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

5. Lease Serial No.
NMSF - 078387-A

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
KERNAGHAN B 8S

2. Name of Operator
BP AMERICA PRODUCTION COMPANY
Contact: MARY CORLEY
E-Mail: corleyml@bp.com

9. API Well No.
30045 32472

3a. Address
P.O. BOX 3092
HOUSTON, TX 77253

3b. Phone No. (include area code)
Ph: 281.366.4491
Fx: 281.366.0700

10. Field and Pool, or Exploratory
BASIN FRUITLAND COAL

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SWNW Lot E 1470FNL 1160FWL 36.51400 N Lat, 107.41100 W Lon

At proposed prod. zone

11. Sec., T., R., M., or Blk. and Survey or Area
E Sec 33 T31N R8W Mer NMP
SME: BLM

14. Distance in miles and direction from nearest town or post office*
22 MILES FROM AZTEC, NEW MEXICO

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)
1160

16. No. of Acres in Lease
320.00

17. Spacing Unit dedicated to this well
320.00 W/2

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
2650

19. Proposed Depth
3340 MD

20. BLM/BIA Bond No. on file
WY2924

21. Elevations (Show whether DF, KB, RT, GL, etc.
6483 GL

22. Approximate date work will start
09/10/2004

23. Estimated duration
4 DAYS

OCT 2004
RECEIVED
OIL CONS. DIV.
DIST. 3

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)	MARY CORLEY	07/22/2004

Title
AUTHORIZED REPRESENTATIVE

Approved by (Signature)	Name (Printed/Typed)	Date
Original Signed: Stephen Mason		SEP 28 2004
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 #33415 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
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

30-045-32472

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
~~30-045-11612~~	71629	Basin Fruitland Coal

[4] Property Code	[5] Property Name	[6] Well Number
000766	Kernaghan B	8S

[7] OGRID No.	[8] Operator Name	[9] Elevation
000778	~~Amoco Production Company~~	~~6483'~~

[10] Surface Location

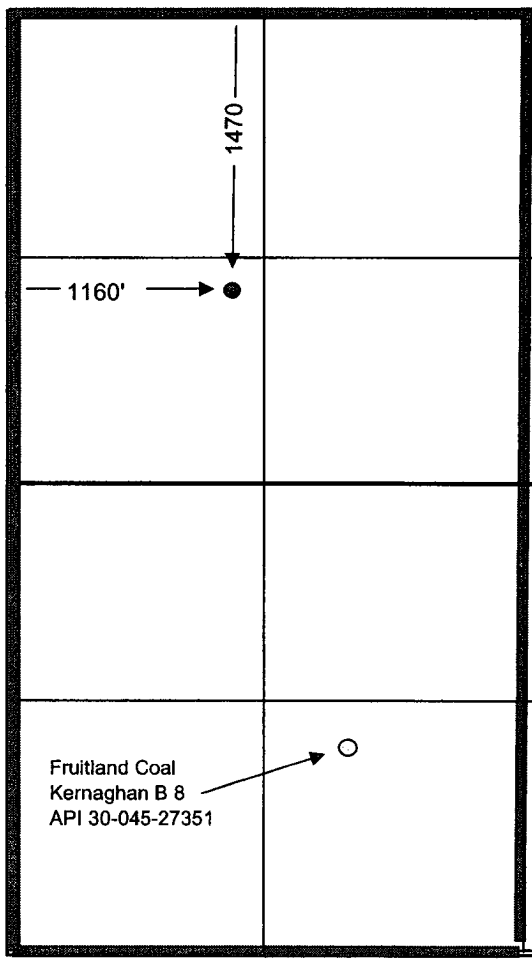
UL or lot no.	Section	Township	Range	Lot Idn	Feet from	North/South	Feet from	East/West	County
Unit E	33	31N	08W		1470	North	1160	West	San Juan

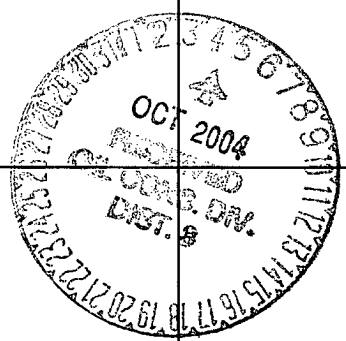
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from	North/South	Feet	East/West	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320			

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.

Mary Corley

Signature

Mary Corley

Printed Name

Sr. Regulatory Analyst

Title

07/22/2004

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.

