Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
APR 19 2011
Farmington Field Office
Bureau of Land Management

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: USA NMNM 28277

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 8B #16H

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

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

9. API Well No.: 30-039-31059

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

At surface: 2095' FSL, 119' FWL Sec 9 T 32N R 4W L078

At proposed prod. zone: 1400' FSL, 760' FWL Sec.8 T 32 N R 4W

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

11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 8 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
119'	.252547	274.08/Sec.8
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**
74'	7650' MD	NM2707
21. Elevations (Show whether DF, KDB, RT, GL, etc.	**22. Approximate date work will start***	**23. Estimated duration**
6183' GL	07/01/2011	30 days

24. Attachments

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

Hold C104 for Directional Survey and "As Drilled" plat

25. Signature	Name (Printed/Typed)	Date
	Devin Mills	04/19/2011

Title: Drilling Engineer

Approved by (Signature)	Name (Printed/Typed)	Date
Joe Hewitt	JOE Hewitt	6-17-11
Title	**Office**	
Acting ADM	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)

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

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

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

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

JUL 01 2011

NMOCD

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

*(Instructions on page 2)

RCVD JUN 22 '11
OIL CONS. DIV.
DIST. 3

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
APR 19 2011
Farmington Field Office
Bureau of Land Management

Form C-102
Revised July 10, 2010

Submit one copy to appropriate District Office

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31059	71629	BASIN FRIUTLAND COAL

[4] Property Code	[5] Property Name	[6] Well Number
38596	CARRACAS 8B	16H

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	6183'

[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
L	9	32N	4W	8	2095'	SOUTH	119'	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
L	8	32N	4W	8	1400'	SOUTH	760'	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
274.08 / see 8 cm			R-13119

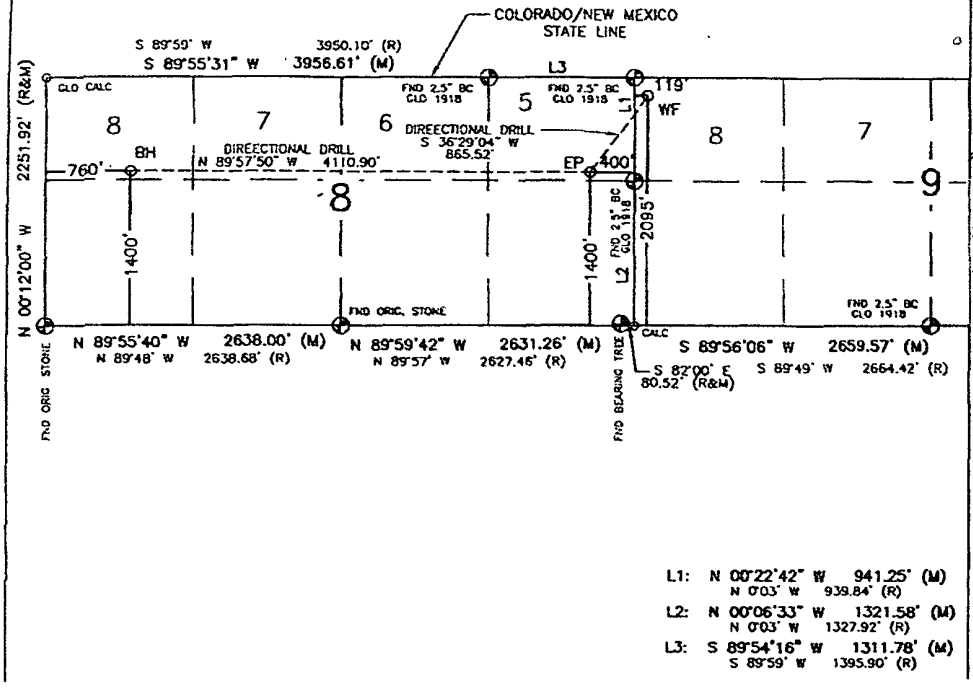
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16

BOTTOM HOLE
LAT. 36.99767° N
LONG. 107.28456° W
DATUM (NAD 1983)

