Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
JUL 06 2010
Bureau of Land Management
Farmington Field Office

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: USA NMNM 59696

1a. Type of Work: [X] DRILL [ ] REENTER

6. If Indian, Allotee or Tribe Name:

1b. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone

7. Unit or CA Agreement Name and No.:

2. Name of Operator: Energen Resources Corporation

8. Lease Name and Well No.: Carracas 34B #12

3a. Address: 2010 Afton Place Farmington, New Mexico 87401

3b. Phone No. *(include area code)*: (505)325-6800

9. API Well No.: 30-039-30979

4. Location of Well *(Report location clearly and in accordance with any State equirements)**

At surface: 280' FSL, 338' FEL 33-32N-4W

At proposed prod. zone: 2540' FSL, 2000' FEL 34-32N-4W

10. Field and Pool, or Exploratory: Basin Fruitland Coal

11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 33 T 32N R 4W

14. Distance in miles and direction from nearest town or post office*: 9 miles from Arboles

12. County or Parish: Rio Arriba

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
338'	1920	320 S/2 Sec. 34
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
63'	8024' MD	
21. Elevations (Show whether DF, KDB, RT, GL, etc.	**22. Approximate date work will start***	**23. Estimated duration**
7237'/GL	04/01/2011	30 days

24. Attachments

RCVD OCT 25 '10
OIL CONS. DIV.

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the BLM

DIST. 3

25. Signature	Name *(Printed/Typed)*	Date
Stephen Byers	Stephen Byers	06/02/2010

Title: Drilling Engineer

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Manuel Montoya		10/18/2010
Title	**Office**	
AFM	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 knowlingly 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)

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

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

NOV 18 2010

NMOCD

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 LANDS

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., Aztec, N.M. 87410

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

State of New Mexico
Energy, Minerals & Natural Resources Department

RECEIVED

OIL CONSERVATION DIVISION JUL 06 2010
1220 South St. Francis Dr.
Santa Fe, NM 87505

Bureau of Land Management
Farmington Field Office

Form C-102
Revised October 12, 2005

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039- 30979	71629	BASIN FRIUTLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
35669	CARRACAS 34B	12

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7237'

[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
P	33	32N	4W		280'	SOUTH	338	EAST	RIO ARRIBA

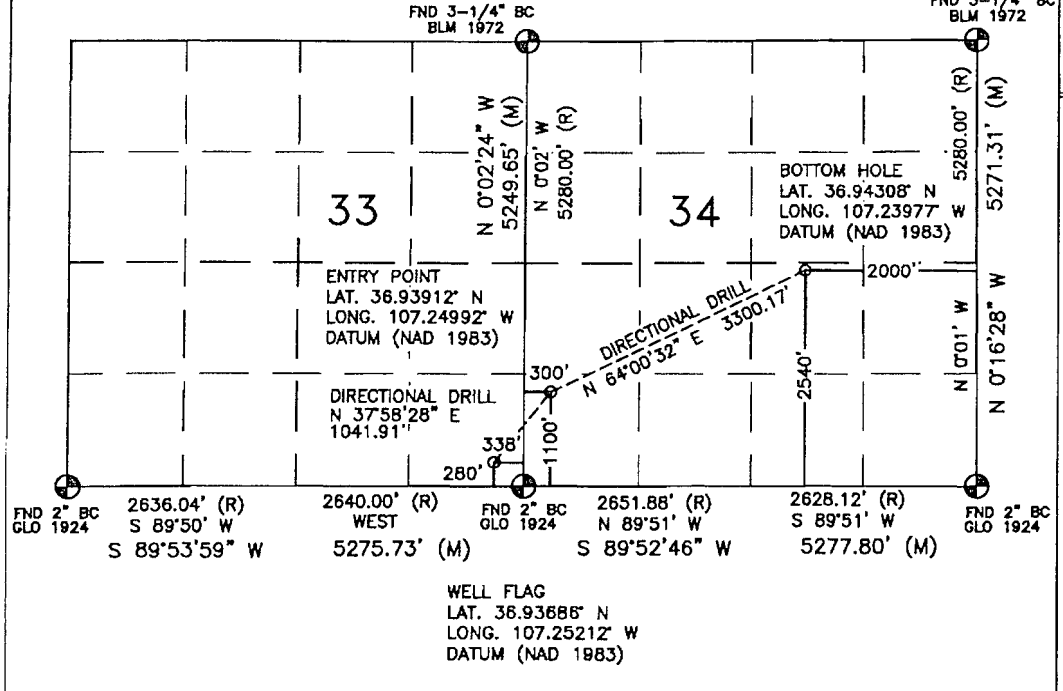
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	34	32N	4W		2540'	SOUTH	2000'	EAST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320 Ac. S/2 Sec. 34			

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

16



WELL FLAG
LAT. 36.93686° N
LONG. 107.25212° W
DATUM (NAD 1983)

[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.

