

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

2007 FEB 12

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. 14-20-603-1297
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name Navajo Allottee #011154
2. Name of Operator Patina Oil and Gas Corporation		7. If Unit or CA Agreement, Name and No SW-I-4222
3a. Address 5802 US Highway 64, Farmington, NM87401	3b. Phone No. (include area code) 505-632-8056	8. Lease Name and Well No Navajo 11 13
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 805 FSL and 1031 FWL At proposed prod zone same		9. API Well No 30-045-3465
14. Distance in miles and direction from nearest town or post office* 25 miles south of Bloomfield, NM		10. Field and Pool, or Exploratory Basin Dakota
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg unit line, if any) 805'		11. Sec., T. R. M. or Blk. and Survey or Area M Sec. 11, T25N, R10W
16. No. of acres in lease 320		12. County or Parish San Juan
17. Spacing Unit dedicated to this well S/2 320 acres		13. State NM
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 715'		20. BLM/BIA Bond No on file LMP8720503-CO1291
19. Proposed Depth 6583'		21. Estimated duration 12 days
22. Approximate date work will start* 06/01/2007		23. Estimated duration 12 days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature <i>Billie Maez</i>	Name (Printed/Typed) Billie Maez	Date 1-12-07
Title District Manager		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 6/14/07
Title FEO		

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)

Submit application for pit permit on OGD Form C-103  
prior to constructing location.

RECD JUN 15 '07

OIL CONS. DIV.

DIST. 3

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

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

NMOC

06-28-07  
BH

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  
Free Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045-34165	<sup>2</sup> Pool Code 71599	<sup>3</sup> Pool Name BASIN DAKOTA
<sup>4</sup> Property Code 36536	<sup>5</sup> Property Name NAVAJO 11	<sup>6</sup> Well Number 13
<sup>7</sup> OGRID No. 173252	<sup>8</sup> Operator Name PATINA OIL & GAS CORPORATION	<sup>9</sup> Elevation 6717'

<sup>10</sup> Surface Location

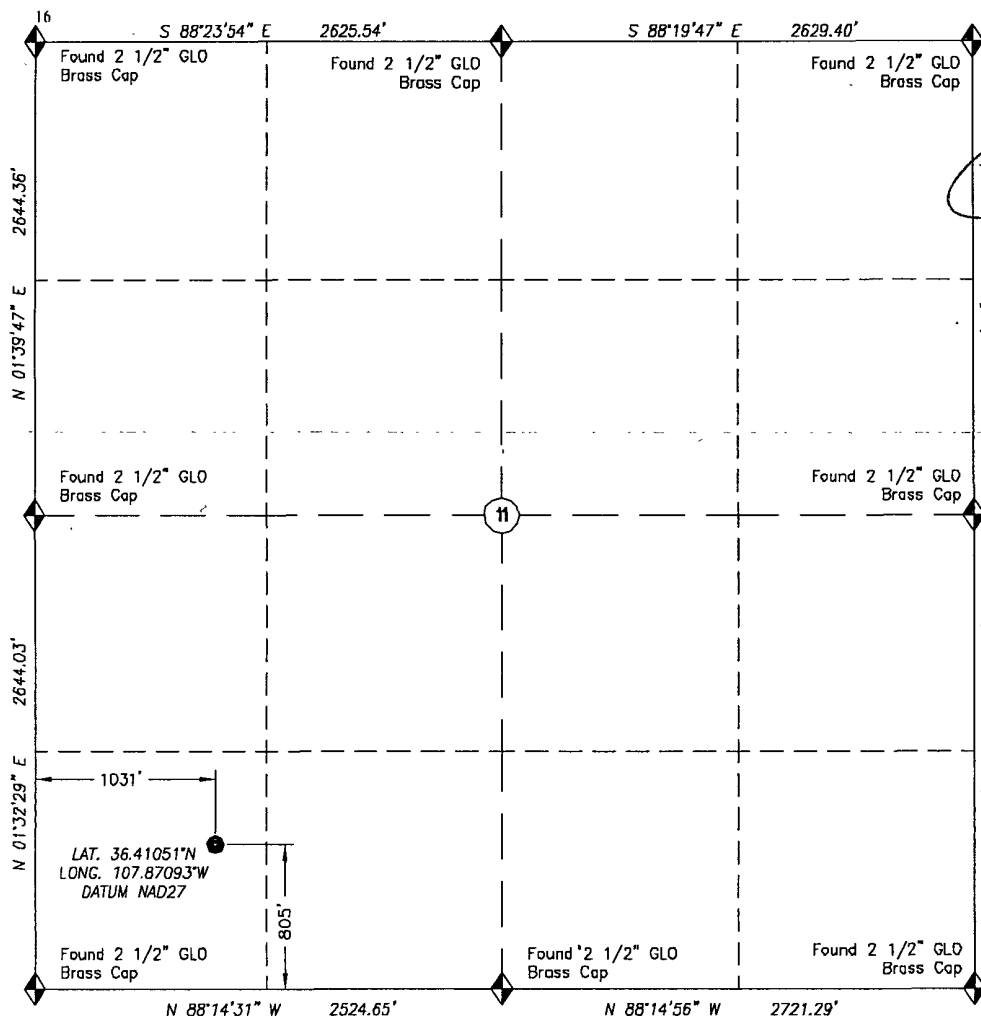
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	11	25N	10W		805	*SOUTH	1031	WEST	SAN JUAN

