

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

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. Jicarilla Contract 102	
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		6. If Indian, Allottee or Tribe Name Jicarilla Apache	
2. Name of Operator CDX RIO, LLC		7. If Unit or CA Agreement, Name and No. Jicarilla 102 #10N	
3a. Address 2010 Afton Place, Farmington, New Mexico 87401		8. Lease Name and Well No. Jicarilla 102 #10N	
3b. Phone No. (include area code) (505) 326-3003		9. API Well No. 30-039-29772	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 2100' FSL, 665' FWL, Lat. 36 30' 50.3", Long 107 15' 46.6" At proposed prod. zone		10. Field and Pool, or Exploratory Blanco Mesaverde/Basin Dakota	
14. Distance in miles and direction from nearest town or post office* 30 miles East of Lindrith, New Mexico		11. Sec., T., R., M., or Blk. and Survey or Area Section 4, T-26-N, R-4-W	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 665'		12. County or Parish Rio Arriba	
16. No. of Acres in lease		13. State NM	
17. Spacing Unit dedicated to this well 322.88 W/2			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 500'		20. BLM/BIA Bond No. on file National bond on file	
19. Proposed Depth 7650'			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7187' 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 1-20-06
Title Land Manager		
Approved by (Signature) <i>D. Mankiewicz</i>	Name (Printed/Typed)	Date 7/24/06
Title AFM	Office FTO	

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)



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 30-039-29772	² Pool Code 72319/71599	³ Pool Name Blanco Mesaverde/Basin Dakota
⁴ Property Code 33455	⁵ Property Name JICARILLA 102	⁶ Well Number 10N
⁷ OGRID No. 222374	⁸ Operator Name CDX RIO, LLC.	⁹ Elevation 7187'

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
L	4	26-N	4-W		2100	SOUTH	665	WEST	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 MV - W/322.88 DK - W/322.88				¹³ Joint or Infill Y		¹⁴ Consolidation Code		¹⁵ 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

FD 3 1/4" BC 1972 BLM	LOT 4	LOT 3	LOT 2	LOT 1	<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p><i>Richard Corcoran</i></p> <p>Signature</p> <p>Richard Corcoran</p> <p>Printed Name</p> <p>Land Manager rich.corcoran@cdxgas.com</p> <p>Title and E-mail Address</p> <p>1-20-06</p> <p>Date</p>
N 01-19-39 W 5329.18' (C)	4				
665'	LAT: 36°30'50.3" N. (NAD 83) LONG: 107°15'46.6" W. (NAD 83)				<p>18 SURVEYOR CERTIFICATION</p> <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>SEPTEMBER 15, 2006</p> <p>Date of Survey</p> <p><i>John A. Vukobratovich</i></p> <p>Signature of Registered Professional Surveyor</p> <p>14831</p> <p>REGISTERED PROFESSIONAL SURVEYOR</p> <p>Certificate Number</p>
2100'	S 89-31-09 E 5204.29' (C)				
CALC'D COR. BY DBL. PORP.	CALC'D COR. BY DBL. PORP.				

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

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.)		WELL API NO. 30-039- <u>29772</u>
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/>		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator CDX RIO, LLC		6. State Oil & Gas Lease No. Jicarilla 102
3. Address of Operator 2010 Afton Place, Farmington, New Mexico 87401		7. Lease Name or Unit Agreement Name Jicarilla 102
4. Well Location Unit Letter <u>L</u> : <u>2100'</u> feet from the <u>South</u> line and <u>665'</u> feet from the <u>West</u> line Section <u>4</u> Township <u>26N</u> Range <u>4W</u> NMPM Rio Arriba County		8. Well Number <u>10N</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>7187' GR</u>		9. OGRID Number <u>222374</u>
Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>		10. Pool name or Wildcat Blanco Mesaverde/Basin Dakota
Pit type <u>New Drill</u> Depth to Groundwater <u>< 100'</u> Distance from nearest fresh water well <u><1000'</u> Distance from nearest surface water <u><1000'</u>		
Pit Liner Thickness: <u>12</u> 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:
PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

SUBSEQUENT REPORT OF:
REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: New Drill Pit Sundry ☒ 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.

