

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

2004 SEP 27 AM 10:42 NMS F078464  
RECEIVED  
070 FARMINGTON NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator  
PATINA OIL AND GAS

3a. Address 5802 US HIGHWAY 64  
FARMINGTON, NM 87401

3b. Phone No. (include area code)  
505.632.8056

4. Location of Well (Report location clearly and in accordance with any State requirements.)  
At surface 8950' FSL & 1990' FEL  
At proposed prod. zone SAME 1945'

5. Lease Serial No.  
421 NMS F078464

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.  
CAIN FEDERAL #3

9. API Well No.  
30-045-32605

10. Field and Pool, or Exploratory  
BASIN DK/BLANCO MV

11. Sec., T. R. M. or Blk. and Survey or Area  
O 25-31N-13W

12. County or Parish  
SAN JUAN

13. State  
NM

14. Distance in miles and direction from nearest town or post office\*  
3 MILES EAST OF LA PLATA, NM

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)  
660'

16. No. of acres in lease  
320

17. Spacing Unit dedicated to this well  
E/2 320 ACRES

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.  
1050' +/-

19. Proposed Depth  
7150'

20. BLM/BIA Bond No. on file  
320 E/P

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
5970' 5439'

22. Approximate date work will start\*  
11/01/2004

23. Estimated duration  
21 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:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature *Runell A. Seale* Name (Printed/Typed) Runell A. Seale Date 09/24/2004

Title *Regulatory Engineering Technician* Name (Printed/Typed) JENN M. MUSE Date 9/17/05

Approved by *[Signature]* Name (Printed/Typed) Office PFO Date 3-22-05

Title AFM

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.

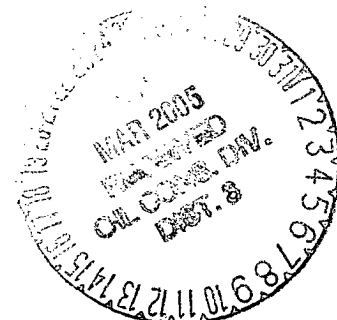
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

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".

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 30-065-32605		*Pool Code 72319 \ 71599	*Pool Name BLANCO MESAVERDE \ BASIN DAKOTA
*Property Code 34727	*Property Name CAIN FEDERAL		*Well Number 3
*GRID No. 173252	*Operator Name PATINA SAN JUAN, INC.		*Elevation 5939'

<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	25	31N	13W		895	SOUTH	1945	EAST	SAN JUAN

