RCVD JAN 31 '07
OIL CONS. DIV.
DIST. 3

Form 3160-3
(September 2001)

FORM APPROVED
OMB No. 1004-0136
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

2006 FEB 16 PM 12 50

# APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED
070 FARMINGTON NM

| | |
|---|---|
| 1a. Type of Work: ☑ DRILL ☐ REENTER | 5. Lease Serial No. Jicarilla Contract 108 |
| | 6. If Indian, Allottee or Tribe Name Jicarilla Apache |
| | 7. If Unit or CA Agreement, Name and No. |
| 1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone | 8. Lease Name and Well No. Jicarilla C #2N |
| 2. Name of Operator CDX RIO, LLC | 9. API Well No. 30-039- 29813 |
| 3a. Address 2010 Afton Place, Farmington, New Mexico 87401 | 3b. Phone No. *(include area code)* (505) 326-3003 |
| | 10. Field and Pool, or Exploratory Blanco Mesaverde/Basin Dakota |
| 4. Location of Well *(Report location clearly and in accordance with any State requirements. *)* At surface 175' FSL, 130' FEL At proposed prod. zone | 11. Sec., T., R., M., or Blk. and Survey or Area P Section 14, T-26-N, R-5-W |
| 14. Distance in miles and direction from nearest town or post office* 30 miles east of Lindrith, New Mexico | 12. County or Parish Rio Arriba / 13. State NM |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) | 16. No. of Acres in lease / 17. Spacing Unit dedicated to this well 320 S/2 |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. | 19. Proposed Depth 7660' / 20. BLM/BIA Bond No. on file National bond on file |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6661' GR | 22. Approximate date work will start* / 23. Estimated duration |

## 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.
2. A Drilling Plan.
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).
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 authorized officer.

| | | |
|---|---|---|
| 25. Signature Richard Corcoran | Name *(Printed/Typed)* Richard Corcoran | Date 2-15-06 |
| Title Land Manager | | |
| Approved by *(Signature)* /s/ Manuel Gomez AFM | Name *(Printed/Typed)* | Date 1/29/07 |
| Title | 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.

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 reverse)*

NSL-5417

NOTIFY AZTEC OCD 24hrs IN TIME TO WITNESS cement

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

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

B 2/1/07

NMOCD

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

DISTRICT II
1301 W. Grand Ave., Artesia, N.M. 88210

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

DISTRICT IV
1220 South 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 | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-039- 29813 | 72319/71599 | Blanco Mesaverde/Basin Dakota |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 33461 | JICARILLA C | 2N |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 222374 | CDX RIO, LLC. | 6661' |

## [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 |
|---|---|---|---|---|---|---|---|---|---|
| P | 14 | 26-N | 5-W | | 175 | SOUTH | 130 | EAST | RIO ARRIBA |

