

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

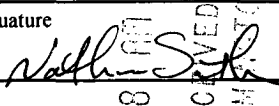
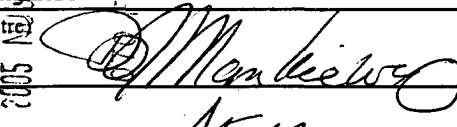
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. USA SF-079090
1b. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Energen Resources Corporation		7. Unit or CA Agreement Name and No.
3a. Address 2198 Bloomfield Highway Farmington, New Mexico 87401		8. Lease Name and Well No. Navajo Lake #100
3b. Phone No. (include area code) (505) 325-6800		9. API Well No. 30-039-29707
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface SHL: 760' fnl, 2540' fel; BHL: 1000' fnl, 1000' fel of S13 At proposed prod. zone		10. Field and Pool, or Exploratory Basin Fruitland Coal
14. Distance in miles and direction from nearest town or post office* Approximately 4 miles south of Arboles, CO		11. Sec., T., R., M., or Blk. and Survey or Area B S24, T32N, R6W
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 760'	16. No. of Acres in lease 1398.28	12. County or Parish Rio Arriba
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Approx. 75'	19. Proposed Depth 3324 TVD 4033' ADP	13. State NM
20. BLM/BIA Bond No. on file	21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL 6646'	17. Spacing Unit dedicated to this well E 1/2
22. Approximate date work will start* 7/25/06	23. Estimated duration 20 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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/Typed) Nathan Smith	Date 11/28/05
Title Drilling Engineer		
Approved by (Signature) 	Name (Printed/Typed) M. Manley	Date 9/14/06
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)

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

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

NMOCD

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-29707		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 36016	*Property Name NAVAJO LAKE		*Well Number 100
*GRID No. 162928	*Operator Name ENERGEN RESOURCES CORPORATION		*Elevation 6646'

¹⁰ Surface Location

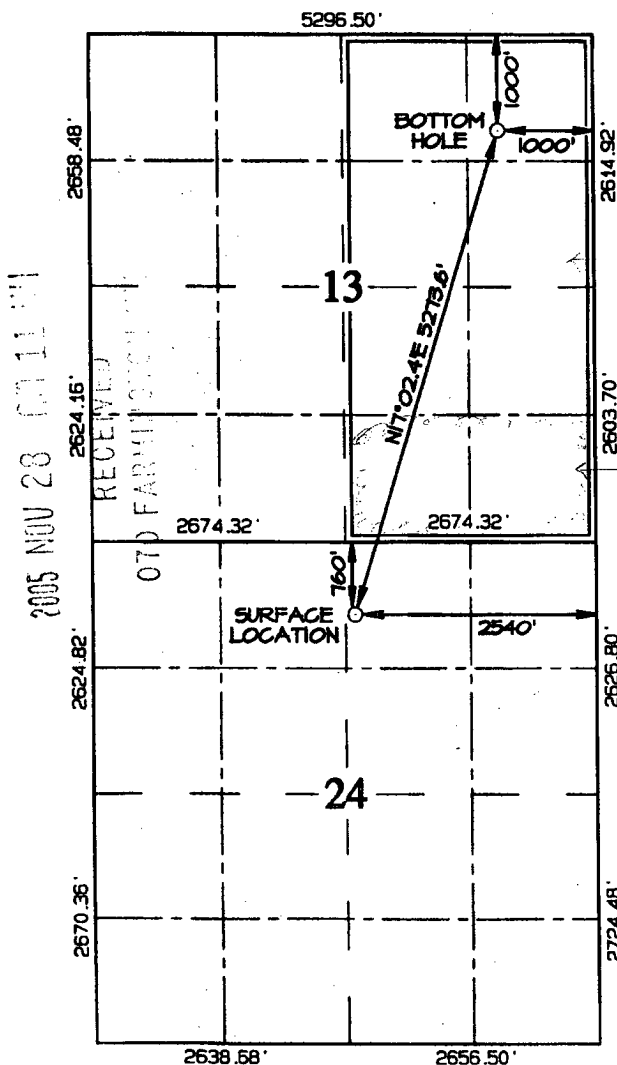
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	24	32N	6W		760	NORTH	2540	EAST	RIO ARriba

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
A	13	32N	6W		1000	NORTH	1000	EAST	RIO ARriba

