

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. SF-079485A	
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 checked="" 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 Hwy Farmington, NM 87401		8. Lease Name and Well No. San Juan 30-4 Unit	
3b. Phone No. (include area code) 505.325.6800		9. API Well No. #105S 30-039-30158	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 1180' fsl, 1965' fwl At proposed prod. zone 2530' fsl, 760' fel		10. Field and Pool, or Exploratory Basin Fruitland Coal	
14. Distance in miles and direction from nearest town or post office* Approximately 10.25 mile N NW of Gobernador		11. Sec., T, R, M., or Blk. and Survey or Area (O) S18, T30N, R4W	
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 539.04	17. Spacing Unit dedicated to this well RCVD MAR 12 '08 E/2	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50'	19. Proposed Depth 6006' (MD)	20. BLM/BIA Bond No. on file OIL CONS. DIV. DIST. 3	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7423' GL	22. Approximate date work will start* 5/25/2007	23. Estimated duration 25 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 1/12/07
-------------------	--------------------------------------	-----------------

Title Drilling Engineer	
Approved by (Signature) 	Name (Printed/Typed) A. F. F.
Title AFEN	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. Minimum BOP test pressure: 750#

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)

HOLD C104 FOR directional survey  
as dated C-102

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

Submit completed, amended C102  
B

NMOCD

MAR 20 2008

AV

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

DISTRICT II  
811 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

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

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
		FRUITLAND COAL
<sup>4</sup> Property Code	<sup>5</sup> Property Name	<sup>6</sup> Well Number
	30 - 4	105 S
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name	<sup>9</sup> Elevation
	ENERGEN RESOURCES CORPORATION	7423'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	18	30N	4W		1180'	SOUTH	1965'	WEST	RIO ARRIBA

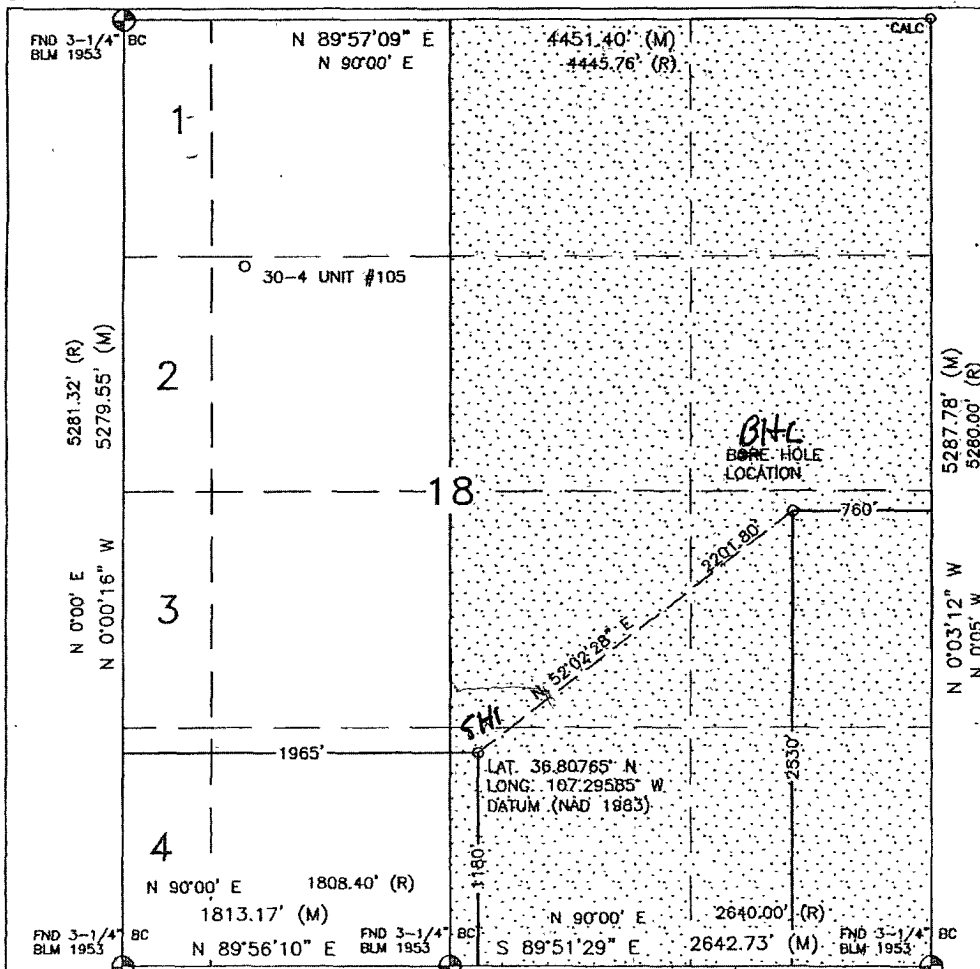
<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	18	30N	4W		2530'	SOUTH	760'	EAST	RIO ARRIBA

