Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No. NM 02555 03779

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.
McCroden B #3B

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

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

9 API Well No.
30-039-30502

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

At surface 995 fsl, 965 fwl M Sec 3

At proposed prod. zone 760 fsl, 760 fwl Sec 4, 25N, 3W

RECEIVED
MAR 20 2008
Bureau of Land Management
Farmington Field Office

10. Field and Pool, or Exploratory
Blanco Mesa Verde

11. Sec., T., R., M., or Blk. and Survey or Area
(M) Sec 3, T25N, R3W

14. Distance in miles and direction from nearest town or post office*
Approximatly 9.75 miles NW of Lindreth

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
760'	40 / 120.00	320.0 S/2
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 75'	19. Proposed Depth 10729' (MD)	20 BLM/BIA Bond No. on file

RCVD JUN 3 '08
OIL CONS. DIV.
DIST. 3

21. Elevations (Show whether DF, KDB, RT, GL, etc.	22. Approximate date work will start*	23. Estimated duration
7243' GL	4/15/08	45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall 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 shall 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 authorized officer.

25. Signature	Name (*Printed/Typed*)	Date
	Nathan Smith	3/17/08

Title: Drilling Engineer

Approved by (Signature)	Name (*Printed/Typed*)	Date
/s/ Manderfield		6/2/08
Title: AFM	Office: 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 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.

(Instructions on page 2)

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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

Hold C104
for Directional Survey
and "As Drilled" plat

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

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

NMOCD

JUN 16 2008

RECEIVED

MAR 2 0 2008

Bureau of Land Management
Farmington Field Office

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

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

Form C-102
Revised October 12, 2005

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-30502	72319	Blanco MESA VERDE/~~BASIN DAKOTA~~

[4] Property Code	[5] Property Name	[6] Well Number
21978	McCRODEN B	3B

[7] OGRID No.	[8] Operator Name	[9] Elevation
162928	ENERGEN RESOURCES CORPORATION	7243'

[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
M	3	25N	3W		995'	SOUTH	965'	WEST	RIO ARRIBA

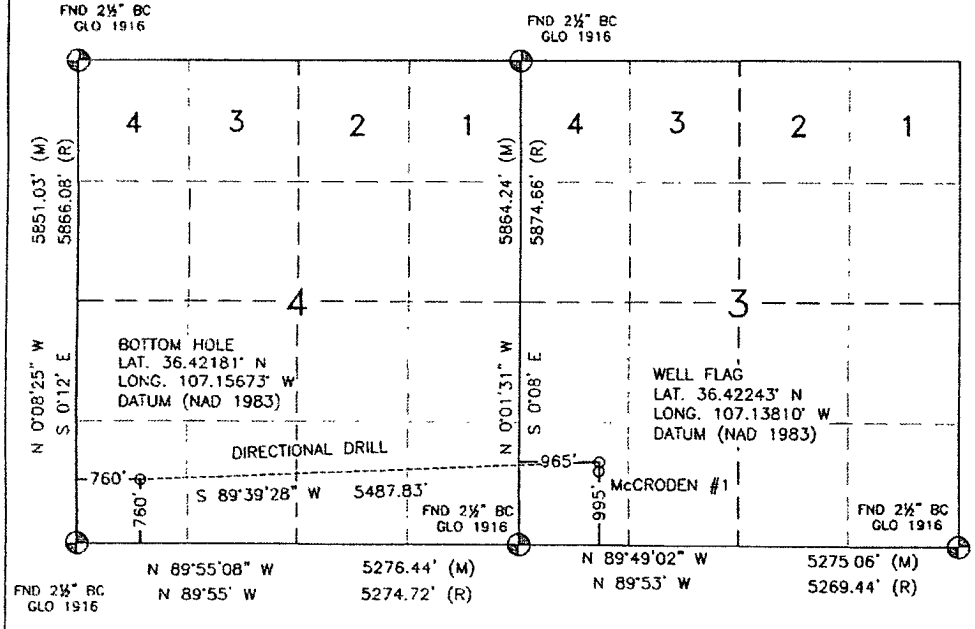
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	25N	3W		760'	SOUTH	760'	WEST	RIO ARRIBA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.00 Acres – (S/2)			

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



[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 3-17-08
Date

Nathan Smith
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.

