

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No. SF - 078039	
6. If Indian, Allottee or tribe Name	
7. If Unit or CA Agreement, Name and No	
8. Lease Name and Well No. Barnes A 18R	
9. API Well No. 3004531936	
1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	10. Field and Pool, or Exploratory Basin Dakota & Blanco Mesaverde
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well Gas <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone	11. Sec., T., R., M., or Blk, and survey or Area B Unit B Sec. 27, T32N, R11W
2. Name of Operator BP America Production Company Attn: Mary Corley	12. County or Parish San Juan
3a. Address P.O. Box 3092 Houston, Texas 77253	13. State New Mexico
3b. Phone No. (include area code) 281-366-4491	14. Distance in miles and direction from nearest town or post office* 17 miles from Aztec, NM
4. Location of Well (Report location clearly and in accordance with any State requirements) At surface 845' FNL & 2115' FEL At proposed prod. Zone	
15. Distance from proposed* Location to nearest Property or lease line, ft. (Also to nearest drig. Ujnit line, if any) 845'	16. No. of Acres in lease 320
17. Spacing Unit dedicated to this well 320 N/2	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1200'
19. Proposed Depth 7900'	20. BLM/BIA Bond No. on file WY2924
21. Elevations (show whether DF, KDB., RT, GL, etc.) 6519' GL	22. Approximate date work will start* December 01, 2003
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:

- | | |
|---|--|
| 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>Mary Corley</i>	Name (Printed/typed) Mary Corley	Date 10/01/2003
Title Senior Regulatory Analyst		
Approved by (Signature) <i>David J. Mankiewicz</i>	Name (Printed/Typed) David J. Mankiewicz	Date DEC - 1 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.

*(Instructions on reverse)

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

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 30-045-31936	² Pool Code 71599 & 72319	³ Pool Name Basin Dakota & Blanco Mesavende
⁴ Property Code 000293	⁵ Property Name Barnes A	⁶ Well Number # 18 R
⁷ OGRID No. 000118	⁸ Operator Name BP AMERICA PRODUCTION COMPANY	⁹ Elevation 6519

¹⁰ Surface Location

UL or Lot No. B	Section 27	Township 32 N	Range 11 W	Lot Idn	Feet from the 845	North/South line NORTH	Feet from the 2115	East/West line EAST	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>Mary Corley</i></p> <p>Printed Name MARY CORLEY</p> <p>Title Regulatory Analyst</p> <p>Date 10.01.2003</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 3, 2003</p> <p>Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p> <p></p> <p>7016</p> <p>Certificate Number</p>

**BP AMERICA PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM**

Prospect Name: Barnes A
Lease: Barnes A
County: San Juan
State: New Mexico
Date: September 8, 2003

Well No: 18R
Surface Location: 27-32N-11W, 845 FNL, 2115 FEL
Field: Blanco Mesaverde/Basin Dakota

OBJECTIVE: Drill 210' below the top of the Upper Two Wells (DKOT), set 41/2" production casing, Stimulate CH, MF, PL and DK intervals							
METHOD OF DRILLING				APPROXIMATE DEPTHS OF GEOLOGICAL MARKER			
TYPE OF TOOLS		DEPTH OF DRILLING		Estimated GL: 6519		Estimated KB: 6533	
Rotary		0 - TD					
LOG PROGRAM							
TYPE		DEPTH INVERAL		MARKER		SUBSEA	
<u>OPEN HOLE</u>						TVD.	
None				Ojo Alamo		4561' 1972'	
				Kirkland		4356' 2177'	
				Fruitland		3908' 2625'	
				Fruitland Coal		* 3695' 2838'	
				Pictured Cliffs		* 3279' 3254'	
				Lewis Shale		# 3104' 3429'	
				Cliff House		# 1770' 4763'	
				Menefee Shale		# 1372' 5161'	
				Point Lookout		# 1012' 5521'	
<u>CASED HOLE</u>				Mancos		675' 5858'	
GR-CCL-TDT		TDT - TD to 7" shoe		Greenhorn		-1038' 7571'	
CBL		Identify 4 1/2" cement top		Bentonite Marker		-1088' 7621'	
REMARKS: - Please report any flares (magnitude & duration).				Two Wells		# -1157' 7690'	
				Paguete		# -1232' 7765'	
				Cubero Upper		# -1263' 7806'	
				Cubero Lower		# -1296' 7836'	
				TOTAL DEPTH			
				# Probable completion interval * Possible Pay			
SPECIAL TESTS				DRILL CUTTING SAMPLES		DRILLING TIME	
TYPE				FREQUENCY DEPTH		FREQUENCY DEPTH	
None				10' 3929' - TD		Geolograph 0-TD	
REMARKS:							