<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 ACRES	<sup>13</sup> Joint or In fill S 1/2	<sup>14</sup> Consolidation Code	<sup>15</sup> 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



<b>17 OPERATOR CERTIFICATION</b>	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
Signature	<i>[Signature]</i>
Printed Name	JEAN M. MUSE
Title and E-mail Address	Regulatory Compliance jmuse@ndtenergyinc.com
Date	1/19/07
<b>18 SURVEYOR CERTIFICATION</b>	
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.	
April 11, 2006	
Date of Survey	
Dale E. Bell New Mexico Reg. PS No. 14400 For and on behalf of Trigon Epc 150 Tech Center Dr., Suite E Durango CO 81301 (970) 385-9100	

# PAD LAYOUT PLAN & PROFILE

PATINA OIL & GAS CORPORATION

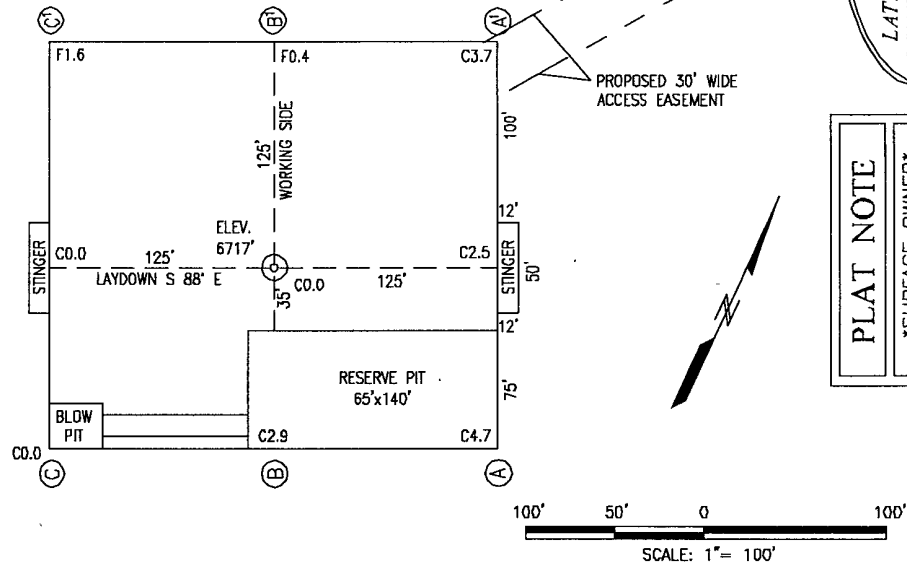
Navajo 11 #13

805' F/SL 1031' F/WL

Sec. 11, T25N, R10W, N.M.P.M.