4/26/2004

Date of Survey

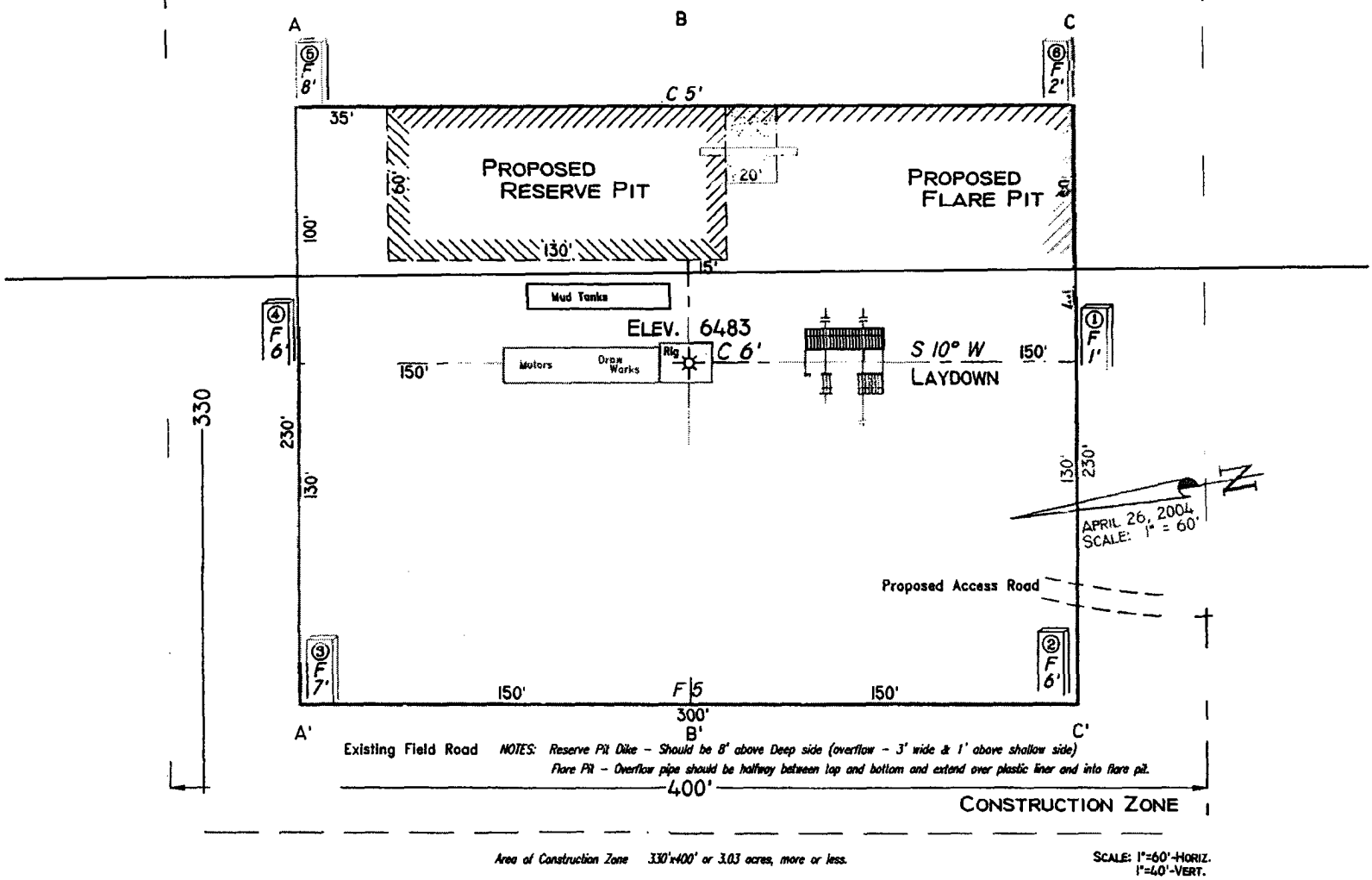
Signature and Seal of Professional Surveyor:

Gary D Vann 7016

Certificate Number

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
Kernaghan B # 8S
1470' F/NL 1160' F/WL
SEC. 33, T31N, R8W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

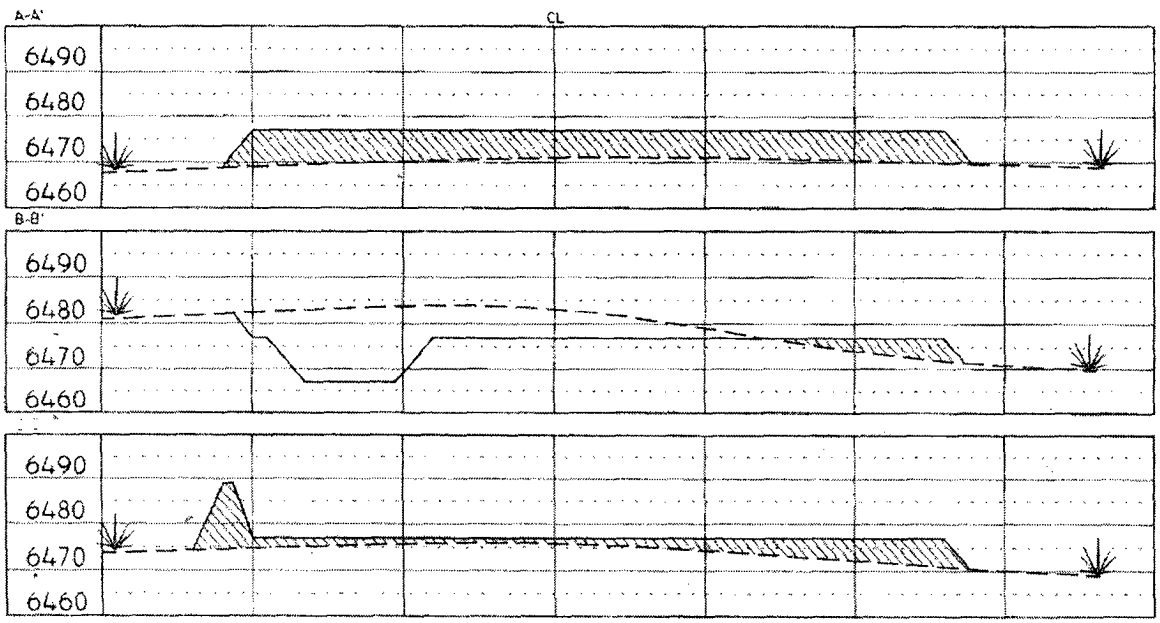
Lat: 36°51'27"
Long: 107°41'08"