¹² Dedicated Acres 320.0 Acres - (E/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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



USA SF-
079090
1398.28

USA SF-079011
2560.00

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information
contained herein is true and complete
to the best of my knowledge and belief

Nathan Smith
Signature

Nathan Smith
Printed Name

Drilling Engineer
Title

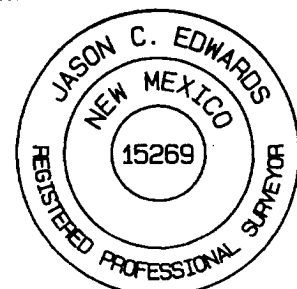
11/28/05
Date

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.

Date Revised: AUGUST 1, 2005
Survey Date: DECEMBER 15, 2004

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

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

Form C-103
May 27, 2004

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

WELL API NO. 30-039-29707

5. Indicate Type of Lease

STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

USA SF 079090

7. Lease Name or Unit Agreement Name:

Navajo Lake

8. Well Number

#100

9. OGRID Number

162928

10. Pool name or Wildcat

Basin Fruitland Coal

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.)

1. Type of Well:

Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

Energen Resources Corporation

3. Address of Operator

2198 Bloomfield Highway, Farmington, NM 87401

4. Well Location

Unit Letter B: 760 feet from the North line and 2540 feet from the East line

Section 24 Township 32N Range 06W NMPM County San Juan

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

6646' 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:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐ CHANGE PLANS ☐

PULL OR ALTER CASING ☐ MULTIPLE COMPLETION ☐

OTHER: Build drilling pit ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☐

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 NMOC guidelines ☒ , a general permit ☐ or an (attached) alternative OCD-approved plan ☐

SIGNATURE Nathan Smith

TITLE Drilling Engineer DATE 11/28/05

E-mail address: nsmith@energen.com

Type or print name Nathan Smith

Telephone No. 505.325.6800

For State Use Only

APPROVED BY [Signature]

DEPUTY OIL & GAS INSPECTOR, DIST. IV

TITLE _____ DATE SEP 18 2006

Conditions of Approval, if any:

ENERGEN RESOURCES CORPORATION NAVAJO LAKE #100
760' FNL & 2540' FFL, SECTION 24, T32N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6646'

ROUND CORNER
TO MINIMIZE CUT

C24 ⑤

A

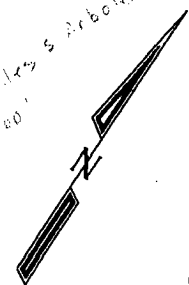
B

C

⑥ C32

ROUND CORNER
TO MINIMIZE CUT

4 Miles S Arboles
N1500'



ACCESS
2300' (0-8%)

C4 ④

125'

125'

F17 ③

A'

B'

② C5

RESERVE PIT
60' X 235'

40'

N56°E
LAYDOWN

WORKING
SIDE

140'