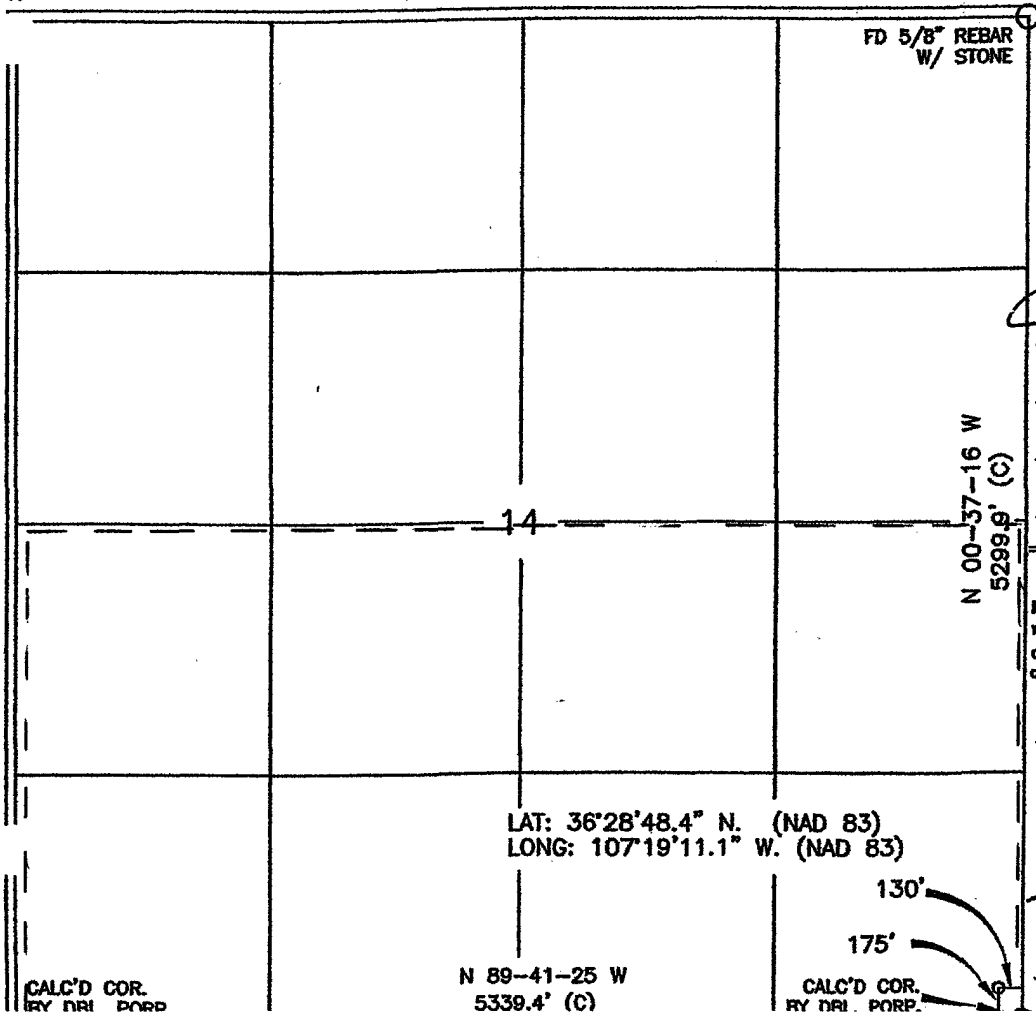
## [11] Bottom Hole Location If Different From Surface

| 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. |
|---|---|---|---|
| MV - S/320<br>DK - S/320 | Y | | NSL-5417 |

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

16




## 17 OPERATOR CERTIFICATION

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

Richard Corcoran
Signature

Richard Corcoran
Printed Name

Land Manager rich.corcoran@cdxgas.com
Title and E-mail Address

2-15-06
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.

SEPTEMBER 2005
Date Surveyed

Signature & Seal of Professional Surveyor:

JOHN W. VUKONICH
NEW MEXICO
14831
11-18-05
REGISTERED PROFESSIONAL SURVEYOR

14831
Certificate Number

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
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- 29813
5. Indicate Type of Lease STATE ☐ FEE ☐
6. State Oil & Gas Lease No. Jicarilla Contract 108

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.)

7. Lease Name or Unit Agreement Name: Jicarilla C
1. Type of Well: Oil Well ☐ Gas Well X☐ Other
8. Well Number 2N
2. Name of Operator: CDX RIO, LLC
9. OGRID Number 222374
3. Address of Operator: 2010 Afton Place, Farmington, New Mexico 87401
10. Pool name or Wildcat: Blanco Mesaverde/Basin Dakota

4. Well Location
Unit Letter P : 175 feet from the South line and 130 feet from the East line
Section 14 Township 26N Range 5W NMPM Rio Arriba County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 6661' GR

