

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

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.
8. Lease Name and Well No. Jicarilla C #3M
9. API Well No. 30-039- 30042
10. Field and Pool, or Exploratory Blanco Mesaverde/Basin Dakota
11. Sec., T., R., M., or Blk. and Survey or Area N Section 23, T-26-N, R-5-W
12. County or Parish Rio Arriba
13. State NM

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone
2. Name of Operator CDX RIO, LLC
3a. Address 2010 Afton Place, Farmington, New Mexico 87401
3b. Phone No. (include area code) (505) 326-3003
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 1275' FSL, 2255' FWL, Lat: 36, 28' 07.2", Long: 107, 19' 47.6" At proposed prod. zone
14. Distance in miles and direction from nearest town or post office* 30 miles from Lindrith, New Mexico
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1275'
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. 300'
19. Proposed Depth 7474'
20. BLM/BIA Bond No. on file National Bond on File
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6566' 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.  | 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 <i>Richard Corcoran</i>	Name (Printed/Typed) Richard Corcoran	Date 8-22-06
Title Land Manager		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFU	Date 2/21/07
Title AFU	Office 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 reverse)

RCVD FEB21'07  
OIL CONS. DIV.

DIST. 3

NMOCD

2-23-07

NOTIFY AZTEC OCD 24 hrs  
IN TIME TO WITNESS CBY fleming

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



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

<sup>1</sup> API Number 30-039- <b>30042</b>	<sup>2</sup> Pool Code 72319/71599	<sup>3</sup> Pool Name Blanco Mesaverde/Basin Dakota
<sup>4</sup> Property Code 33461	<sup>5</sup> Property Name JICARILLA C	<sup>6</sup> Well Number 3M
<sup>7</sup> OGRID No. 222374	<sup>8</sup> Operator Name CDX RIO, LLC.	<sup>9</sup> Elevation 6566'

<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
N	23	26-N	5-W		1275	SOUTH	2255	WEST	RIO ARRIBA

<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 MV - S/320 DK - S/320		<sup>13</sup> Joint or Infill Y		<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

16

CALC'D COR. BY DBL. PORP.	N 00-1-45 E 5289.3' (C)	23	2255'	1275'	LAT: 36°28'07.2" N. (NAD 83) LONG: 107°19'47.6" W. (NAD 83)	S 89-34-54 E 5338.23' (C)	CALC'D COR. BY DBL. PORP.	<sup>17</sup> OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief  <i>Richard Corcoran</i> Signature Richard Corcoran Printed Name Land Manager rich.corcoran@cdxgas.com Title and E-mail Address 8-22-06 Date
								<sup>18</sup> 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 19 Date of Survey Signature and Seal of Professional Surveyor JOHN A. VUKOVICH NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 14887 30-039-30042 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

Form C-103  
May 27, 2004

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO. 30-039- <b>30042</b>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. Jicarilla Contract 108
7. Lease Name or Unit Agreement Name Jicarilla C
8. Well Number 3M
9. OGRID Number 222374
10. Pool name or Wildcat Blanco Mesaverde/Basin Dakota

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type New Drill Depth to Groundwater <50 Distance from nearest fresh water well >1000' Distance from nearest surface water >200'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

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.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

2. Name of Operator  
CDX RIO, LLC

3. Address of Operator  
2010 Afton Place, Farmington, New Mexico 87401

4. Well Location  
Unit Letter N: 1275 feet from the South line and 2255 feet from the West line  
Section 23 Township 26N Range 5W NMPM Rio Arriba County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
6566' GR

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: <u>New Drill Pit</u> <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