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
320.57 Acres - (E/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

18



<sup>17</sup> 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

1/12/07  
Date

<sup>18</sup> 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.

JUNE 7, 2006

Date of Survey

Signature and Seal of Professional Surveyor:

*David Russell*  
DAVID RUSSELL  
NEW MEXICO  
10201  
PROFESSIONAL SURVEYOR  
Certificate Number 10201

~ Resubmit ~

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.

30.039.30158

5. Indicate Type of Lease

STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name:

San Juan 30-4 Unit

8. Well Number

#105

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 Hwy, Farmington, NM 87401

4. Well Location

Unit Letter O : 1180 feet from the South line and 1965 feet from the West line

Section 18 Township 30N Range 4W NMPM County Rio Arriba

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

7423' 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 a 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 drilling pit in accordance with 'OCD Pit and Below Grade Tank Guidelines' issued on November 1, 2004 and also plans to submit a C-144 for closure of such pit in accordance with BIM and 'OCD Pit and Below 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 Nathan Smith TITLE Drilling Engineer DATE 1/12/07

E-mail address:

Type or print name Nathan Smith

Telephone No. 505.325.6800

For State Use Only

APPROVED BY Branchon Powell TITLE Deputy Oil & Gas Inspector, District #3 DATE MAR 20 2008

Conditions of Approval, if any:

## Operations Plan

January 12, 2007

### San Juan 30-4 Unit #105S

#### General Information

Location	1180' fsl, 1965' fwl at surface 2530' fsl, 760' fwl at bottom nese S18, T30N, R4W Rio Arriba County, New Mexico
Elevations	7423' GL
Total Depth	6006' (MD), 4116' (TVD)
Formation Objective	Basin Fruitland Coal

#### Formation Tops

San Jose	Surface
Nacimiento	2368' (TVD)
Ojo Alamo Ss	3495' (TVD), 3495' (MD)
Kirtland Sh	3698' (TVD), 3705' (MD)
Fruitland Fm	3721' (TVD), 3730' (MD)
Top Coal	4106' (TVD), 4514' (MD)
Bottom Coal	4126' (TVD)
Total Depth	4116' (TVD), 6006' (MD)

#### Drilling

The 12 ¼" wellbore will be drilled with a fresh water mud system.

The 8 ¾" 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 8.9 ppg to 9.5 ppg.

**Projected KOP is 3440' TVD with 8.87°/100' doglegs.**

The 6 ¼" 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.

Blowout Control Specifications:

A 2000 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: None

Mud logs: From 3721' (TVD), 3730' (MD) to TD. (Top of Fruitland Fm)

Surveys: Surface to KOP every 500' and a minimum of every 250' for directional.