**Pit or Below-grade Tank Application ☐ or Closure ☐**

**Pit type** New Drill **Depth to Groundwater** <100' **Distance from nearest fresh water well** <1000' **Distance from nearest surface water** ~~<1000'~~ ~1200'

**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: | | SUBSEQUENT REPORT OF: | |
|---|---|---|---|
| PERFORM REMEDIAL WORK ☐ | PLUG AND ABANDON ☐ | REMEDIAL WORK ☐ | ALTERING CASING ☐ |
| TEMPORARILY ABANDON ☐ | CHANGE PLANS ☐ | COMMENCE DRILLING OPNS. ☐ | P AND A ☐ |
| PULL OR ALTER CASING ☐ | MULTIPLE COMPL ☐ | CASING/CEMENT JOB ☐ | |
| OTHER: New Drill Pit X☐ | | 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.

CDX RIO, LLC requests approval to construct a drilling pit in accordance with CDX RIO, LLC General Construction Plan submitted August, 2004. The pit will be a lined as per the general plan. The pit will be closed within 180 days from completion of project as per General Closure Plan submitted August, 2004.

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 Nancy Oltmanns TITLE Agent DATE 2/14/06

Type or print name Nancy Oltmanns E-mail address: nancy.oltmanns@cdxgas. com Telephone No. (505) 326-3003

