

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. SF - 078039
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. BARNES LS 6 M
3a. Address HOUSTON, TX 77253-3092	3b. Phone No. (include area code) Ph: 281-366-4081	9. API Well No. 30045 32682
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NESE 1645FSL 860FEL 36.96694 N Lat, 107.95056 W Lon At proposed prod. zone SWSE 760FSL 1640FEL		10. Field and Pool, or Exploratory BASIN DK & BLANCO MV
14. Distance in miles and direction from nearest town or post office* 15.3 MILES NORTH FROM AZTEC, NM		11. Sec., T., R., M., or Blk. and Survey or Area I Sec 23 T32N R11W Mer NMP
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 760'	16. No. of Acres in Lease 320.00	12. County or Parish SAN JUAN
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 75'	19. Proposed Depth 8083 MD 7874 TVD	13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 6435 GL	22. Approximate date work will start 02/15/2004	17. Spacing Unit dedicated to this well 320.00 E/2
		20. BLM/BIA Bond No. on file WY 2924
		23. Estimated duration 7

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 (Electronic Submission)	Name (Printed/Typed) CHERRY HLAVA Ph: 281-366-4081	Date 11/16/2004
Title REGULATORY ANALYST		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 12/22/04
Title 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 #50986 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

HOLD C104 FOR Directional
Survey

** 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 30-045-32682		2 Pool Code 71599-72319		3 Pool Name Basin Dakota; Blanco Mesaverde		
4 Property Code 000300		5 Property Name Barnes LS			6 Well Number # 6M	
7 OGRID No. 000 778		8 Operator Name BP AMERICA PRODUCTION COMPANY			9 Elevation 6435	

10 Surface Location

UL or Lot No. I	Section 23	Township 32 N	Range 11 W	Lot Idn	Feet from the 1645	North/South line SOUTH	Feet from the 860	East/West line EAST	County SAN JUAN
---------------------------	----------------------	-------------------------	----------------------	---------	------------------------------	----------------------------------	-----------------------------	-------------------------------	---------------------------

11 Bottom Hole Location If Different From Surface

UL or lot no. O	Section 23	Township 32 N	Range 11 W	Lot Idn	Feet from the 760	North/South line SOUTH	Feet from the 1640	East/West line EAST	County SAN JUAN
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>16</p>
	<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>Cherry Hlava</i> Signature Cherry Hlava Printed Name Regulatory Analyst Title 11-15-04 Date</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>September 28, 2004 Date of Survey Signature and Seal of Professional Surveyor 7016 Certificate Number</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

Form C-103
March 4, 2004

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

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 Barnes LS (APD filed with BLM SF 078039)
8. Well Number 6 M
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 ☐ Gas Well ☒ 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 I : 1645 feet from the South line and 860 feet from the East line

Section 23 Township 32N Range 11W NMPM SAN JUAN County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
6435'

Pit or Below-grade Tank Application (For pit or below-grade tank closures, a form C-144 must be attached)

Pit Location: UL I Sect 23 Twp 32N Rng 11W Pit type Drilling Depth to Groundwater >100' Distance from nearest fresh water well >1000'

Distance from nearest surface water >1000' Below-grade Tank Location UL I Sect 23 Twp 32N Rng 11W ;

1695 feet from the South line and 845 feet from the East line PLEASE SEE ATTACHED PAD LAYOUT

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 COMPLETION ☐

OTHER: Lined Drilling PIT PERMIT ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☐

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.