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

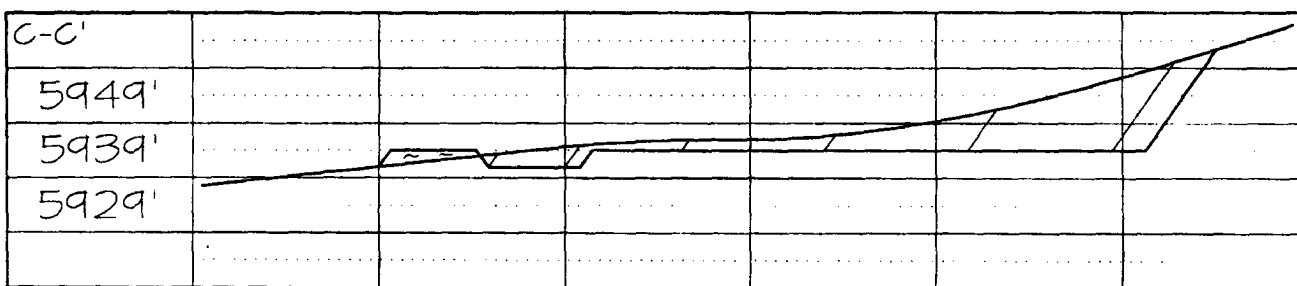
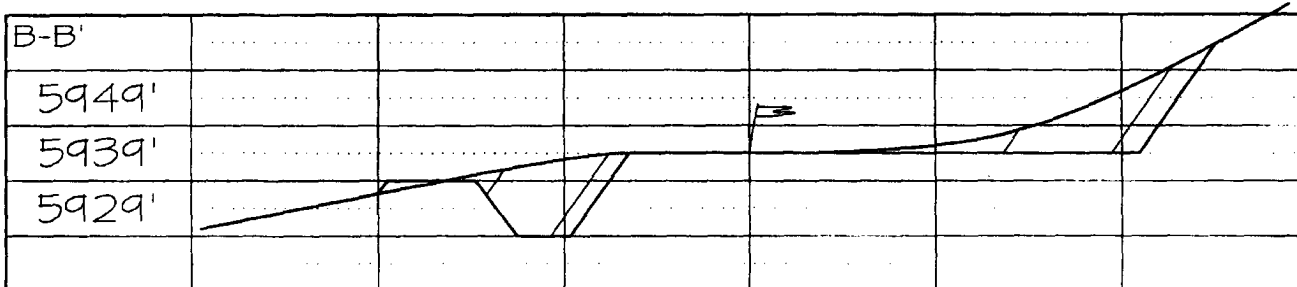
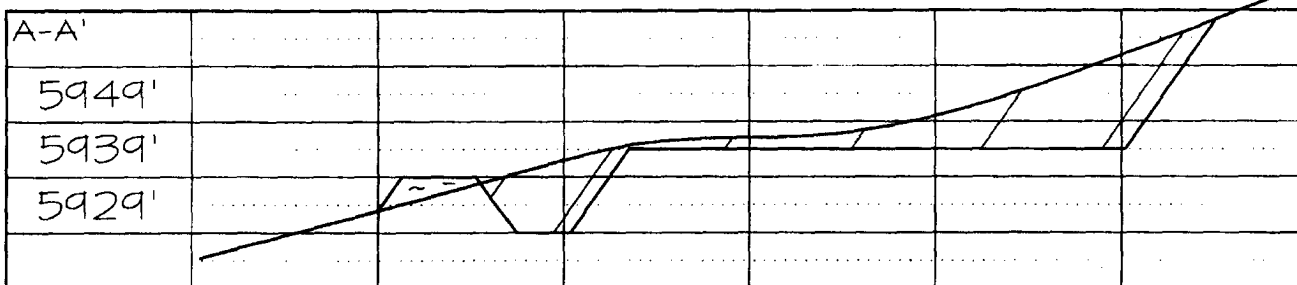
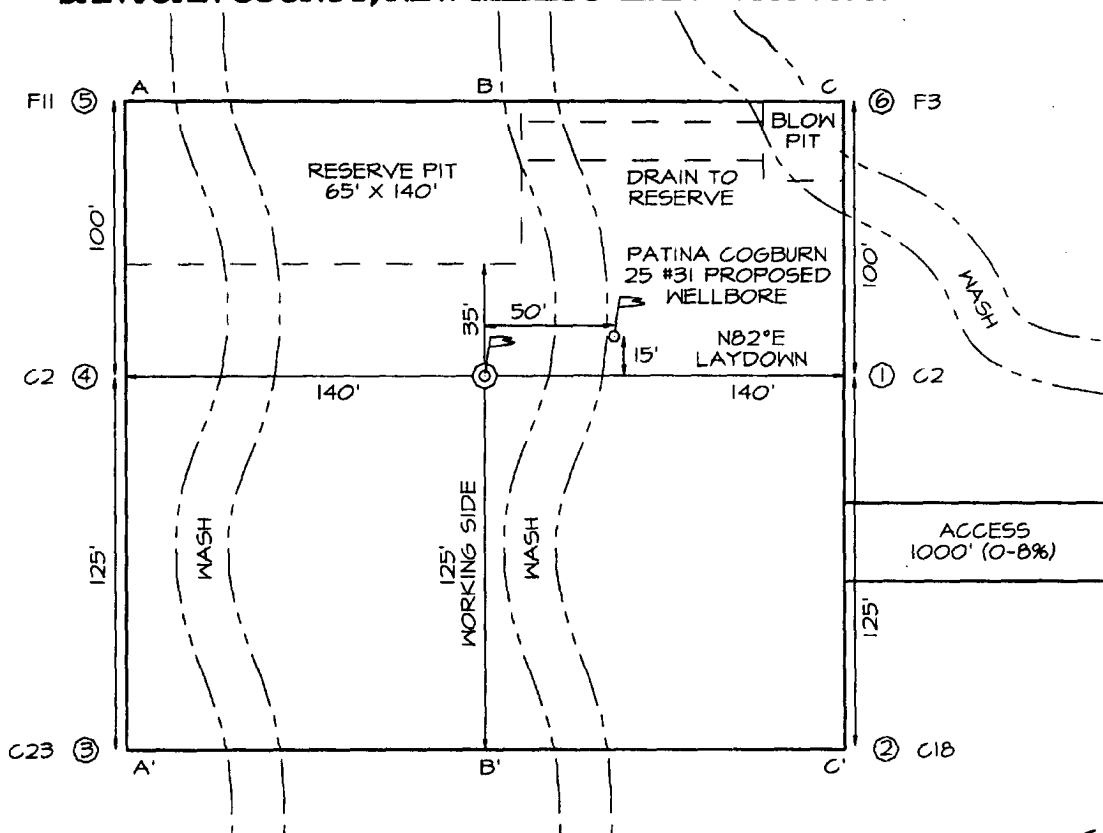
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres 320.0 Acres - (E/2)					<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.		