## Tubulars

### Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-200'	12 ¼"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-4116' (TVD) 4680' (MD)	8 ¾"	7"	23.0 ppf	J-55 LT&C
Production	4116'-4116' (TVD) 4650'-6006' (MD)	6 ¼"	4 ½"	11.6 ppf	J-55 LT&C
Tubing	0'-4342' (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 and rigid centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

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: 125 sks Std (class B) with 2.0 % CaCl<sub>2</sub> and ¼ #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk 148 ft<sup>3</sup> of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

Intermediate Casing: Before cementing, circulate hole at least 1 ½ hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 650 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl<sub>2</sub>, 10 #/sk Gilsonite, and ½ #/sk Flocele (12.3 ppg, 1.93 ft<sup>3</sup>/sk) and a tail of 125 sks Sk with ¼ #/sk Flocele (15.6 ppg, 1.18 ft<sup>3</sup>/sk). (1402 ft<sup>3</sup> of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min.

## 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. This gas is dedicated.



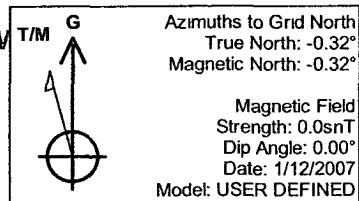
# Project Carson National Forest-S18, T30N, R4W

Site: SJ BR

Well: San Juan 30-4 Unit #105S

Wellbore: Preliminary Design

Plan: Plan #1 (San Juan 30-4 Unit #105S/Preliminary Design)

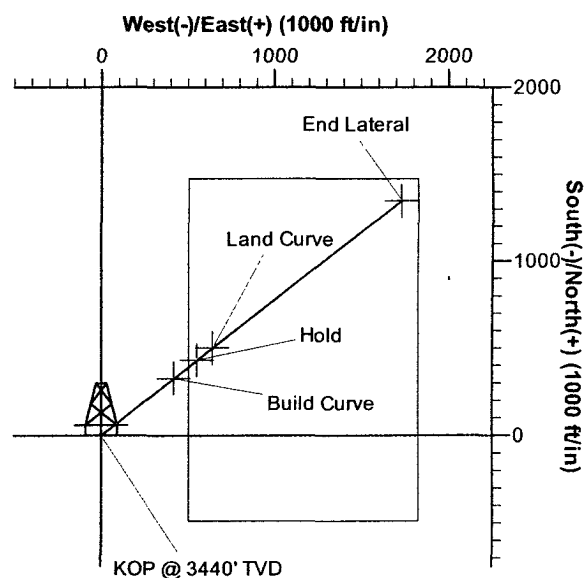
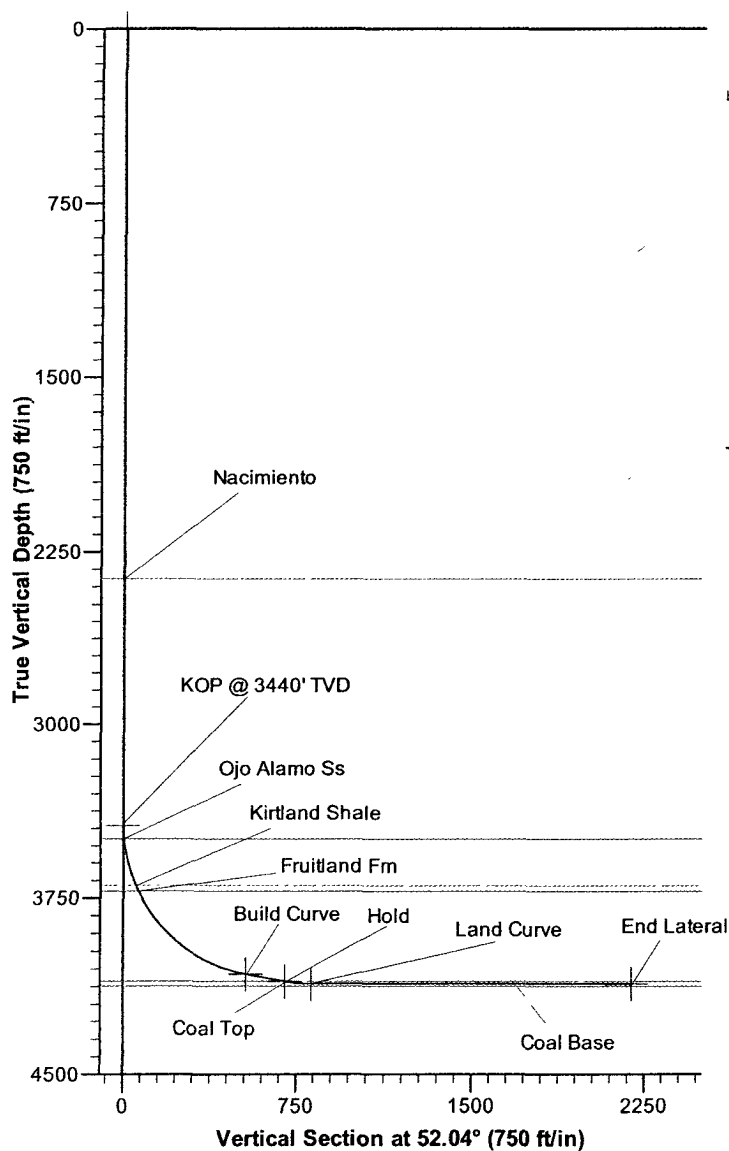