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 11/16/04

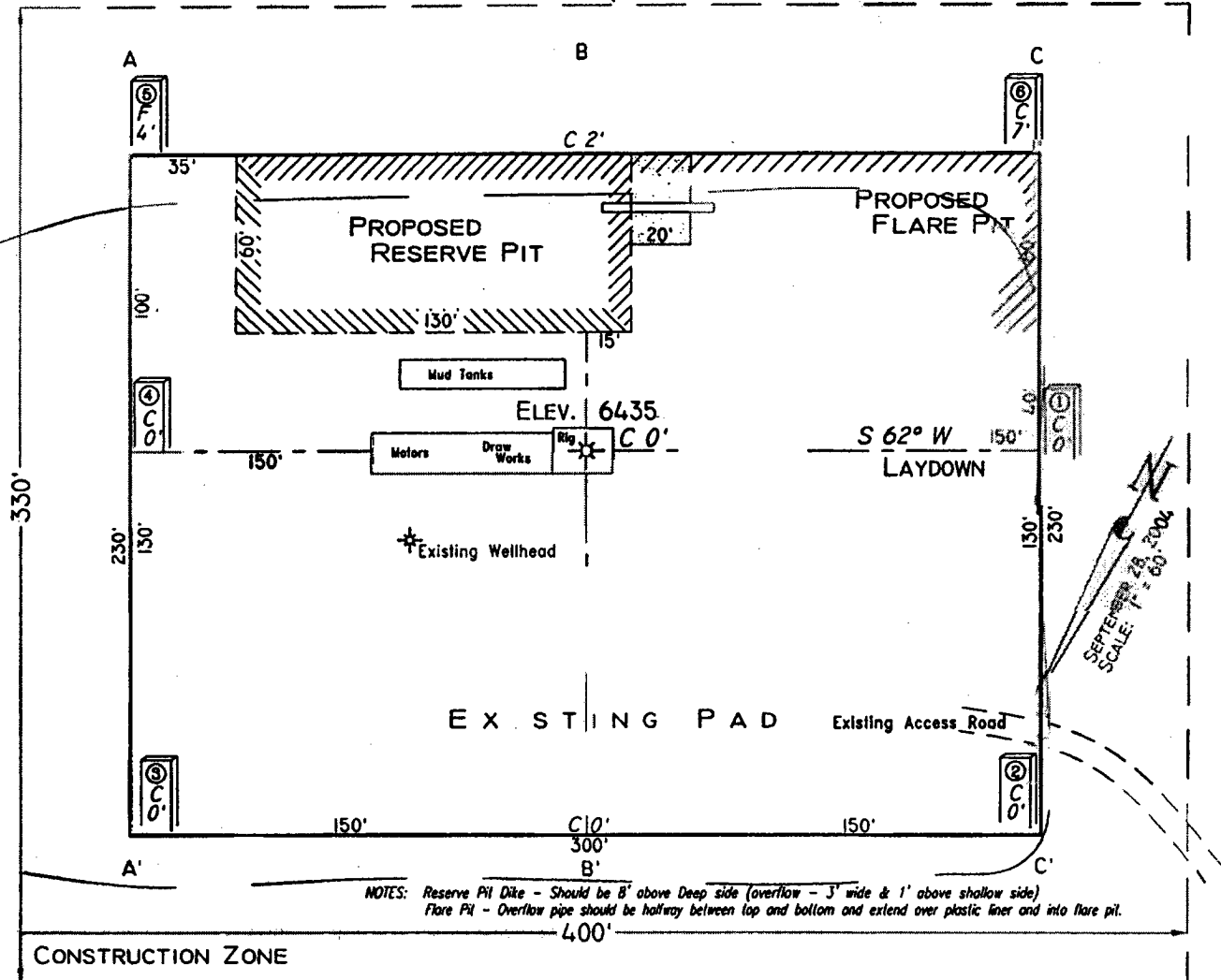
Type or print name Cherry Hlava E-mail address: hlavacl@bp.com Telephone No. 281-366-4081

(This space for State use)

APPROVED BY [Signature] TITLE DEPUTY OIL & GAS INSPECTOR DIST. 38 DATE DEC 27 2004
Conditions of approval, if any:

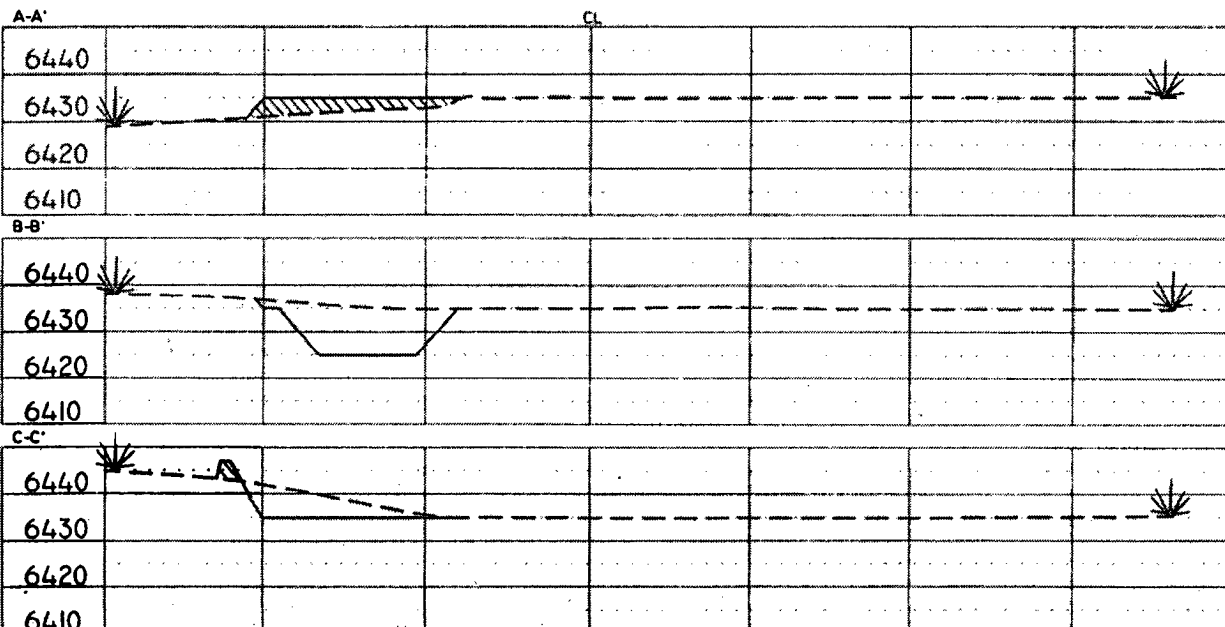
PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
 Barnes LS # 6M
 1645' F/SL 860' F/EL
 SEC. 23, T32N, R11W, N.M.P.M.
 SAN JUAN COUNTY, NEW MEXICO

Lat: 36°58'04"
 Long: 107°57'12"



Area of Construction Zone - 330'x400' or 3.03 acres, more or less.

SCALE: 1"=60'-HORIZ.
 1"=40'-VERT.



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.

Cuts and fills shown are approximate - final finished elevation is to be adjusted so earthwork will balance. Corner stakes are approximate and do not include additional areas needed for sideslopes and drainages. Final Pad Dimensions are to be verified by Contractor.

VANN SURVEYS
 P. O. Box 1306
 Farmington, NM

11/12/2004

Lease:	Barnes LS	Well Name & No.	Barnes LS #6M	Field:	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	Surface Location:	23-32N-11W: 1645' FSL, 860' FEL		
Minerals:	State	Surface:	Lat: 36.9678433 deg; Long: -107.9528650 deg		
Fig :	Aztec 184	BH Location:	23-32N-11W: 760' FSL, 1640' FEL; 36.9653730 deg; -107.9556031 deg		

METHOD OF DRILLING

TYPE OF TOOLS		DEPTH OF DRILLING		Actual GL:	6435	Estimated KB: 6,449.0'						
Rotary		0 - TD		Marker		SUBSEA	TVD	APPROX. MD				
LOG PROGRAM				Ojo Alamo		5,071'	1,378'	1,409'				
Type	Depth Interval			Kirtland		5,017'	1,439'	1,475'				
Single Run				Fruitland		*	3,912'	2,537'	2,657'			
				Fruitland Coal		*	3,647'	2,802'	2,942'			
				Pictured Cliffs		*	3,267'	3,182'	3,352'			
				Lewis		*	3,076'	3,373'	3,557'			
				Cliff House		#	1,752'	4,697'	4,906'			
Cased Hole	TD to 7" shoe Identify 4 1/2" cement top			Menefee		#	1,354'	5,095'	5,304'			
TDT- CBL				Point Lookout		#	999'	5,450'	5,659'			
				Mancos			645'	5,804'	6,013'			
REMARKS: - Please report any flares (magnitude & duration).				Greenhorn			-1,061'	7,510'	7,719'			
				Graneros (bent,mkr)			-1,114'	7,563'	7,772'			
				Two Wells		#	-1,185'	7,634'	7,843'			
				Paguete		#	-1,251'	7,700'	7,909'			
				Cubero		#	-1,284'	7,733'	7,946'			
				L. Cubero		#	-1,315'	7,764'	7,973'			
				Encinal Cyn		#	-1,345'	7,794'	8,003'			
				TOTAL DEPTH:			-1,425'	7,874'	8,083'			
				# Probable completion interval						* Possible Pay		

