

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM - 04208
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
2. Name of Operator BP AMERICA PRODUCTION COMPANY		7. If Unit or CA Agreement, Name and No.
Contact: CHERRY HLAVA E-Mail: hlavacl@bp.com		8. Lease Name and Well No. MCCULLEY LS 4E
3a. Address P.O. BOX 3092 HOUSTON, TX 77253-3092	3b. Phone No. (include area code) Ph: 281.366.4081 Fx: 281.366.0700	9. API Well No. 30-045-32511
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENW 730FNL 1510FWL 36.66667 N Lat, 107.75194 W Lon At proposed prod. zone		10. Field and Pool, or Exploratory BASIN DAKOTA & BLANCO MV
14. Distance in miles and direction from nearest town or post office* 16.8 MILES S/E FROM AZTEC, NM		11. Sec., T., R., M., or Blk. and Survey or Area Sec 14 T28N R9W Mer NMP
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 730'	16. No. of Acres in Lease	12. County or Parish SAN JUAN
17. Spacing Unit dedicated to this well 320.00	18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	13. State NM
19. Proposed Depth 6748 MD	20. BLM/BIA Bond No. on file WY2924	
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5832 GL	22. Approximate date work will start 10/15/2004	23. Estimated duration 7 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:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature (Electronic Submission)	Name (Printed/Typed) CHERRY HLAVA	Date 08/10/2004
Title REGULATORY ANALYST		
Approved by (Signature) <i>Wayne Townsend</i>	Name (Printed/Typed) Wayne Townsend	Date 12/8/07
Title Acting AFM	Office FFO	

Application approval does not warrant or certify 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.

Additional Operator Remarks (see next page)

Electronic Submission #34272 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the Farmington

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

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

NMOCD

District I
PO Box 1980, Hobbs NM 88241-1980
District II
PO Drawer KK, Artesia, NM 87211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-32511	² Pool Code 71599; 72219	³ Pool Name Basin Dakota; Blanco Mesaverde
⁴ Property Code 000854	⁵ Property Name McCulley LS	⁶ Well Number #4E
⁷ OGRID No. 000778	⁸ Operator Name BP AMERICA PRODUCTION COMPANY	⁹ Elevation 5832

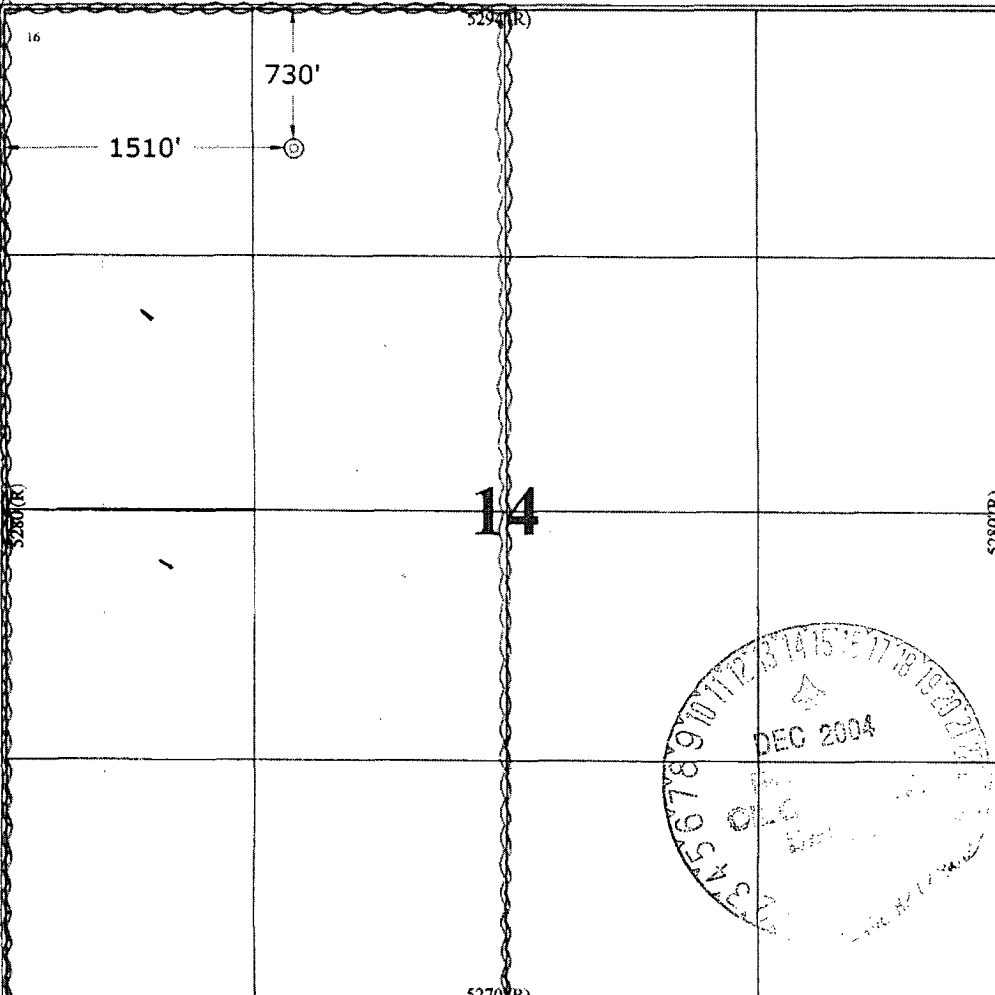
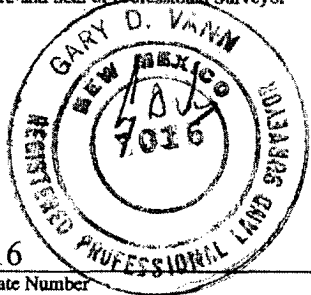
¹⁰ Surface Location

