

R E C E I V E D

JAN 04 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Bureau of
Farmingington Field Office

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

Lease Serial No.
NMNM013480

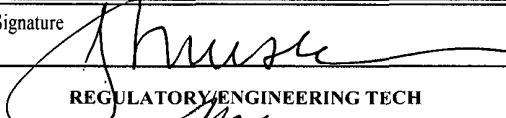
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		6. If Indian, Allottee or Tribe Name	
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 checked="" type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No	
2. Name of Operator NOBLE ENERGY, INC.		8. Lease Name and Well No. LADD FEDERAL 19-01	
3a. Address 5802 US HIGHWAY 64 FARMINGTON, NEW MEXICO 87401		9. API Well No. 30-045-35080	
3b. Phone No. (include area code) 505-632-8056		10. Field and Pool, or Exploratory Basin Dakota/Blanco Mesa Verde	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 665' FNL and 665' FEL At proposed prod zone SAME		11. Sec., T. R. M. or Blk and Survey or Area A SEC 19-T25N-R9W	
14. Distance in miles and direction from nearest town or post office* 26 miles south of Bloomfield, NM		12. County or Parish SAN JUAN	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drng unit line, if any) 665'	16. No. of acres in lease 320 ACRES	17. Spacing Unit dedicated to this well 321.8' cm N/2 320 ACRES	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1669'	19. Proposed Depth 6793'	20. BLM/BIA Bond No. on file LMP8720503 - CO1291	
21. Elevations (Show whether DF, KDB, RT, GL, etc) 6763' GL	22. Approximate date work will start* 06/01/2010	23. Estimated duration 18 DAYS	

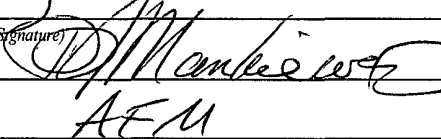
24. Attachments

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) JEAN M. MUSE	Date 12/10/2009
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Title REGULATORY ENGINEERING TECH

Approved by (Signature) 	Name (Printed/Typed) AEM	Date 6/24/2010
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Title AEM	Office FFO
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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 USC 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)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

JUL 12 2010

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

NMOC

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

RECEIVED
JUL 12 2010
BLM OCS DIV.
DIST. 3

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15 17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

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 October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-36080	² Pool Code 71599 / 72314	³ Pool Name BASIN DAKOTA / Blanco MV
⁴ Property Code 38220	⁵ Property Name LADD FEDERAL 19	⁶ Well Number 01
⁷ OGRID No. 234550	⁸ Operator Name NOBLE ENERGY, INC.	⁹ Elevation 6763