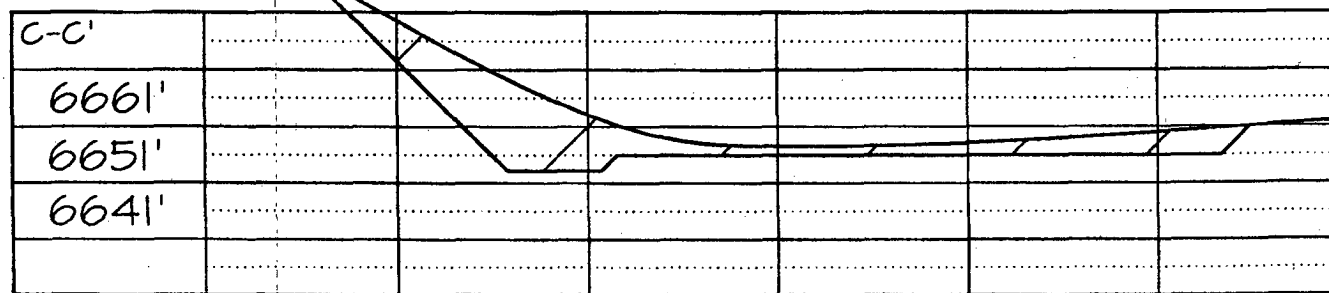
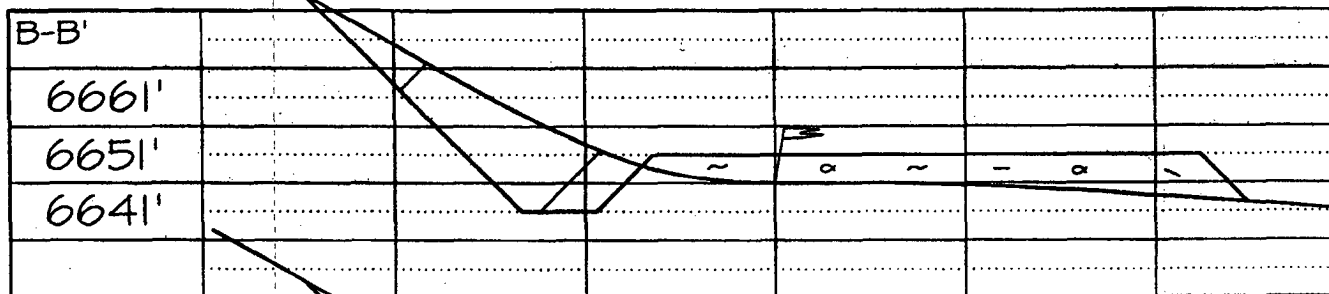
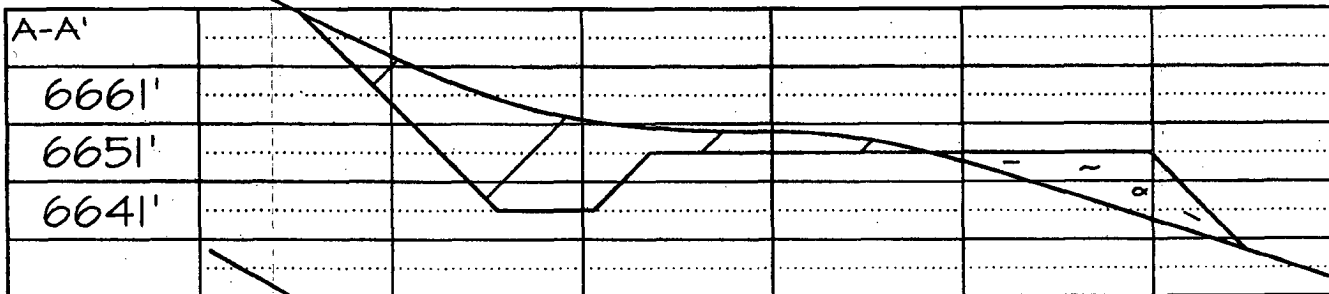
135'

125'

125'

① C1

LATITUDE: 36°58'16"
LONGITUDE: 107°24'29"
DATUM: NAD1927



Operations Plan
Revised December 14, 2005

Navajo Lake #100

General Information

Location	760' fnl, 2540' fel at surface 1000' fnl, 1000' fel at bottom nwne S24, T32N, R05W at surface S13, T32N, R6W at bottom Rio Arriba County, New Mexico
Elevations	6646' GL
Total Depth	7866' +/- (MD); 3326' +/- (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San José	Surface
Nacimiento	1186' (TVD)
Ojo Alamo Ss	2556' (TVD), 2650' (MD)
Kirtland Sh	2666' (TVD), 2810' (MD)
Fruitland Fm	3116' (TVD), 3750' (MD)
Top Coal	3241' (TVD), 4050' (MD)
Target Coal Top (1)	3241' (TVD), 4050' (MD)
Target Coal Base (1)	3261' (TVD), 4050' (MD)
Target Coal Top (2)	3321' (TVD), 4290' (MD)
Target Coal Base (2)	3326' (TVD), 4290' (MD)
Bottom Coal	3326' (TVD), 4290' (MD)
Pictured Cliffs Ss	3326' (TVD)
Total Depth	3326' (TVD), 7866' (MD)

Drilling

The 12 1/4" wellbore will be drilled with a fresh water mud system.

The 8 3/4" 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 8.3 ppg to 8.9 ppg. Kick off point is anticipated to be at 1324 ft (TVD).

The 6 1/4" wellbore will be drilled with a fresh water system or CaCl₂ brine as wellbore and formation pressures dictate.

Blowout Control Specifications:

A 2000 psi minimum double ram or annulus BOP stack (figure 1) 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.