SPECIAL TESTS	DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE	FREQUENCY	Start depth to TD	FREQUENCY	DEPTH
None	30'/10' intervals	3,665'	Geologist	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.		
3,665'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
8,083'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:							
Casing□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	3,665'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	8,083'	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/NMOCD 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	4,697'	500	0
Point Lookout	5,450'	600	0
Dakota	7,634'	2600	920.52

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:	
HGJ JMP		12-Nov-04			
Form 46 7-84bw		For Drilling Dept.		For Production Dept.	

Cementing Program

Well Name: Barnes LS 6M Location: 23-32N-11W, 1645 FSL, 860 FEL County: San Juan State: New Mexico	Field: Blanco Mesaverde / Basin Dakota API No. Well Flac Formation: Blanco Mesaverde/Basin Dakota KB Elev (est) 6449 GL Elev. (est) 6435
---	---

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	13.5	9.625	ST&C	Surface	NA	
Intermediate	3665	8.75	7	LT&C	Surface	NA	
Production -	8083	6.25	4.5	ST&C	3565	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	3370	1400	254	0.0787	8.845
Intermediate	7	20	K-55	3740	2270	234	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	120	183
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.	Fresh Water
Slurry 1	154 sx Class C Cement	195 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)	
		0.4887 cuft/ft OH
Slurry Properties:	Density (lb/gal)	Yield (ft³/sk)
Slurry 1	15.2	1.27
		Water (gal/sk)
		5.8

Cementing Program

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 Slurry 1 TOC@Surface		310 sx Class "G" Cement + 3% D79 extender + 1/4 #/sk. Cellophane Flake + 5 lb/sk Gilsonite	815 cuft
Tail Slurry 2 500 ft fill		59 sx 50/50 Class "G"/Poz + 2% gel (extender) + 1/4 #/sk. Cellophane Flake + 2% CaCl ₂ (accelerator) + 5 lb/sk Gilsonite	75 cuft 0.1503 cuft/ft OH 0.1746 cuft/ft csg ann

Slurry Properties:	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)
Slurry 1	11.4	2.63	15.8
Slurry 2	13.5	1.27	5.72

Casing Equipment: 7", 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 one in middle of first joint, then every third collar
 1 Top Rubber Plug
 1 Thread Lock Compound

Production:

Fresh Water	10 bbl	CW100	
Lead Slurry 1 TOC, 400' above 7" shoe		188 LiteCrete D961 / D124 / D154 + 0.03 gps D47 antifoam + 0.5% D112 fluid loss + 0.11% D65 TIC	475 cuft
Tail Slurry 2 1570 ft fill		157 sx 50/50 Class "G"/Poz + 5% D20 gel (extender) + 0.1% D46 antifoam + 1/4 #/sk. Cellophane Flake + 0.25% D167 Fluid Loss + 5 lb/sk Gilsonite	226 cuft

Cementing Program

+0.1% d800, retarder
+0.15% D65, dispersant

0.1026 cuft/ft OH

Slurry Properties:

	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)	
Slurry 1	9.5	2.52	6.38	0.1169 cuft/ft csg ann
Slurry 2	13	1.44	6.5	Top of Mancos 6013

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 in mud drilled holes, none in air drilled holes.
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.