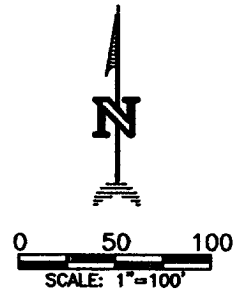
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒ a general permit or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Nancy Oltmanns TITLE Regulatory Consultant DATE 12/22/05

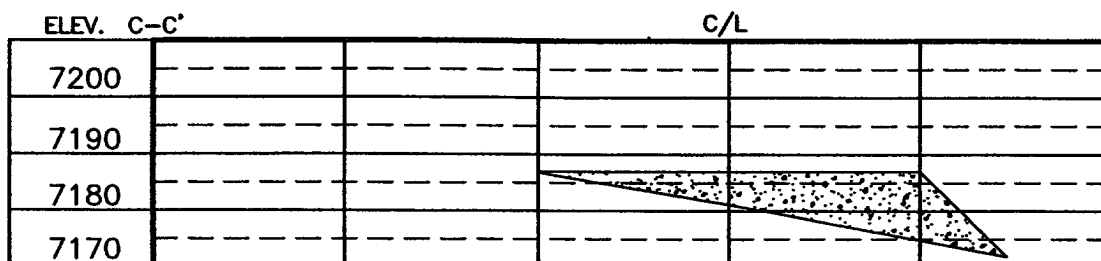
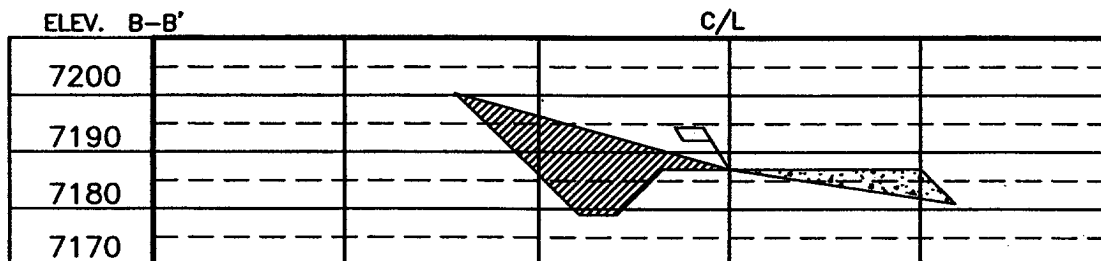
Type or print name Nancy Oltmanns E-mail address: nancy.oltmanns@cdxgas.com Telephone No. (505) 326-3003
For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 83 DATE JUL 26 2006
Conditions of Approval (if any): _____

LAT. = 36°30'50.3" N.
LONG. = 107°15'46.6" W
NAD 83



ELEV. A-A'	C/L
7200	
7190	
7180	
7170	

[illegible]

Jicarilla 102 10N
General Drilling Plan
CDX Rio, LLC
Rio Arriba County, New Mexico

1. LOCATION:

2100' FSL & 665' FWL, Section 4, T26N, R4W
Rio Arriba County, New Mexico
UGL: 7187' Estimated KB: 7199'

Field: Blanco Mesa Verde and Basin Dakota
Surface: Jicarilla Contract #102
Minerals: Jicarilla Contract #102