Stephen Byers 6-2-10
Signature Date

Stephen Byers
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.

JULY 20, 2009
Date of Survey

Signature and Seal of Professional Surveyor:

David R. Russell

DAVID R. RUSSELL
NEW MEXICO
10201
REGISTERED PROFESSIONAL LAND SURVEYOR

DAVID RUSSELL
Certificate Number 10201

6/2/2010

ENERGEN RESOURCES

OPERATIONS PLAN

WELL NAME.....Carracas 34B #12
JOB TYPE.....Horizontal OPE FTC
DEPT.....Drilling and Completions
PREPARED BY.....Stephen Byers

GENERAL INFORMATION

Surface Location	280 FSL 338 FEL
S-T-R	(P) Sec. 33, T32N, R04W
Bottom Hole Location	2540 FSL 2000 FEL
S-T-R	(J) Sec. 34, T32N, R04W
County, State	Rio Arriba, New Mexico
Elevations	7237' GL
Total Depth	8024' +/- (MD); 4084' (TVD)
Formation Objective	Basin Fruitland Coal

FORMATION TOPS

San Jose	Surface
Nacimiento	2348' (TVD)
Ojo Alamo Ss	3518' (TVD)
Kirtland Sh	3658' (TVD)
Fruitland Fm	3968' (TVD) 4210'MD
Top Target Coal	4078' (TVD) 4602'MD
Base Target Coal	4090' (TVD)
Total Depth	**4084' (TVD), 8024' (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 3100' TVD with 6.7°/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: 3800' TVD, 3907' MD to TD
Surveys: Surface to KOP every 500' and a minimum of every 200' for directional.

6/2/2010

ENERGEN RESOURCES

CASING, TUBING & CASING EQUIPMENT

String	Start Depth	End Depth	Wellbore	Size	Wt	Grade
Surface	0	200	12-1/4"	9-5/8"	32.3 lb/ft	H-40 ST&C
Intermediate TVD	0 0	4716 4084	8-3/4"	7"	23 lb/ft	J-55 LT&C
Prod. Liner TVD	4616 4082	8024 4084	6-1/4"	4-1/2"	11.6 lb/ft	J-55 LT&C
Tubing	0	4416	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

Surface Casing: 110 sks Type V with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 126 ft^3 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 410 sks SJ PRB II with 5 #/sk Gilsonite, and 0.25 #/sk Flocele (12.3 ppg, 2.24 ft^3/sk) and a tail of 150 sks SJ PRB II with ¼ #/sk Flocele and 5 #/sk Gilsonite (13.5 ppg, 1.81 ft^3/sk). (1,181 ft^3 of slurry, 100% excess to circulate to surface). WOC 12 hours. Test casing to 1200 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

