

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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. NMSF - 078513
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		7. If Unit or CA Agreement, Name and No.
Contact: MARY CORLEY E-Mail: corleyml@bp.com		8. Lease Name and Well No. ARNAUD A 3S
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. 30045 31428
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWSE Lot 10 1940FSL 1820FEL 36.58100 N Lat, 107.48000 W Lon At proposed prod. zone		10. Field and Pool, or Exploratory BASIN FRUITLAND COAL
14. Distance in miles and direction from nearest town or post office* 22 MILES TO AZTEC, NEW MEXICO		11. Sec., T., R., M., or Blk. and Survey or Area Sec 20 T32N R9W Mer NMP
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 820	16. No. of Acres in Lease 316.42	12. County or Parish SAN JUAN
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 3000	19. Proposed Depth 3744 MD	13. State NM
21. Elevations (Show whether DF, KB, RT, GL, etc.) 6771 GL	22. Approximate date work will start 04/21/2003	17. Spacing Unit dedicated to this well 316.42
23. Estimated duration 3 DAYS		20. BLM/BIA Bond No. on file WY2924
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 02/27/2003
Title AUTHORIZED REPRESENTATIVE		
Approved by (Signature) /s/ David J. Mankiewicz	Name (Printed/Typed)	Date APR 15 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 #18984 verified by the BLM Well Information System
For BP AMERICA PRODUCTION COMPANY, sent to the FarmingtonDRILLING 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

** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL **

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 30-045-31428	² Pool Code 71629	³ Pool Name Basin Fruitland Coal
⁴ Property Code 000275	⁵ Property Name Arnaud A	⁶ Well Number # 3S
⁷ OGRID No. 000778	⁸ Operator Name BP AMERICA PRODUCTION COMPANY	⁹ Elevation 6771

¹⁰ Surface Location

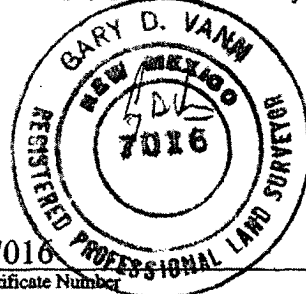
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J (Lot 10)	20	32 N	9 W		1940	SOUTH	1820	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

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 316.42	¹³ Joint or Infill	¹⁴ Order No.
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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

¹⁶ Lot 4	¹⁶ Lot 3	¹⁶ Lot 2	¹⁶ Lot 1	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature: <i>Mary Corley</i> Printed Name: Mary Corley Title: Sr Regulatory Analyst Date: 02.27.2003									
					¹⁶ Lot 5	¹⁶ Lot 6	¹⁶ Lot 7	¹⁶ Lot 8	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. January 29, 2003 Date of Survey Signature and Seal of Professional Surveyor  7016 Certificate Number				
										¹⁶ Lot 12	¹⁶ Lot 11	¹⁶ Lot 10	¹⁶ Lot 9

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

Prospect Name: Arnaud A

Lease:

County: San Juan

State: New Mexico

Date: February 26, 2003

Well No: 3S

Surface Location: Section 20J, T32N, R9W; 1940' FSL, 182'

Field: Basin Fruitland Coal

OBJECTIVE: Drill to a TD of 3744' md, set 7" casing and perf and frac the Fruitland Coal interval.			
METHOD OF DRILLING		APPROXIMATE DEPTHS OF GEOLOGICAL MARKER	
TYPE OF TOOLS Rotary	DEPTH OF DRILLING 0 - 3744' MD, 3756' KB	Estimated GL: 6771	Estimated KB: 678
LOG PROGRAM		MARKER	SUBSEA
		Ojo Alamo	4743
		Kirtland	4617
		Fruitland	3727
		Fruitland Coal	*# 3559
		Pictured Cliffs	* 3164
TYPE <u>OPEN HOLE</u> Run 3-detector Litho-Density. (see Remarks section below).		DEPTH INVERAL TD up to minimum charge.	
CASED HOLE			
REMARKS: - Primary presentation is Bulk Density Presentation (5"=100') with <1.75 g/cc shaded as coal. High resolution pass across the Fruitland interval only. Three final prints to Dan Crosby in Houston.			
		TOTAL DEPTH	3027
		# Probable completion interval	* Possible Pay
SPECIAL TESTS		DRILL CUTTING SAMPLES	
TYPE None		FREQUENCY none	DEPTH none
REMARKS: Obtain reservoir pressures by individual coal seam before starting production.		DRILLING TIME FREQUENCY Geolograph 0-	

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 - 3744 (1)	Water/LSND	8.6-9.2		<6	
	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, I
Surface/Conductor	120	9 5/8"			12.5"	1
Intermediate	3744	7"			8.75"	1
Production						

REMARKS:

(1) Circulate Cement to Surface

CORING PROGRAM:

None

COMPLETION PROGRAM:

Rigless, Single 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:

Daniel Crosby

2/26/2003

Form 46 12-00 MNP

BP America Production Company **BOP Pressure Testing Requirements**

Well Name: Arnaud A
County: San Juan

3S
State: New Mexico

Formation	TVD	Anticipated Bottom Hole Pressure	Maximum Anticipated Surface Pressure **
Ojo Alamo	2028		
Kirtland	2154		
Fruitland Coal	3211	500	0
PC	3607	1300	506
Lewis Shale			
Cliff House			
Menefee Shale			
Point Lookout			
Mancos			
Dakota			

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

Requested BOP Pressure Test Exception: 850 psi

Cementing Program

Well Name: **Arnud A3S**
 Location: **Sec 20 - 32N - 9W, 1940' FSL, 1820' FEL**
 County: **San Juan**
 State: **New Mexico**