PROJECT DETAILS: Carson National Forest-S18, T30N, R4W	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Western Zone
System Datum:	Mean Sea Level

SURFACE LOCATION	
Easting:	2880436.29
Northing:	2113747.55

## SECTION DETAILS

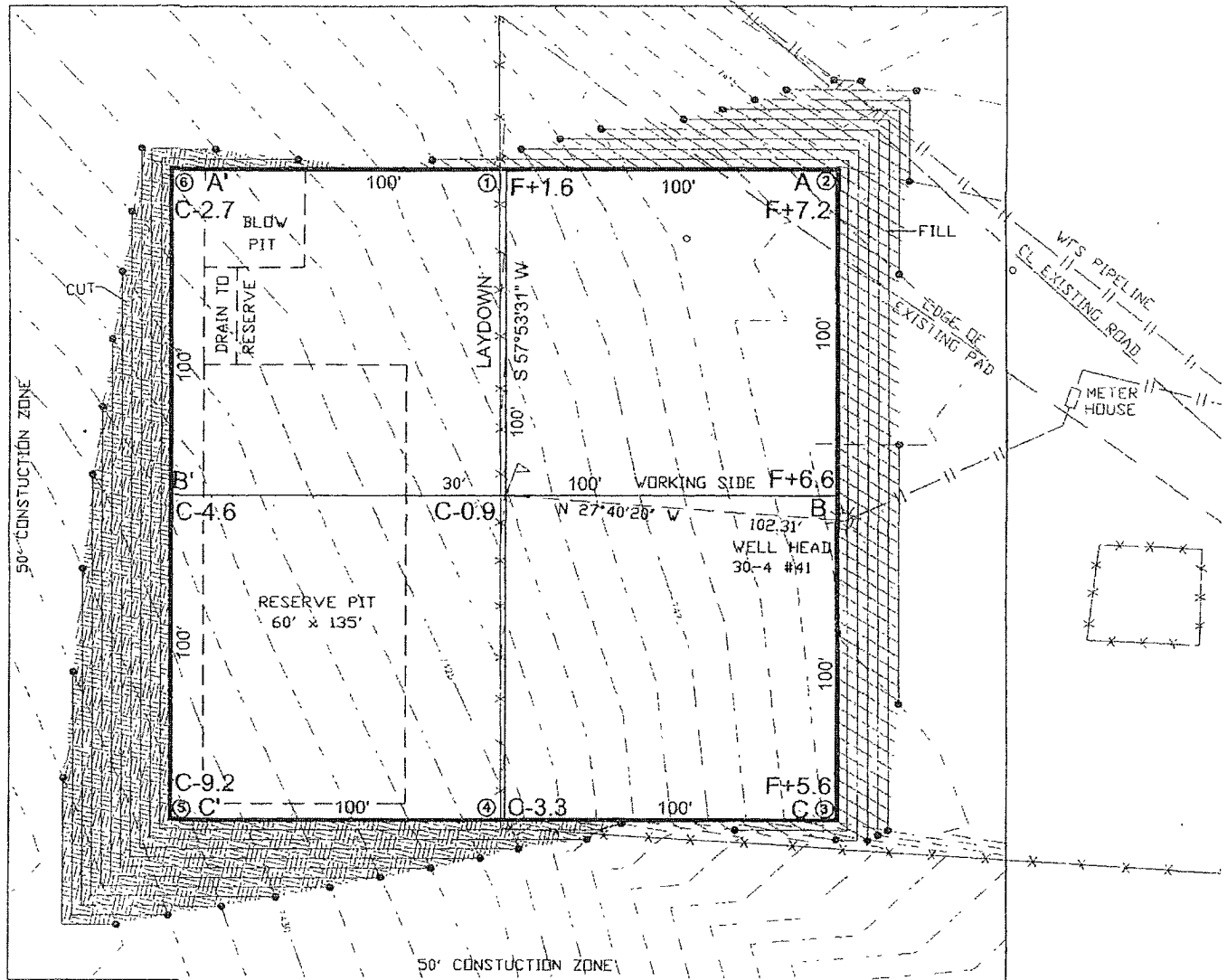
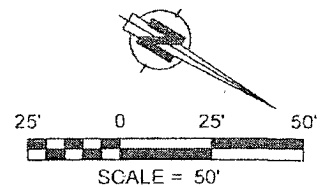
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3440.0	0.00	0.00	3440.0	0.0	0.0	0.00	0.00	0.0	KOP @ 3440' TVD
3	4341.8	80.00	52.04	4076.0	328.3	420.8	8.87	52.04	533.7	Build Curve
4	4514.5	79.99	52.04	4106.0	432.9	554.9	0.01	180.00	703.8	Hold
5	4629.4	90.01	52.04	4116.0	503.2	645.0	8.72	0.00	818.1	Land Curve
6	6006.4	89.99	52.04	4116.0	1350.2	1730.7	0.00	-180.00	2195.1	End Lateral