¹⁰ Surface Location

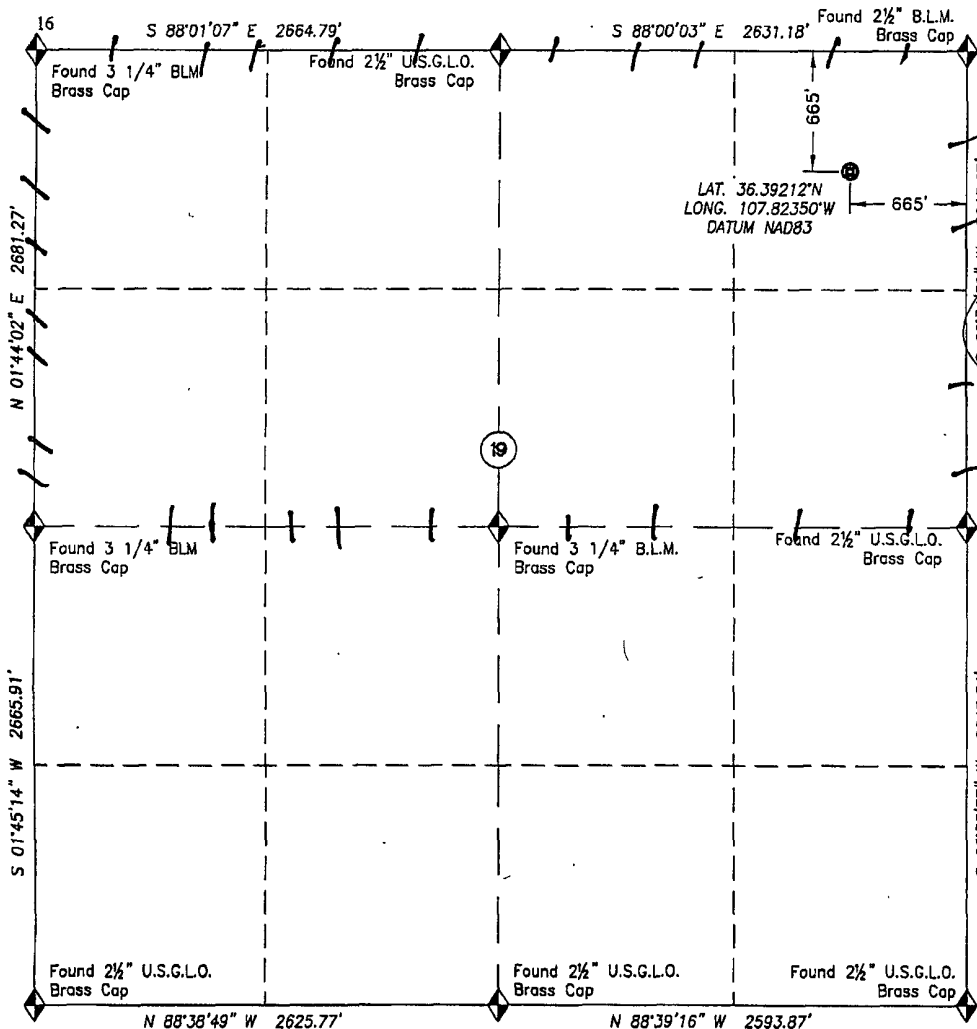
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	19	25N	9W		665	NORTH	665	EAST	SAN JUAN

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 320 ACRES	¹³ Joint or In fill 321-8cm	¹⁴ Consolidation Code N 1/2	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



¹⁷ **OPERATOR CERTIFICATION**
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *[Signature]*
Printed Name: **JEAN MUSE**
Date: **12-10-09**

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.

February 18, 2009
Date of Survey
Signature and Seal of Professional Surveyor:
DALE E. BELL
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
14400
PS 14400
Certificate Number

RECEIVED

JUN 23 2010

Bureau of Land Management
Farmington Field Office

Ladd Federal #19-01
General Drilling Plan
Noble Energy, Inc.
San Juan County, New Mexico

1. LOCATION:

NENE of Section 19, T25N, R9W
665' FSL, 665' FEL
San Juan County, New Mexico

Field: Basin Dakota – Blanco Mesa Verde
Surface: Federal
Minerals: NMNM013480

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

Surface formation – Nacimiento

<u>Formation</u>	<u>Estimated Formation Top (Ft)</u>
Ojo Alamo	1101'
Kirtland	1252'
Fruitland	1508'
Pictured Cliffs**	1966'
Lewis**	2116'
Cliff House**	2470'
Menefee**	3542'
Point Lookout**	4396'
Mancos Shale	4651'
Gallup	5693'
Greenhorn	6375'
Graneros	6431'
Dakota ***	6493'
TD	7500' 6743'

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 and lines:	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:

Casing Program:

Hole Size	Depth	Casing Size
13.0"	30 0'	9-5/8"
8-3/4"	4500' +/-	7.0"
6-1/4"	7500' 6745'	4-1/2"

Hole Size	Casing Type	Top (MD)	Bottom (MD)	Wt. (lb./ft)	Grade	Thread	Condition
9-5/8"	Surface	0'	300'	36.0	J55	STC	New
7.0"	Production	0'	4500' +/-	23.0	N80	LTC	New
4-1/2"	Production	0'	7500' 6743'	11.6	L80	LTC	New

Casing Data				Collapse	Burst	Min. Tensile
OD	Wt/Ft	Grade	Thread	(psi)	(psi)	(Lbs.)
9-5/8"	36.0 lbs.	J55	STC	2,020	3,520	394,000
7.0"	23.0 lbs.	L80	LTC	3,830	6,340	435,000
4-1/2"	11.6 lbs.	L80	LTC	6,350	7,780	212,000

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: 5,000 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 Fruitland Coal formation. One centralizer below stage tool and one centralizer above stage tool.