Logging Program:

Open hole logs: Gamma Ray MWD and mud logs.

Surveys: Surface and as needed for directional drilling

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-200	12 1/4"	9 5/8"	32.3 ppf	H-40 STC
Intermediate	200'-4400' (MD) 3323' (TVD)	8 3/4"	7"	23.0 ppf	J-55 LTC & FJ
Production	4400'-7866' (MD) 3321'-3326' (TVD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LTC
	3994'-7818' (MD) 3241'-3251' (TVD)	6 1/4"	4 1/2"	11.6 ppf	J-55 LTC
Tubing	0'-3360' (TVD) 4070' (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 centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Wellhead

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

Cementing

Surface Casing: 125 sks Std (class B) with 2.0 % CaCl₂ and 1/4 #/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 1000 psi for 30 min.

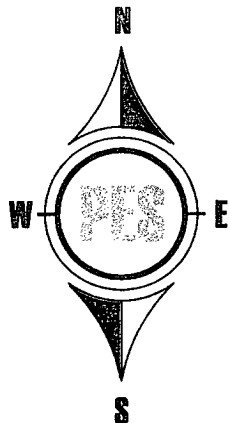
Intermediate Casing: Before cementing, circulate hole at least 1 1/2 hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 600 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.96 ft³/sk) and a tail of 150 sks of Standard (Class B) cement with 5.0 #/sk Gilsonite, and 1/4 #/sk Flocele (15.2ppg, 1.24 ft³/sk). (1356 ft³ of slurry, 100 % excess to circulate to surface).

Production Liner – NO CEMENT

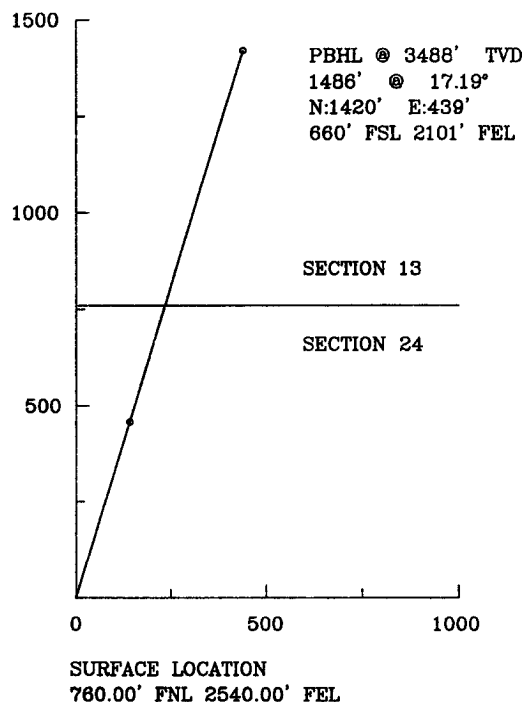
Other Information

- 1) This well will be an open hole completion with a pre-drilled liner
- 2) If lost circulation is encountered, LCM will be added to the mud system to maintain well control.
- 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 are expected. BHP can be 1200 psi.
- 5) This gas is dedicated.