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	3115	4084	Sandstone	Possible Differential Sticking, Gas, Water
Kirtland Formation	3540	3659	Shale	
Fruitland Formation	3859	3340	Coal, Shale, Sandstone	Possible Lost Circulation Zone, Gas, Water
Pictured Cliffs Sandstone	3994	3205	Sandstone	Possible Lost Circulation Zone, Gas, Water
Lewis Shale	4108	3091	Shale	Sloughing Shale
Huerfano Bentonite Bed	4444	2755	Shale	
Chacra Interval	4908	2291	Siltstone	Gas, Water
Mesaverde Formation (MVRD)	5649	1550	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Cliff House Sandstone (MVRD)	5649	1550	Sandstone	Possible Lost Circulation, Gas, Water
Menefee Member (MVRD)	5751	1448	Coal, Sandstone, Shale	Possible Lost Circulation, Gas, Water
Point Lookout Sandstone(MVRD)	6101	1098	Sandstone	Possible Lost Circulation, Gas, Water
Mancos Shale	6263	936	Shale	Sloughing Shale
Gallup Formation (GLLP)	7311	-112	Siltstone, Shale	Gas, Oil
Greenhorn Limestone	8062	-863	Limestone	Gas, Oil
Graneros Shale	8076	-877	Shale	Gas, Oil, Water
Dakota Formation (DKOT)	8115	-916	Sandstone, Shale, Coal	Gas, Oil, Water
Two Wells Sandstone (DKOT)	8115	-916	Sandstone	Gas, Oil, Water
Paguate Sandstone (DKOT)	8230	-1031	Sandstone	Gas, Oil, Water
Upper Cubero Sandstone(DKOT)	8259	-1060	Sandstone	Gas, Oil, Water
Main Body (DKOT)	8295	-1096	Shale, Sandstone	Gas, Oil, Water
Lower Cubero (DKOT)	8341	-1142	Shale, Sandstone	Gas, Oil, Water
Burro Canyon (DKOT)	8371	-1172	Sandstone	Gas, Water - TD immediately below L. Cubero.
Morrison Formation			Shale, Sandstone	On-site pick when black/brown cuttings start.
Proposed TD	8364	-1165		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:

<u>Hole Size</u>	<u>Depth</u>	<u>Casing Size</u>
12 1/4"	250'	9 5/8"
8 3/4"	4344' +/- Lewis seat	7"
6 1/4"	8364'	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'	4344' +/-	23.0	N80	LTC	New
4 1/2"	Prod Liner	4224'	8364'	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 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 , 1/4#/sx celloflake. 100% excess to circulate cement to surface. WOC 12 hrs.

Slurry weight: 15.2 ppg
Slurry yield: 1.27 ft³/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
	<u>100% excess (annulus)</u>	<u>96.1 cu ft</u>
	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: 4344'

1st Stage: 146 sacks of Type III cement: 4344' - 3440' (904')

Slurry weight: 14.5 ppg Annular Vol = 135.9 cf + 68.0 cf (50% Access)
Slurry yield: 1.4 ft³/sack = 203.9 cf

2nd Stage: (Stage tool at 3440' +/-): 401 sacks of Premium Lite FM

Slurry weight: 12.4 ppg Volume = 769.9 cf
Slurry yield: 1.92 ft³/sack

<u>Volume Basis:</u>	40' of 7" shoe joint	8.8 cu ft
	<u>4094' of 7" x 8 3/4" annulus</u>	<u>615.5 cu ft</u>
	250' of 7" x 9 5/8" csg	41.7 cu ft
	<u>50% excess (annulus)</u>	<u>307.8 cu ft</u>
	Total	973.8 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 4344' – 8364' (4020')

Stage 1: 260 sacks of Premium Lite High Strength FM out guide shoe.

Slurry weight: 12.3 ppg
Slurry yield: 2.13 ft³/sack

Volume basis:	40' of 4 1/2" shoe joint	3.5 cu ft
	4020' of 4 1/2 " x 6 1/4" hole	<u>412.5 cu ft</u>
	120' of 4 1/2" x 7" casing	13.3 cu ft
	<u>30% excess (annulus)</u>	<u>123.8 cu ft</u>
	Total	553.1 cu ft

Note:

1. Design top of cement is 4224' +/- 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 4344', 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 ₂ 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: June 1, 2006

