

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. NMSF - 077123
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input 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: MARY CORLEY E-Mail: corleyml@bp.com		8. Lease Name and Well No. WARREN LS 2B
3a. Address P.O. BOX 3092 HOUSTON, TX 77253	3b. Phone No. (include area code) Ph: 281.366.4491 Fx: 281.366.0700	9. API Well No. 3004531969
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SESE Lot P Tract P 1105FSL 1095FEL 36.40300 N Lat, 107.44100 W Lon At proposed prod. zone		10. Field and Pool, or Exploratory BLANCO MESAVERDE
14. Distance in miles and direction from nearest town or post office* 16.5 MILES FROM BLOOMFILED, NEW MEXICO		11. Sec., T., R., M., or Blk. and Survey or Area Sec 12 T28N R9W Mer NMP SME: BLM
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1095	16. No. of Acres in Lease 269.88	12. County or Parish SAN JUAN
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 768	19. Proposed Depth 4785 MD	13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 5745 GL	22. Approximate date work will start 01/03/2004	17. Spacing Unit dedicated to this well 269.88 A //
		20. BLM/BIA Bond No. on file WY2924
		23. Estimated duration 5 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:

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) MARY CORLEY	Date 10/15/2003
Title AUTHORIZED REPRESENTATIVE		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date NOV 20 2003
Title Office		

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 #24247 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-045-31969		2 Pool Code 72319		3 Pool Name BLANCO MESA VERDE		
4 Property Code 001212		5 Property Name Warren LS			6 Well Number # 2B	
7 OGRID No. 000778		8 Operator Name BP AMERICA PRODUCTION COMPANY			9 Elevation 5745	


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
P	12	28 N	9 W		1140	NORTH	1095	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
12 Dedicated Acres 269.88		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>[Signature]</i> Signature <i>[Signature]</i> Printed Name Sr Regulatory Analyst Title 10-15-2003 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>July 21, 2003 Date of Survey Signature and Seal of Professional Surveyor <i>[Signature]</i> GARY D. VANCE REGISTERED PROFESSIONAL SURVEYOR 7016 Certificate Number 10-11</p>					

**Prospect Name:** Warren LS  
**Lease:** Warren  
**County:** San Juan  
**State:** New Mexico  
**Date:** October 9, 2003

**Well No:** 2 B  
**Surface Location:** 12-28N-9W; 1105 FSL, 1095 FEL  
**Field:** Blanco Mesaverde

METHOD OF DRILLING		APPROXIMATE DEPTHS OF GEOLOGICAL MARKER			
TYPE OF TOOLS	DEPTH OF DRILLING	Estimated GL: 5745		Estimated KB: 5759	
Rotary	0 - TD	MARKER		SUBSEA	TVD
<b>LOG PROGRAM</b> <b>TYPE</b> <u>OPEN HOLE</u> None  <u>CASED HOLE</u> GR-CCL-TDT CBL  <b>REMARKS:</b> - Please report any flares (magnitude & duration).		Ojo Alamo		4580	1180
		Kirtland		4531	1229
		Fruitland		4101	1658
		Fruitland Coal	*	3858	1901
		Pictured Cliffs	*	3638	2121
		Lewis	*	3436	2323
		Cliff House	#	2113	3646
		Menefee	#	1882	3878
		Point Lookout	#	1374	4385
		Mancos		1005	4755
		TOTAL DEPTH		974	4785
		# Probable completion interval		* Possible Pay	
SPECIAL TESTS		DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE		FREQUENCY	DEPTH	FREQUENCY	DEPTH
None		None	Production hole	Geolograph	0-TD
REMARKS:					

MUD PROGRAM:							
Approx. Interval			Type Mud	Weight, #/gal	Vis, sec/qt	W/L cc's/30 min	Other Specification
0	-	120	(1)	Spud	8.6-9.2		
120	-	1851		Water/LSND	8.6-9.2	<6	
1851	-	4785		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 String	Estimated Depth	Casing Size	Grade	Weight	Hole Size	Landing Pt, Cmt, Etc.
Surface/Conductor	120	9 5/8"	H-40 ST&C	32#	12.25"	1
Intermediate 1	1851	7"	J/K-55 ST&C	20#	8.75"	1,2
Production	4785	4 1/2"	J-55	10.5#	6.25"	3,4

