

RECEIVED
070 FARMINGTON NM

FORM 3160-3
(December 1990)

SUBMIT IN TRIPLICATE*
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires December 31, 1991

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

2004 OCT 12 PM 1

5. LEASE DESIGNATION AND SERIAL NO.
40 USA-NM-0606

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK **DRILL** ☒ **DEEPEN** ☐ 070 FARMINGTON
1b. TYPE OF WELL
OIL ☐ **GAS** ☒ **OTHER** ☐ **SINGLE** ☒ **MULTIPLE** ☐
WELL ☐ **WELL** ☒ **ZONE** ☒ **ZONE** ☐

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO.
Hart Canyon 31-10-27 2S

2. NAME OF OPERATOR
Energen Resources Corporation

9. API WELL NO.
30-045-32615

3. ADDRESS OF OPERATOR
c/o Walsh Engineering 7415 E. Main St., Farmington, NM 87402 (505) 327-4892

10. FIELD AND POOL OR WILDCAT
Basin Fruitland Coal

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At Surface 1690' FSL and 905' FEL
At proposed Prod. Zone

11. SEC., T., R., M., OR BLK.
AND SURVEY OR AREA
I Sec. 27, T31N, R10W

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
~ 6 miles NE of Aztec, NM

12. COUNTY OR PARISH
San Juan County

13. STATE
NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY
OR LEASE LINE, FT. (Also to nearest drg. unit line, if any)
905'

16. NO. OF ACRES IN LEASE
2394.72

17. NO. OF ACRES ASSIGNED TO THIS WELL
320 5/2 317.118

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL,
DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT.
~850'

19. PROPOSED DEPTH
3224'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
6282' GR

22. APPROX. DATE WORK WILL START*
As soon as permitted

23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	8-5/8"	24#	+/- 240'	~236 cu.ft. Class "B" w/ 1/4# CF & 2% C
7-7/8"	5-1/2"	15.5#	+/- 3224'	~882 cf Lightwt & ~239 cu.ft. Class "B"

Energen Resources Corporation proposes to drill a vertical well to develop the Fruitland Coal formation at the above described location in accordance with the attached drilling and surface use plans. The surface is under the jurisdiction of the Bureau of Land Management.

This location has been archaeologically surveyed by DCA (Division of Conservation Archaeology - Salmon Ruins). Copies of their report have been submitted directly to your office.

This APD also is serving as an application to obtain road and pipeline right-of-ways. This well will require approximately 724' of new access road (see Pipeline & Well Plats #3 & #4).

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM. If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] TITLE John C. Thompson, Agent DATE 10/11/2004

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

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:

APPROVED BY [Signature] TITLE AFM DATE 12/3/04

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

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".

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Avenue, 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 & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised June 10, 2003

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30045-32615		² Pool Code 71629	³ Pool Name UP FRUITLAND COAL
⁴ Property Code 300464	⁵ Property Name HART CANYON 31-10-27		⁶ Well Number 2S
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION		⁹ Elevation 6282.27'

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
I	27	31N	10W		1690	SOUTH	905	EAST	SAN JUAN

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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
9/2 320			

317.11

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

S 89-52-00 W 5,111.04' (REC.)		S 89-48-53 W 2558.76' MEAS.		S 89-53-22 W 2558.83' MEAS.		S 89-52-00 W 5,111.04' (REC.)	
FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968	
N 04-56-05 E 2720.34' (MEAS.)		N 04-56-05 E 2716.56' (REC.)		N 00-27-00 E 2636.04' (REC.)		N 00-31-22 E 2633.27' (MEAS.)	
FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968	
N 01-55-09 W 2605.19' (MEAS.)		N 01-59-00 W 2,607.86' (REC.)		N 00-25-00 E 2641.98' (REC.)		N 00-19-44 E 2642.77' (MEAS.)	
FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968		FD 3 1/4" BRASS CAP BLM 1968	
S 88-27-09 W 2610.35' (MEAS.)		N 89-34-47 W 2615.81' (MEAS.)		S 88-30-00 W 2609.64' (REC.)		N 89-33-00 W 2615.58' (REC.)	
S 88-30-00 W 2609.64' (REC.)		N 89-33-00 W 2615.58' (REC.)		S 88-30-00 W 2609.64' (REC.)		N 89-33-00 W 2615.58' (REC.)	