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

<div>16</div> <div>5192.22'</div> <div>5273.40'</div> <div>25</div> <div>LEASE SF-078464</div> <div>5229.84'</div> <div>5247.00'</div> <div>845'</div> <div>MAR 2005 NEW MEXICO OIL CONSERV. DIV. DIST. 8</div>	<div>17 OPERATOR CERTIFICATION</div> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>JEAN M. MUSE</i> Signature JEAN M. MUSE Printed Name Regulatory/Engineering Tech Title 1/20/05 Date</p> <div>18 SURVEYOR CERTIFICATION</div> <p>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.</p> <p>Survey Date: DECEMBER 3, 2004</p> <p>Signature and Seal of Professional Surveyor</p> <div>JASON C. EDWARDS NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 15269</div> <p><i>JASON C. EDWARDS</i> Certificate Number 15269</p>
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**PATINA SAN JUAN, INC. CAIN FEDERAL #3**  
**895' FSL & 1945' FEL, SECTION 25, T31N, R13W, NMPM**  
**SAN JUAN COUNTY, NEW MEXICO ELEVATION: 5939'**

LATITUDE: 36°51'58"  
 LONGITUDE: 108°09'10"  
 DATUM: NAD1927



When submitting this form to the BLM. Send a copy of this form to the NMOCD also.  
All wells are subject to applicable rules and regulations of the PERMITTED STATE AGENCY.

Form 3160-5  
(September 2001)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0135  
Expires: January 31, 2004

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an  
abandoned well. Use Form 3160-3 (APD) for such proposals.

**SUBMIT IN TRIPLICATE - Other Instructions on reverse side**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

PATINA SAN JUAN, INC.

3a. Address

5802 US Highway 64 Farmington, NM 87401

3b. Phone No. (include area code)

505-632-8056

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

895' FSL

1950' FEL SEC 25 T31N R13W NMPM

5. Lease Serial No.

6. If Indian, Allottee, or Tribe Name

7. If Unit or CA. Agreement Designation

8. Well Name and No.

CAIN FEDERAL #3

9. API Well No.

3004532605

10. Field and Pool, or Exploratory Area

BASIN DK/BLANCO MV

11. County or Parish, State

SAN JUAN

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

☐ Notice of Intent

☐ Acidize

☐ Deepen

☐ Production (Start/ Resume)

☐ Water Shut-off

☒ Subsequent Report

☐ Altering Casing

☐ Fracture Treat

☐ Reclamation

☐ Well Integrity

☐ Casing Repair

☐ New Construction

☐ Recomplete

☒ Other

Movement of well location  
because of presence of T & E  
species on original location.

☐ Change Plans

☐ Plug and abandon

☐ Temporarily Abandon

Movement of well bore due to  
presence of Aztec Gilia and Brack's Cactus on  
original pad

☐ Final Abandonment Notice

☐ Convert to Injection

☐ Plug back

☐ Water Disposal

13. Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof.

If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands.

Attach the Bond under which the work will be performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

NOTICE OF FOOTAGE CHANGES PER ATTACHED PLAT

FROM 660' FSL & 1790' FEL

TO 895' FSL & 1950' FEL



2005 FEB 9 AM 8 16  
RECEIVED  
070 FARMINGTON NM

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed)

JEAN M. MUSE

Title

REGULATORY/ENGINEERING TECHNICIAN

Signature

Date

JANUARY 20, 2005

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any are attached. Approval of this notice 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.