San Juan County, New Mexico

LATITUDE: 36.41051° N  
LONGITUDE: 107.87093° W  
DATUM: NAD1927



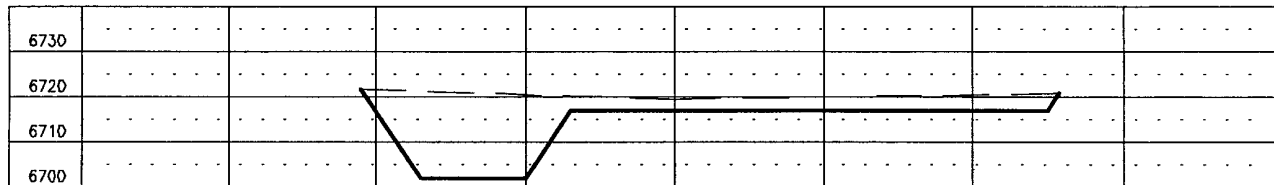
PLAT NOTE

\*SURFACE OWNER\*

NAVAJO NATION  
ALLOTMENT

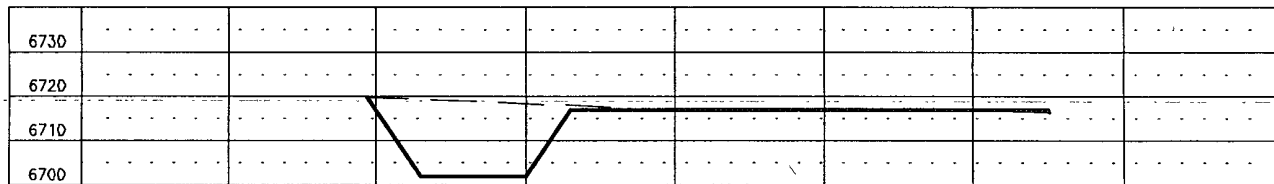
A-A'

CL



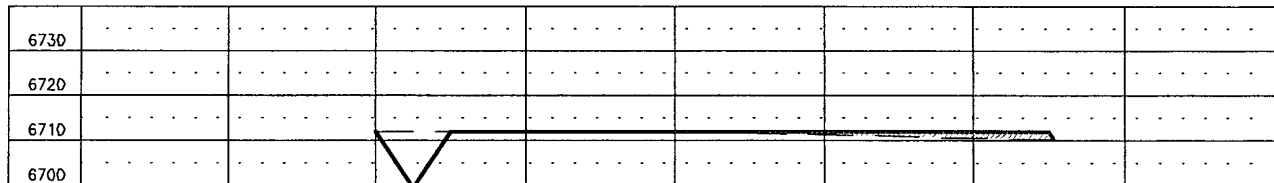
B-B'

CL



C-C'

CL



HORIZONTAL SCALE: 1" = 60'  
VERTICAL SCALE: 1" = 40'

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL ONE-CALL FOR LOCATION OF ALL BURIED FACILITIES ON WELL PAD AND/OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.
2. CUTS AND FILLS SHOWN ARE APPROXIMATE - FINAL FINISHED ELEVATION IS TO BE ADJUSTED SO EARTHWORK WILL BALANCE. CORNER STAKES ARE APPROXIMATE AND DO NOT INCLUDE ADDITIONAL AREAS NEEDED FOR SIDESLOPES AND DRAINAGES. FINAL PAD DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR.

DATE SURVEYED: 10/05/04

DRAWN BY: AEM

DATE DRAWN: 4/28/06

REVISION DATE: 5/02/06

FILE NAME: NAVAJO111302

CUENT

PATINA SAN JUAN, INC.