REMARKS:

- (1) Circulate Cement to Surface
- (2) Set casing 50' above Fruitland Coal
- (3) Bring cement 100' above 7" shoe
- (4) 100' Overlap

**CORING PROGRAM:**  
None

**COMPLETION PROGRAM:**  
Rigless, 2-3 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: HGJ/MNP/JMP	APPROVED:	DATE: October 9, 2003 Version 1.0
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Form 46 12-00 MNP

# BP America Production Company BOP Pressure Testing Requirements

Well Name: Warren LS  
County: San Juan

2 B  
State: New Mexico

Formation	Estimated TVD/MD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	1180		
Fruitland Coal	1901		
PC	2121		
Lewis Shale	2323		
Cliff House	3646	500	0
Menefee Shale	3878		
Point Lookout	4385	600	0
Mancos	4755		

\*\* Note: Determined using the following formula:  $ABHP - (.22 \times TVD) = ASP$

Requested BOP Pressure Test Exception: 750 psi

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

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## 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.

# Cementing Program

Well Name: Warren LS 2B  
 Location: 12-28N-09W, 1140 FL, 1095 FEL  
 County: San Juan  
 State: New Mexico

Field: Blanco Mesaverde  
 API No.  
 Well Flac  
 Formation: MesaVerde  
 KB Elev (est) 5759  
 GL Elev. (est) 5745

## 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	12.25	9.625	ST&C	Surface	NA	
Intermediate	1851	8.75	7	LT&C	Surface	NA	
Production -	4785	6.25	4.5		1751	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
Intermediate		7	20 K-55	3740		2270	234	0.0405
Production -		4.5	11.6 J-55	5350		4960	154	0.0155

## Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	<u>Recommended Mud Properties Prio Cementing:</u>	
			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	100	40
Excess %, Tail	NA	0	40
BHST (est deg. F)	72	110	159
Time Between Stages, (hr)	NA	NA	NA
Special Instructions	1,6	1,6	2,6

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	70 sx Class G Cement		75 cuft
TOC@Surface	+ 3% CaCl <sub>2</sub> (accelerator)		
	0.25 #/sk Cellophane Flake (lost circulation additive)		0.3132 cuft/ft OH
	0.1% D46 antifoam		100 % excess
Slurry Properties:	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water (gal/sk)
Slurry 1	15.8	1.16	4.95

## 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:

# Cementing Program

Fresh Water 20 bbl fresh water

Lead 150 sx Class "G" Cement 391 cuft  
 Slurry 1 + 3% D79 extender  
 TOC@Surface + 1/4 #/sk. Cellophane Flake  
 + 0.1% D46 antifoam'  
 Tail 60 sx 50/50 Class "G"/Poz 75 cuft  
 Slurry 2 + 2% gel (extender)  
 0.1% D46 antifoam  
 500 ft fill + 1/4 #/sk. Cellophane Flake 0.1503 cuft/ft OH  
 + 2% S1 Calcium Chloride 0.1746 cuft/ft csg ann  
 80 % excess

Slurry Properties:	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water (gal/sk)
Slurry 1	11.7	2.61	17.77
Slurry 2	13.5	1.27	5.72

Casing Equipment: 7", 8R, ST&C

1 Float Shoe  
 1 Float Collar  
 1 Stop Ring  
 Centralizers, one every other joint to base of Ojo  
 2 Turbolizers across Ojo  
 Centralizers, one every 4th joint from Ojo to base of surface casing  
 1 Top Rubber Plug  
 1 Thread Lock Compound

## Production:

Fresh Water 10 bbl CW100

Slurry 180 LiteCrete D961 / D124 / D154 438 cuft  
 + 0.03 gps D47 antifoam  
 + 0.5% D112 fluid loss  
 TOC@Liner Top + 0.11% D65 TIC

Slurry Properties:	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water (gal/sk)	
Slurry	9.5	2.52	6.38	0.1026 cuft/ft OH 40 % excess 0.1169 cuft/ft csg ann

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