Office

FFO

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 any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NMOCD

**Cain Federal #3  
General Drilling Plan  
Patina San Juan, Inc.  
San Juan County, New Mexico**

**1. LOCATION:**

SWSE of Section 25, T31N, R13W  
San Juan, New Mexico

Field: Blanco MV & Basin DK  
Surface: BLM  
Minerals: SF-078464

**2. SURFACE FORMATION, ESTIMATED TOPS AND WATER, OIL, GAS OR  
MINERAL BEARING FORMATIONS (TVD):**

Surface formation – Nacimiento

<b><u>Formation</u></b>	<b><u>Estimated Formation Top (Ft)</u></b>
Ojo Alamo	250
Fruitland	1537
Pictured Cliffs**	2236
Cliff House**	3780
Menefee**	3942
Point Lookout**	4563
Gallup	5914
Greenhorn	6611
Graneros	6668
Dakota ***	6722
TD	7150

Legend:      \* Freshwater bearing formation  
             \*\* Possible hydrocarbon bearing formation  
             \*\*\* Probable hydrocarbon bearing formation  
             # Possible H2S bearing formation

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and adequately protected.

### 3. **PRESSURE CONTROL EQUIPMENT:**

BOP equipment will be tested to the lesser of its rated working pressure, 70-percent of the internal yield of the surface casing or 1,000 psi. See attachments for BOP and choke manifold diagrams.

#### **Production Hole BOP Requirements and Test Plan**

11" – 2,000 psi single ram (blind)

11" – 2,000 psi single ram (pipe)

Test as follows:

- |                              |                  |               |
|------------------------------|------------------|---------------|
| a) Pipe rams:                | 1,000 psi (High) | 250 psi (low) |
| b) Choke manifold and lines: | 1,000 psi (High) | 250 psi (low) |

All ram type preventers and related equipment will be hydraulically tested at nipple-up. They will also be retested in either of the following events:

- A pressure seal is broken.
- 30 days have elapsed since the last successful test of the equipment.

Furthermore, BOP's will be checked daily as to mechanical operating condition. All ram type preventers will have hand wheels, which will be operative and accessible at the time the preventers are installed. See attached Exhibit for details on the BOP equipment.

#### **AUXILIARY EQUIPMENT:**

- a) Manually operated kelly cock (upper and lower)
- b) Full opening manually operated safety valves in the full open position, capable of fitting all drill stem connections.

#### 4. CASING DESIGN:

##### Casing Program:

Hole Size	Depth	Casing Size
12 1/4"	250'	9 5/8"
8 3/4"	4800' +/-	7"
6 1/4"	7150'	4 1/2"

Hole Size	Casing Type	Top (MD)	Bottom (MD)	Wt. (lb./ft)	Grade	Thread	Condition
9-5/8"	Surface	0'	250'	36.0	J55	STC	New
7"	Production	0'	4800' +/-	23.0	N80	LTC	New
4 1/2"	Production	0	7150'	11.6	N80	LTC	New

Casing Data				Collapse (psi)	Burst (psi)	Min. Tensile (Lbs.)
OD	Wt/Ft	Grade	Thread			
9-5/8"	36.0 lbs.	J55	STC	2,020	3,520	394,000
7"	23.0 lbs.	N80	LTC	3,830	6,340	442,000
4 1/2"	11.6 lbs.	N80	LTC	6,350	7,780	223,000

#### MINIMUM CASING DESIGN FACTORS:

COLLAPSE: 1.125

BURST: 1.00

TENSION: 1.80

Area Fracture Gradient Range: 0.7 – 0.8 psi/foot

Maximum anticipated reservoir pressure: 2,500 psi

Maximum anticipated mud weight: 9.0 ppg

Maximum surface treating pressure: 3,500 - 3,750 psi

## Float Equipment:

**Surface Casing:** Guide shoe on bottom and 3 centralizers on the bottom 3 joints.

**Intermediate Casing:** Float shoe on bottom joint and a float collar one joint up from float shoe. One centralizer 10 ft above float shoe and nine centralizers spaced every joint above the float collar. Stage tool above the Cliffhouse formation. One centralizer below stage tool and one centralizer above stage tool.