PREPARED BY

**TRIGON EPC**  
ENGINEERING • PROCUREMENT • CONSTRUCTION

**Navajo 11 #13**  
**General Drilling Plan**  
**Patina San Juan, Inc.**  
**San Juan County, New Mexico**

**1. LOCATION:**

Est. elevation: 6717'  
SWSW Section 11-T25N-R10W  
805' FSL 1031' FWL  
San Juan, New Mexico

Field: Huerfano  
Surface: United States of America  
Minerals: United States of America

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

Surface formation – Nacimiento

<b>Formation</b>	<b>drilling depth</b>
Ojo Alamo	1017
Kirtland	1217
Fruitland	1445
Pictured Cliffs**	1931
Lewis	2173
Cliff House**	3504
Menefee	3520
Point Lookout**	4403
Mancos Shale	4611
Gallup**	5679
Greenhorn	6351
Graneros	6409
Dakota***	6446
<b>TD</b>	<b>6583</b>

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 its rated working pressure or 70-percent of the internal yield of the surface casing, but not to exceed 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:	1,000 psi (High)	250 psi (low)
c) Choke 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:

Hole Data				
Interval	Bit Size (Inches)	Casing Size (Inches)	Top (Ft)	Bottom (Ft)
Surface	12.25	9.625	0	300
Production	7 7/8	4.5	0	6583

Casing Data							
OD (Inches)	ID (Inches)	Weight (Lbs/Ft)	Grade	Thread	Collapse (psi)	Burst (psi)	Min. Tensile (Lbs)
9.625	8.921	36.0	J55	STC	2,020	3,520	394,000
4.5	4.276	11.6	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: 3,750 psi

Float Equipment:

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

**Production Casing:** Float shoe on bottom joint and a float collar one joint up from float shoe. One centralizer 10 ft above float shoe and centralizers over potential hydrocarbon bearing zones. Stage tool above the Cliffhouse formation. One centralizer below stage tool and one centralizer above stage tool.

## CEMENTING PROGRAMS:

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

165 sx Standard cement with 2% CaCl<sub>2</sub>, 0.13 #/sx Poly-E-Flakes. 100% excess to circulate cement to surface. WOC 4 hrs. Pressure test surface casing to 1000 psi for 30 minutes.

Slurry weight: 15.6 ppg  
Slurry yield: 1.20 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	100 cu ft
	<u>100% excess (annulus)</u>	<u>100 cu ft</u>
	Total	217 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.

### 4 1/2" Production casing:

1<sup>st</sup> Stage:

Lead: 80 sx of Premium cement plus additives

Slurry weight: 11.5 ppg

Slurry yield: 2.89 ft<sup>3</sup>/sx

Tail: 670 sx 50/50 Poz cement plus additives

Slurry weight: 13.5 ppg

Slurry yield: 1.33 ft<sup>3</sup>/sx

2<sup>nd</sup> Stage:

Lead: 380 sx of Premium cement plus additives

Slurry weight: 11.5 ppg

Slurry yield: 2.89 ft<sup>3</sup>/sx

Tail: 50 sx 50/50 Poz cement plus additives

Slurry weight: 13.5 ppg

Slurry yield: 1.33 ft<sup>3</sup>/sx

Volume basis:	1 <sup>st</sup> Stage:	
	40' of 4 1/2" shoe joint	5 cu ft
	3183' of 4 1/2" x 7 7/8" hole	725 cu ft
	2 <sup>nd</sup> Stage:	
	3400' of 4 1/2" x 7 7/8" hole	775 cu ft
	<u>30% excess (annulus)</u>	<u>210 cu ft</u>
	Total	1715 cu ft

Note:

1. Design 1<sup>st</sup> stage top of cement is  $\pm 3400'$  (100' above the top of the Cliff House formation).
2. DV tool is approximately 1200' below the top of the Lewis Shale formation.
3. 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 production hole will be drilled with water until mud up at about 3500 ft. From mud up point to total depth, it will be drilled with a LSND mud. Anticipated mud weight ranges from 8.5 – 9.2 ppg. Mud weight will be increased as required to maintain hole stability and control gas influx.

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.