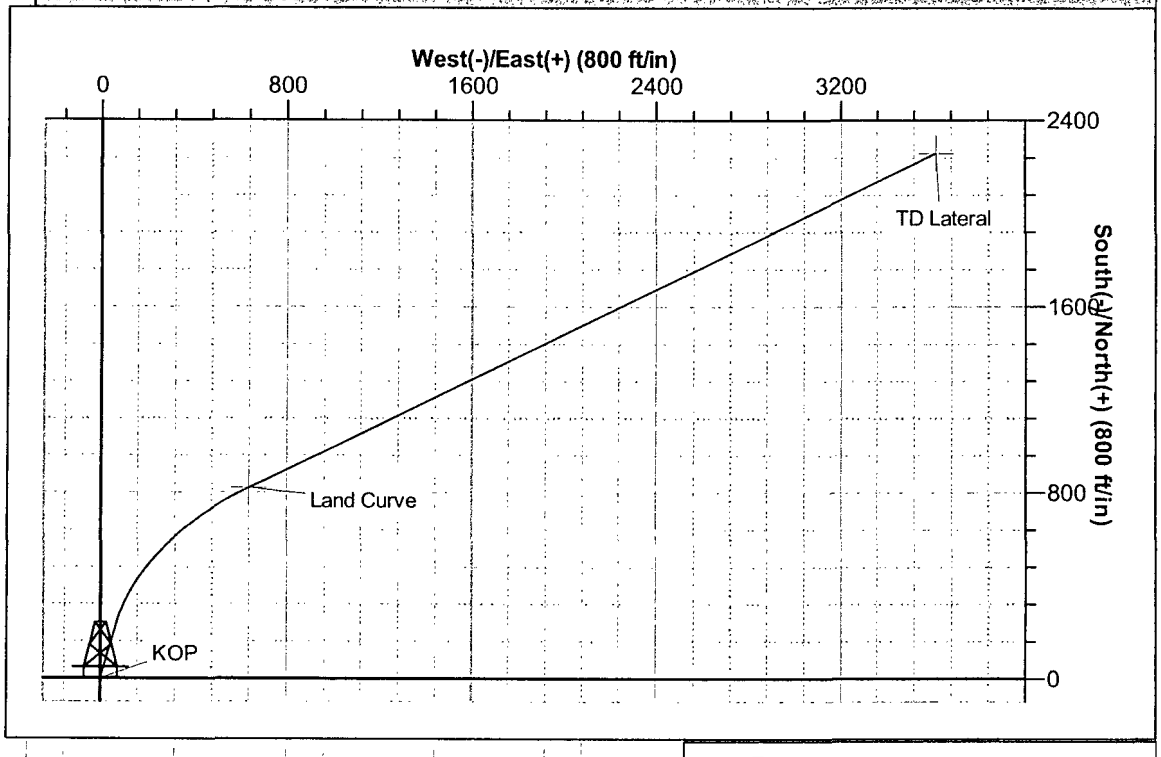
Project: Carson National Forest Sec 33-T32N-R04W
Site: Carracas Mesa
Well: Carracas 34B #12
Wellbore: Horizontal OPE FTC

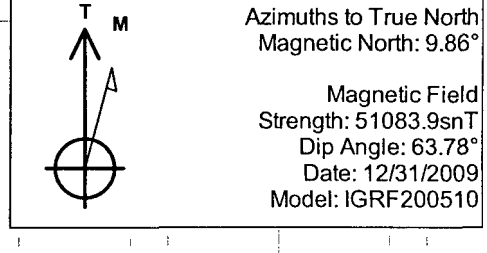
PROJECT DETAILS:

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

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	3100.0	0.00	0.00	3100.0	0.0	0.0	0.00	0.00	0.0	KOP
3	3784.5	44.92	16.37	3716.5	244.5	71.8	6.56	16.37	190.5	
4	3789.3	44.92	16.37	3719.9	247.8	72.8	0.00	0.00	193.0	
5	4716.3	90.00	64.19	4084.0	820.0	638.0	6.66	57.32	975.6	Land Curve
6	8024.0	90.00	64.20	4084.0	2260.0	3615.8	0.00	0.00	4264.0	TD Lateral





Energen

DIRECTIONAL PLAN

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 34B #12
Project:	Carson National Forest Sec 33-T32N-R04W	**TVD Reference:**	KB @ 7252.0ft (KB)
Site:	Carracas Mesa	**MD Reference:**	KB @ 7252.0ft (KB)
Well:	Carracas 34B #12	**North Reference:**	True
Wellbore:	Horizontal OPE FTC	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 2003.16 Single User Db

Project	Carson National Forest Sec 33-T32N-R04W		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Carracas Mesa				
Site Position:		**Northing:**	2,161,848.87 ft	**Latitude:**	36° 56' 12.696 N
From:	Lat/Long	**Easting:**	1,347,548.40 ft	**Longitude:**	107° 15' 7.632 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	-0.60 °

Well	Carracas 34B #12					
Well Position	**+N/-S**	0.0 ft	**Northing:**	2,161,848.87 ft	**Latitude:**	36° 56' 12.696 N
	+E/-W	0.0 ft	**Easting:**	1,347,548.40 ft	**Longitude:**	107° 15' 7.632 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	7,237.0 ft	**Ground Level:**	7,237.0 ft

Wellbore	Horizontal OPE FTC				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	12/31/2009	9.86	63.78	51,084