Production Casing: 4 1/2" Float shoe and a float collar on top of bottom joint with centralizers over potential hydrocarbon bearing zones.

CEMENTING PROGRAMS:

9-5/8" Surface casing:

245 sxs Type III cement with 2% CaCl_2 , 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 ft³/sack

Volume basis:	40' of 9-5/8" shoe joint	17 cu ft
	300' of 12-1/4" x 9-5/8" annulus	147 cu ft
	<u>100% excess (annulus)</u>	<u>147 cu ft</u>
	Total	311 cu ft

Note:

1. Design top of cement is the surface.
2. Have available 100 sacks Type III cement with 2% CaCl_2 for top out purposes.

7" Intermediate Casing:

1st Stage: 155 sacks of Type III cement plus additives

Slurry weight: 13.0 ppg
Slurry yield: 2.0 ft³/sx

2nd Stage: (Stage tool at 2500' +/-)

Lead: 105 sacks of Premium Lite FM

Slurry weight: 12.0 ppg
Slurry yield: 2.55 ft³/sack

Tail: 60 sacks of Type III cement plus additives

Slurry weight: 13.0 ppg
Slurry yield: 2.00 ft³/sack

Volume Basis:	40' of 7" shoe joint	9 cu ft
	4200' of 7" x 8 3/4" hole	631 cu ft
	300' of 7" x 9 5/8" casing	50 cu ft
	<u>30% excess (annulus)</u>	<u>189 cu ft</u>
	Total	879 cu ft

Note:

1. Design top of cement is surface.
2. Actual cement volumes to be based on caliper log plus 30%.
3. Intermediate TD @ +/-4500', cement stage tool @ +/-2500'.

4 1/2" Production casing:

Stage 1: 390 sacks of 50/50 Type III/POZ cement.

Slurry weight: 12.5 ppg

Slurry yield: 1.78 ft³/sack

Volume basis:	40' of 4 1/2" shoe joint	5 cu ft
	3000' of 4 1/2" x 6 1/4" hole	307.8 cu ft
	300' of 4 1/2" x 7" casing overlap	33 cu ft
	40% excess (annulus)	138 cu ft
	Total	445 cu ft

Note:

1. Design top of cement is 4200' +/- ft. or 300' above the 7" intermediate casing.
2. Intermediate casing @ +/- 4500'.
3. Estimated TD @ +/- ~~7500'~~ **6725'**.

5. MUD PROGRAM:

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

The production hole will be drilled with water until mud up at +/- 3500'. From mud up point to TD, 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 and porosity logs.

7. ABNORMAL PRESSURE AND TEMPERATURE:

H ₂ S	None
Coal	Fruitland
Minerals	None
Water	None
Static BHT	160° F
Lost Circulation	Possible
Hole Deviation	None
Abnormal Pressures	None
Unusual Drilling Problems	None

8. ANTICIPATED STARTING DATE: 3rd Quarter, 2010

Anticipated duration: 18 days

MULTI-POINT SURFACE USE PLAN

1. Existing Roads:

All existing roads used to access the proposed location are shown on attached plat #1 and shall be maintained in the same or better condition than presently found.