**Production Casing:** 4 1/2" whirler type cement nosed guide shoe and a float collar on top of bottom joint with centralizers over potential hydrocarbon bearing zones.

## CEMENTING PROGRAMS:

### 9-5/8" Surface casing:

165 sxs Type III cement with 2% CaCl<sub>2</sub>, 1/4#/sx cellofakes. 100% excess to circulate cement to surface. WOC 12 hrs. Pressure test surface casing to 1000 psi for 30 minutes.

Slurry weight: 15.2 ppg  
Slurry yield: 1.27 ft<sup>3</sup>/sack

Volume basis:	40' of 9-5/8" shoe joint	17 cu ft
	300' of 12-1/4" x 9-5/8" annulus	94 cu ft
	<u>100% excess (annulus)</u>	<u>94 cu ft</u>
	Total	205 cu ft

Note:

1. Design top of cement is the surface.
2. Have available 100 sx Type III cement with 2% CaCl<sub>2</sub> for top out purposes.

### 7" Intermediate Casing:

1st Stage: 100 sacks of Type III cement

Slurry weight: 14.5 ppg  
Slurry yield: 1.4 ft<sup>3</sup>/sack

2<sup>nd</sup> Stage: (Stage tool at 3600' +/-): 365 sacks of Premium Lite FM

Slurry weight: 12.4 ppg  
Slurry yield: 1.92 ft<sup>3</sup>/sack

Volume Basis:	40' of 7" shoe joint	9 cu ft
	4500' of 7" x 8 3/4" annulus	586 cu ft
	300' of 7" x 9 5/8" hole	50 cu ft
	<u>30% excess (annulus)</u>	<u>176 cu ft</u>
	Total	821 cu ft

Note:

1. Design top of cement is surface.
2. Actual cement volumes to be based on caliper log plus 30%.

#### **4 1/2" Production casing:**

Stage 1: 220 sacks of Premium Lite High Strength FM out guide shoe.

Slurry weight: 12.3 ppg  
Slurry yield: 2.13 ft<sup>3</sup>/sack

Volume basis:	40' of 4 1/2" shoe joint	5 cu ft
	4 1/2 " x 6 1/4" hole	318 cu ft
	4 1/2" x 7" casing	33 cu ft
	<u>30% excess (annulus)</u>	<u>107 cu ft</u>
	Total	463 cu ft

Note:

1. Design top of cement is 3900 +/- ft. or 300 ft. into 7" intermediate casing.
2. Actual cement volumes to be based on caliper log plus 30%.

#### **5. MUD PROGRAM:**

The surface hole will be drilled with spud mud. Gel and polymer sweeps will be used from surface to 300 feet as necessary to keep hole clean.

The intermediate hole will be drilled with water till mud up at about 3100 ft. From 3100' to 4800', intermediate casing depth, will be drilled with LSND mud. Anticipated mud weight ranges from 8.5 – 9.0 ppg. Mud weight will be increased as required to maintain hole stability and control gas influx.

The production hole will be drilled with air or air/mist.

Sufficient mud materials to maintain stable wellbore conditions (for either well control or lost circulation scenarios) will be maintained at the well site.

No chrome-based additives will be used in the mud system.

8/9-24-04

**6. EVALUATION PROGRAM:**

Mud logger: From base of surface casing to TD.

Testing: No DST is planned

Coring: None Planned

Electric logs:

Intermediate Hole:

1) DIL-GR-SP: TD to base of surface casing.

2) LDT-CNL-GR-CAL-PE: TD to base of surface casing

Production Hole:

1) DIL-GR-SP: TD to base of intermediate casing.

2) LDT-CNL-GR-CAL-PE: TD to base of intermediate casing

**7. ABNORMAL PRESSURE AND TEMPERATURE:**

H <sub>2</sub> S	None
Coal	Fruitland
Minerals	None
Water	None
Static BHT	175° F
Lost Circulation	Possible
Hole Deviation	None
Abnormal Pressures	None
Unusual Drilling Problems	None