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 8/22/06

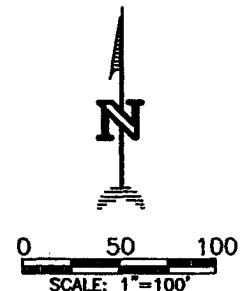
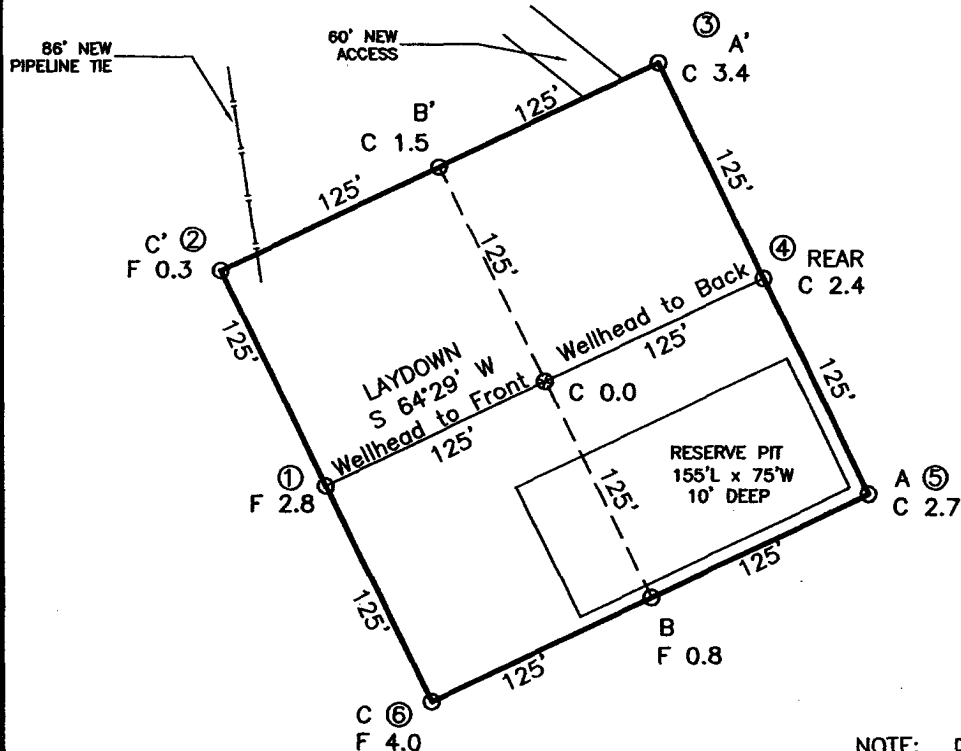
Type or print name Nancy Oltmanns E-mail address: nancy.oltmanns@cdxgas.com Telephone No. (505) 326-3003  
For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 67 DATE FEB 23 2007  
Conditions of Approval (if any):

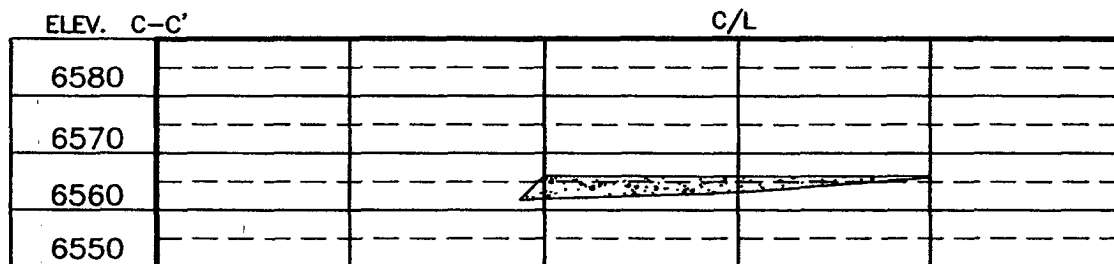
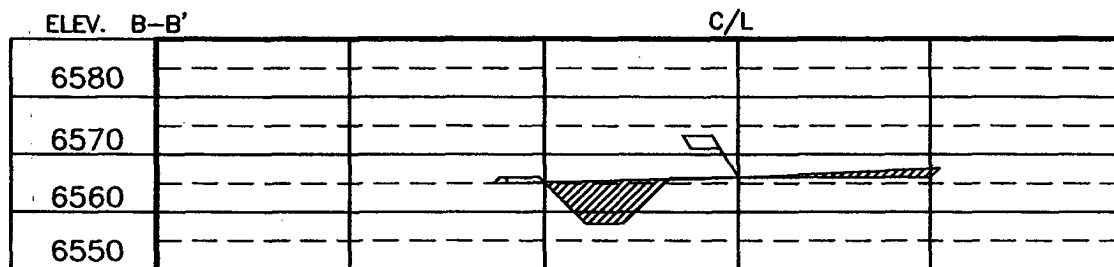
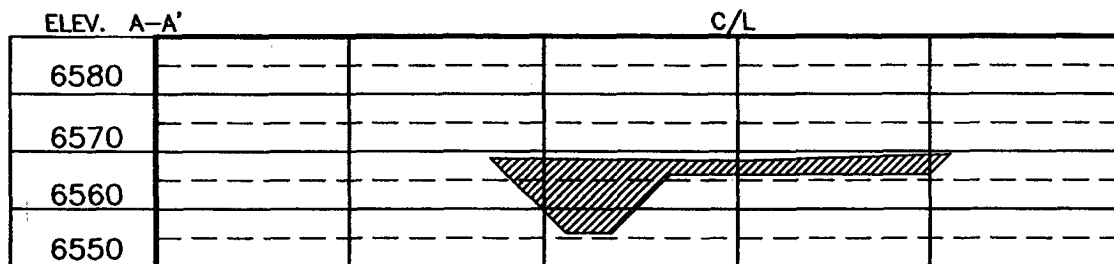