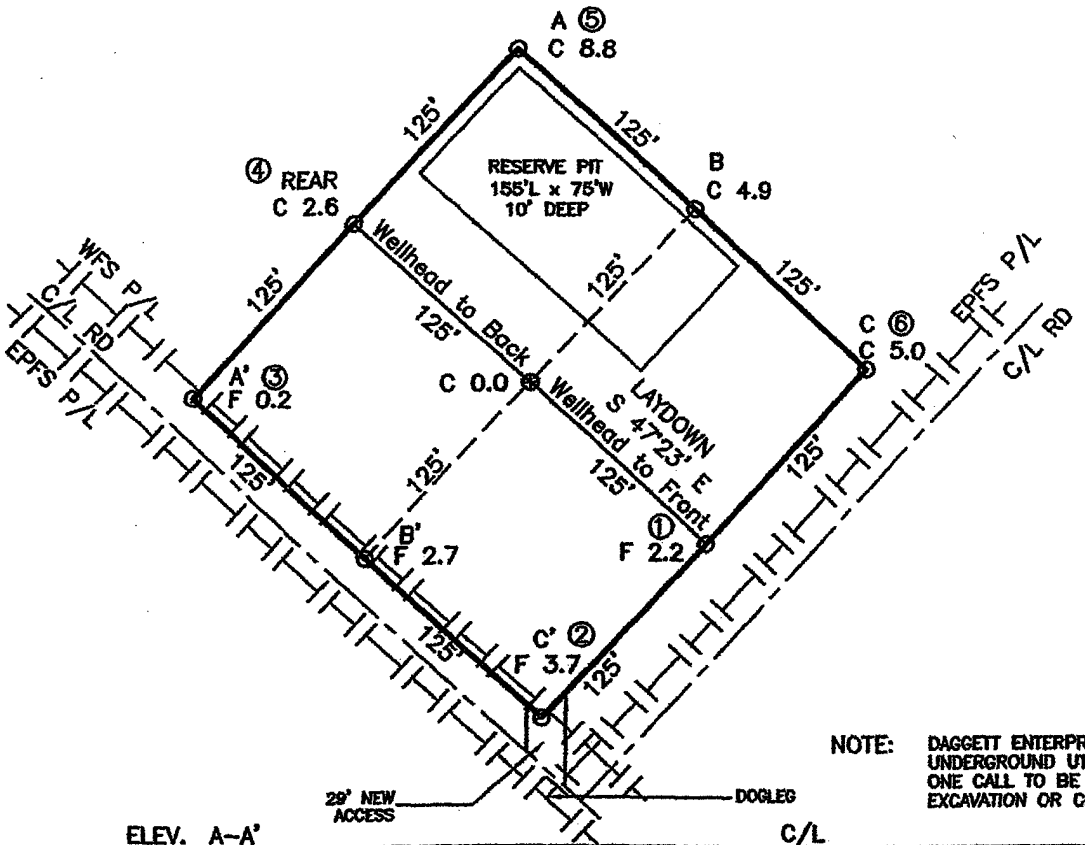
**For State Use Only**

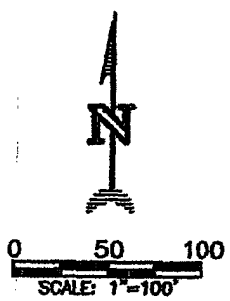
APPROVED BY: _____ TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE FEB 01 2007

Conditions of Approval (if any):

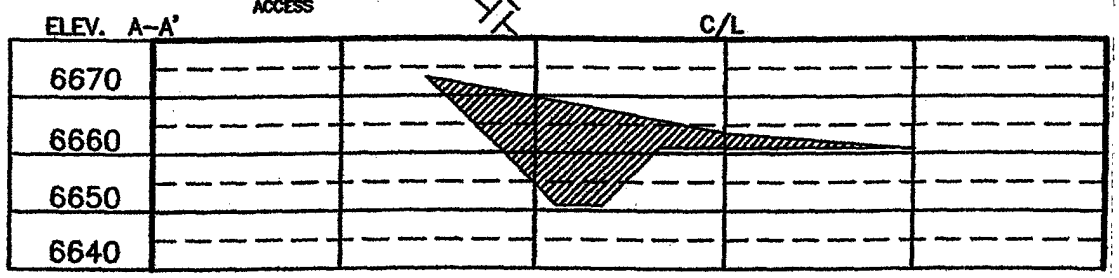
CDX RIO, LLC
JICARILLA C No. 2N, 175 FSL 130 FEL
SECTION 14, T26N, R5W, N.M.P.M., RIO ARRIBA COUNTY, N. M.
GROUND ELEVATION: 6661', DATE: SEPTEMBER 19, 2005

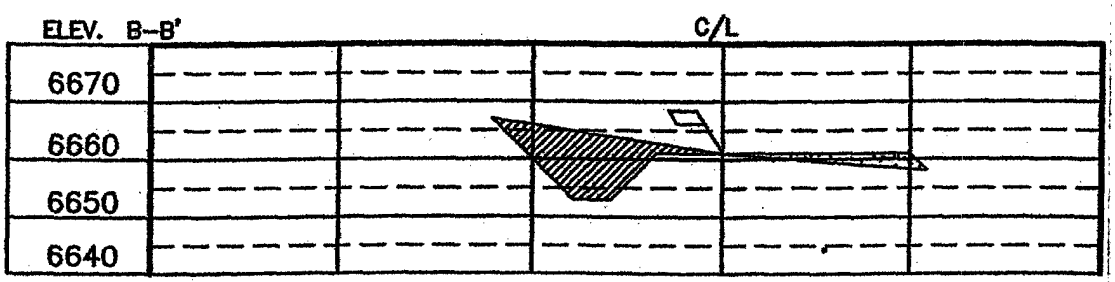
LAT. = 36°28'48.4" N.
LONG. = 107°19'11.1" W
NAD 83

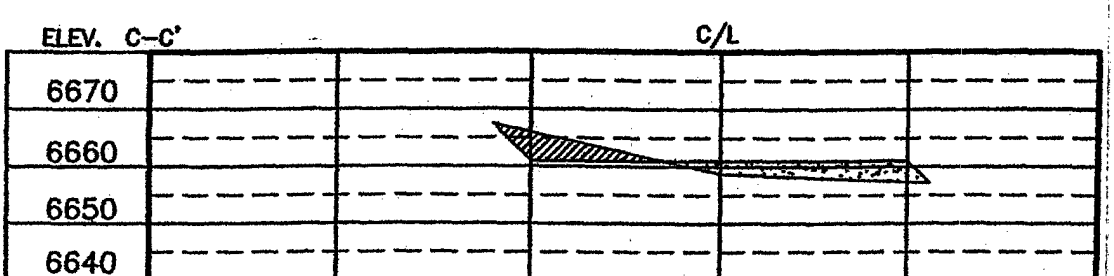



NOTE: DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.