DEC 2004

DEDICATED ACREAGE S/2

27

905'

1690'

17 OPERATOR CERTIFICATION

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

[Signature]
Signature

John C. Thompson
Printed Name
john@walsheng.net
Engineer

Title and E-mail Address

10/11/04
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.

9/11/04
Date of Survey

[Signature]
Signature and Seal of Registered Professional Land Surveyor

NM #9679
Certificate Number

HOWARD DAGGETT
REGISTERED PROFESSIONAL LAND SURVEYOR
9679

Submit 3 Copies To Appropriate District Office.

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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

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.)		WELL API NO.
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator Energen Resources Corporation		6. State Oil & Gas Lease No.
3. Address of Operator c/o Walsh Engineering & Production, 7415 E. Main, Farmington, NM 87402		7. Lease Name or Unit Agreement Name Hart Canyon #1-10 27
4. Well Location Unit Letter <u>I</u> : <u>1690</u> feet from the <u>South</u> line and <u>905</u> feet from the <u>East</u> line Section <u>27</u> Township <u>31N</u> Range <u>10</u> NMPM San Juan County		8. Well Number No. 2S
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>6282' GR</u>		9. OGRID Number 162928
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/>		10. Pool name or Wildcat Basin Fruitland Coal
Pit type <u>Drilling Pit</u> Depth to Groundwater <u>>100'</u> Distance from nearest fresh water well <u>>1000'</u> Distance from nearest surface water <u>>1000'</u>		
Pit Liner Thickness: <u>12</u> mfl Below-Grade Tank: Volume <u> </u> bbls; Construction Material <u> </u>		

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 COMPL ☐

OTHER:

☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/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.

Drilling Pit Permit Request

See APD for location of pit relative to wellhead. Note: location is on federal minerals and federal surface. Will close as per Energen Resources pit closure plan and NMOCD Guidelines in accordance with Rule 50.

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 John C. Thompson TITLE Engineer/Agent DATE 9/19/04

Type or print name
For State Use Only

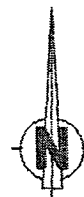
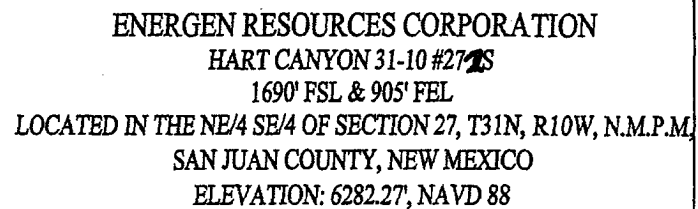
E-mail address: john@walsheng.net Telephone No. 327-4892

DEPUTY OIL & GAS INSPECTOR, DIST. #

APPROVED BY: [Signature] TITLE

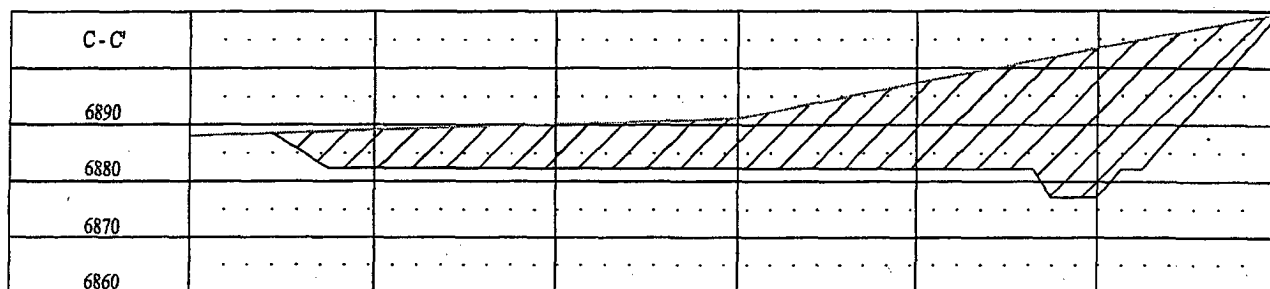
DATE DEC - 6 2004

Conditions of Approval (if any):



LATITUDE: 36°52'01"N
LONGITUDE: 107°51'50"W
DATUM: NAD 83

Plat #2



Energen Resources Corporation
Operations Plan
Hart Canyon 31-10 27 No. 2S

(Note: The following may be adjusted on site based upon actual conditions)