UL or Lot No. C	Section 14	Township 28 N	Range 9 W	Lot Idn	Feet from the 730	North/South line NORTH	Feet from the 1510	East/West line WEST	County SAN JUAN
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¹¹ Bottom Hole Location If Different From Surface

⁷ 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	¹³ Joint or Infill	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

	<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>Signature: <i>Cherry Alava</i></p> <p>Printed Name: Cherry Alava</p> <p>Title: Regulatory Analyst</p> <p>Date: 8-9-04</p>
	<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>Date of Survey: July 21, 2004</p> <p>Signature and Seal of Professional Surveyor: </p> <p>Certificate Number: 7016</p>

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
March 4, 2004

WELL API NO.
NEW WELL
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name McCulley LS
8. Well Number 4 E
9. OGRID Number 000778
10. Pool name or Wildcat Basin Dakota & Blanco Mesaverde

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 <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	
2. Name of Operator BP AMERICA PRODUCTION CO	
3. Address of Operator P.O. BOX 3092 HOUSTON, TX 77079-2064	
4. Well Location Unit Letter <u>C</u> : <u>730</u> feet from the <u>North</u> line and <u>1510</u> feet from the <u>West</u> line Section <u>14</u> Township <u>28N</u> Range <u>09W</u> NMPM <u>SAN JUAN</u> County 11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>5832'</u>	
Pit or Below-grade Tank Application (For pit or below-grade tank closures, a form C-144 must be attached)	
Pit Location: UL <u>C</u> Sect <u>14</u> Twp <u>28N</u> Rng <u>09W</u> Pit type <u>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> Below-grade Tank Location UL <u>C</u> Sect <u>14</u> Twp <u>28N</u> Rng <u>09W</u> ; <u>630</u> feet from the <u>North</u> line and <u>1525</u> feet from the <u>West</u> line PLEASE SEE ATTACHED PAD LAYOUT	

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"/> PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPLETION <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>
OTHER: Lined Drilling Pit Permit <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. Please reference BP America's San Juan Basin Drilling/Workover Pit construction Plan on file with the NMOCD. Pit construction Plan issued date of 04/15/2004. Pit will be closed according to closure plan on file.	

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 ☐.

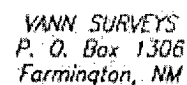
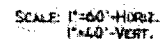
SIGNATURE _____ TITLE Regulatory Analyst DATE 8/10/04

Type or print name Cherry Hlava E-mail address: hlavacl@bp.com Telephone No. 281-366-4081

(This space for State use)

APPROVED BY [Signature] TITLE SENIOR OIL & GAS INSPECTOR, DIST. 48 DATE DEC 14 2004
Conditions of approval, if any:

Lat: 36°40'03"
Long: 107°45'43"



BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

8/5/2004

Lease:	McCulley LS	Well Name & No.	McCulley LS #4E	Field:	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	Surface Location:	14-28N-9W:730' FNL, 1510' FWL		
Minerals:	State	Surface:	Lat: 36.6672545 deg; Long: -107.7613276 deg		
Rig :	Aztec 184	BH Location:	vertical		

OBJECTIVE: Drill 250' below the top of the Two Wells Mbr, set 4-1/2" production casing, Stimulate DK, MF, and PL intervals.