NOVEMBER 13, 2007
Date of Survey

Signature and Seal of Professional Surveyor

David Russell

DAVID RUSSELL NEW MEXICO 10201 REGISTERED PROFESSIONAL LAND SURVEYOR

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 87240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr , Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-103
May 27, 2004

WELL API NO. 30-039-30502

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: McCroden B

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

8. Well Number 3B

2. Name of Operator: Energen Resources Corporation

9. OGRID Number 162928

3. Address of Operator: 2198 Bloomfield Highway, Farmington, NM 87401

10. Pool name or Wildcat: Blanco Mesa Verde

4. Well Location

Unit Letter M : 995 feet from the South line and 965 feet from the West line

Section 3 Township 25N Range 3W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 7243' GL

Pit or Below-grade Tank Application ☒ **or Closure** ☐

Pit type Drill **Depth to Groundwater** >100' **Distance from nearest fresh water well** 1000' **Distance from nearest surface water** 250'

Pit Liner Thickness: 12 **mil** **Below-Grade Tank: Volume** _____ **bbls; Construction Material** _____

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST AND CEMENT JOB	☐		
OTHER: Build drilling pit	☒			OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Energen Resources plans to build a lined pit according to "OCD Pit and Below-grade Tank Guidelines", as issued on November 1,2004. Energen anticipates the submittal of a C-144 for closure of this pit in accordance with BLM and "OCD Pit and Below-grade Tank Guidelines".

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines** ☒ **, a general permit** ☐ **or an (attached) alternative OCD-approved plan** ☐

SIGNATURE _____ TITLE Drilling Engineer DATE 3/12/08

E-mail address:

Type or print name Nathan Smith Telephone No. 505.325.6800

For State Use Only

APPROVED BY _____ TITLE Deputy Oil & Gas Inspector, District #3 DATE JUN 16 2008

Conditions of Approval, if any:

Operations Plan
February 18, 2008

McCroden B #3B

General Information

Location	995 fsl, 965 fwl (section 3) at surface 760 fsl, 760 fwl (sction 4) at bottom swsw 3, T25N, R3W Rio Arriba County, New Mexico
Elevations	7243' GL
Total Depth	10726' (MD), 5955' (TVD)
Formation Objective	~~Basin Fruitland Coal~~ Blanco MV

Formation Tops

San Jose	Surface
Nacimiento	2135' (TVD)
Ojo Alamo Ss	3335' (TVD)
Kirtland Sh	3410' (TVD)
Fruitland Fm	3535' (TVD)
Pictured Cliffs	3775' (TVD)
Lewis Shale	3900' (TVD)
Cliffhouse	5400' (TVD), 5505' (MD)
Menefee	5525' (TVD), 5681' (MD)
Point Lookout	5925' (TVD), 6589' (MD)
Total Depth	**5955' (TVD), 10726' (MD)**

Drilling

Surface Wellbore: 17 ½" wellbore will be drilled with spud mud.
Intermediate Wellbore: 12 ¼" wellbore will be drilled with a Low Solids Non-Dispersed mud with densities expected to range from 8.8 ppg to 9.2 ppg.
Drilling Liner Wellbore: 8 ¾" wellbore will be drilled with a Low Solids Non-Dispersed mud with densities expected to range from 8.8 ppg to 9.2 ppg, or Air/Mist as the wellbore dictates.
Production Wellbore: 6 ¾" wellbore will be drilled with Air/Mist. The production lateral will be drilled to accommodate a tapered liner string.
Projected KOP is 4290' TVD with 3.44°/100' doglegs. Anticipated BHP is 500 psi.
Blowout Control Specifications:

A 3000 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: FMI (Focused Micro Imaging)
Mud logs: 5400' TVD, 5505' MD to TD
Surveys: Surface to KOP every 500' and a minimum of every 200' for directional.