1. Location

Location	:	1690' fsl & 905' fel (ne se) Sec 27, T31N, R10W San Juan County, New Mexico
Elevations	:	6282' GL
Total Depth	:	3224' MD RKB
Well Objective	:	Basin Fruitland Formation

2. Formation Tops

A. <u>Formation</u>	<u>Depth-KB</u>
Nacimiento Fm.	Surface
Ojo Alamo Ss.	1644'
Kirtland Sh.	1744'
Fruitland Fm.	2644'
Top Coal	2799'
Base Coal	3024'
Pictured Cliffs Ss.	3034'
Total Depth	3224'

Estimated depths of anticipated water, oil, gas and other mineral bearing formations which are expected to be encountered:

Water and gas: 1644' – 3034'

B. Logging program: Induction/GR and Density logs at TD

3. Hazards

Overpressuring/H₂S

No over pressured zones are expected in this well. No known H₂S zones will be penetrated in this well. Maximum expected BHP: 600 psig.

Lost Circulation

Lost circulation is not expected to be a problem. However, in the event lost circulation zones are encountered or hole stability problems develop, lost circulation material (LCM) will be on location to be used with any mud systems that may be needed to address the lost circulation zones. Also, lost circulation material will be used in the production cement

in attempt to minimize any lost circulation zones/problems that may be encountered during cementing of the production string.

4. Drilling

A. Contractor: L&B Speed Drill

B. Mud Program:

The surface hole will be drilled with a fresh water mud system.

The production hole will be drilled with a fresh water/polymer mud system. The weighting material will be drill solids or if conditions dictate, barite. The maximum weight expected is 8.5 ppg.

C. Minimum Blowout Control Specifications

Double ram type or annular type 2000 psi working pressure BOP with a rotating head will be utilized. See the attached Exhibits #1 & #2 for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1000 psi.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

4. Casing & Materials

A. Casing

<u>String</u>	<u>Interval</u>	<u>Hole Size</u>	<u>Csg OD</u>	<u>Wt lb/ft</u>	<u>Grade</u>
➤ Surface	0'-240'	12-1/4"	8-5/8"	24.0	J-55
➤ Production	0'-3224'	7-7/8"	5-1/2"	15.5	J-55

B. Float equipment

I) Surface Casing: None

II) Production Casing: 5-1/2" cement guide shoe and self fill insert float collar.

Place float one joint above shoe. Five centralizers spaced every other joint above shoe and five turbolizers every fifth joint from the top of the well.

5. Cementing

Surface Casing: 8-5/8" – Use 170 sx (201 cu.ft.) of Class "B" with 1/4#/sk celloflake and 2% CaCl₂. (yield: 1.18 cu.ft./sk; slurry weight: 15.6 ppg). Use 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

Production Casing: 5-1/2" – Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 20 bbls of fresh water. Lead with 428 sx (882 cu.ft.) of Class "B" with 2% SMS (sodium metasilicate) and 1/4#/sk celloflake. (yield: 2.06 cu.ft./sk; slurry weight: 12.5 ppg). Tail with 200 sx (236 cu.ft.) of Class "B" with 1/4#/sk

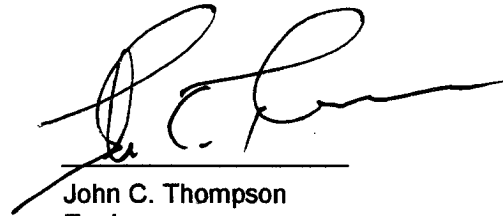
cellolake (yield: 1.18 cu.ft./sk; slurry weight: 15.6 ppg). Total cement volume is 1106 cu.ft. (use 100% excess to circulate cement to surface).

6. Completion

Well will be selectively perforated and hydraulically fractured to test for production. If productive the well will be produced thru 2-3/8" tubing.

7. Surface Facilities

1. If well is productive, set separator, production tank (or water lines) and any related production equipment.
2. Set meter and tie well into pipeline.
3. Turn wellover to production department.
4. Rehabilitate as per the managing surface agency request.



John C. Thompson
Engineer

Energen Resources Corp.