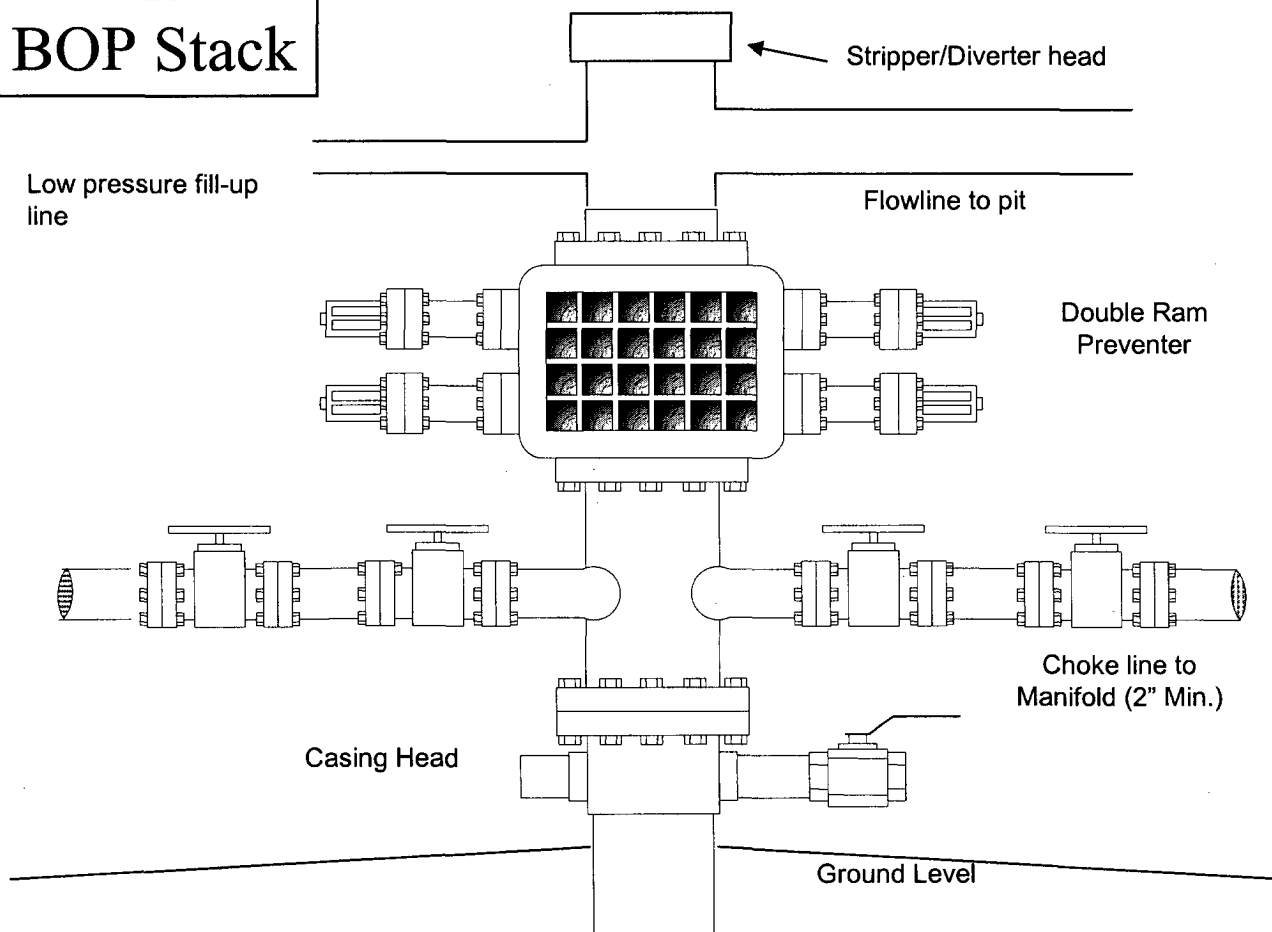
All ram type preventers and related control equipment will be hydraulically tested to 250 psi (low pressure) and 2000 psi (high pressure), upon installation, following any repairs or equipment replacements, or at 30 day intervals. Accessories to BOP equipment will include kelly cock, upper kelly cock 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



BOP Stack



Choke & Kill Manifold