**8. ANTICIPATED STARTING DATE: December 1, 2004**

Anticipated duration: 16 days

# Cain Federal No. 3

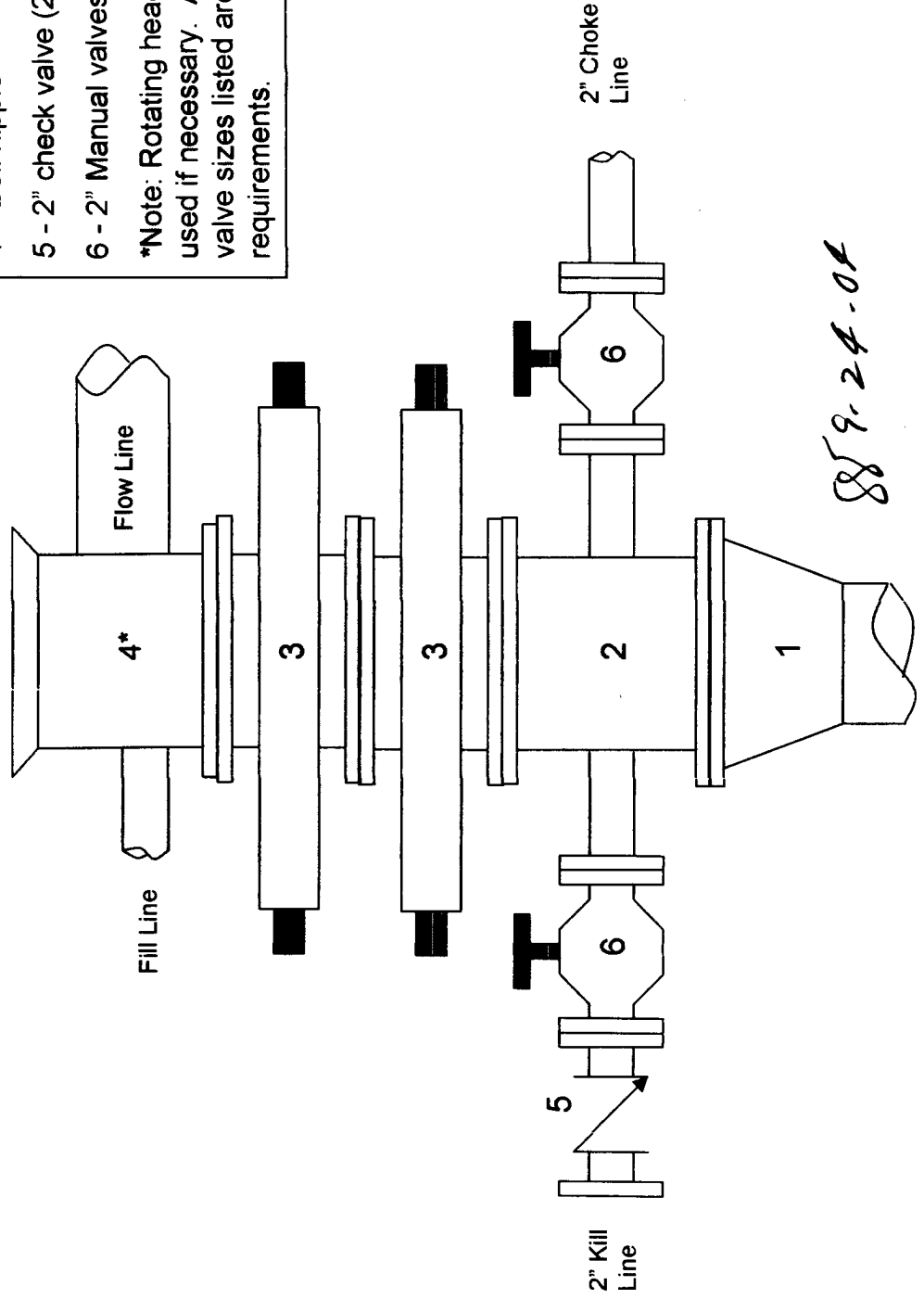
2000 psi BOP stack

Minimum requirements

## Components

- 1 - Wellhead 9-5/8" (2M)
- 2 - Drilling spool 11" (2M)
- 3 - A double or two single rams with blinds on bottom 11" (2M)
- 4 - Bell nipple\*
- 5 - 2" check valve (2M)
- 6 - 2" Manual valves (2M)

\*Note: Rotating head may also be used if necessary. Also, all line and valve sizes listed are minimum requirements.