MUD PROGRAM:						
Approx. Interval	Type Mud	Weight, #/ga	Vis, sec/qt	W/L cc's/30 min	Other Specification	
0 - 280	Spud	8.6-9.2				
280 - 3929 (1)	Water/LSND	8.6-9.2		<6		
3929 - 7900	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	280	9 5/8"	H-40 ST&C	32#	13.5"	1
Intermediate 1	3929	7"	J/K-55 ST&C	20#	8.75"	1,2
Production	7900	4 1/2"	J-55	11.6#	6.25"	3
REMARKS: (1) Circulate Cement to Surface (2) Set casing 500' 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				September 8, 2003		
				Version 4.0		
Form 46 12-00 MNP						

BP America Production Company

BOP Pressure Testing Requirements

Well Name: Barnes A
County: San Juan

18R
State: New Mexico

Formation	TVD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	1972		
Fruitland Coal	2838		
PC	3254		
Lewis Shale	3429		
Cliff House	4763	500	0
Menefee Shale	5161		
Point Lookout	5521	600	0
Mancos	5858		
Dakota	7690	2600	1449

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

Requested BOP Pressure Test Exception: 1500 psi

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.

Cementing Program

Well Name: Barnes A 18R
 Location: 27-32N-11W, 845 FNL, 2115 FEL
 County: San Juan
 State: New Mexico

Field: Blanco Mesaverde / Basin Dakota
 API No.
 Well Flac
 Formation: Blanco Mesaverde/Basin Dakota
 KB Elev (est) 6381
 GL Elev. (est) 6367

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	280 120	13.5	9.625	ST&C	Surface	NA	
Intermediate	3929	8.75	7	ST&C	Surface	NA	
Production -	7900	6.25	4.5	ST&C	3829	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 2370		1400	254	0.0787
Intermediate		7	20 K-55	3740		2270	254 234	0.0405
Production -		4.5	11.6 J-55	5350		4960	154	0.0155

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	Recommended Mud Properties Prio Cementing:
			PV <20 YP <10 Fluid Los: <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.	FreshWater	
Slurry 1	240	118-sx Class G Cement	278
TOC@Surface		+ 3% CaCl2 (accelerator)	117-cuft
		+ 0.25 #/sk Cellophane Flake (lost circulation additive)	0.4887 cuft/ft OH

Slurry Properties:

	Density (lb/gal)	Yield (ft3/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

Cementing Program

Intermediate:

Fresh Water	20 bbl	fresh water	
Lead		340 sx Class "G" Cement	894
Slurry 1		+ 3% D79 extender	894 cuft
TOC@Surface		+ 1/4 #/sk. Cellophane Flake	
		+ 5 lb/sk Gilsonite	
Tail		60 sx 50/50 Class "G"/Poz	74
Slurry 2		+ 2% gel (extender)	74 cuft
500 ft fill		+ 1/4 #/sk. Cellophane Flake	0.1503 cuft/ft OH
		+ 2% CaCl2 (accelerator)	0.1746 cuft/ft csg ann
		+ 5 lb/sk Gilsonite	

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		170 LiteCrete D961 / D124 / D154	428
Slurry 1		+ 0.03 gps D47 antifoam	414 cuft
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss	
		+ 0.11% D65 TIC	
Tail		160 sx 50/50 Class "G"/Poz	230
Slurry 2		+ 5% D20 gel (extender)	221 cuft
1542 ft fill		+ 0.1% D46 antifoam	
		+ 1/4 #/sk. Cellophane Flake	
		+ 0.25% D167 Fluid Loss	
		+ 5 lb/sk Gilsonite	
		+ 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
Slurry 2	13	1.44	6.5
			0.1169 cuft/ft csg ann
			Top of Mancos
			5858

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