NOTE: CONTRACTOR SHOULD CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.


Daggett Enterprises, Inc.
Surveying and Oil Field Services
P. O. Box 15068 • Farmington, NM 87401
Phone (505) 326-1772 • Fax (505) 326-6019
NEW MEXICO L.S. No. 14831


REVISED BY:
DATE:
DRAWN BY: A.G.
DATE: 11/07/05

**Jicarilla C 2N**
**General Drilling Plan**
**CDX Rio, LLC**
**Rio Arriba County, New Mexico**

## 1. LOCATION:

175' FSL & 130' FEL, Section 14, T26N, R5W
Rio Arriba County, New Mexico
UGL: 6661' Estimated KB: 6673'

Field: Blanco Mesa Verde and Basin Dakota
Surface: Jicarilla Contract #108
Minerals: Jicarilla Contract #108

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

| Formation Tops | Top MD (KB) | Top Subsea (KB) | Rock Type | Comments |
|---|---|---|---|---|
| Ojo Alamo Sandstone | | | Sandstone | Possible Differential Sticking, Gas, Water |
| Kirtland Formation | 2870 | 3803 | Shale | |
| Fruitland Formation | 3027 | 3646 | Coal, Shale, Sandstone | Possible Lost Circulation Zone, Gas, Water |
| Pictured Cliffs Sandstone | 3234 | 3439 | Sandstone | Possible Lost Circulation Zone, Gas, Water |
| Lewis Shale | 3371 | 3302 | Shale | Sloughing Shale |
| Huerfanito Bentonite Bed | 3682 | 2991 | Shale | |
| Chacra Interval | 4127 | 2546 | Siltstone | Gas, Water |
| Mesaverde Formation (MVRD) | 4884 | 1789 | Coal, Sandstone, Shale | Possible Lost Circulation, Gas, Water |
| Cliff House Sandstone (MVRD) | 4884 | 1789 | Sandstone | Possible Lost Circulation, Gas, Water |
| Menefee Member (MVRD) | 5000 | 1673 | Coal, Sandstone, Shale | Possible Lost Circulation, Gas, Water |
| Point Lookout Sandstone(MVRD) | 5426 | 1247 | Sandstone | Possible Lost Circulation, Gas, Water |
| Mancos Shale | 5604 | 1069 | Shale | Sloughing Shale |
| Gallup Formation (GLLP) | 6598 | 75 | Siltstone, Shale | Gas, Oil |
| Greenhorn Limestone | 6344 | -671 | Limestone | Gas, Oil |
| Graneros Shale | 7408 | -735 | Shale | Gas, Oil, Water |
| Dakota Formation (DKOT) | 7448 | -775 | Sandstone, Shale, Coal | Gas, Oil, Water |
| Two Wells Sandstone (DKOT) | 7448 | -775 | Sandstone | Gas, Oil, Water |
| Paguate Sandstone (DKOT) | 7524 | -851 | Sandstone | Gas, Oil, Water |
| Upper Cubero Sandstone(DKOT) | 7557 | -884 | Sandstone | Gas, Oil, Water |
| Main Body (DKOT) | 7591 | -981 | Shale, Sandstone | Gas, Oil, Water |
| Lower Cubero (DKOT) | 7641 | -968 | Shale, Sandstone | Gas, Oil, Water |
| Burro Canyon (DKOT | 7670 | -997 | Sandstone | Gas, Water - TD immediately below L. Cubero. |
| Morrison Formation | | | Shale, Sandstone | On-site pick when black/brown cuttings start. |
| Proposed TD | 7660 | -987 | | **Avoid wet Burro Canyon.** |