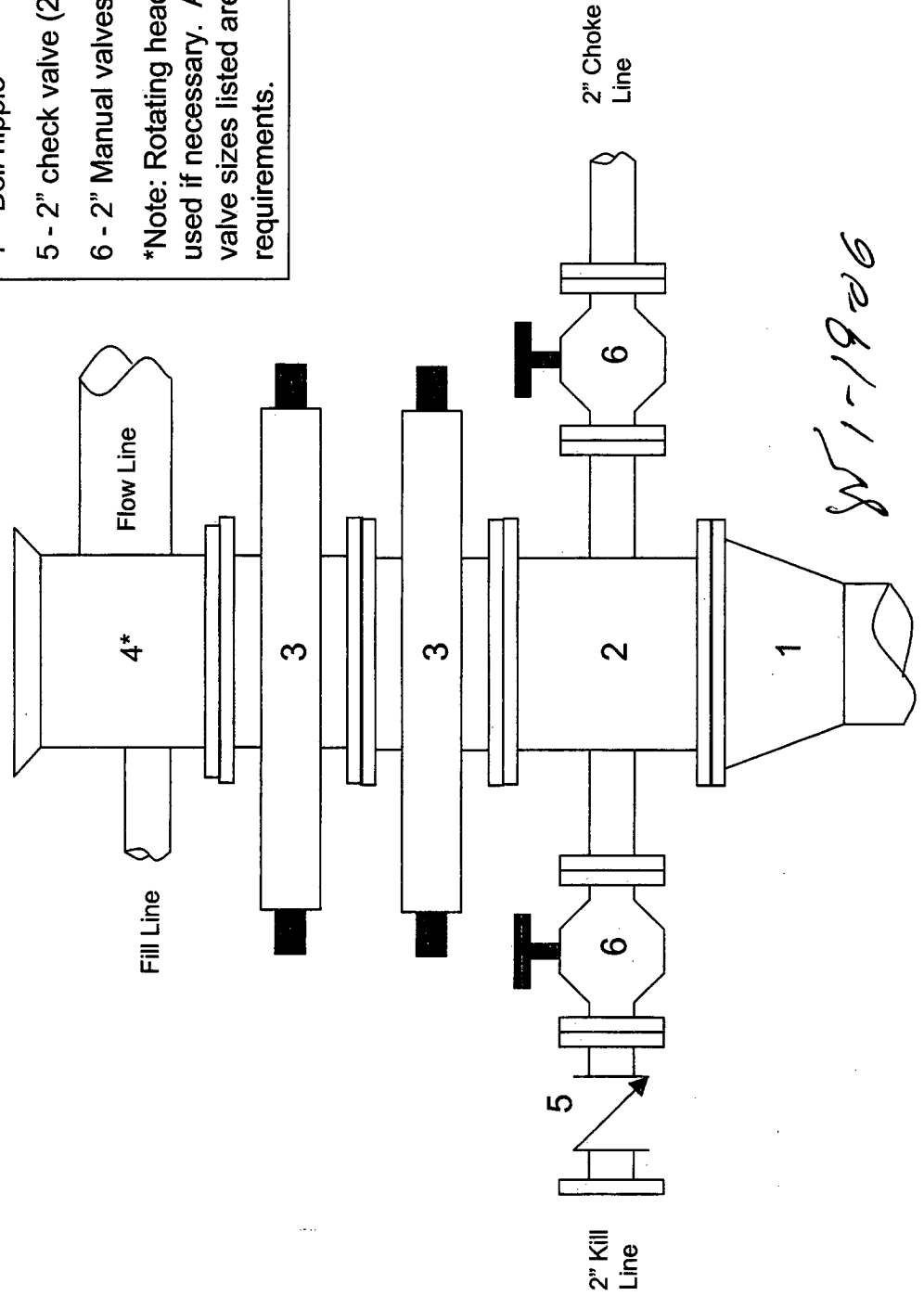
Anticipated duration: 16 days

Jicarilla 102 No. 10N

2000 psi BOP stack
Minimum requirements

<u>Components</u>	
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 102 No. 10N