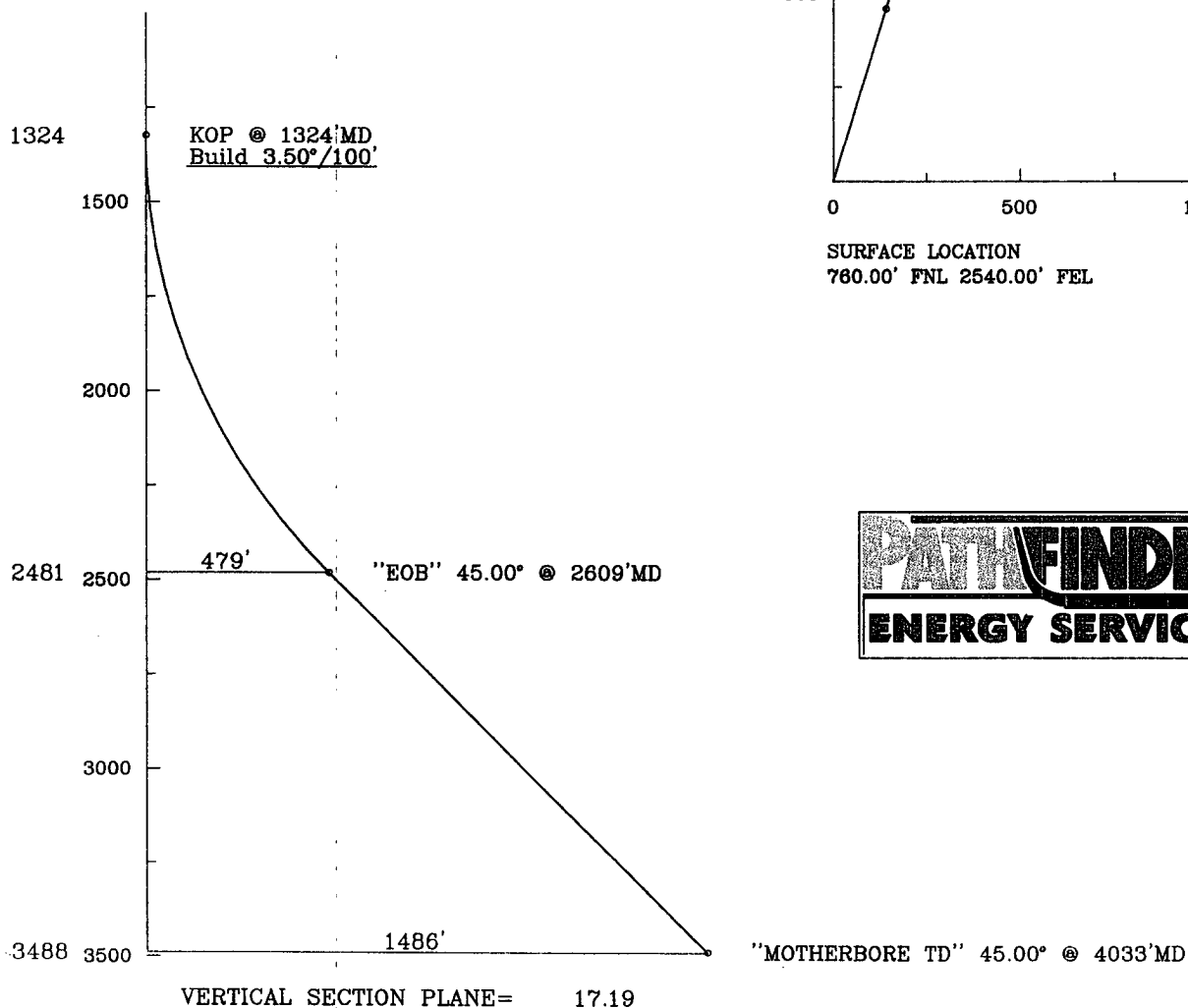
ENERGEN RESOURCES
 NAVAJO LAKE, WELL No.100
 BASIN FRUITLAND COAL
 MOTHERBORE



PLAN
 SCALE: 1"=500'