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)

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 AND CEMENTING DESIGN:

**Casing Program:**

| Hole Size | Depth | Casing Size |
|---|---|---|
| 12 ¼" | 250' | 9 5/8" |
| 8 ¾" | 3582' +/- Lewis seat | 7" |
| 6 ¼" | 7660' | 4 1/2" |

| Csg 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" | Intermediate | 0' | 3582' +/- | 23.0 | N80 | LTC | New |
| 4 ½" | Prod Liner | 3462' | 7660' | 11.6 | N80 | 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" | 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 Kirtland formation. One centralizer below stage tool and one centralizer above stage tool.

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

**Cementing Program:**

**9-5/8" Surface casing: 250'**
165 sxs Type III cement with 2% $CaCl_2$, ¼#/sx celloflake. 100% excess to circulate cement to surface. WOC 12 hrs.

Slurry weight: 15.2 ppg
Slurry yield: 1.27 $ft^3$/sack

| | | |
|---|---|---|
| Volume basis: | 40' of 9-5/8" shoe joint | 17.4 cu ft |
| | 250' of 12-1/4" x 9-5/8" annulus | 96.1 cu ft |
| | 100% excess (annulus) | 96.1 cu ft |
| | Total | 209.6 cu ft |

Note:
1. Design top of cement is the surface.
2. Have available 100 sx Type III cement with 2% $CaCL_2$ for top out purposes.

**7" Intermediate Casing: 3582'**
1st Stage: 131 sacks of Type III cement: 3582' – 2770' (812')
Slurry weight: 14.5 ppg Annular Vol = 122.1 cf + 61.1 cf (50% Access)
Slurry yield: 1.4 $ft^3$/sack = 183.2 cf

2nd Stage: (Stage tool at 2770' +/-): 323 sacks of Premium Lite FM

Slurry weight: 12.4 ppg Volume = 618.7 cf
Slurry yield: 1.92 $ft^3$/sack

| | | |
|---|---|---|
| Volume Basis: | 40' of 7" shoe joint | 8.8 cu ft |
| | 3332' of 7" x 8 ¾" annulus | 500.9 cu ft |
| | 250' of 7" x 9 5/8" csg | 41.7 cu ft |
| | 50% excess (annulus) | 250.5 cu ft |
| | Total | 801.9 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: Air Drilled Hole 3582' – 7660' (4078')**
Stage 1: 264 sacks of Premium Lite High Strength FM out guide shoe.

Slurry weight: 12.3 ppg
Slurry yield: 2.13 $ft^3$/sack

| | | |
|---|---|---|
| Volume basis: | 40' of 4 1/2" shoe joint | 3.5 cu ft |
| | 4078' of 4 1/2 " x 6 1/4" hole | 418.5 cu ft |
| | 120' of 4 ½" x 7" casing | 13.3 cu ft |
| | 30% excess (annulus) | 125.6 cu ft |
| | Total | 560.9 cu ft |

Note:
1. Design top of cement is 3462' +/- ft. or 120 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 250 feet as necessary to keep hole clean.

The intermediate hole will be drilled with water till mud up at about 2300 ft. From 2300' to 3582', 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.

# Jicarilla C No. 2N

2000 psi BOP stack
Minimum requirements

**Components**

1 - Wellhead 9-5/8" (2M)

2 – Drilling spool 11" (2M)