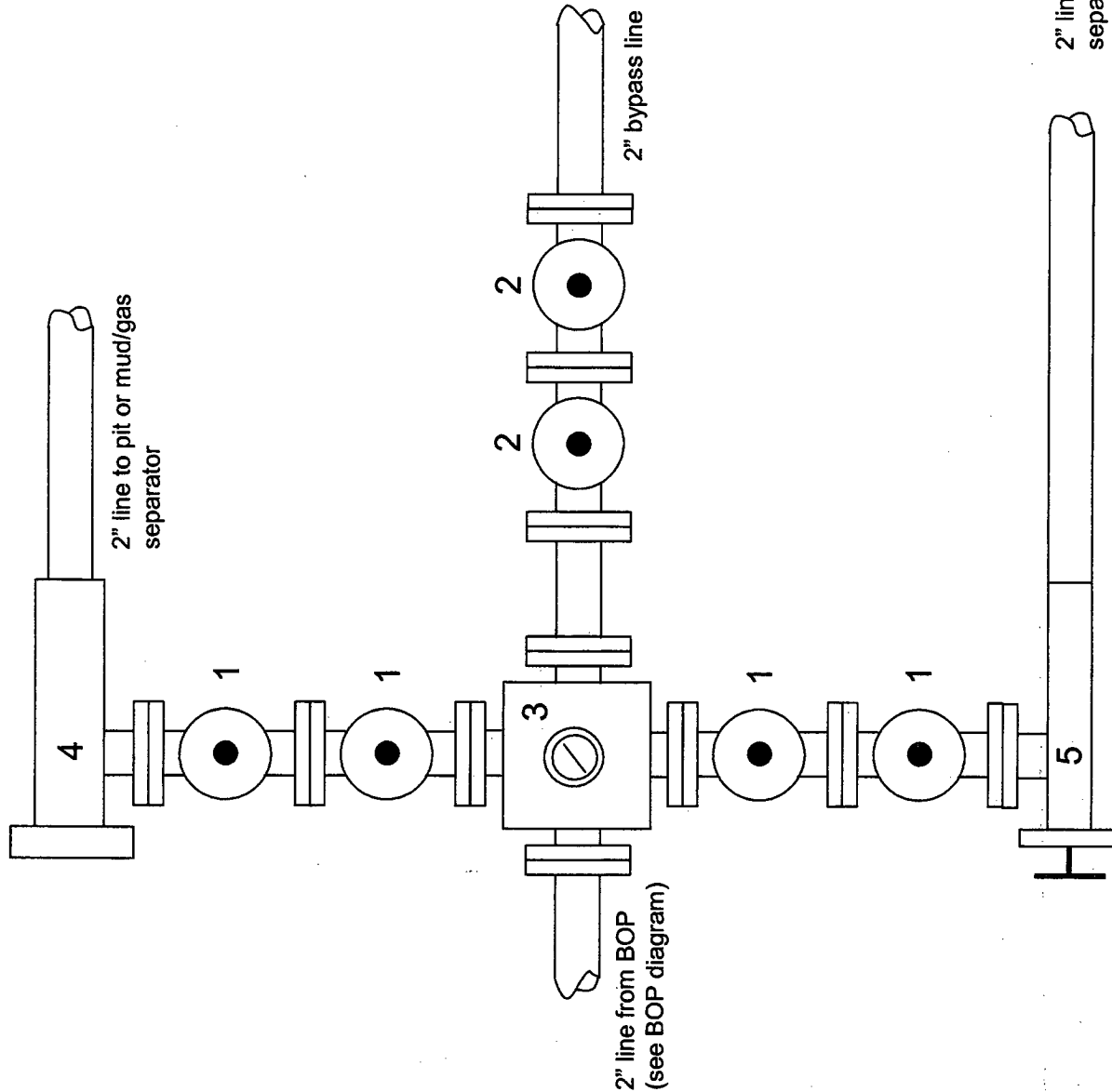
2000 psi Choke Manifold

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.



JS 1-19-06