Directions from the intersection of Highway #64 & Highway #550 in Bloomfield New Mexico

To Noble Energy Inc. Ladd Federal 19-01

665 FNL & 665 FEL, Section 19, T-25-N, R-9-W, N.M.P.M., San Juan County, New Mexico

From the intersection of Highway #64 & Highway #550 in Bloomfield NM, Go South on Highway #550, 24.5 miles and turn left on paved access road;

Continue east 0.1 Miles to a point where road changes to dirt;

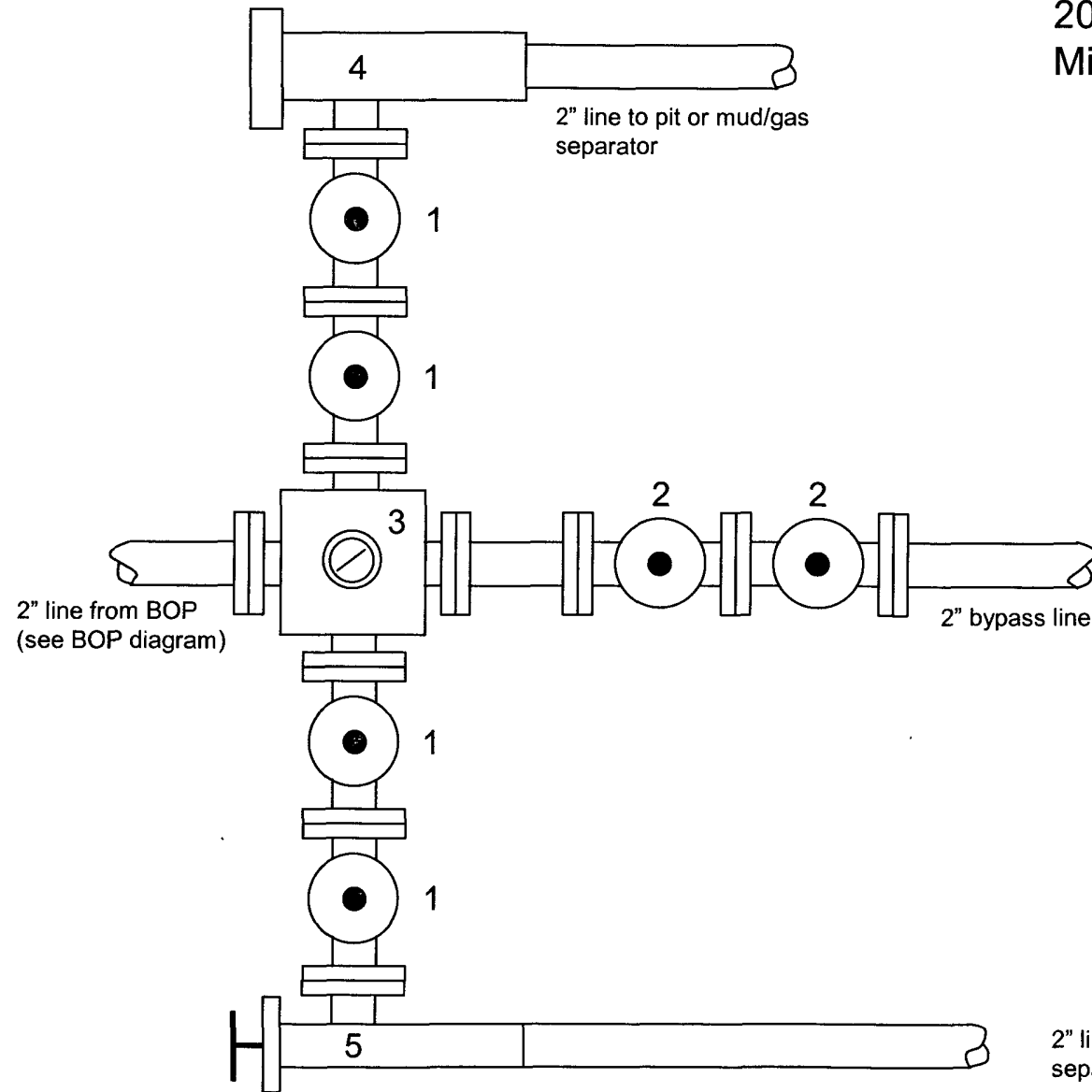
Continue (East) 0.2 miles, to existing well pad;

Continue straight thru well pad past well head 0.5 miles to the beginning of new access road southeast of the tank, which continues for 1,296 feet to staked Location.

Ladd Federal #19-01

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.