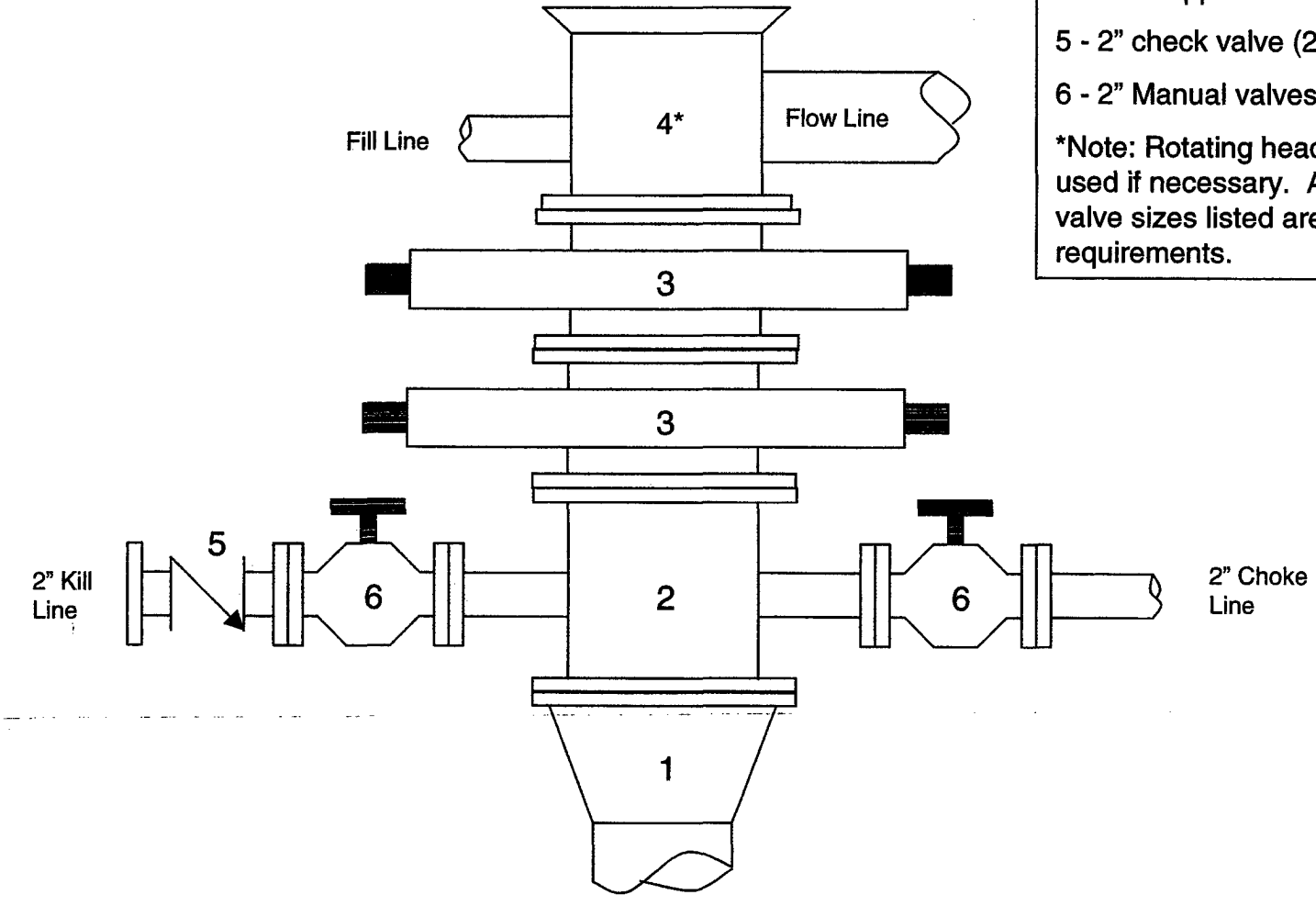
3 – A double or two single rams with blinds on bottom 11" (2M)

4 – Bell nipple*

5 - 2" check valve (2M)