8859-24-01

# Cain Federal No. 3

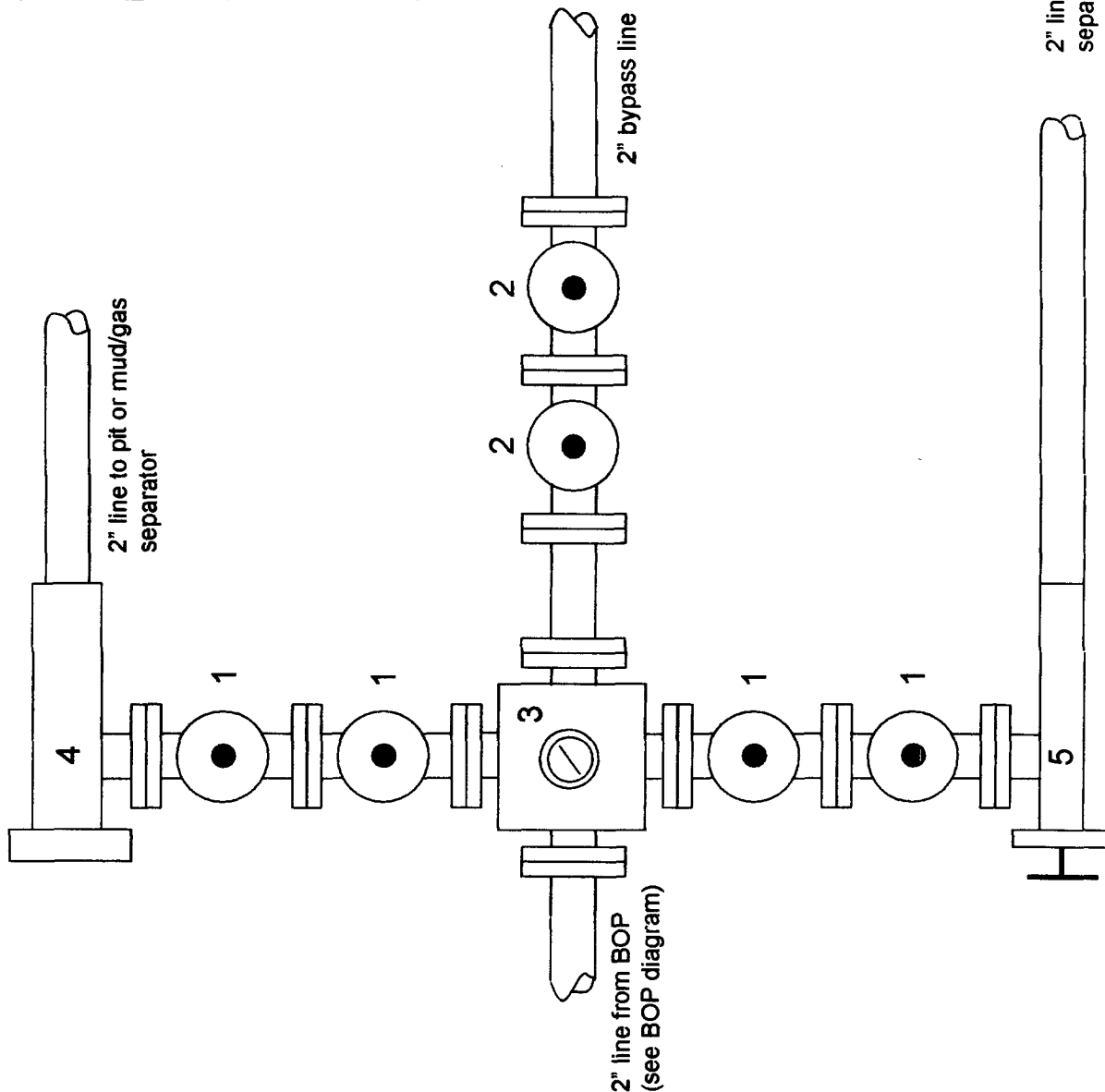
## 2000 psi Choke Manifold

### Minimum requirements

#### Components

- 1 – 2" Valve (2M)
- 2 – 2" Valve (2M)
- 3 – Mud cross with gauge (2M) flanged below the gage.
- 4 – Adjustable beam choke (2M)
- 5 – Adjustable needle choke (2M)

Note: All line and valve sizes listed are minimum requirements.



SN 9-24-01