LATITUDE: 36.80765°N  
LONGITUDE 107.29585°W  
DATUM: NAD 83

# ENERGEN RESOURCES CORPORATION

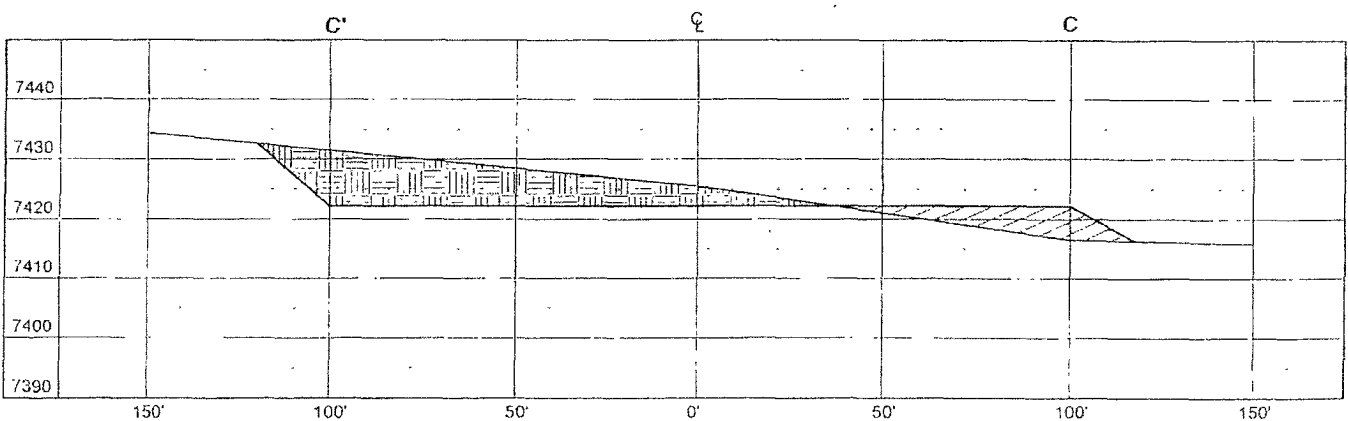
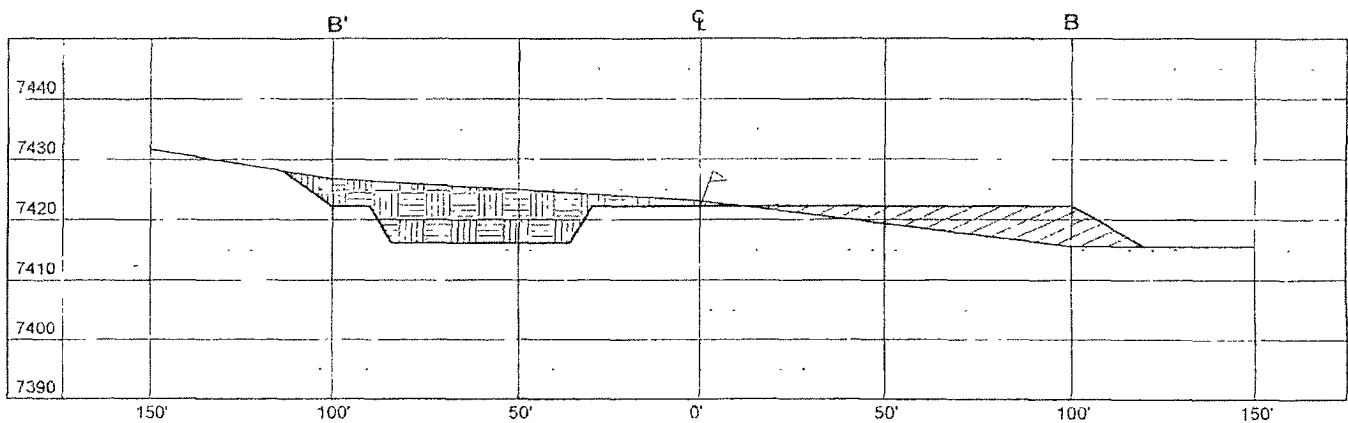
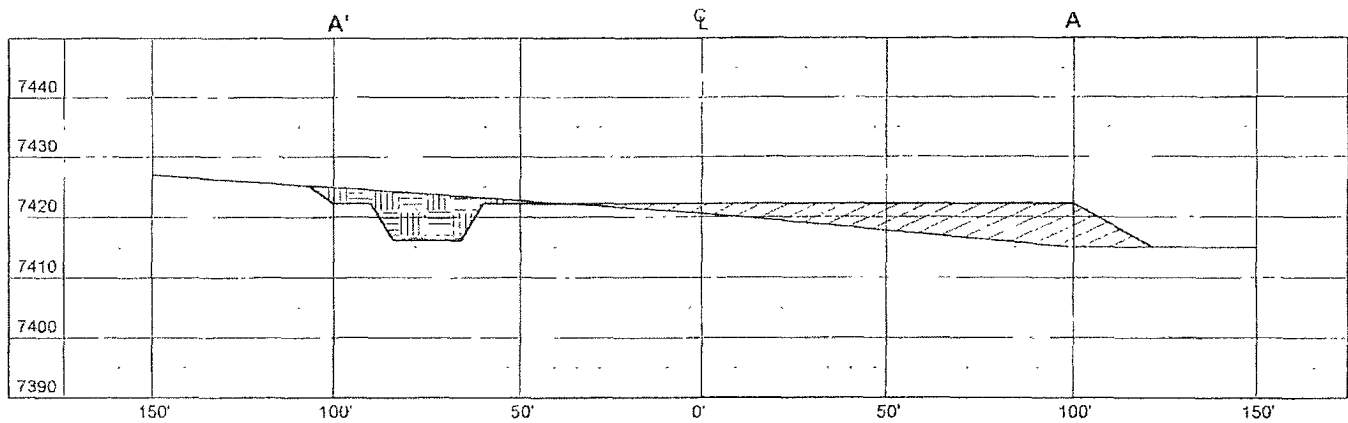
30 - 4 UNIT 105 S  
1180' FSL & 1965' FWL  
LOCATED IN THE SE/4 SW/4 OF SECTION 18,  
T30N, R4W, N.M.P.M.,  
RIO ARRIBA, NEW MEXICO  
GROUND ELEVATION: 7423', NAVD 88  
FINISHED PAD ELEVATION: 7422.2', NAVD 88