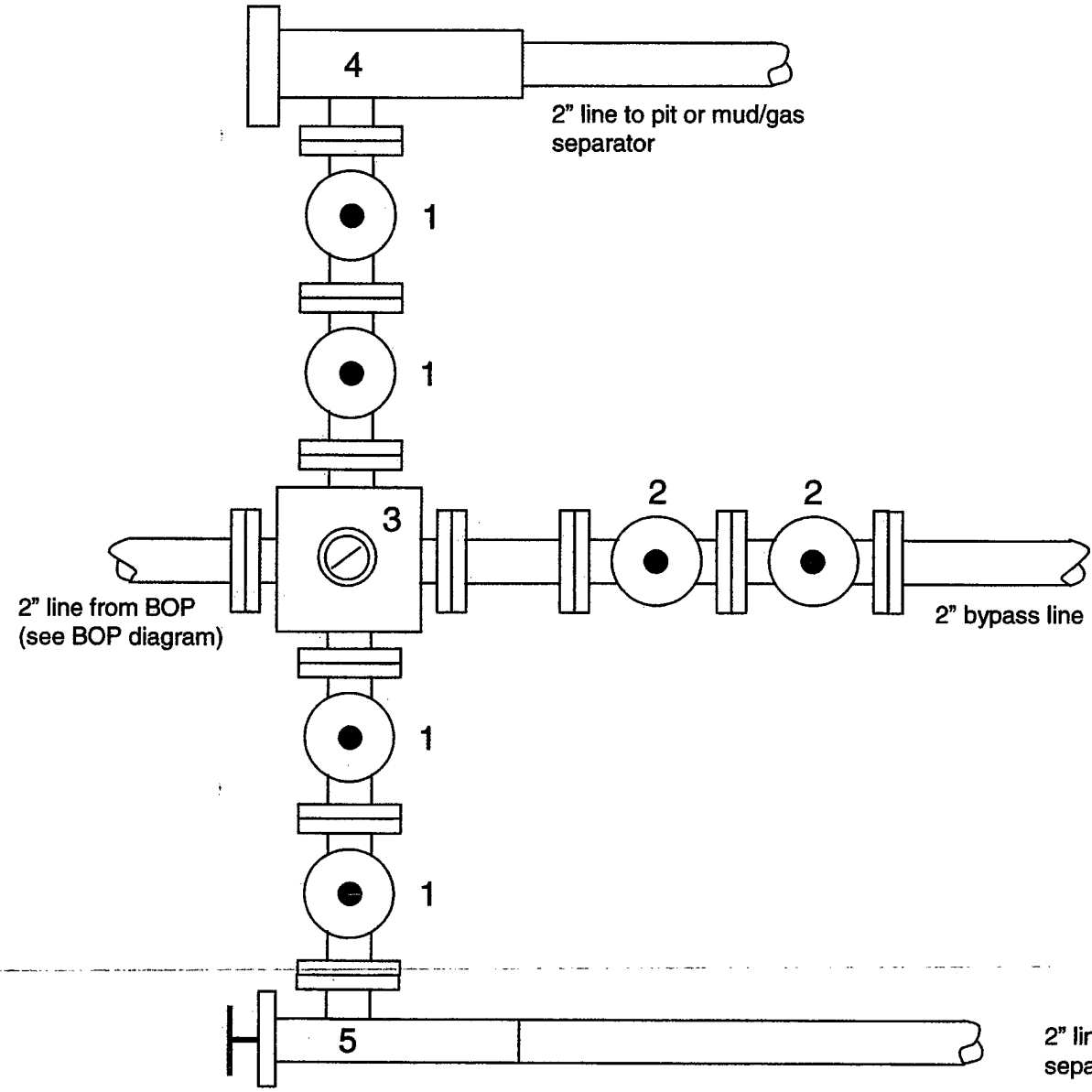
6 - 2" Manual valves (2M)

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



# Jicarilla C No. 2N

## 2000 psi Choke Manifold
## Minimum requirements




**Components**

1 – 2" Valve (2M)

2 – 2" Valve (2M)

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

4 – Replaceable beam choke (2M)

5 – Adjustable needle choke (2M)

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