Design	Plan #1				
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	57.99	

Survey Tool Program	**Date** 6/2/2010			
From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.0	8,024.0	Plan #1 (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	**Local Co-ordinate Reference:**	Well Carracas 34B #12
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Wellbore:	Horizontal OPE FTC	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**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
2,300.0	2,300.0	0.00	0.00	0.00	0.0	0.0	0.0
2,348.0	2,348.0	0.00	0.00	0.00	0.0	0.0	0.0
			Nacimiento				
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
3,100.0	3,100.0	0.00	0.00	0.00	0.0	0.0	0.0
			KOP				
3,150.0	3,150.0	3.28	16.37	6.56	1.4	0.4	1.1
3,200.0	3,199.8	6.56	16.37	6.56	5.5	1.6	4.3
3,250.0	3,249.3	9.84	16.37	6.56	12.3	3.6	9.6
3,300.0	3,298.3	13.12	16.37	6.56	21.9	6.4	17.0
3,350.0	3,346.6	16.41	16.37	6.56	34.1	10.0	26.6
3,400.0	3,394.1	19.69	16.37	6.56	49.0	14.4	38.1
3,450.0	3,440.7	22.97	16.37	6.56	66.4	19.5	51.7
3,500.0	3,486.2	26.25	16.37	6.56	86.4	25.4	67.3
3,535.9	3,518.0	28.60	16.37	6.56	102.2	30.0	79.7
			Ojo Alamo SS				
3,550.0	3,530.3	29.53	16.37	6.56	108.8	32.0	84.8
3,600.0	3,573.1	32.81	16.37	6.56	133.6	39.3	104.1
3,650.0	3,614.3	36.09	16.37	6.56	160.8	47.2	125.3
3,700.0	3,653.9	39.37	16.37	6.56	190.1	55.9	148.1
3,705.3	3,658.0	39.72	16.37	6.56	193.4	56.8	150.7
			Kirtland Sh				
3,750.0	3,691.6	42.65	16.37	6.56	221.6	65.1	172.7
3,784.5	3,716.5	44.92	16.37	6.56	244.5	71.8	190.5
3,789.3	3,719.9	44.92	16.37	0.00	247.8	72.8	193.0
3,800.0	3,727.5	45.31	17.21	3.62	255.0	75.0	198.7
3,850.0	3,762.0	47.20	21.00	3.78	289.1	86.8	226.9
3,900.0	3,795.4	49.21	24.57	4.02	323.5	101.3	257.3