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-300'	17 ½"	13 3/8"	48.0 ppf	H-40 ST&C
Intermediate	0'-4100'	12 ¼"	9 5/8"	40.0 ppf	N-80 LT&C
Drilling Liner	3900'-5955' (TVD) 3900'-6910' (MD)	8 ¾"	7"	26.0 ppf	N-8- LT&C
Prod Liner	5948'-5955' (TVD) 6750'-10726' (MD)	6 ¾"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-5300'(MD)		2 3/8"	4.7 ppf	J-55

Casing Equipment:

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

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

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

Surface Casing: 375 sks Type V with 2.0 % $CaCl_2$ and ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk 443 ft^3 of slurry to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min. Nipple up BOP after WOC. Test BOP to 250 psi low, 1200 psi high for 15 min each. Test choke manifold to ~~750~~ 1200 psi for 30 min.

Intermediate Casing: Depending on wellbore conditions, cement may consist of 1150 sks 65/35 with 6.0 % Bentonite, 2.0 % $CaCl_2$, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.96 ft^3/sk) and a tail of 275 sks Type V with ¼ #/sk Flocele (15.6 ppg, 1.18 ft^3/sk). (2544 ft^3 of slurry to circulate to surface). WOC 12 hours. Test casing to 1200 psi for 30 min. Test BOP to 250 psi low, 1200 psi high for 15 min each. Test choke manifold to ~~750~~ 1200 psi for 30 min.

Drilling Liner: 500 sks 50/50 with 2.0 % Bentonite, 0.80 % Halad-9, 5 #/sk Gilsonite, ¼ #/sk Flocele. (13.0 ppg, 1.30 ft^3/sk). (650 ft^3 to circulate off the liner top). WOC 8 hours. Test BOP to 250 psi low, 1200 psi high for 15 min each. Test choke manifold to ~~750~~ 1,200 psi for 30 min.

Production Liner: NO CEMENT, Open Hole Completion

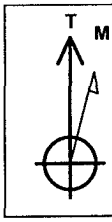
****Cement volumes subject to change if caliper logs are ran****

Other Information

1) This well will be an open hole completion lined with an uncemented pre-drilled liner. The Point Lookout will be fracture stimulated.
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.

Project: Jicarilla - SW Sec 4, T25N, R3W
Site: McCroden Unit
Well: McCroden B #3B
Wellbore: Preliminary Plan
Plan: Plan #1 (McCroden B #3B/Preliminary Plan)

PROJECT DETAILS: Jicarilla - SW Sec 4, T25N, R3W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Central Zone
System Datum:	Mean Sea Level