Well Control Equipment Schematic for 2M Service

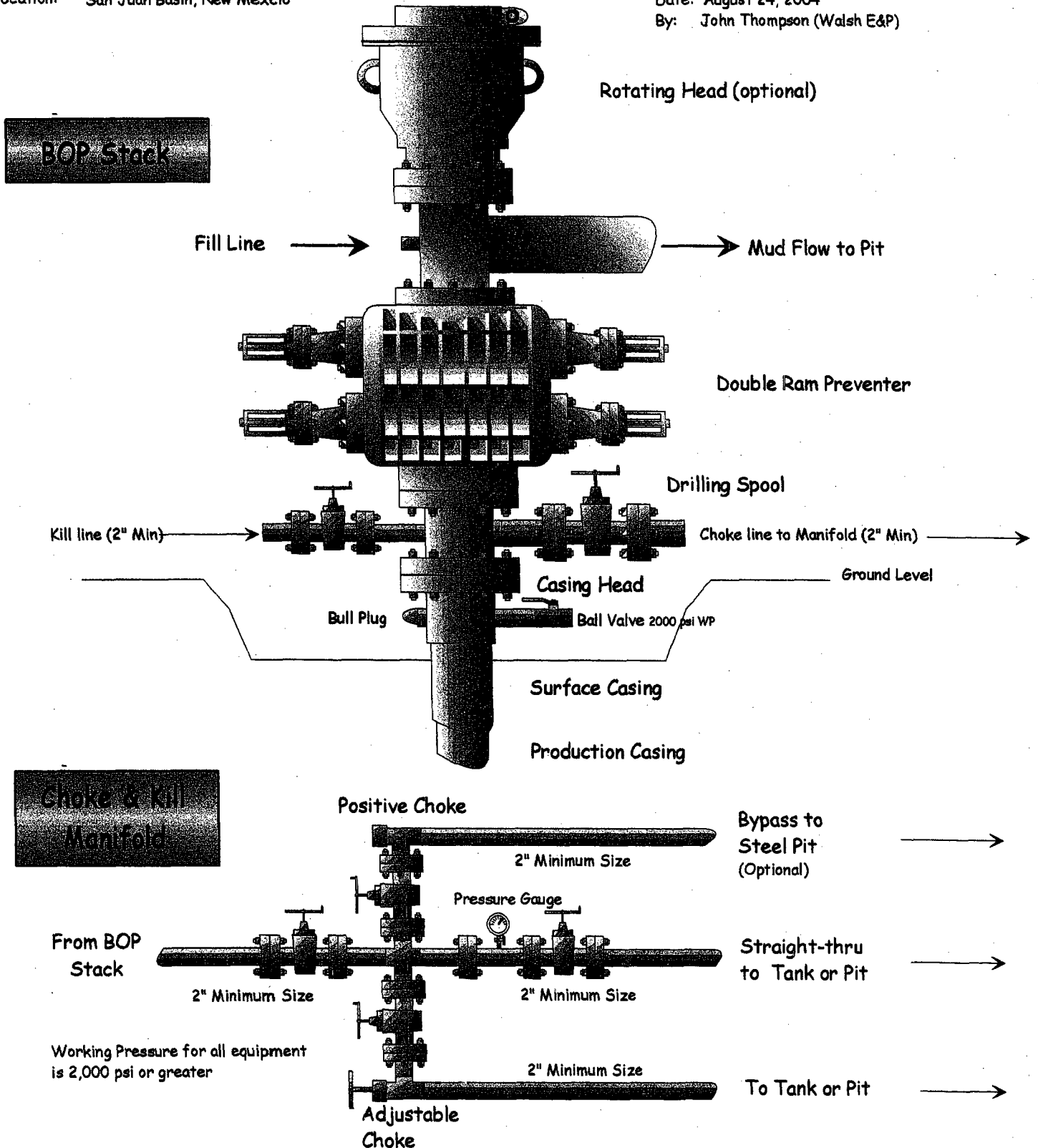
Attachment to Drilling Technical Program

Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 24, 2004

By: John Thompson (Walsh E&P)



Energen Resources Corp.

Well Control Equipment Schematic for 1M Service

Attachment to APD Form 3160-3

Exhibit #2

Location: Typical set up for shallow FTC/PC
Wells in San Juan County, New Mexico

Date: August, 2004
Drawn By: John C. Thompson