ENTRY POINT
LAT. 36.99766° N
LONG. 107.27049° W
DATUM (NAD 1983)

WELL FLAG
LAT. 36.99957° N
LONG. 107.26872° W
DATUM (NAD 1983)



L1: N 00°22'42" W 941.25' (M)
N 0°03' W 939.84' (R)

L2: N 00°06'33" W 1321.58' (M)
N 0°03' W 1327.92' (R)

L3: S 89°54'16" W 1311.78' (M)
S 89°59' W 1395.90' (R)

[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 of such a mineral or working interest, or to a voluntary voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 4-19-11

Printed Name: Devon Mew

E-mail Address: DMEW@ENERGEN.com

[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.

FEBRUARY 7, 2011
Date of Survey

Signature and Seal of Professional Surveyor:

DAVID RUSSELL
Certificate Number 10201

OPERATIONS PLAN

WELL NAME.....Carracas 8B #16H
JOB TYPE.....Horizontal Fruitland Coal
DEPT.....Drilling and Completions
PREPARED BY.....Devin Mills

GENERAL INFORMATION

Surface Location	2095 FSL 119 FWL
S-T-R	(E) Sec.9, T32N, R04W
Bottom Hole Location	1400 FSL 760 FWL
S-T-R	(E) Sec.8, T32N, R04W
County, State	Rio Arriba, New Mexico
Elevations	6183' GL
Total Depth	7650' +/- (MD); 3057' (TVD)
Formation Objective	Fruitland Coal

FORMATION TOPS

San Jose	Surface
Nacimiento	1104' (TVD)
Ojo Alamo Ss	2354' (TVD)
Kirtland Sh	2505' (TVD)
Fruitland Fm	2850' (TVD)
Top Coal Interval	3030' (TVD)
Base Coal Interval	3057' (TVD)
Total Depth	**3057' (TVD), 7650' (MD)**

DRILLING

Surface: 12-1/4" wellbore will be drilled with a Low Solids Non-Dispersed mud system.
Intermediate: 8-3/4" wellbore will be drilled with a Lignosulfate Dispersed mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.4 ppg to 9.1 ppg.
Production: 6-1/4" wellbore will be drilled with a CaCl brine. Anticipated BHP is 1500 psi.

Projected KOP is 2633' TVD with 8.62°/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 1500 psi for 15 min.**

Logging Program:
Open hole logs: none
Mudlogs: 2354' TVD to TD
Surveys: Surface to KOP every 500' and a minimum of every 200' for directional.

6/16/2011

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	3715 3057	8-3/4"	7"	23 lb/ft	J-55 LT&C
Prod. Liner TVD	3650 3057	7650 3057	6-1/4"	4-1/2"	11.6 lb/ft	L/N-80 LT&C
Tubing	0	3500	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 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.

Liner: Open Hole Completion with 6 shots/foot pre perforated liner

WELLHEAD

11" 3000 x 9 5/8" weld/slip on casing head. 11" 3000 x 7 1/16" Christmas Tree.

CEMENTING

Surface Casing: 107 sks Type V with 2.0 % CaCl2 and ¼ #/sk Flocele (15.6 ppg, 1.18 ft3/sk 126 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 203 sks PRB II with 5 #/sk Gilsonite, and ¼ #/sk Flocele (12.3 ppg, 2.24 ft3/sk) and a tail of 100 sks PRB II with 5 #/sk Gilsonite and ¼ #/sk Flocele (13.5 ppg, 1.81 ft3/sk). (635 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 with 6 shots/foot pre perforated 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.