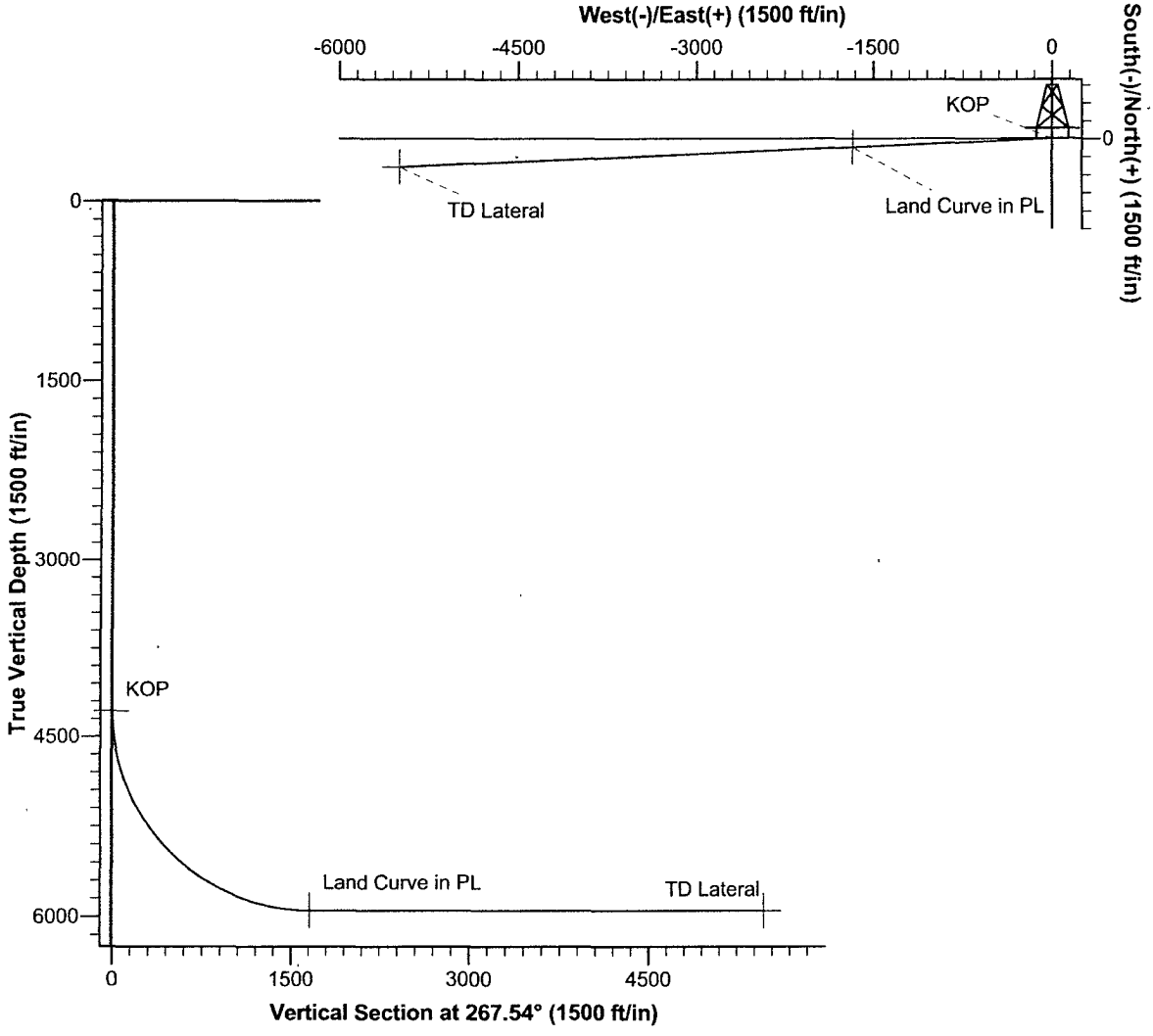


Azimuths to True North
Magnetic North: 9.98°

Magnetic Field
Strength: 50982.7snT
Dip Angle: 63.39°
Date: 2/18/2008
Model: IGRF200510

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	4290.0	0.00	0.00	4290.0	0.0	0.0	0.00	0.00	0.0	KOP
3	6906.9	90.05	267.54	5955.0	-71.5	-1665.0	3.44	267.54	1666.5	Land Curve in PL
4	10726.4	89.95	267.55	5955.0	-235.0	-5481.0	0.00	174.00	5486.0	TD Lateral



Energen

Planned Wellpath

Company:	Energen Resources	**Local Co-ordinate Reference:**	Well McCroden B #3B
Project:	Jicarilla - SW Sec 4, T25N, R3W	**TVD Reference:**	KB @ 7256.0ft (Drilling Rig)
Site:	McCroden Unit	**MD Reference:**	KB @ 7256.0ft (Drilling Rig)
Well:	McCroden B #3B	**North Reference:**	True
Wellbore:	Preliminary Plan	**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
Land Curve in PL - plan hits target - Point	0.00	0.00	5,955.0	-71.5	-1,665.0	1,974,181.16	1,377,471.64	36° 25' 20.040 N	107° 8' 37.532 W
KOP - plan hits target - Point	0.00	0.00	4,290.0	0.0	0.0	1,974,237.34	1,379,137.23	36° 25' 20.748 N	107° 8' 17.160 W
TD Lateral - plan hits target - Point	0.00	0.00	5,955.0	-235.0	-5,481.0	1,974,052.79	1,373,654.30	36° 25' 18.419 N	107° 9' 24.223 W