Field: **Basin Fruitland Coal**
 API No.:
 Well Flac:
 Formation: **Fruitland Coal**
 KB Elev (est): **6783**
 GL Elev. (est): **6771**

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	12.5	9.625	ST&C	Surface	NA	
Production -	3744	8.75	7	LT&C	Surface	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
Production -		7	20 K-55	3740		2270	234	0.0405

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight	Recommended Mud Properties Prio Cementing:
			PV <20
			YP <10
			Fluid Loss <6
0 - SCP	Water/Spud	8.6-9.2	
SCP - TD	Water/LSND	8.6-9.2	
SCP - TD	Gas/Air/N2/Mist	NA	

Cementing Program:

	Surface	Production
Excess %, Lead	100	40
Excess %, Tail	NA	40
BHST (est deg. F)	75	120
Special Instructions	1,6,7	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	80 sx Class G Cement		83 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)		
	0.25 #/sk Cellophane Flake (lost circulation additive)		0.347 cuft/ft OH
	0.1% D46 antifoam		
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

Cementing Program

1 Top Wooden Plug
 1 Autofill insert float valve
 Centralizers, 1 per joint except top joint
 1 Stop Ring
 1 Thread Lock Compound

Production:

Fresh Water 10 bbl CW100

Lead	260 sx Class "G" Cement	678 cuft
Slurry 1	+ 3% D79 extender	
TOC@Surface	+ 2% S1 Calcium Chloride	
	+1/4 #/sk. Cellophane Flake	
	+ 0.1% D46 antifoam'	
Tail	90 sx 50/50 Class "G"/Poz	105 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 (ft ³ /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

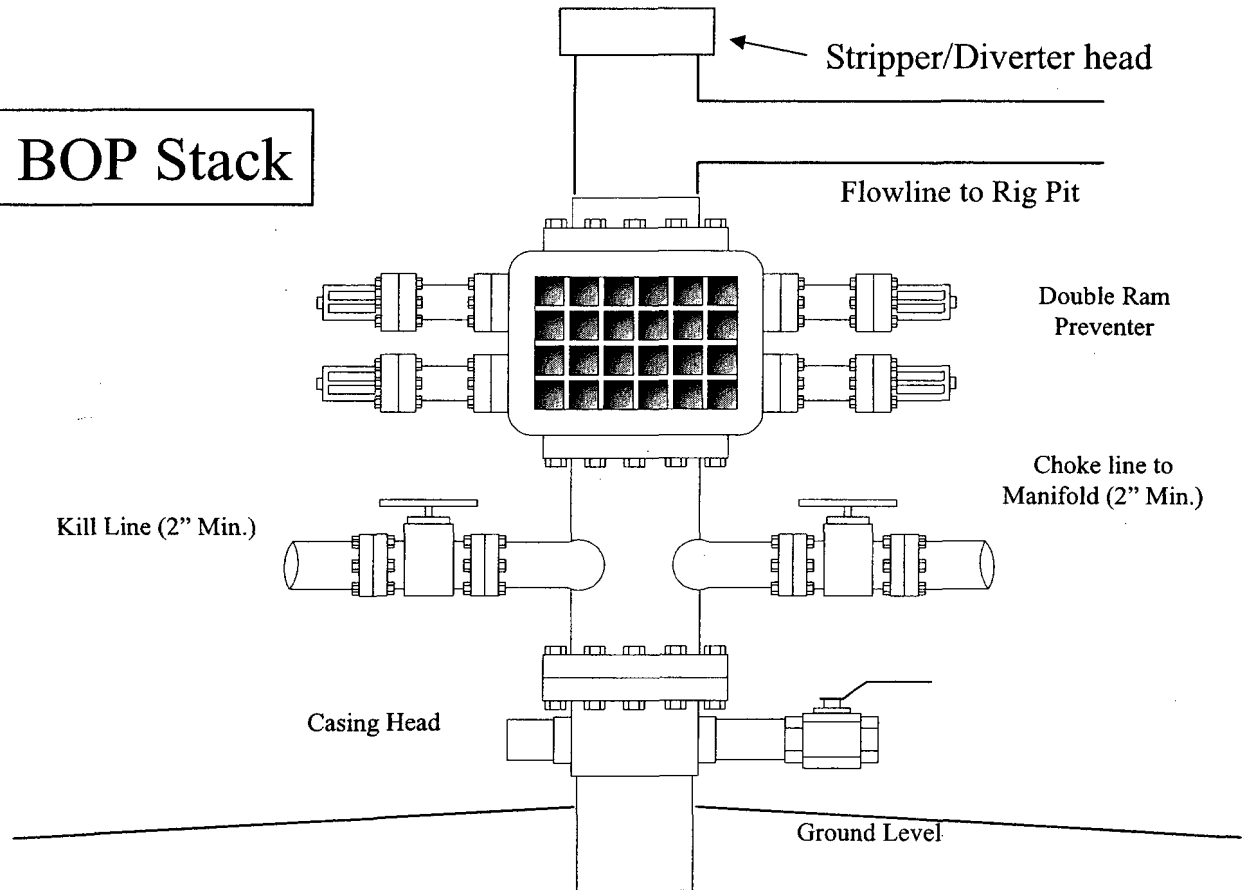
1 Float Shoe (autofill with minimal LCM in mud)
 1 Float Collar (autofill with minimal LCM in mud)
 1 Top Rubber Plug
 1 Thread Lock Compound

BP American Production Company

Well Control Equipment Schematic



BOP Stack



Choke & Kill Manifold