METHOD OF DRILLING		APPROXIMATE DEPTHS OF GEOLOGICAL MARKER			
TYPE OF TOOLS	DEPTH OF DRILLING	Actual GL: 5832	Estimated KB: 5,846.0'		
Rotary	0 - TD	Marker	SUBSEA	TVD	APPROX. MD
LOG PROGRAM		Ojo Alamo	4,726'	1,120'	1,120'
Type	Depth Interval	Kirtland	4,586'	1,260'	1,260'
Single Run		Fruitland	* 4,174'	1,672'	1,672'
		Fruitland Coal	* 3,793'	2,053'	2,053'
		Pictured Cliffs	* 3,656'	2,190'	2,190'
		Lewis	* 3,421'	2,425'	2,425'
Cased Hole		Cliff House	# 2,388'	3,458'	3,458'
TDT- CBL	TD to 7" shoe	Menefee	# 1,970'	3,876'	3,876'
	Identify 4 1/2" cement top	Point Lookout	# 1,408'	4,438'	4,438'
REMARKS:		Mancos	1,038'	4,808'	4,808'
- Please report any flares (magnitude & duration).		Greenhorn	-538'	6,384'	6,384'
		Graneros (bent,mkr)	-603'	6,449'	6,449'
		Two Wells	# -652'	6,498'	6,498'
		Paguate	# -719'	6,565'	6,565'
		Cubero	# -767'	6,613'	6,613'
		L. Cubero	# -814'	6,660'	6,660'
		Encinal Cyn	# -879'	6,725'	6,725'
		TOTAL DEPTH:	-902'	6,748'	6,748'
		# Probable completion interval		* Possible Pay	

SPECIAL TESTS		DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE		FREQUENCY	DEPTH	FREQUENCY	DEPTH
None		30'/10' intervals	2525' - TD	Geolograph	0 - TD
REMARKS:					

MUD PROGRAM:					
Interval	Type <input type="checkbox"/> Mud	#/gal	Vis, <input type="checkbox"/> sec/qt	/30 min	Other Specification
200'	Spud	8.8 - 9.0	Sufficient to clean hole.		
2,525'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
6,748'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:							
Casing <input type="checkbox"/> String	Depth	Size	Casing Size	Grade, Thread	Weight	Landing Point	Cement
Surface/Conductor	200'	13 1/2"	9-5/8"	H-40 ST&C	32#		cmt to surface
Intermediate 1	2,525'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	6,748'	6-1/4"	4-1/2"	J-55	11.6#	DKOT	150' inside Intermediate - TOC survey required

CORING PROGRAM:	
None	

COMPLETION PROGRAM:	
Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead	

GENERAL REMARKS:	
Notify BLM/NMOCDD 24 hours prior to Spud, BOP testing, and Casing and Cementing.	

BOP Pressure Testing Requirements			
Formation	Depth	Anticipated bottom hole pressure	Max anticipated surface pressure**
Cliffhouse	3,458'	500	0
Point Lookout	4,438'	600	0
Dakota	6,498'	2600	1170.44

Requested BOP Pressure Test Exception = 1500 psi ** Note: Determined using the following formula: ABHP - (.22*TVD) = ASP

Form 46 Reviewed by:	Logging program reviewed by:			
PREPARED BY:	APPROVED:	DATE:	APPROVED:	DATE:
HGJ JMP		5-Aug-04		
Form 46 7-84bw	For Drilling Dept.		For Production Dept.	

Cementing Program

Well Name: McCulley LS #4E
 Location: 14-28N-9W:730' FNL, 1510' FWL
 County: San Juan
 State: New Mexico

Well Flac
 Formation: Dakota MesaVerde
 KB Elev (est) 5846
 GL Elev. (est) 5832

Casing Program:

Casing String	Est. Depth (ft.)	Hole Size (in.)	Casing Size (in.)	Thread	TOC (ft.)	Stage Tool Or TOL (ft.)	Cmt Cir. Out (bbl.)
Surface	200	13 1/2	9.625	ST&C	Surface	NA	
Intermediate	2525	8.75	7	LT&C	Surface	NA	
Production -	6748	6.25	4.5	?	2425	NA	

Casing Properties:

(No Safety Factor Included)								
Casing String	Size (in.)	Weight (lb/ft)	Grade	Burst (psi.)	Collapse (psi.)	Joint St. (1000 lbs.)	Capacity (bbl/ft.)	Drift (in.)
Surface		9.625	32 H-40	2270	1400	254	0.0787	8.845
Intermediate		7	20 K-55	3740	2270	254	0.0405	6.456
Production -		4.5	11.6 J-55	5350	4960	154	0.0155	3.875

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	Recommended Mud Properties Prio Cementing:
			PV <20
			YP <10
			Fluid Loss <15
0 - SCP	Water/Spud	8.6-9.2	
SCP - ICP	Water/LSND	8.6-9.2	
ICP - ICP2	Gas/Air Mist	NA	
ICP2 - TD	LSND	8.6 - 9.2	

Cementing Program:

	Surface	Intermediate	Production
Excess %, Lead	100	75	40
Excess %, Tail	NA	0	40
BHST (est deg. F)	75	128	190
Special Instructions	1,6,7	1,6,8	2,4,6

1. Do not wash pumps and lines.
2. Wash pumps and lines.
3. Reverse out
4. Run Blend Test on Cement
5. Record Rate, Pressure, and Density on 3.5" disk
6. Confirm densitometer with pressurized mud scales
7. 1" cement to surface if cement is not circulated.
8. If cement is not circulated to surface, run temp. survey 10-12 hr. after landing plug.