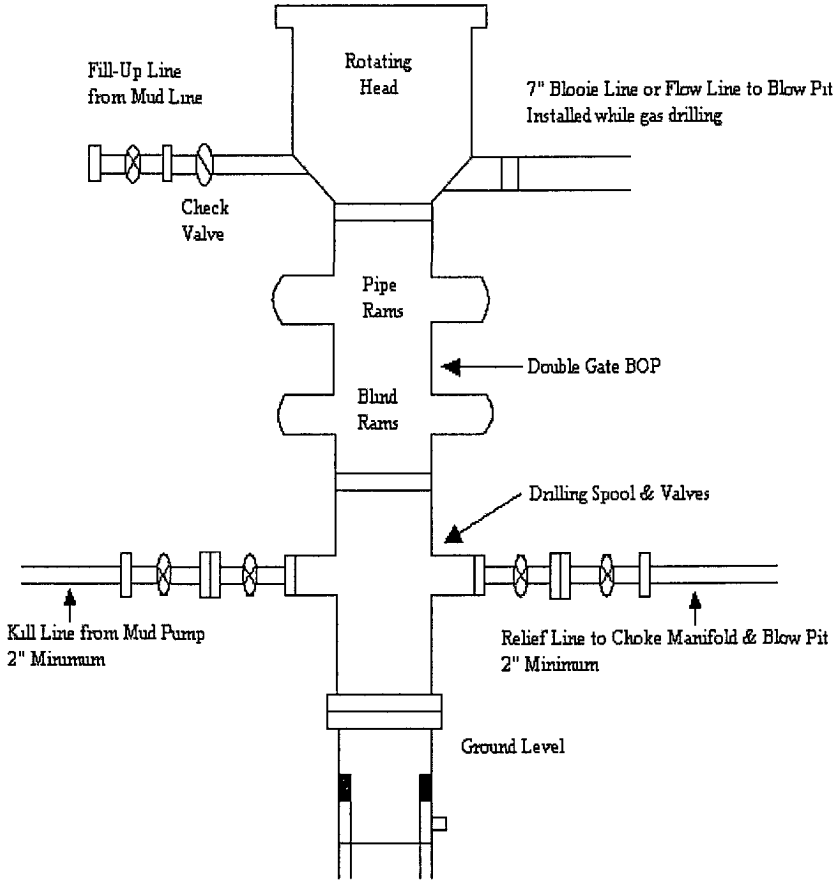
Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,335.0	3,335 0	Ojo Alamo		0.00	
5,681.4	5,525 0	Menefee		0.00	
3,900.0	3,900.0	Lewis Shale		0.00	
3,410.0	3,410.0	Kirtland Shale		0.00	
6,588.8	5,925.0	Point Lookout		0.00	
2,135.0	2,135.0	Nacimiento		0.00	
3,775.0	3,775.0	Pictured Cliffs		0.00	
0.0	0.0	San Jose		0.00	
3,535.0	3,535.0	Fruitland FM		0.00	
5,505.0	5,400.0	Cliffhouse		0.00	

Checked By: _____ Approved By: _____ Date: _____

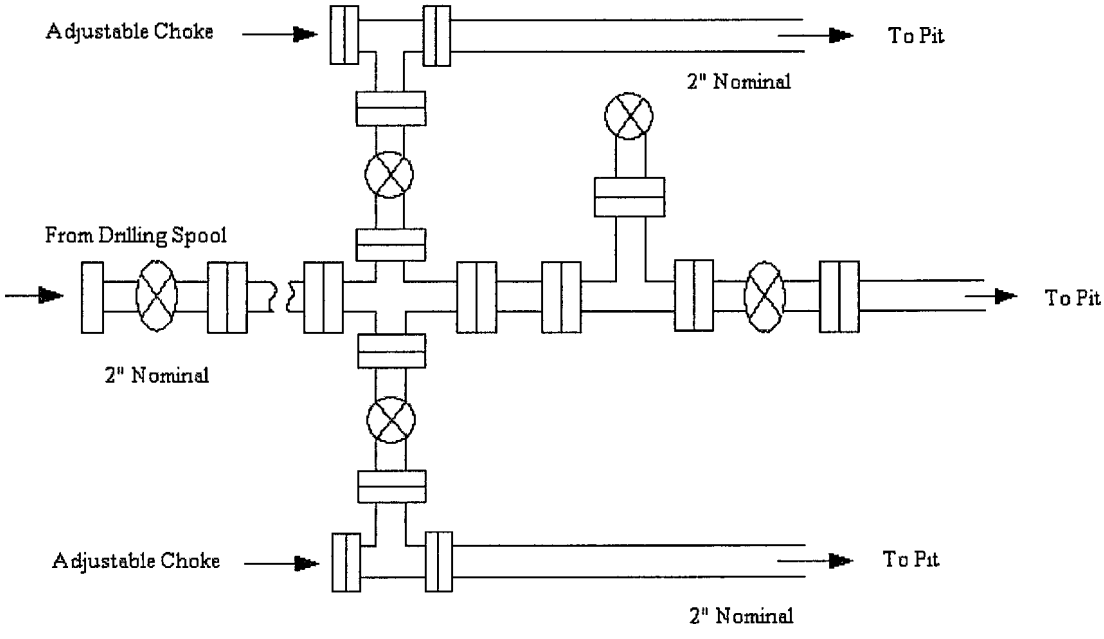
Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