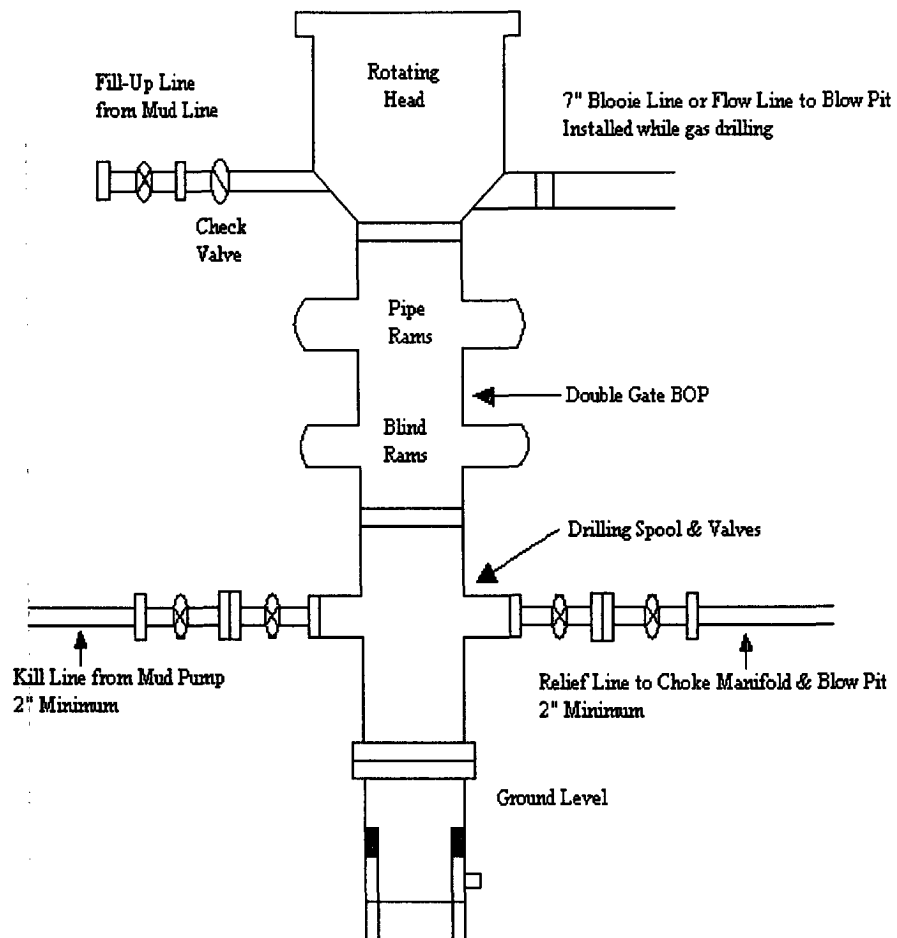


VERTICAL SECTION
 SCALE: 1"=500'



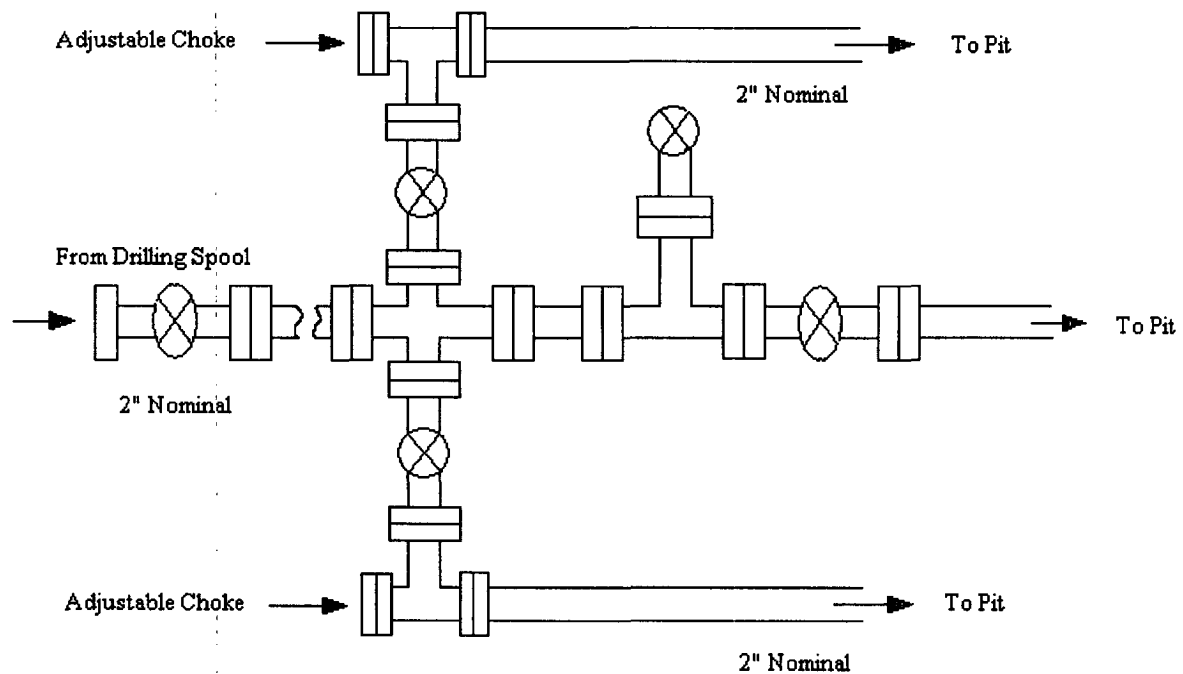
Energen Resources Corporation

Typical BOP Configuration for Gas Drilling



Energen Resources Corporation

Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD