Form 3160-3
(August 1999)

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: ☒ DRILL ☐ REENTER	5. Lease Serial No. ~~NMNM 76235~~ NMSF-078138A
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone	6. If Indian, Allottee or Tribe Name
2. Name of Operator BP AMERICA PRODUCTION COMPANY Contact: CHERRY HLAVA E-Mail: hlavacl@bp.com	7. If Unit or CA Agreement, Name and No.
3a. Address HOUSTON, TX 77253-3092	8. Lease Name and Well No. STOREY B 1 M
3b. Phone No. (include area code) Ph: 281.366.4081	9. API Well No. 30-045-32324
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*	10. Field and Pool, or Exploratory BASIN DK & BLANCO MV
At surface SWSE 720FSL 1735FEL 36.82111 N Lat, 107.95750 W Lon	11. Sec., T., R., M., or Blk. and Survey or Area
At proposed prod. zone SESE 720FSL 700FEL	Sec 11 T30N R11W Mer NMP
14. Distance in miles and direction from nearest town or post office* 1.7 MILES N/E OF CITY HALL IN AZTEC, NM	12. County or Parish SAN JUAN / 13. State NM
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 700	16. No. of Acres in Lease 320.00 / 17. Spacing Unit dedicated to this well 320 S/2 DK 319.8 E/2 MV
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 7305 MD 7110 TVD / 20. BLM/BIA Bond No. on file WY2924
21. Elevations (Show whether DF, KB, RT, GL, etc. 5860 GL	22. Approximate date work will start 05/20/2005 / 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	Name (Printed/Typed)	Date
(Electronic Submission)	CHERRY HLAVA Ph: 281.366.4081	01/24/2005

Title: AGENT

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Manager		2-3-05
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)

HOLD C104 FOR Directional Survey

Electronic Submission #53356 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the Farmington

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

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

**** 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

S/2 E/2

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-32324	71599 ; 72319	Basin Dakota ; Blanco Mesaverde

4 Property Code	5 Property Name	6 Well Number
001137	Storey B	# 1M

7 OGRID No.	8 Operator Name	9 Elevation
000778	BP AMERICA PRODUCTION COMPANY	5860

10 Surface Location

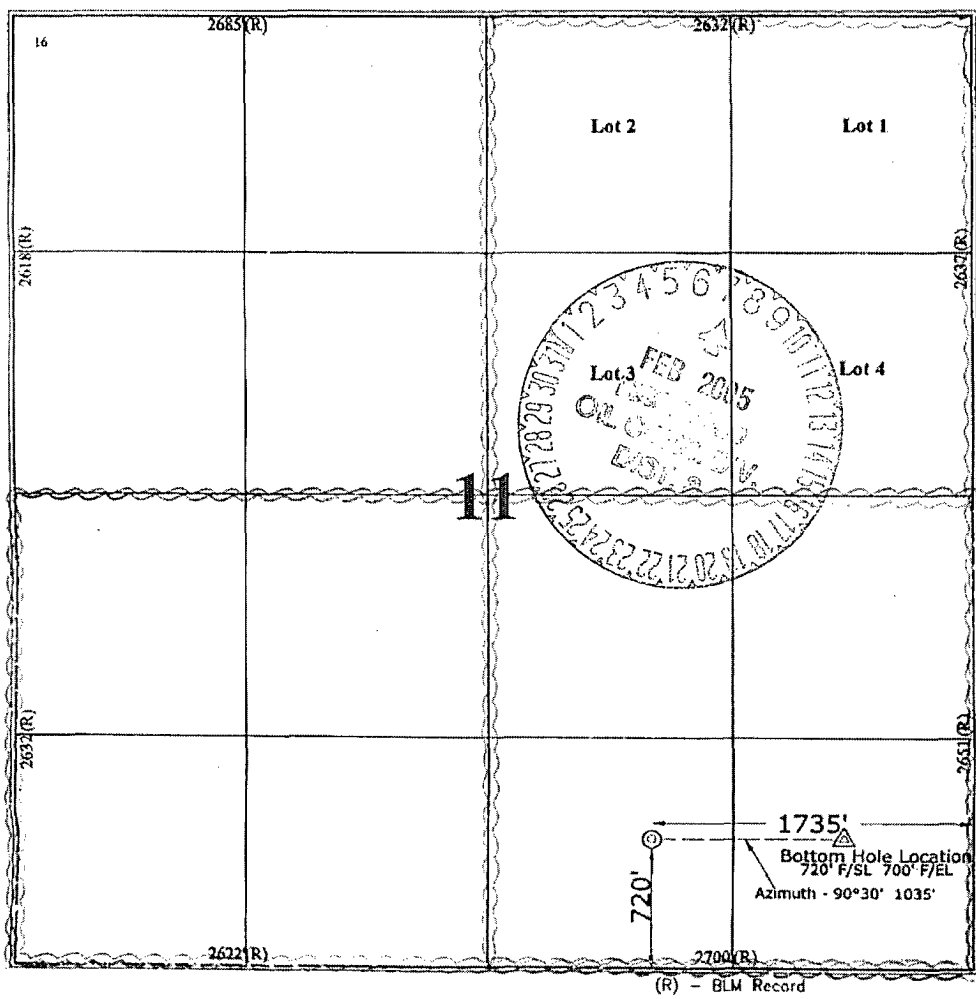
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	11	30 N	11 W		720	SOUTH	1735	EAST	SAN JUAN

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
P	11	30 N	11 W		720	SOUTH	700	EAST	SAN JUAN

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320 DK 319.8 MV			

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



17 OPERATOR CERTIFICATION

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

Cherry Hlava
Signature
Cherry Hlava
Printed Name
Regulatory Analyst
Title
3-26-04
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.

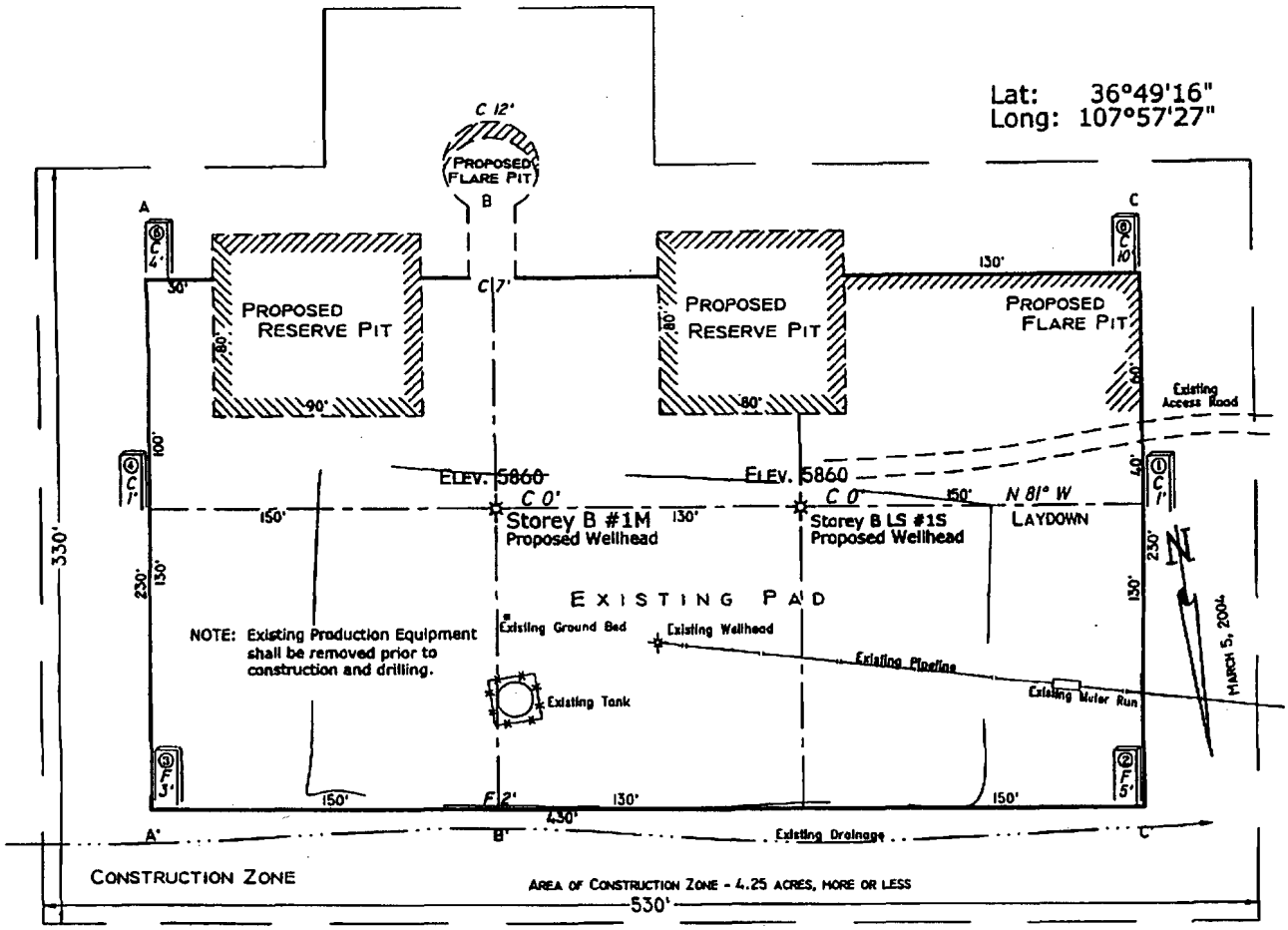
March 5, 2004
Date of Survey

Signature and Seal of Professional Surveyor

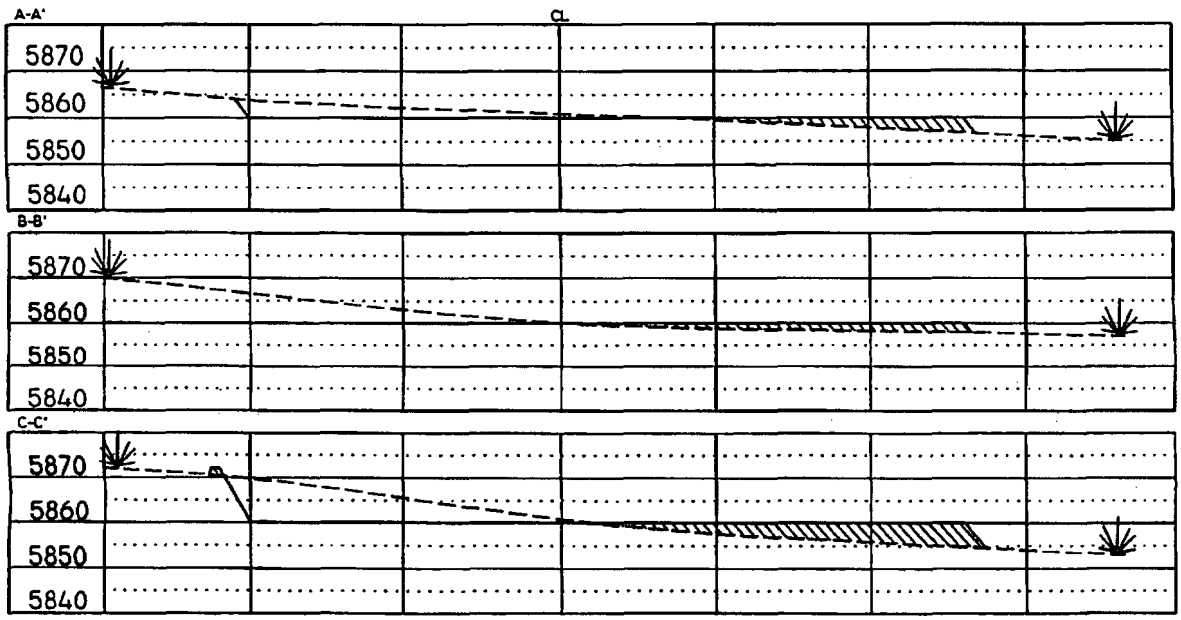
GARY D. VANN NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 7016

7016
Certificate Number

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
Storey B # 1M
720' F/SL 1735' F/EL
SEC.11, T30N, R11W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO



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

BP AMERICA PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM

Prospect Name: Storey B
Lease: Storey
County: San Juan
State: New Mexico
Date: April 12, 2004

Well No: 1 M
Surface Location: 11-30N-11W, 720 FSL, 1735 FEL
BHL: 11-30N-11W, 720 FSL, 700 FEL
Field: Blanco Mesaverde/Basin Dakota

OBJECTIVE: Drill 270' below the top of the Two Wells; set 41/2" production casing. Stimulate CH, MF, PL and DK intervals

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 - TD

LOG PROGRAM

TYPE	DEPTH INTERVAL
OPEN HOLE	
None	
CASED HOLE	
GR-CCL-TDT	TDT – TD to 7" shoe
CBL	Identify 4 ½" cement top

REMARKS:
- Please report any flares (magnitude & duration).

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Estimated GL: 5827 Estimated KB: 5841

MARKER		SUBSEA	TVD.
Ojo Alamo		962'	949'
Kirkland		1033'	1015'
Fruitland		1830'	1744'
Fruitland Coal	*	2140'	2028'
Pictured Cliffs	*	2479'	2338'
Lewis Shale	#	2735'	2572'
Cliff House	#	4083'	3888'
Menefee Shale	#	4325'	4130'
Point Lookout	#	4822'	4627'
Mancos		5159'	4964'
Greenhorn		6828'	6633'
Bentonite Marker		6881'	6686'
Two Wells	#	6935'	6740'
Paguate	#	7011'	6816'
Cubero Upper	#	7060'	6865'
Cubero Lower	#	7115'	6920'
Encinal Canyon	#	7163'	6968'
TOTAL DEPTH		7305'	7110'

Probable completion interval * Possible Pay

SPECIAL TESTS

TYPE
None

REMARKS:

DRILL CUTTING SAMPLES

FREQUENCY	DEPTH
10'	2672' -TD

DRILLING TIME

FREQUENCY	DEPTH
Geograph	0-TD

MUD PROGRAM:

Approx. Interval			Type Mud	Weight, #/ga	Vis, sec/qt	W/L cc's/30 min	Other Specification
0	- 120		Spud	8.6-9.2			
120	- 2846	(1)	Water/LSND	8.6-9.2		<6	
2846	- 7305		Gas/Air/N2/Mist	Volume sufficient to maintain a stable and clean wellbore			

REMARKS:
(1) The hole will require sweeps to keep unloaded while fresh water drilling. Let hole conditions dictate frequency.

CASING PROGRAM: (Normally, tubular goods allocation letter specifies casing sizes to be used. Hole sizes will be governed by Contract)

Casing String	Estimated Depth	Casing Size	Grade	Weight	Hole Size	Landing Pt, Cmt, Etc.
Surface/Conductor	120	9 5/8"	H-40 ST&C	32#	13.5"	1
Intermediate 1	2846	7"	J/K-55 ST&C	20#	8.75"	1,2
Production	7305	4 1/2"	J-55	11.6#	6.25"	3

REMARKS:
(1) Circulate Cement to Surface
(2) Set casing 100' into Lewis Shale
(3) Bring cement 100' above 7" shoe

CORING PROGRAM:
None

COMPLETION PROGRAM:
Rigless, 3-4 Stage Limited Entry Hydraulic Frac

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

Form 46 Reviewed by: Logging program reviewed by: N/A

PREPARED BY:	APPROVED:	DATE:	
HGJ/MNP/JMP		April 12, 2004 Version 1.1	

Form 46 12-00 MNP

Additional Operator Remarks
Storey B 1M
APD

BP America Production Company respectfully requests permission to drill this Aztec City well directionally to a total depth of approximately 7110' TVD and 7305' MD, complete in the Basin Dakota Pool, produce the well to establish a production rate, perform a deliverability test, isolate the DK then complete into the Blanco MV Pool; drill out the bridge plug and commingle production downhole.

Application for Downhole Commingling authority (NMOCD order R-11363) will be submitted to all appropriate for approval after Permit to Drill has been approved.

If terrain allows it is our intent to pre-set the 9 5/8" casing on the above mentioned well by drilling a surface hole with air/air mist in lieu of drilling mud and the surface casing be cemented with 94.5 cu/ft type I-II, 20% FLYASH, 14.5 PPG, 7.41 gal/sk, 1.61 cf/sk Yield, 80 DEG BHST ready mix cement. If the area will not allow for pre-set the approved cement program will be followed.

SUPPLEMENTAL TO SURFACE USE PLAN

New Facilities:
A 4.5" diameter buried steel pipeline that is +/- 250 feet in length will be constructed. The pipe wall thickness is .156 and the pipe wall strength is 42,000#. It will be adjacent to the access road and tie the well into an existing gas meter operated by BP America Production Company. The pipeline will not be used to transport gas to drill the well. After the well is spud the pipeline will be authorized by a right-of-way issued by El Paso Field Services.

APD/ROW

Cementing Program

Well Name:	Storey B1M	Field:	Blanco Mesaverde / Basin Dakota
Location:	11-30N-11W, 720 FSL, 1735 FEL	API No.	
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Dakota MesaVerde
		KB Elev (est)	5841
		GL Elev. (est)	5827

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	120	13.5	9.625	ST&C	Surface	NA	
Intermediate	2846	8.75	7	~~ST&C~~	Surface	NA	
Production -	7305	6.25	4.5	?	2746	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~~ 3370	1400	254	0.0787	8.845
Intermediate	7	20	K-55	3740	2270	~~254~~ 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
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~~

Recommended Mud Properties Prio Cementing:

PV	<20
YP	<10
Fluid Loss	<15

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 minmize drillout.

Surface:

Preflush 20 bbl. FreshWater

Slurry 1	100	sx Class C Cement
TOC@Surface		+ 2% CaCl2 (accelerator)

127 ~~117~~ cuft

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

Cementing Program

Intermediate:

	Fresh Water	20 bbl	fresh water	
	Lead	240 sx	Class "G" Cement	~~606~~ 624 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

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 centalizers @ base of Ojo
1 Top Rubber Plug
1 Thread Lock Compound

Production:

	Fresh Water	10 bbl	CW100	
	Lead	170	LiteCrete D961 / D124 / D154	~~404~~ 428 cuft
	Slurry 1		+ 0.03 gps D47 antifoam	
	TOC, 100' above 7" shoe		+ 0.5% D112 fluid loss	
			+ 0.11% D65 TIC	
	Tail	170 sx	50/50 Class "G"/Poz	~~236~~ 245 cuft
	Slurry 2		+ 5% D20 gel (extender)	+ 5 #/sk D24 gilsonite
	1646 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
				0.1169 cuft/ft csg ann
				Top of Mancos 5159

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	9.5	2.52	6.38
Slurry 2	13	1.44	6.5

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

BP America Production Company
BOP Pressure Testing Requirements

Well Name: Storey B 1 M
County: San Juan **State:** New Mexico

Formation	TVD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	918		
Fruitland Coal	2028		
PC	2338		
Lewis Shale	2572		
Cliff House	3888	500	0
Menefee Shale	4130		
Point Lookout	4627	600	0
Mancos	4964		
Dakota	6740	2600	1449

** Note: Determined using the following formula: ABHP – (.22*TVD) = ASP

Requested BOP Pressure Test Exception: 1500 psi

SAN JUAN BASIN
Dakota/MV 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

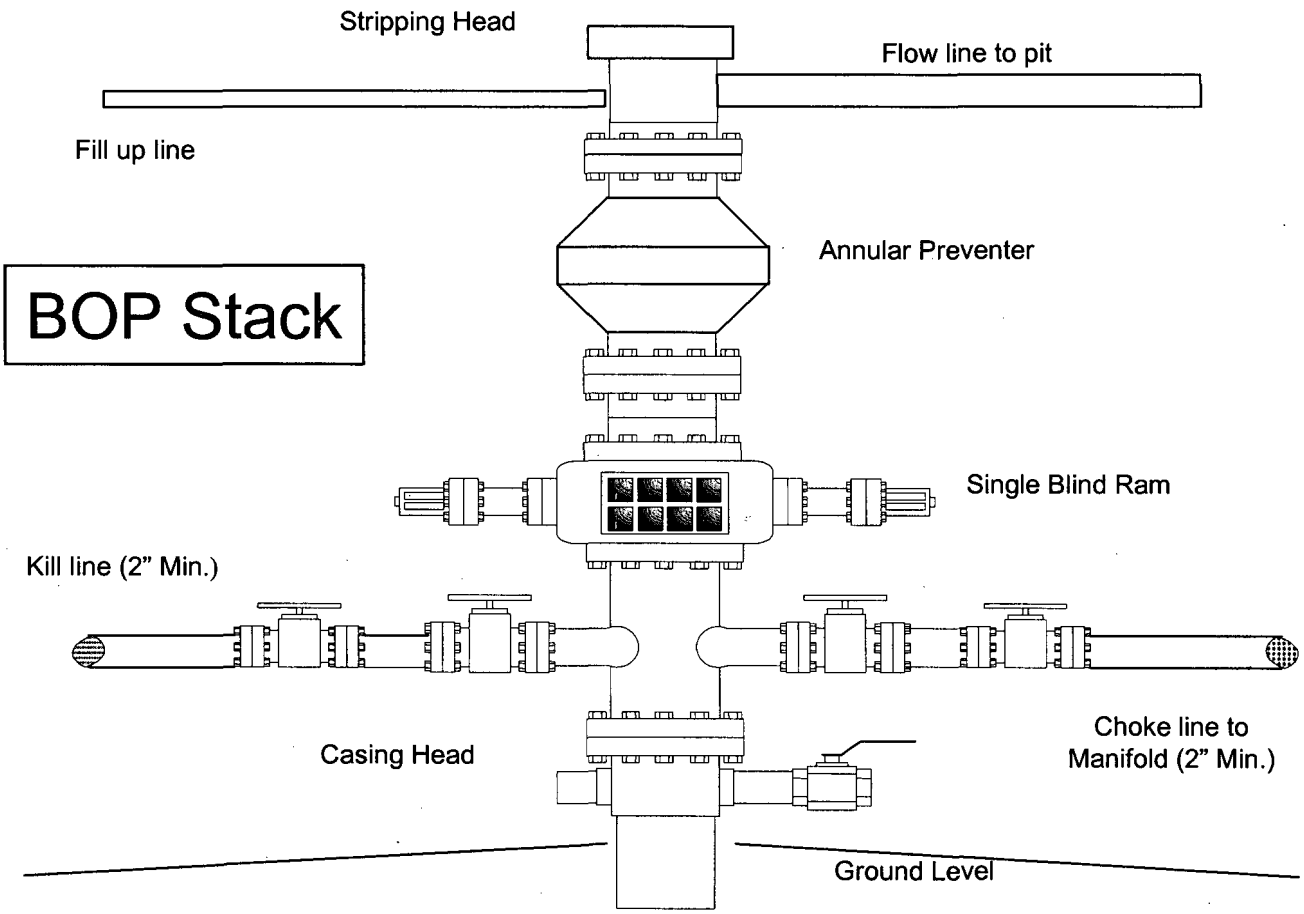
Interval	BOP Equipment
Below conductor casing to total depth	11" nominal or 7 1/16",2000 psi single ram preventer with 3000 psi annular preventer and rotating head.

All ram type and annular preventers as well as related control equipment will be hydraulically tested to 250 psi (low pressure) and 1500 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 American Production Company

Well Control Equipment Schematic

BOP Stack



Choke & Kill Manifold