CDX RIO, LLC  
 JICARILLA C No. 3M, 1275 FSL 2255 FWL  
 SECTION 23, T26N, R5W, N.M.P.M., RIO ARRIBA COUNTY, N. M.  
 GROUND ELEVATION: 6566', DATE: SEPTEMBER 19, 2005

LAT. = 36°28'07.2" N.  
 LONG. = 107°19'47.6" 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.

DATE	07/20/08	BL
REVISION	12/08/08	TAG
WELL AND P/L RESTORE	02/07/08	

Daggett Enterprises, Inc.  
 Surveying and Oil Field Services  
 P. O. Box 15088 • Farmington, NM 87401  
 Phone (505) 326-1772 • Fax (505) 326-8019  
 NEW MEXICO L.S. No. 14831  
 DRAWN BY: A.G.  
 CHECKED BY: A.G.  
 DATE: 10/11/05  
 ROW#: CDXGAS081



**Jicarilla C 3M  
General Drilling Plan  
CDX Rio, LLC  
Rio Arriba County, New Mexico**

**1. LOCATION:**

1275' FSL & 2255' FWL, Section 23, T26N, R5W  
Rio Arriba County, New Mexico  
UGL: 6566' Estimated KB: 6578'

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	2603	3975	Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	2706	3872	Shale	
Fruitland Formation	2998	3580	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	3066	3512	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	3181	3397	Shale	Sloughing Shale
Huerfano Bentonite Bed	3519	3059	Shale	
Chacra Interval	3969	2609	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	4763	1815	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	4763	1815	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	4877	1701	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	5261	1377	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	5426	1152	Shale	Sloughing Shale
Gallup Formation (GLLP)	6443	135	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	7153	-575	Limestone	Gas, Oil
Graneros Shale	7213	-635	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	7238	-660	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	7238	-660	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	7328	-750	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	7363	-785	Sandstone	Gas, Oil, Water
Main Body (DKOT)	7397	-819	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	7452	-874	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT)	7487	-909	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	7474	-896		Avoid wet Burro Canyon.

1 8-17-06



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:

<u>Hole Size</u>	<u>Depth</u>	<u>Casing Size</u>
12 1/4"	250'	9 5/8"
8 3/4"	3419' +/- Lewis seat	7"
6 1/4"	7474'	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'	3419' +/-	23.0	N80	LTC	New
4 1/2"	Prod Liner	3299'	7474'	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	7,010	7,780	223,000

20350

##### 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'

137 sxs Type III cement with 2% CaCl<sub>2</sub>, 1/4#/sx celloflake. 100% excess to circulate cement to surface. WOC 12 hrs.

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

Volume basis:	40' of 9-5/8" shoe joint	17.4 cu ft
	250' of 12-1/4" x 9-5/8" annulus	78.3 cu ft
	100% excess (annulus)	78.3 cu ft
	Total	174.0 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: 3419'

1st Stage: 131 sacks of Type III cement: 3419' - 2606' (813')

Slurry weight: 14.5 ppg      Annular Vol = 122.2 cf + 61.1 cf (50% Access)  
Slurry yield: 1.4 ft<sup>3</sup>/sack                      = 183.3 cf

2<sup>nd</sup> Stage: (Stage tool at 2606' +/-): 303 sacks of Premium Lite FM

Slurry weight: 12.4 ppg      Volume = 581.8 cf  
Slurry yield: 1.92 ft<sup>3</sup>/sack



<u>Volume Basis:</u>	40' of 7" shoe joint	8.8 cu ft
	<u>3169' of 7" x 8 3/4" annulus</u>	<u>476.4 cu ft</u>
	<u>250' of 7" x 9 5/8" csg</u>	<u>41.7 cu ft</u>
	<u>50% excess (open hole annulus)</u>	<u>238.2 cu ft</u>
	Total	765.1 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 3419' – 7474' (4055')**

Stage 1: 249 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	3.5 cu ft
	<u>4055' of 4 1/2 " x 6 1/4" hole</u>	<u>395.0 cu ft</u>
	120' of 4 1/2" x 7" casing	13.3 cu ft
	<u>30% excess (annulus)</u>	<u>118.5 cu ft</u>
	Total	530.3 cu ft

Note:

1. Design top of cement is 3299' +/- 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 3419', 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.