Energen

DIRECTIONAL PLAN

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 34B #12
Project:	Carson National Forest Sec 33-T32N-R04W	**TVD Reference:**	KB @ 7252.0ft (KB)
Site:	Carracas Mesa	**MD Reference:**	KB @ 7252.0ft (KB)
Well:	Carracas 34B #12	**North Reference:**	True
Wellbore:	Horizontal OPE FTC	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**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)
3,950.0	3,827.3	51.32	27.91	4.22	357.9	118.3	290.0
4,000.0	3,857.8	53.52	31.06	4.40	392.4	137.8	324.8
4,050.0	3,886.8	55.79	34.04	4.56	426.8	159.7	361.7
4,100.0	3,914.0	58.14	36.85	4.69	460.9	184.0	400.4
4,150.0	3,939.5	60.55	39.53	4.81	494.7	210.6	440.8
4,200.0	3,963.2	63.00	42.07	4.91	528.0	239.4	482.9
4,210.8	3,968.0	63.54	42.61	4.97	535.1	245.9	492.2
			Fruitland Fm				
4,250.0	3,984.9	65.50	44.51	5.01	560.8	270.3	526.5
4,300.0	4,004.6	68.04	46.86	5.08	592.9	303.2	571.3
4,350.0	4,022.3	70.61	49.12	5.14	624.2	337.9	617.4
4,400.0	4,037.8	73.21	51.30	5.19	654.6	374.5	664.5
4,450.0	4,051.1	75.83	53.43	5.24	684.0	412.6	712.4
4,500.0	4,062.3	78.46	55.52	5.28	712.3	452.3	761.1
4,550.0	4,071.1	81.12	57.56	5.30	739.5	493.3	810.3
4,600.0	4,077.7	83.78	59.57	5.33	765.3	535.6	859.8
4,602.9	4,078.0	83.94	59.69	5.34	766.8	538.1	862.7
			Top Target Coal				
4,650.0	4,081.9	86.45	61.56	5.34	789.8	579.0	909.6
4,700.0	4,083.9	89.13	63.54	5.35	812.8	623.3	959.4
4,716.3	4,084.0	90.00	64.19	5.35	820.0	638.0	975.6
			Land Curve				
4,800.0	4,084.0	90.00	64.19	0.00	856.4	713.3	1,058.8
4,900.0	4,084.0	90.00	64.19	0.00	900.0	803.3	1,158.2
5,000.0	4,084.0	90.00	64.19	0.00	943.5	893.4	1,257.6
5,100.0	4,084.0	90.00	64.19	0.00	987.0	983.4	1,357.1
5,200.0	4,084.0	90.00	64.19	0.00	1,030.6	1,073.4	1,456.5
5,300.0	4,084.0	90.00	64.19	0.00	1,074.1	1,163.4	1,555.9
5,400.0	4,084.0	90.00	64.19	0.00	1,117.7	1,253.5	1,655.3
5,500.0	4,084.0	90.00	64.19	0.00	1,161.2	1,343.5	1,754.7
5,600.0	4,084.0	90.00	64.19	0.00	1,204.7	1,433.5	1,854.1
5,700.0	4,084.0	90.00	64.19	0.00	1,248.3	1,523.5	1,953.6
5,800.0	4,084.0	90.00	64.19	0.00	1,291.8	1,613.6	2,053.0
5,900.0	4,084.0	90.00	64.19	0.00	1,335.4	1,703.6	2,152.4
6,000.0	4,084.0	90.00	64.19	0.00	1,378.9	1,793.6	2,251.8
6,100.0	4,084.0	90.00	64.19	0.00	1,422.4	1,883.6	2,351.2
6,200.0	4,084.0	90.00	64.19	0.00	1,466.0	1,973.7	2,450.6
6,300.0	4,084.0	90.00	64.19	0.00	1,509.5	2,063.7	2,550.0
6,400.0	4,084.0	90.00	64.19	0.00	1,553.1	2,153.7	2,649.5
6,500.0	4,084.0	90.00	64.19	0.00	1,596.6	2,243.7	2,748.9
6,600.0	4,084.0	90.00	64.19	0.00	1,640.1	2,333.8	2,848.3
6,700.0	4,083.9	90.00	64.19	0.00	1,683.7	2,423.8	2,947.7
6,800.0	4,083.9	90.00	64.19	0.00	1,727.2	2,513.8	3,047.1
6,900.0	4,083.9	90.00	64.19	0.00	1,770.7	2,603.8	3,146.5
7,000.0	4,083.9	90.00	64.19	0.00	1,814.3	2,693.9	3,246.0

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 34B #12
Project:	Carson National Forest Sec 33-T32N-R04W	**TVD Reference:**	KB @ 7252.0ft (KB)
Site:	Carracas Mesa	**MD Reference:**	KB @ 7252.0ft (KB)
Well:	Carracas 34B #12	**North Reference:**	True
Wellbore:	Horizontal OPE FTC	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**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)
7,100.0	4,083.9	90.00	64.19	0.00	1,857.8	2,783.9	3,345.4
7,200.0	4,083.9	90.00	64.19	0.00	1,901.4	2,873.9	3,444.8
7,300.0	4,083.9	90.00	64.19	0.00	1,944.9	2,963.9	3,544.2
7,400.0	4,083.9	90.00	64.19	0.00	1,988.4	3,054.0	3,643.6
7,500.0	4,083.9	90.00	64.19	0.00	2,032.0	3,144.0	3,743.0
7,600.0	4,083.9	90.00	64.19	0.00	2,075.5	3,234.0	3,842.5
7,700.0	4,083.9	90.00	64.19	0.00	2,119.1	3,324.0	3,941.9
7,800.0	4,083.9	90.00	64.19	0.00	2,162.6	3,414.1	4,041.3
7,900.0	4,083.9	90.00	64.19	0.00	2,206.1	3,504.1	4,140.7
8,000.0	4,083.9	90.01	64.19	0.00	2,249.7	3,594.1	4,240.1
8,024.0	4,084.0	90.00	64.20	-0.02	2,260.0	3,615.8	4,264.0