Notes:

*Do not wash up on top of plug. Wash lines before displacing production cement job to minimize drillout.

Surface:

Preflush	20 bbl.	FreshWater
Slurry 1	160 sx Class C Cement	203 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)	
		0.4887 cuft/ft OH

Slurry Properties:

	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	15.2	1.27	5.8

Casing Equipment:

9-5/8", 8R, ST&C
 1 Guide Shoe
 1 Top Wooden Plug
 1 Autofill insert float valve
 Centralizers, 1 per joint except top joint
 1 Stop Ring
 1 Thread Lock Compound

Intermediate:

Fresh Water	20 bbl	fresh water
Lead	200 sx Class "G" Cement	515 cuft
Slurry 1	+ 3% D79 extender	
TOC@Surface	+ 2% S1 Calcium Chloride	
	+1/4 #/sk. Cellophane Flake	
	+ 0.1% D46 antifoam	
Tail	60 sx 50/50 Class "G"/Poz	75 cuft
Slurry 2	+ 2% gel (extender)	
500 ft fill	0.1% D46 antifoam	0.1503 cuft/ft OH
	+1/4 #/sk. Cellophane Flake	0.1746 cuft/ft csg ann
	+ 2% CaCl2 (accelerator)	

Slurry Properties:

	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	11.4	2.61	17.77
Slurry 2	13.5	1.27	5.72

Casing Equipment:

7", 8R, ST&C

Cementing Program

1 Float Shoe (autofill with minimal LCM in mud)
 1 Float Collar (autofill with minimal LCM in mud)
 1 Stop Ring
 14 Centralizers (one in middle of first joint, then every third collar)
 2 Fluidmaster vane centralizers @ base of Ojo
 1 Top Rubber Plug
 1 Thread Lock Compound

Production:				
	Fresh Water	10 bbl	CW100	
Lead		160 LiteCrete D961 / D124 / D154	400 cuft	
Slurry 1		+ 0.03 gps D47 antifoam		
TOC, 100' above 7" shoe		+ 0.5% D112 fluid loss		
		+ 0.11% D65 TIC		
Tail		150 sx 50/50 Class "G"/Poz	207 cuft	
Slurry 2		+ 5% D20 gel (extender)	+ 5 #/sk D24 gilsonite	
1440 ft fill		+ 0.1% D46 antifoam	+ 0.15% D65 TIC	
		+ 1/4 #/sk. Cellophane Flake	+ 0.1% D800 retarder	
		+ 0.25% D167 Fluid Loss		
				0.1026 cuft/ft OH
Slurry Properties:	Density	Yield	Water	
	(lb/gal)	(ft ³ /sk)	(gal/sk)	0.1169 cuft/ft csg ann
Slurry 1	9.5	2.52	6.38	
Slurry 2	13	1.44	6.5	Top of Mancos
				4808
Casing Equipment:	4-1/2", 8R, ST&C 1 Float Shoe (autofill with minimal LCM in mud) 1 Float Collar (autofill with minimal LCM in mud) 1 Stop Ring Centralizers, every 4th joint 1 Top Rubber Plug 1 Thread Lock Compound			

**SAN JUAN BASIN
Dakota Formation
Pressure Control Equipment**

Background

The objective Dakota formation maximum surface pressure is anticipated to be less than 1000 psi, based on shut-in surface pressures from adjacent wells. Pressure control equipment working pressure minimum requirements are therefore 2000 psi. Equipment to be used will conform to API RP-53 (Figure 2.C.2) for a 2000 psi system per Federal Onshore Order No. 2. Due to available conventional equipment within the area, 3000 psi rated pressure control equipment will typically be utilized in a double ram type arrangement. Regional drilling rights to be utilized have substructure height limitations which exclude the use of annular preventers; therefore a rotating head will be installed above these rams. This pressure control equipment will be utilized for conventional drilling below conductor to total depth in the Basin Dakota. No abnormal temperature, pressure, or H₂S anticipated.

Equipment Specification

Interval

BOP Equipment

Below conductor casing to total depth	11" nominal or 7 1/16", 3000 psi double ram preventer with rotating head.
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All ram type preventers and related control equipment will be hydraulically tested to 250 psi (low pressure) and 2000 psi (high pressure), upon installation, following any repairs or equipment replacements, or at 30 day intervals. Accessories to BOP equipment will include kelly cock, upper kelly cock with a handle available, floor safety valves and choke manifold which will also be tested to equivalent pressure.

BP America Production Company

Well Control Equipment Schematic