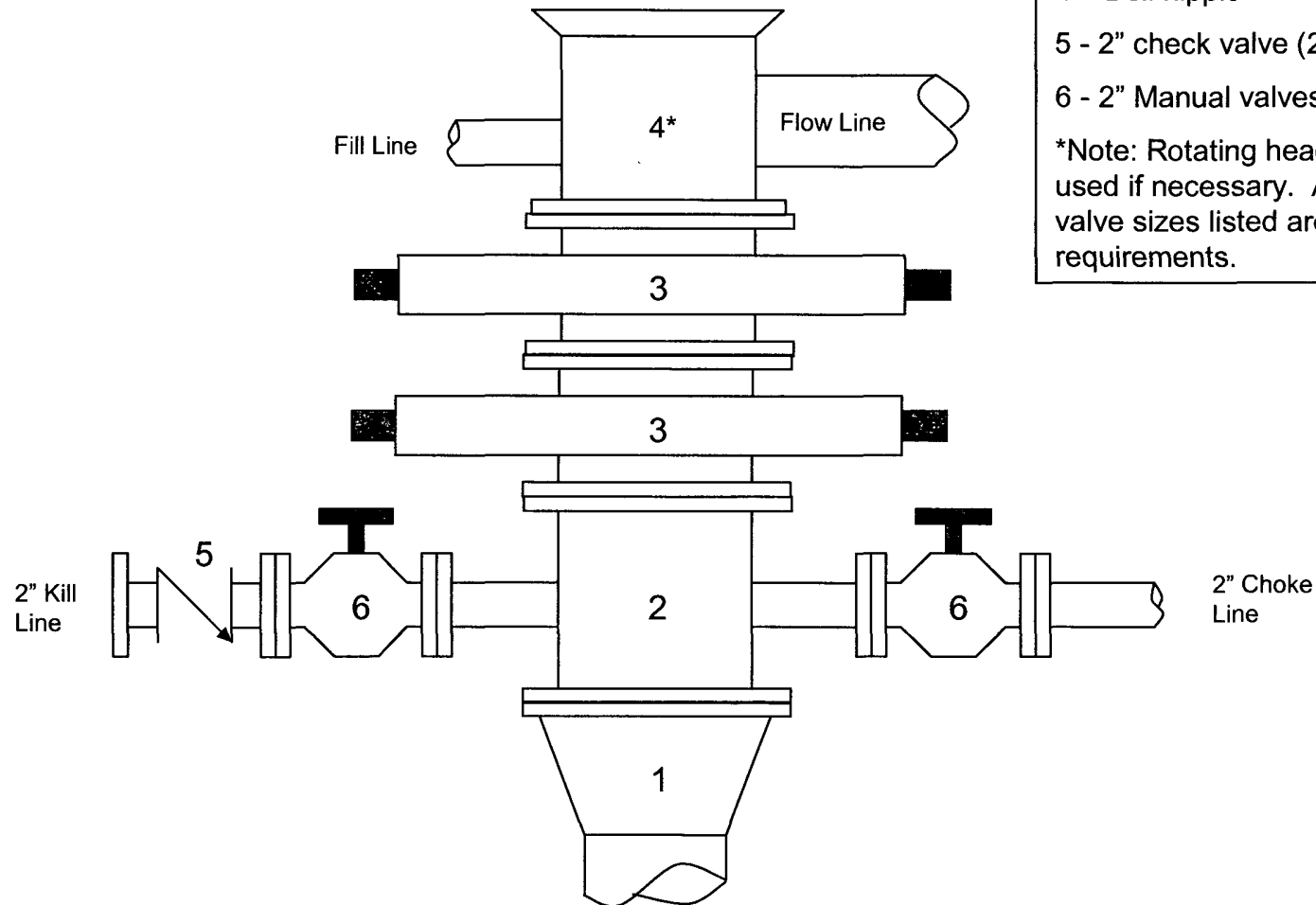
4 – Adjustable choke (2M)

5 – Adjustable choke (2M)

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

Ladd Federal #19-01

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.