TD Lateral

Energen

DIRECTIONAL PLAN

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well Carracas 34B #12
Project:	Carson National Forest Sec 33-T32N-R04W	**TVD Reference:**	KB @ 7252.0ft (KB)
Site:	Carracas Mesa	**MD Reference:**	KB @ 7252.0ft (KB)
Well:	Carracas 34B #12	**North Reference:**	True
Wellbore:	Horizontal OPE FTC	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**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	3,100.0	0.0	0.0	2,161,848.87	1,347,548.40	36° 56' 12.696 N	107° 15' 7.632 W
TD Lateral - plan hits target - Point	0.00	0.00	4,084.0	2,260.0	3,615.8	2,164,070.74	1,351,187.75	36° 56' 35.040 N	107° 14' 23.092 W
Land Curve - plan hits target - Point	0.00	0.00	4,084.0	820.0	638.0	2,162,662.12	1,348,194.98	36° 56' 20.804 N	107° 14' 59.773 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
4,716.0	4,084.0	Intermediate	7	8-3/4
8,024.0	4,083.9	Liner	4-1/2	6-1/8

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,602.9	4,078.0	Top Target Coal		0.00	
	4,090.0	Base Target Coal		0.00	
3,535.9	3,518.0	Ojo Alamo SS		0.00	
	4,137.0	Pictured Cliffs		0.00	
4,210.8	3,968.0	Fruitland Fm		0.00	
2,348.0	2,348.0	Nacimiento		0.00	
3,705.3	3,658.0	Kirtland Sh		0.00	

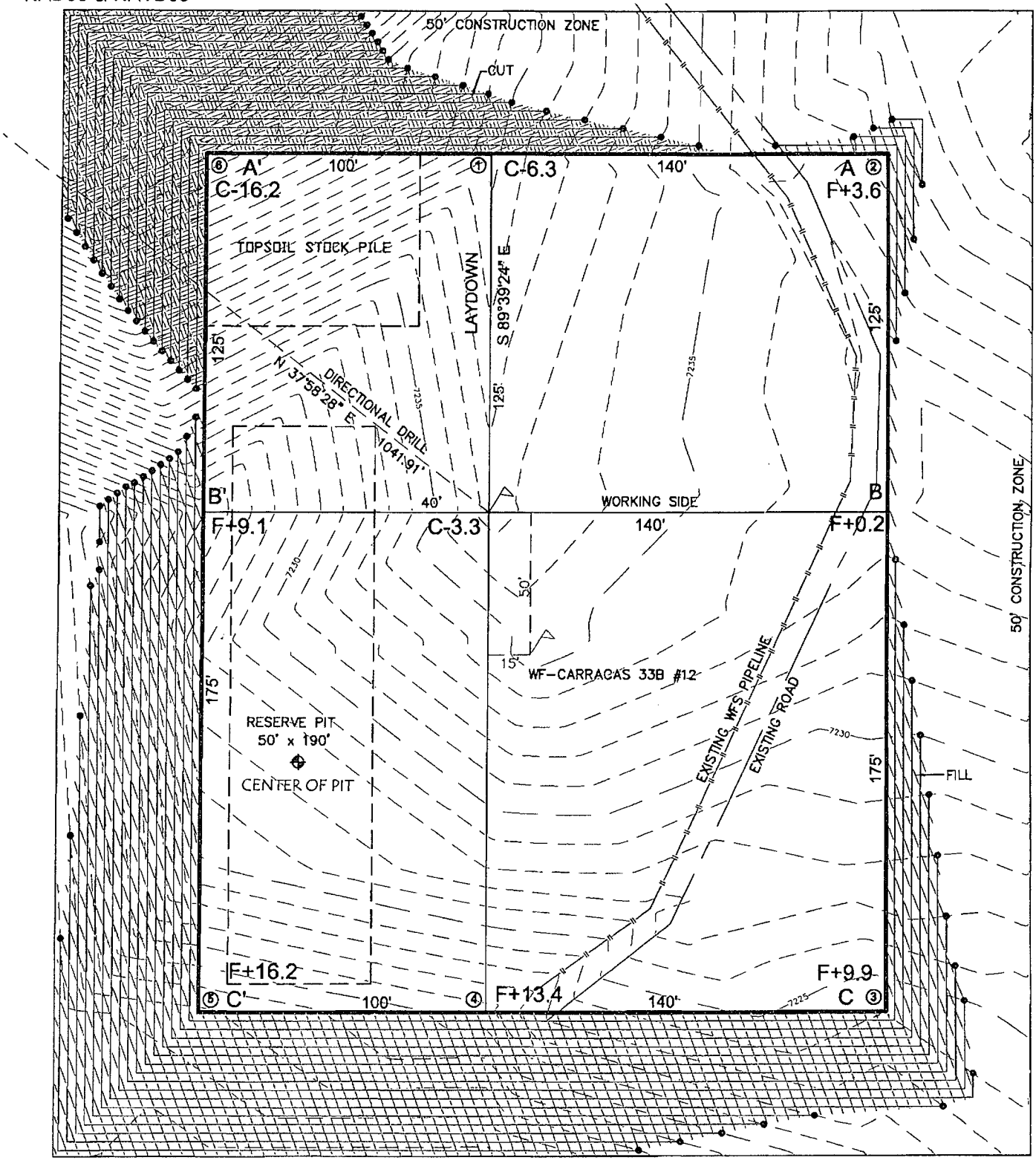
Checked By: _____ Approved By: _____ Date: _____