**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) No open hole logs
- 2) Cased hole resistivity & porosity logs

**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

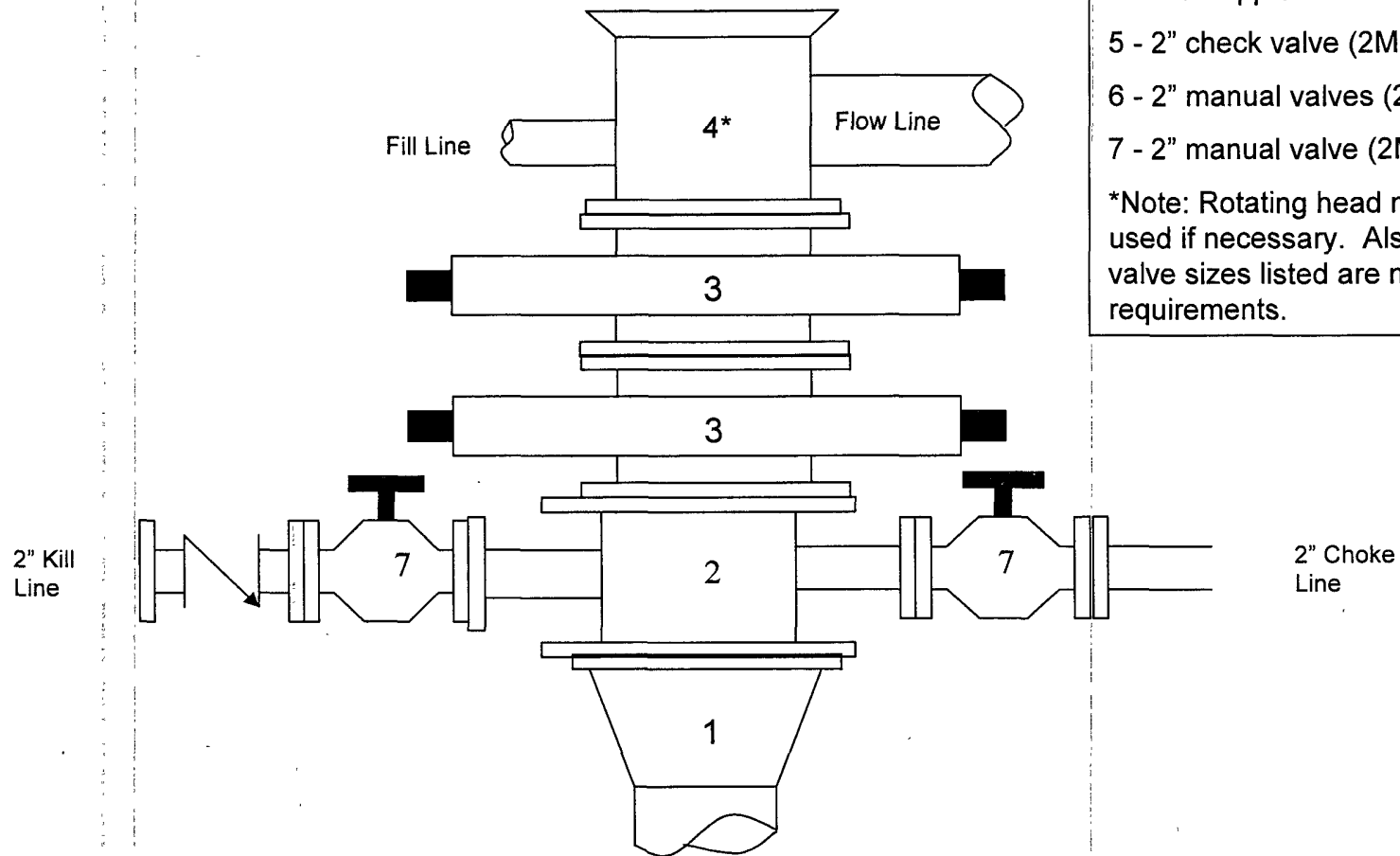
**8. ANTICIPATED STARTING DATE: Q2, 2007**

Anticipated duration: 2 days

# Navajo #11-13

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)

