0.00	1,510.3	-1,689.6	2,132.6
6,300.0	4,195.0	90.00	277.03	0.00	1,522.6	-1,788.9	2,229.2
6,400.0	4,195.0	90.00	277.04	0.00	1,534.8	-1,888.1	2,325.8
6,500.0	4,195.0	90.00	277.04	0.00	1,547.1	-1,987.4	2,422.4
6,600.0	4,195.0	90.00	277.04	0.00	1,559.3	-2,086.6	2,519.0
6,700.0	4,195.0	90.00	277.05	0.00	1,571.6	-2,185.9	2,615.6
6,800.0	4,195.0	90.00	277.05	0.00	1,583.9	-2,285.1	2,712.2
6,900.0	4,195.0	90.00	277.05	0.00	1,596.2	-2,384.3	2,808.8
7,000.0	4,195.0	90.00	277.06	0.00	1,608.4	-2,483.6	2,905.5
7,100.0	4,195.0	90.00	277.06	0.00	1,620.7	-2,582.8	3,002.1
7,200.0	4,195.0	90.00	277.07	0.00	1,633.0	-2,682.1	3,098.7
7,300.0	4,195.0	90.00	277.07	0.00	1,645.3	-2,781.3	3,195.3

Company: Energen Resources Corp.
Project: Carson National Forest Sec. 12-T32N-R05W
Site: Carracas Mesa
Well: Carracas 12A #2H
Wellbore: Horizontal OPE FTC
Design: Preliminary Plan #2

Local Co-ordinate Reference: Well Carracas 12A #2H
TVD Reference: KB @ 7452.0ft (Drilling Rig)
MD Reference: KB @ 7452.0ft (Drilling Rig)
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)
7,400.0	4,195.0	90.00	277.07	0.00	1,657.6	-2,880.5	3,291.9
7,500.0	4,195.0	90.00	277.08	0.00	1,670.0	-2,979.8	3,388.5
7,600.0	4,195.0	90.00	277.08	0.00	1,682.3	-3,079.0	3,485.2
7,700.0	4,195.0	90.00	277.09	0.00	1,694.6	-3,178.3	3,581.8
7,800.0	4,195.0	90.00	277.09	0.00	1,707.0	-3,277.5	3,678.4
7,900.0	4,195.0	90.00	277.09	0.00	1,719.3	-3,376.7	3,775.0
8,000.0	4,195.0	90.00	277.10	0.00	1,731.7	-3,476.0	3,871.7
8,100.0	4,195.0	90.00	277.10	0.00	1,744.0	-3,575.2	3,968.3
8,200.0	4,195.0	90.00	277.11	0.00	1,756.4	-3,674.4	4,064.9
8,300.0	4,195.0	90.00	277.11	0.00	1,768.8	-3,773.7	4,161.5
8,400.0	4,195.0	90.00	277.11	0.00	1,781.2	-3,872.9	4,258.2
8,500.0	4,195.0	90.00	277.12	0.00	1,793.5	-3,972.1	4,354.8
8,600.0	4,195.0	90.00	277.12	0.00	1,805.9	-4,071.4	4,451.5
8,700.0	4,195.0	90.00	277.13	0.00	1,818.3	-4,170.6	4,548.1
8,800.0	4,195.0	90.00	277.13	0.00	1,830.7	-4,269.8	4,644.7
8,900.0	4,195.0	90.00	277.13	0.00	1,843.2	-4,369.0	4,741.4
9,000.0	4,195.0	90.00	277.14	0.00	1,855.6	-4,468.3	4,838.0
9,100.0	4,195.0	90.00	277.14	0.00	1,868.0	-4,567.5	4,934.7
9,175.5	4,195.0	90.00	277.14	0.00	1,877.4	-4,642.4	5,007.6

TD Lateral

Company: Energen Resources Corp.
Project: Carson National Forest Sec.12-T32N-R05W
Site: Carracas Mesa
Well: Carracas 12A #2H
Wellbore: Horizontal OPE FTC
Design: Preliminary Plan #2

Local Co-ordinate Reference: Well Carracas 12A #2H
TVD Reference: KB @ 7452.0ft (Drilling Rig)
MD Reference: KB @ 7452.0ft (Drilling Rig)
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
KOP - plan hits target - Point	0.00	0.00	3,000.0	0.0	0.0	2,182,379.18	1,331,927.92	36° 59' 34.008 N	107° 18' 22.824 W
Land Curve - plan hits target - Point	0.00	0.00	4,195.0	1,425.5	-1,000.0	2,183,815.69	1,330,943.79	36° 59' 48.102 N	107° 18' 35.151 W
TD Lateral - plan hits target - Point	0.00	0.00	4,195.0	1,877.4	-4,642.4	2,184,307.97	1,327,306.63	36° 59' 52.567 N	107° 19' 20.051 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
200.0	200.0	Surface	9-5/8	12-1/4
5,505.0	4,195.0	Intermediate	7	8-3/4
9,175.0	4,195.0	Liner	4-1/2	6-1/8

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,466.5	3,450.0	Ojo Alamo		0.00	
2,250.0	2,250.0	Nacimiento		0.00	
5,211.8	4,180.0	Top Target Coal		0.00	
	4,213.0	Base Target Coal		0.00	
4,579.3	4,055.0	Fruitland		0.00	
3,639.0	3,597.0	Kirtland		0.00	

Checked By: _____ Approved By: _____ Date: _____