WELL FLAG
LATITUDE: 36.93686° N
LONGITUDE: 107.25212° W
DATUM: NAD 83
CENTER OF PIT
LATITUDE: 36.93702° N
LONGITUDE: 107.25247° W
ELEVATION: 7228'
NAD83 & NAVD88

ENERGEN RESOURCES CORPORATION

CARRACAS 34B #12
280' FSL & 338' FEL
LOCATED IN THE SE/4 SE/4 OF SECTION 33,
T32N, R4W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND ELEVATION: 7237', NAVD 88
FINISHED PAD ELEVATION: 7234.0', NAVD 88

25' 0 25' 50'
SCALE = 50'

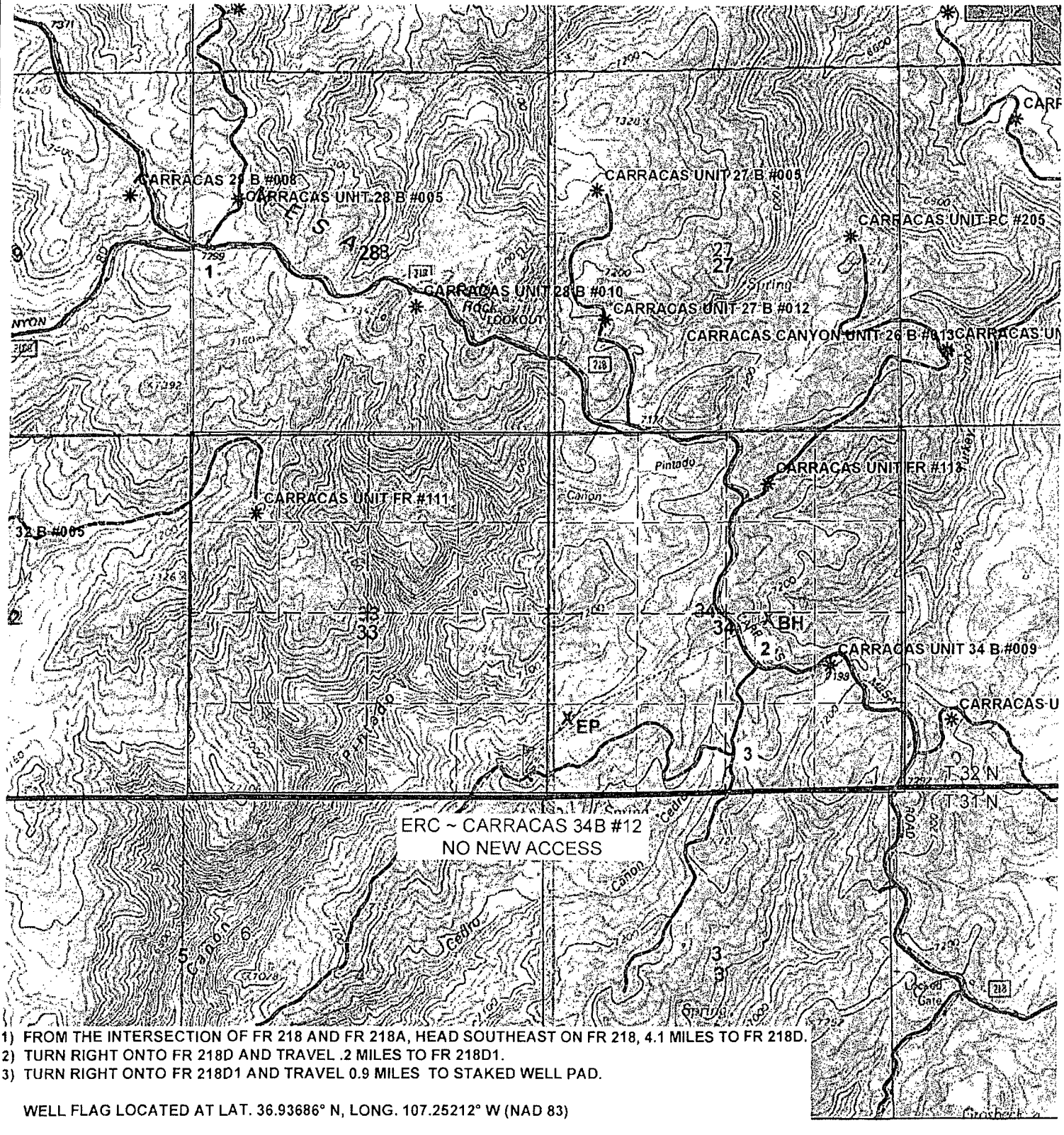


1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: ERG251
DATE: 07/24/09
DRAWN BY: GRR

Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

ENERGEN RESOURCES CORPORATION

CARRACAS 34B #12
280' FSL & 338' FEL
LOCATED IN THE SE/4 SE/4 OF SECTION 33,
T32N, R4W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND ELEVATION: 7237', NAVD 88
NO NEW ACCES



1) FROM THE INTERSECTION OF FR 218 AND FR 218A, HEAD SOUTHEAST ON FR 218, 4.1 MILES TO FR 218D.
2) TURN RIGHT ONTO FR 218D AND TRAVEL .2 MILES TO FR 218D1.
3) TURN RIGHT ONTO FR 218D1 AND TRAVEL 0.9 MILES TO STAKED WELL PAD.

WELL FLAG LOCATED AT LAT. 36.93686° N, LONG. 107.25212° W (NAD 83)

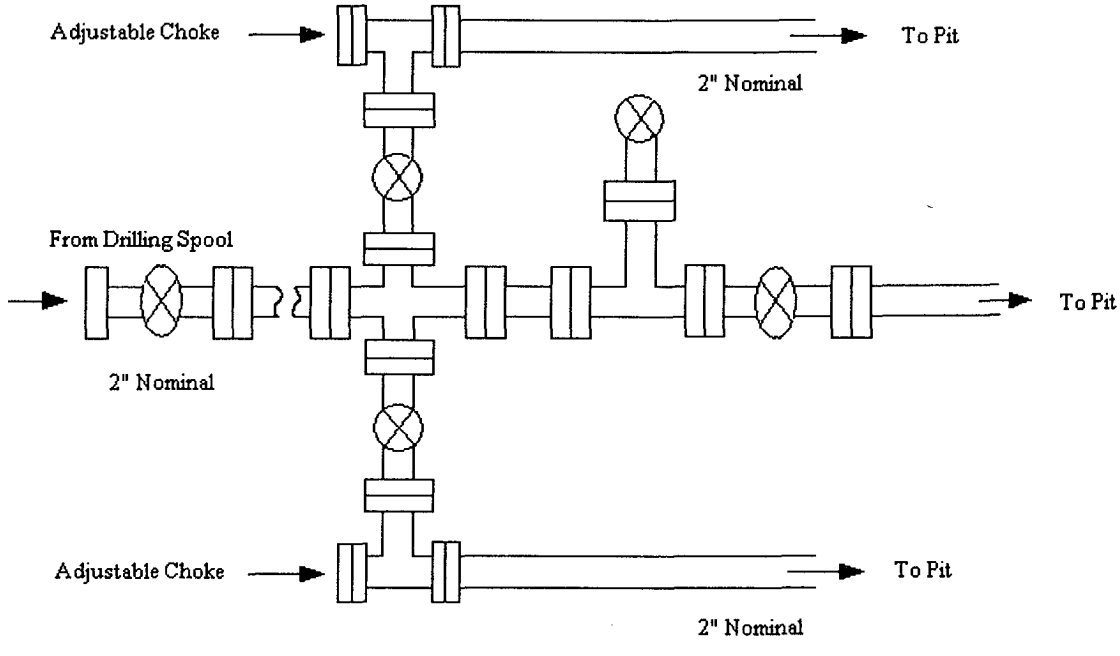
U.S.G.S. QUAD: CARRACAS CANYON
SCALE: 1" = 2000' (1:24,000)
JOB No.: ERG251
DATE: 07/24/09

NEW OR RECONSTRUCTED ROADS MUST MEET
SMA DESIGN STANDARDS
INSTALL CULVERTS AS NEEDED

Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

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