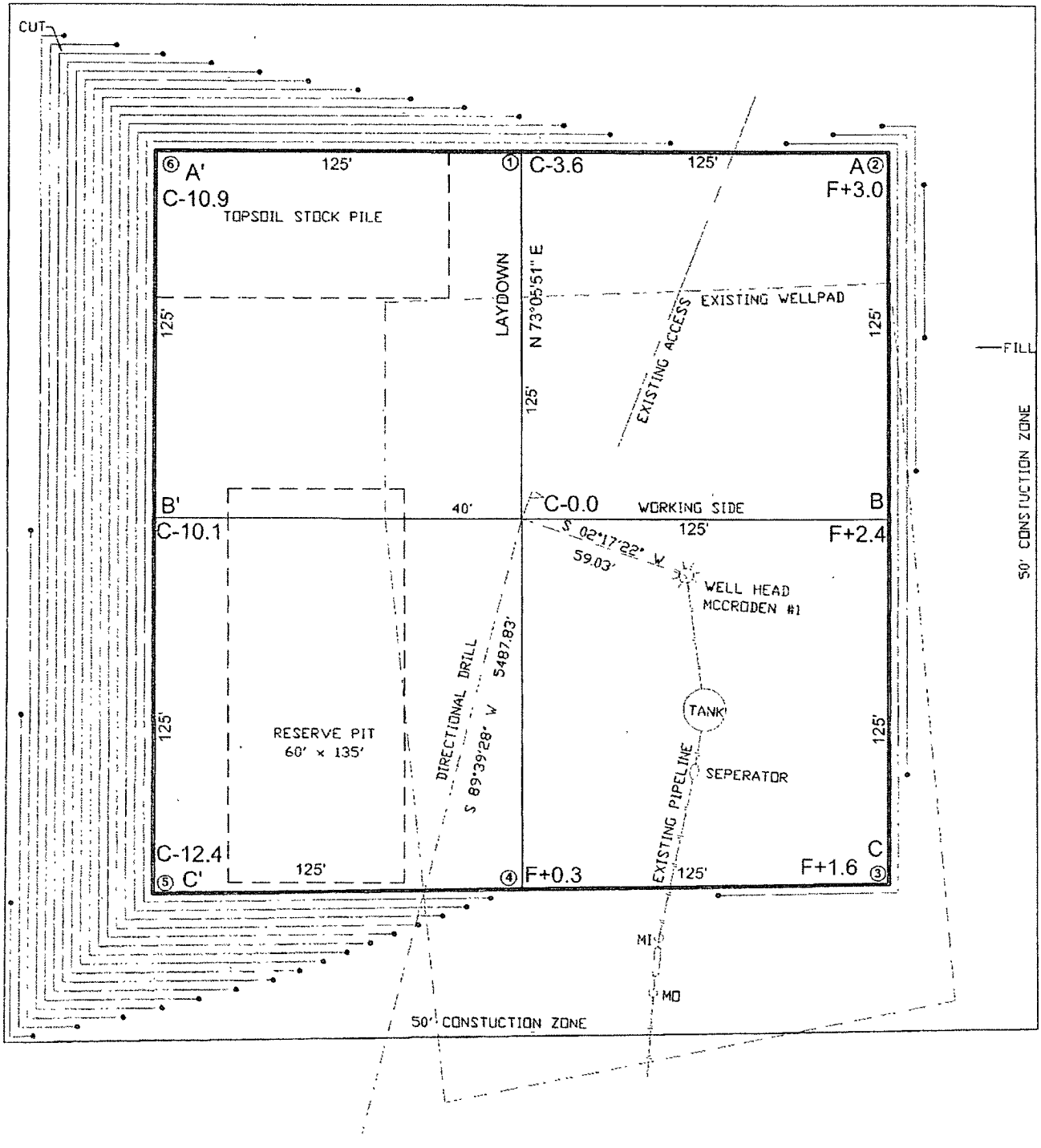
Choke manifold installed from surface to TD