Project: Carson National Fore
Site: 8B; Sec 8 T 32N R4W
Well: Carracas 8B #16H
Wellbore: Wellbore #1
n: Design #1 (Carracas 8B #16H/Wellbore #

PROJECT DETAILS: Carson National Forest

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

System Datum: Mean Sea Level

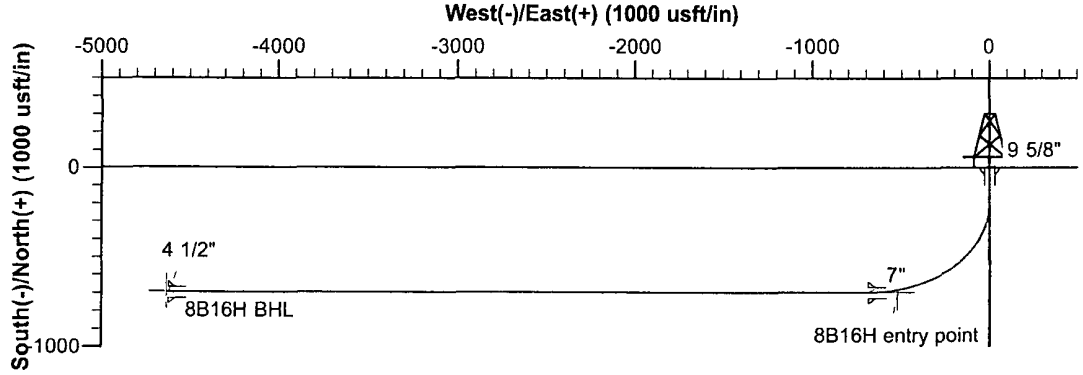
T M

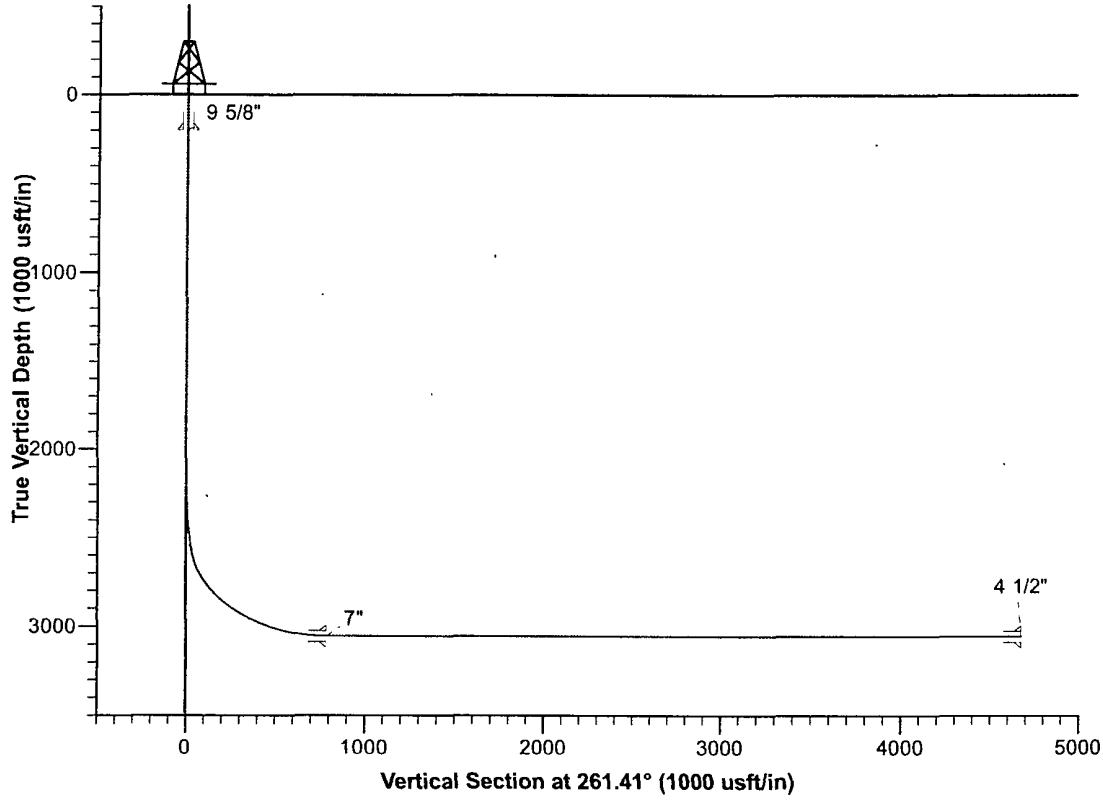
Azimuths to True North
Magnetic North: 9.72°

Magnetic Field
Strength: 51006.6snT
Dip Angle: 63.80°
Date: 3/29/2011
Model: IGRF200510

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	2633.5	46.00	180.00	2578.0	-202.9	0.0	8.62	180.00	30.3	
4	3716.6	90.00	270.00	3057.0	-698.9	-689.5	8.31	90.00	786.2	
5	7654.3	90.00	270.00	3057.0	-698.9	-4627.2	0.00	0.00	4679.7	8B16H BHL





Energen

APD Report

Company:	Energen Resources	**Local Co-ordinate Reference:**	Site 8B; Sec 8 T 32N R4W
Project:	Carson National Forest	**TVD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Site:	8B; Sec 8 T 32N R4W	**MD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Well:	Carracas 8B #16H	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 5000.1 Single User Db

Project Carson National Forest

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site 8B; Sec 8 T 32N R4W

Site Position:		**Northing:**	2,184,731.55 usft	**Latitude:**	36° 59' 58.452 N
From:	Lat/Long	**Easting:**	1,342,941.07 usft	**Longitude:**	107° 16' 7.392 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.61 °

Well Carracas 8B #16H

Well Position	**+N/-S**	0.0 usft	**Northing:**	2,184,731 55 usft	**Latitude:**	36° 59' 58.452 N
	+E/-W	0.0 usft	**Easting:**	1,342,941.07 usft	**Longitude:**	107° 16' 7.392 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	6,183.0 usft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	3/29/2011	9.72	63.80	51,007

Design Design #1

Audit Notes:

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

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	261.41

Survey Tool Program **Date** 3/31/2011

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.0	7,654.3	Design #1 (Wellbore #1)	MWD	MWD - Standard

Company:	Energen Resources	**Local Co-ordinate Reference:**	Site 8B, Sec 8 T 32N R4W
Project:	Carson National Forest	**TVD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Site:	8B; Sec 8 T 32N R4W	**MD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Well:	Carracas 8B #16H	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00
200.0	0 00	0 00	0.0	0 0	0 0	0.00
9 5/8"						
1,104.0	0.00	0.00	0.0	0.0	0 0	0.00
Nacimiento						
2,100.0	0 00	0.00	0.0	0.0	0.0	0.00
2,200.0	8.62	180 00	1 1	-7.5	0 0	8.62
2,300.0	17.24	180.00	4.5	-29.9	0.0	8.62
2,360.6	22.47	180 00	7.5	-50.5	0 0	8.62
Ojo Alamo						
2,400.0	25.87	180 00	9.9	-66 6	0 0	8 62
2,500.0	34.49	180 00	17.4	-116.8	0.0	8.62
2,535.5	37.55	180.00	20 6	-137.7	0 0	8 62
Kirtland						
2,600.0	43.11	180 00	26.8	-179 4	0.0	8.62
2,633.5	46.00	180.00	30.3	-202.9	0 0	8.62
2,700.0	46.26	187.66	40 6	-250 7	-3.2	8 31
2,800.0	47.58	198 90	67.8	-321.5	-20 0	8.31
2,900.0	49.95	209 50	108.5	-389.9	-50 9	8.31
3,000.0	53.21	219.26	161.9	-454.3	-95 1	8.31
3,049.9	55.12	223.80	193.0	-484.6	-122.0	8.31
Fruitland						
3,100.0	57.20	228.14	226.9	-513.5	-151.9	8.31
3,200.0	61.76	236.21	302.0	-566.1	-219.9	8.31
3,300 0	66 76	243.59	385.7	-611.1	-297.8	8.31
3,400 0	72 07	250 42	476 3	-647.5	-383 9	8.31
3,484.0	76.71	255.84	556 3	-671.0	-461.3	8.31
Fruitland Coal						

Company:	Energen Resources	**Local Co-ordinate Reference:**	Site 8B; Sec 8 T 32N R4W
Project:	Carson National Forest	**TVD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Site:	8B; Sec 8 T 32N R4W	**MD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Well:	Carracas 8B #16H	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)
3,500.0	77.60	256.84	571.9	-674.6	-476.5	8.31
3,548.7	80.36	259 87	619 6	-684.3	-523.3	8 31
8B16H entry point						
3,600.0	83.28	263.00	670.4	-691.8	-573.5	8.31
3,700.0	89.04	269.01	769.7	-698 8	-672.9	8 31
3,715.0	89.91	269 90	784 6	-698.9	-687.9	8.31
7"						
3,716.6	90.00	270.00	786.2	-698.9	-689.5	8.31
3,800.0	90.00	270.00	868 6	-698 9	-772 9	0 00
3,900.0	90.00	270.00	967.5	-698.9	-872.9	0.00
4,000.0	90.00	270.00	1,066.4	-698.9	-972.9	0.00
4,100 0	90.00	270.00	1,165.3	-698.9	-1,072.9	0 00
4,200.0	90.00	270 00	1,264.1	-698 9	-1,172.9	0.00
4,300.0	90.00	270.00	1,363 0	-698.9	-1,272.9	0.00
4,400.0	90.00	270 00	1,461.9	-698 9	-1,372.9	0 00
4,500 0	90.00	270.00	1,560.8	-698.9	-1,472.9	0.00
4,600.0	90.00	270.00	1,659.7	-698.9	-1,572.9	0.00
4,700.0	90.00	270 00	1,758.5	-698 9	-1,672.9	0.00
4,800 0	90.00	270.00	1,857.4	-698.9	-1,772.9	0.00
4,900 0	90.00	270.00	1,956.3	-698.9	-1,872.9	0 00
5,000.0	90.00	270.00	2,055.2	-698.9	-1,972.9	0.00
5,100.0	90.00	270 00	2,154.1	-698.9	-2,072.9	0 00
5,200 0	90.00	270.00	2,252.9	-698.9	-2,172.9	0.00
5,300.0	90.00	270.00	2,351.8	-698 9	-2,272 9	0.00
5,400.0	90.00	270 00	2,450.7	-698 9	-2,372.9	0 00
5,500 0	90.00	270.00	2,549.6	-698.9	-2,472.9	0 00
5,600.0	90 00	270.00	2,648.4	-698.9	-2,572.9	0.00

Energen

APD Report

Company:	Energen Resources	**Local Co-ordinate Reference:**	Site 8B; Sec 8 T 32N R4W
Project:	Carson National Forest	**TVD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Site:	8B; Sec 8 T 32N R4W	**MD Reference:**	WELL @ 6197 0usft (Original Well Elev)
Well:	Carracas 8B #16H	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)
5,700.0	90.00	270.00	2,747.3	-698.9	-2,672.9	0.00
5,800 0	90.00	270 00	2,846 2	-698.9	-2,772.9	0.00
5,900.0	90.00	270.00	2,945.1	-698.9	-2,872 9	0.00
6,000.0	90.00	270 00	3,044.0	-698.9	-2,972.9	0.00
6,100.0	90.00	270 00	3,142 8	-698 9	-3,072.9	0.00
6,200.0	90.00	270.00	3,241.7	-698.9	-3,172.9	0.00
6,300.0	90 00	270 00	3,340.6	-698.9	-3,272.9	0.00
6,400.0	90.00	270.00	3,439 5	-698 9	-3,372.9	0 00
6,500.0	90.00	270.00	3,538.3	-698.9	-3,472.9	0.00
6,600.0	90 00	270 00	3,637.2	-698.9	-3,572 9	0.00
6,700.0	90.00	270.00	3,736.1	-698 9	-3,672.9	0 00
6,800.0	90 00	270 00	3,835.0	-698 9	-3,772.9	0.00
6,900.0	90.00	270 00	3,933.9	-698.9	-3,872.9	0.00
7,000.0	90.00	270.00	4,032.7	-698.9	-3,972.9	0.00
7,100.0	90 00	270 00	4,131 6	-698.9	-4,072 9	0.00
7,200.0	90.00	270.00	4,230.5	-698.9	-4,172.9	0.00
7,300 0	90.00	270 00	4,329.4	-698.9	-4,272.9	0.00
7,400.0	90 00	270.00	4,428.3	-698.9	-4,372.9	0.00
7,500.0	90 00	270 00	4,527.1	-698.9	-4,472.9	0.00
7,600 0	90 00	270 00	4,626.0	-698.9	-4,572.9	0 00
7,650.0	90.00	270.00	4,675.5	-698.9	-4,622.9	0.00
4 1/2"						
7,654.3	90 00	270.00	4,679.7	-698.9	-4,627.2	0.00
8B16H BHL						

Energen

APD Report

Company:	Energen Resources	**Local Co-ordinate Reference:**	Site 8B; Sec 8 T 32N R4W
Project:	Carson National Forest	**TVD Reference:**	WELL @ 6197.0usft (Original Well Elev)
Site:	8B; Sec 8 T 32N R4W	**MD Reference:**	WELL @ 6197 0usft (Original Well Elev)
Well:	Carracas 8B #16H	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Design #1	**Database:**	EDM 5000.1 Single User Db

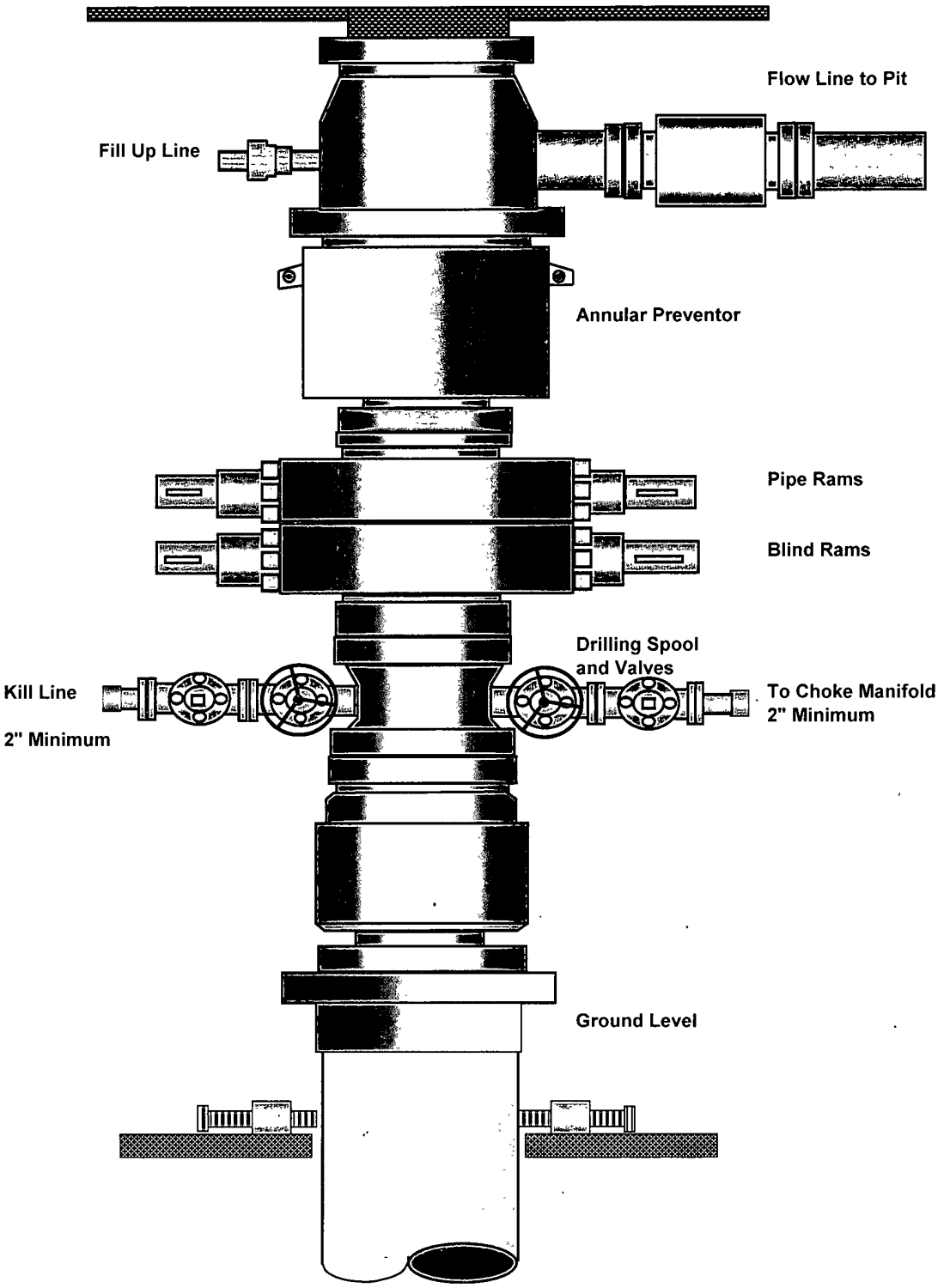
Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,650.0	3,057.0	4 1/2"	4-1/2	6-1/4
3,715.0	3,057 0	7"	7	8-3/4
200 0	200.0	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,104.0	1,104 0	Nacimiento		0 00	
2,360.6	2,354 0	Ojo Alamo		0.00	
3,049.9	2,850.0	Fruitland		0.00	
2,535.5	2,505.0	Kirtland		0.00	
3,484.0	3,030.0	Fruitland Coal		0 00	

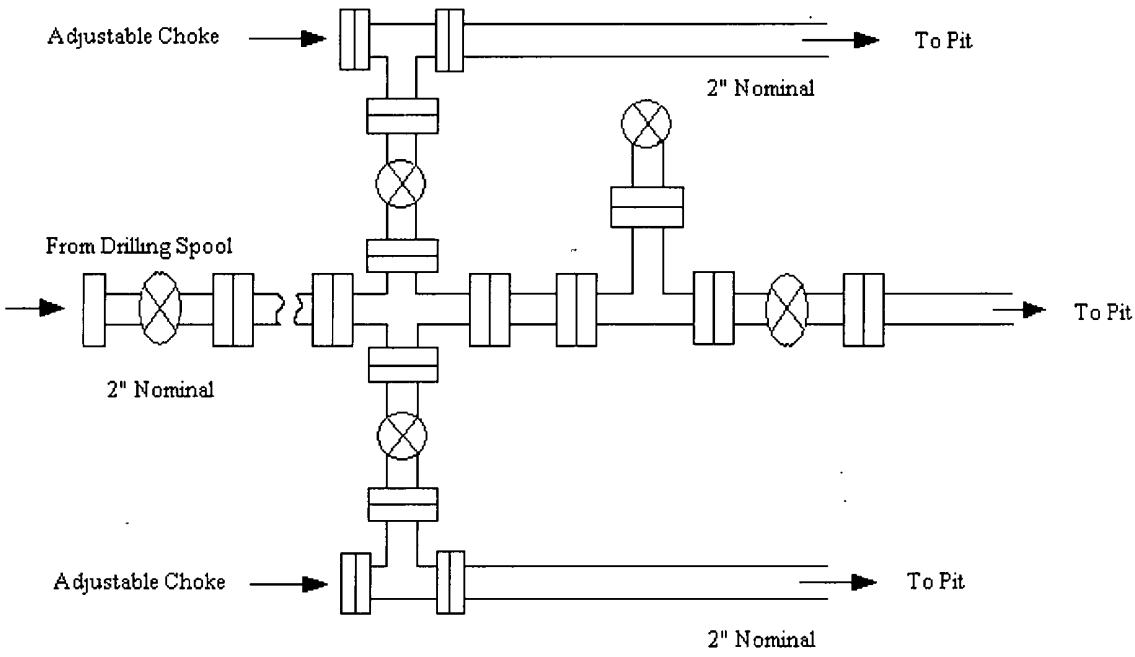
Checked By: _____ Approved By: _____ Date: _____



3M Typical BOP Configuration

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