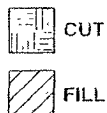
1 FOOT CONTOUR INTERVAL SHOWN  
SCALE: 1" = 50'  
JOB No.: ERG112  
DATE: 06/07/06

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

30 - 4 UNIT 105 S  
1180' FSL & 1965' FWL  
LOCATED IN THE SE/4 SW/4 OF SECTION 18,  
T30N, R4W, N.M.P.M.,  
RIO ARRIBA, NEW MEXICO  
GROUND ELEVATION: 7423', NAVD 88  
FINISHED PAD ELEVATION: 7422.2', NAVD 88



VERT. SCALE. 1" = 30'  
HORIZ. SCALE. 1" = 50'  
JOB No.. ERG112  
DATE: 06/07/06

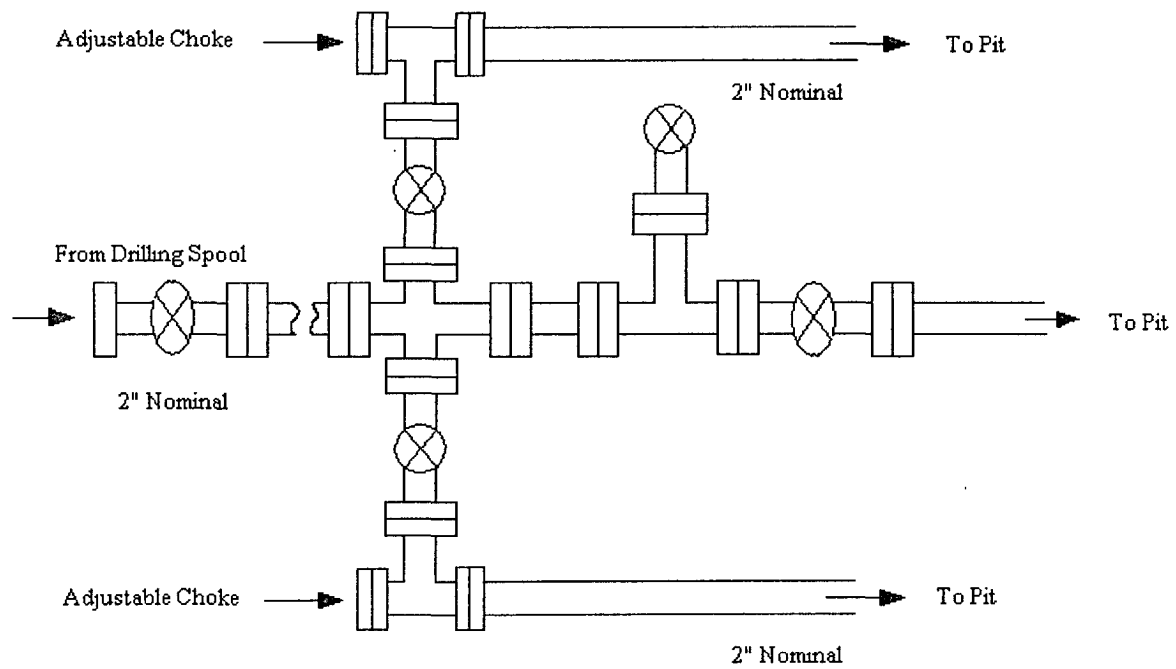


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1409 W. Aztec Blvd. #5  
Aztec, New Mexico 87410  
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## Energen Resources Corporation

### Typical 2000 psi Choke Manifold Configuration



Choke manifold installed from surface to TD

## Energen Resources Corporation

### Typical BOP Configuration for Gas Drilling