LATITUDE: 36.42243°N
LONGITUDE: 107.13810°W
DATUM: NAD 83

ENERGEN RESOURCES CORPORATION

McCRODEN B #3B
995' FSL & 965' FWL
LOCATED IN THE SW/4 SW/4 OF
SECTION 3, T25N, R3W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND ELEVATION: 7248', NAVD 88
FINISHED PAD ELEVATION: 7247.9', NAVD 88

25' 0 25' 50'
SCALE = 50'



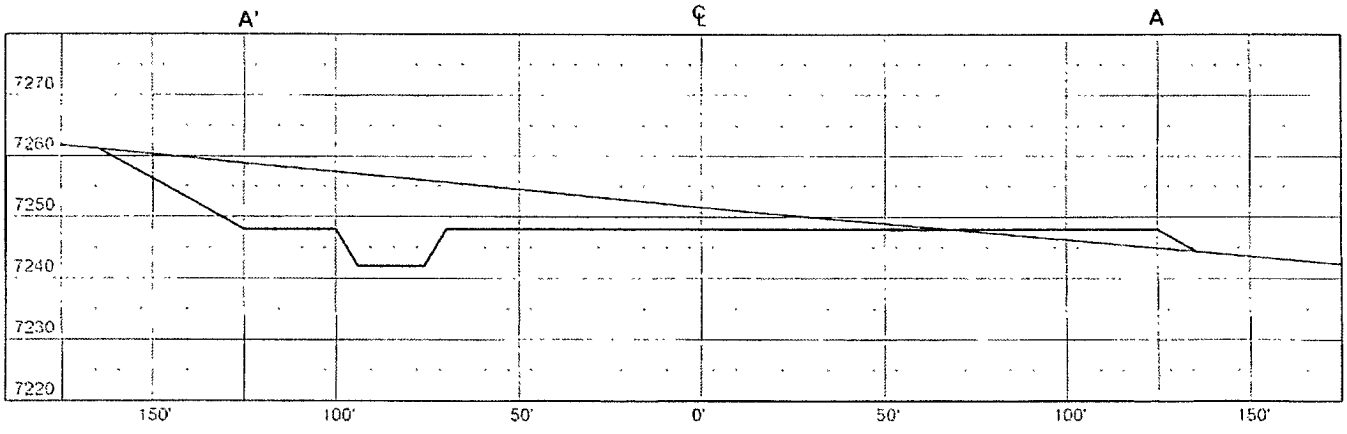
1 FOOT CONTOUR INTERVAL SHOWN
SCALE: 1" = 50'
JOB No.: ERG142
DATE: 12/13/07

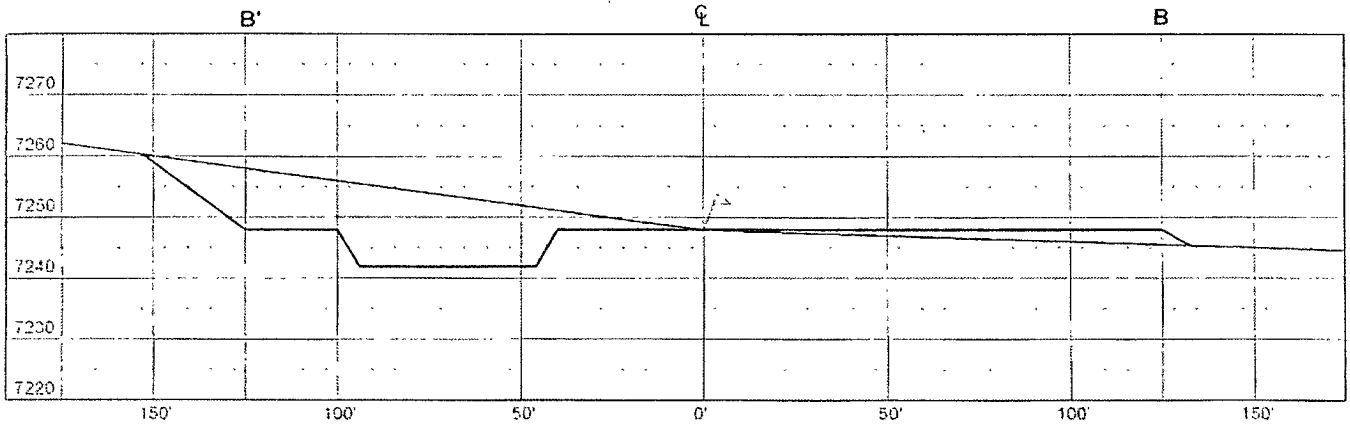
Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637

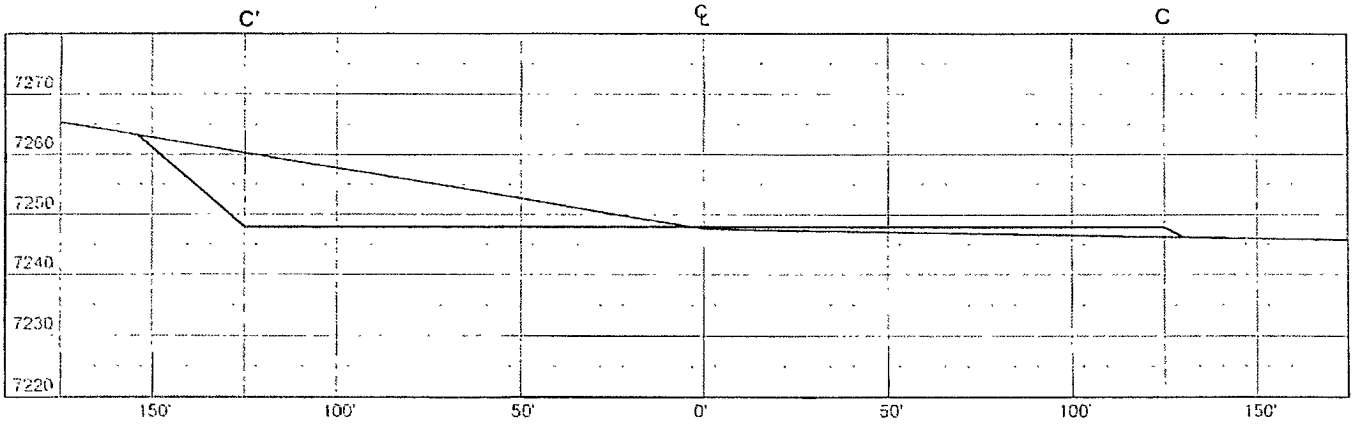
ENERGEN RESOURCES CORPORATION

McCRODEN B #3B

995' FSL & 965' FWL
LOCATED IN THE SW/4 SW/4 OF
SECTION 3, T25N, R3W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND ELEVATION: 7248', NAVD 88
FINISHED PAD ELEVATION: 7247.9', NAVD 88







VERT. SCALE: 1" = 30'
HORZ. SCALE: 1" = 50'
JOB No.: ERG142
DATE: 12/13/07

CUT

FILL

Russell Surveying
1409 W. Aztec Blvd. #5
Aztec, New Mexico 87410
(505) 334-8637