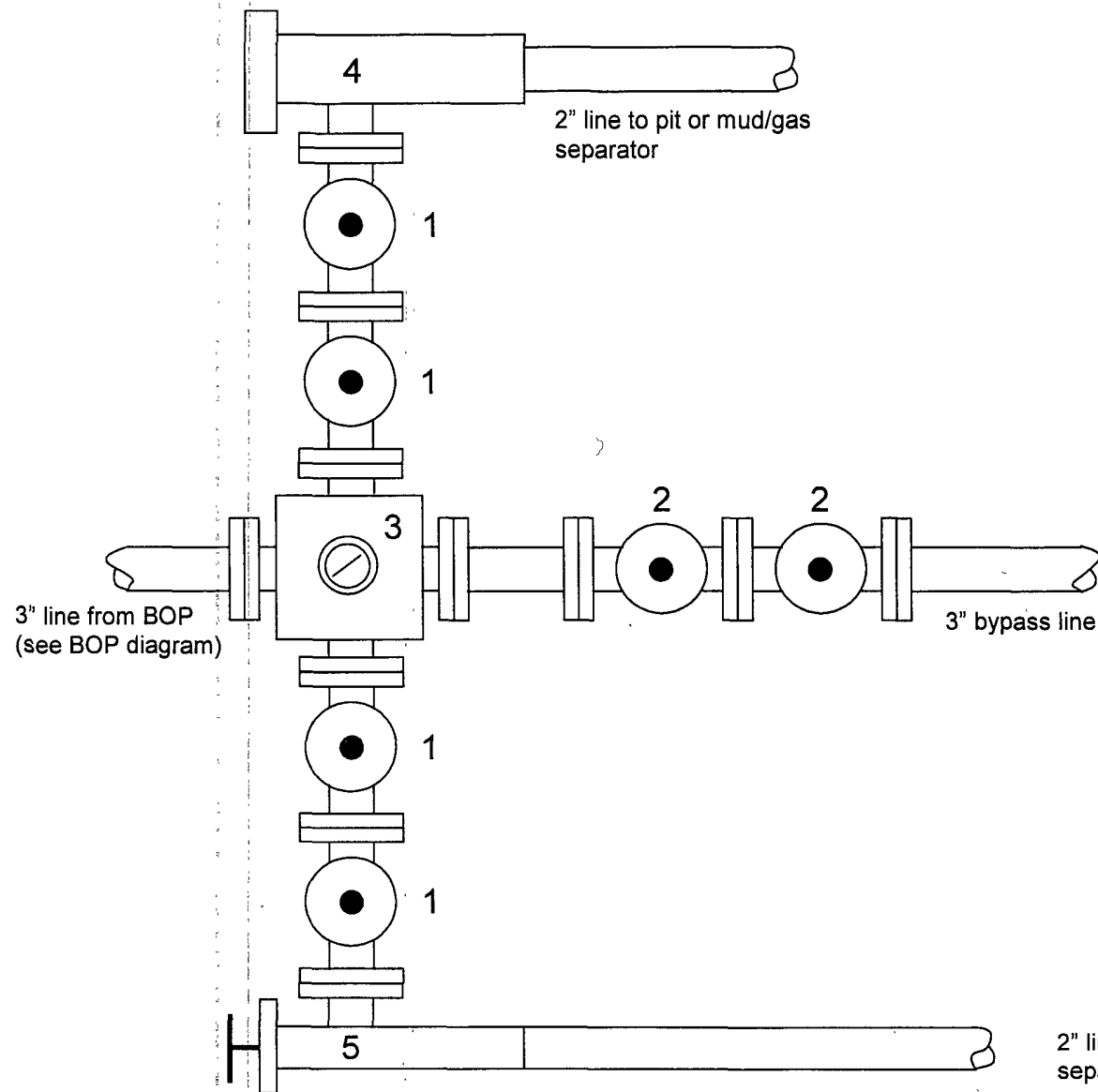
7 - 2" manual valve (2M)

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

# Navajo #11-13

2000 psi Choke Manifold

Minimum requirements



## Components

1 – 2" Valve (2M)

2 – 3" Valve (2M)

3 – Mud cross with gauge (2M) flanged below the gage.

4 – Adjustable choke (2M)

5 – Adjustable choke (2M)

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