**6. EVALUATION PROGRAM:**

Mud logger: None Planned

Testing: No DST is planned

Coring: None Planned

Electric logs:  
Intermediate Hole: Non Planned

Production Hole: TMD-L or Open Hole Platform Express

**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: January 1, 2007**

Anticipated duration: 16 days



## Jicarilla C No. 3M

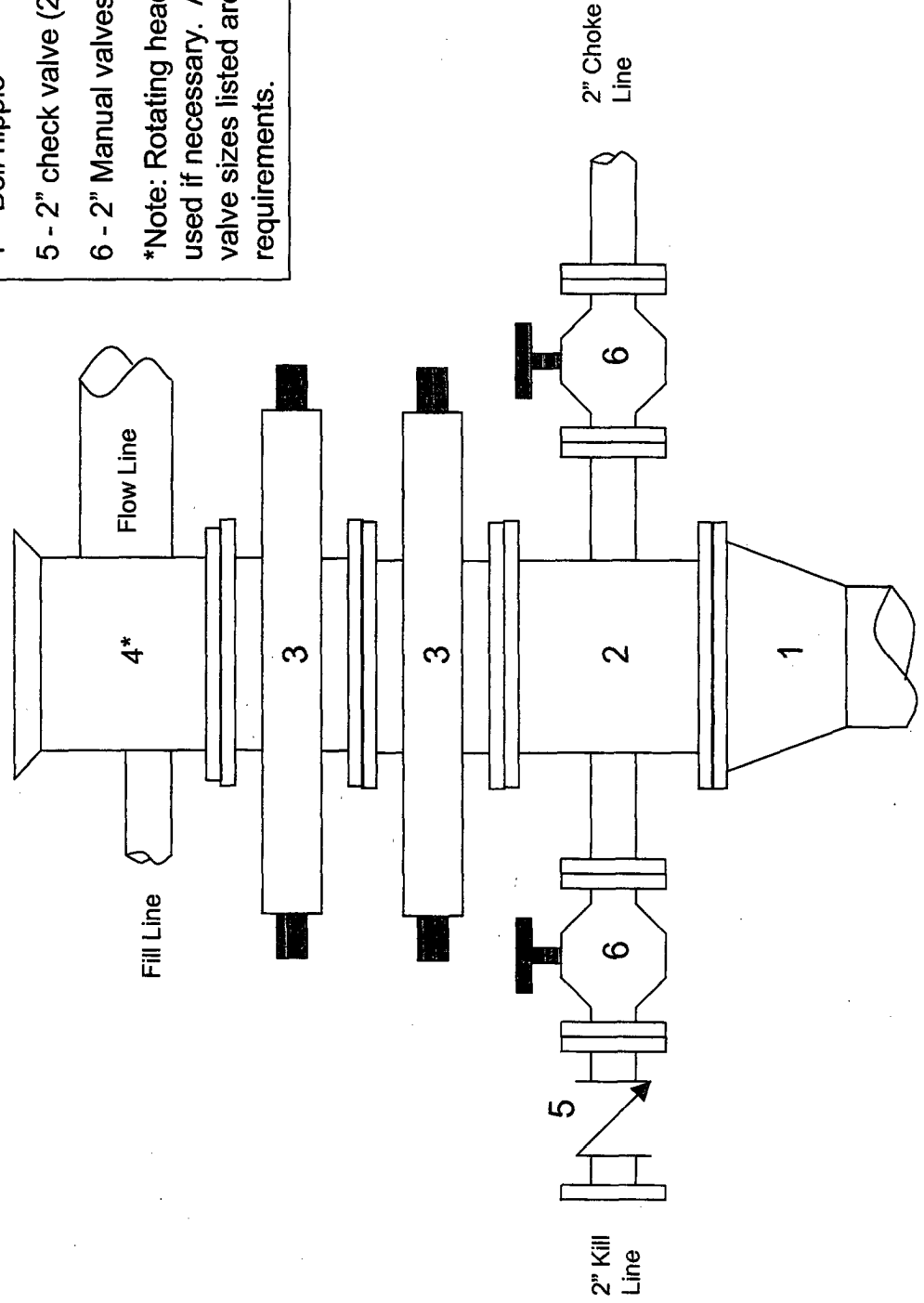
2000 psi BOP stack

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. 3M

## 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.