NOTES: Reserve Pit Dike – Should be 8' above Deep side (overflow – 3' wide & 1' above shallow side)
Flare Pit – Overflow pipe should be halfway between top and bottom and extend over plastic liner and into flare pit.

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

BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

14-Jul-2004

Lease: Kernaghan **Well Name & No.** Kernaghan B 8S **Field:** Basin Fruitland Coal

County: San Juan, New Mexico **Location:** Section 33 Unit E, T31N, R8W; 1470 FNL, 1160 FWL

Minerals: State **BHLOC:** Vertical

Rig : Aztec 507 **Surface:** Lat: 36.51.4 deg; Long: -107.41.1

OBJECTIVE: Drill to a TD of 3340' MD - topset FT with 7" casing and air drill the Fruitland Coal interval, underream and set 5.5" liner.

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 – 3340' MD, 3353' KB

LOG PROGRAM

Type	Depth Interval
Mud log & gas chromatograph	3110'-3340' MD

REMARKS:

At TD and prior to completion of the Fruitland coal interval, the operator will FAX or email a copy of the mud log and gas chromatograph analysis covering the lower basal Fruitland coal seam to the FFO-PMT geologist (Chip Harraden @ 505-599-8997 or chip_harraden@nm.blm.gov) and to the BP geologist at hilkewdn@bp.com,fax (281) 366-7099.

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Actual GL: 6262' Estimated KB: 6,276.0'

Marker		SUBSEA	TVD	APPROX. MD
Ojo Alamo		4,314'	2,182'	2,182'
Kirtland		4,240'	2,256'	2,256'
Fruitland	*	3,454'	3,042'	3,042'
Fruitland Coal	*#	3,348'	3,148'	3,148'
Pictured Cliffs	*	3,153'	3,343'	3,343'
TOTAL DEPTH:		3,156'	3,140'	3,140'

Probable completion interval * Possible Pay

SPECIAL TESTS

TYPE
None

REMARKS:

DRILL CUTTING SAMPLES		DRILLING TIME	
FREQUENCY	DEPTH	FREQUENCY	DEPTH
none	none	Geolograph	0 - 3340'

MUD PROGRAM:

Interval	Type□Mud	#/gal	Vis, □sec/qt	/30 min	Other Specification
120'	Spud	8.8 - 9.0	Sufficient to clean hole.		
3,124'	Water/LSND	8.4 - 9.0		<9	
3,315'	Air	1			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	120	12-1/2"	9-5/8"	H-40, 8 RND	32.3#	1	cmt to surface
Intermediate 1	3148	8-3/4"	7"	J-55, 8 RND	20#	1	cmt to surface
Production	3,138' - 3,340'	11"	5-1/2"	J-55, 8 RND	15.5#	2	

CORING PROGRAM:

None

COMPLETION PROGRAM:

No frac, perforated liner completion. Run 2-3/8" reduced collar tubing to a depth of 3310' MD

GENERAL REMARKS:

Under-ream open-hole section from 6.25" to 11.0". 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**
Ojo Alamo	2,182'		0
Kirtland	2,256'		0
Fruitland Coal	3,143'	200	0
PC	3,343'	250	0

Requested BOP Pressure Test Exception = 850 psi ** Note: Determined using the following formula: ABHP – (.22*TVD) = ASP

Form 46 Reviewed by:	Logging program reviewed by:			
PREPARED BY:	**APPROVED:**	**DATE:**	**APPROVED:**	**DATE:**
Teruko thomas		14-Jul-04		
Form 46 7-84bw	For Drilling Dept.		For Production Dept.	

Additional Operator Remarks:

Notice of Staking Submitted.

BP America Production Company respectfully request permission to drill the subject well to a total depth of approximately 3340complete in the Basin Fruitland Coal Pool as per the attached procedure.

As an alternate to the drilling of the surface hole with drilling mud as stated on the attached Form 46, BP request permission to either drill with drilling mud or with air/air mist. Additionally, BP request as a possible alternate to the cementing of the surface casing to be either the cementing program stated on the attachment or with approximately 90 CU/FT TYPE I-II, 20% FLYASH, 14.5 PPG, 7.41 GAL/SK, 1.61 CF/SK YIELD, ~~80 DEG BHST~~ READY MIX CMT.

SUPPLEMENTAL TO SURFACE USE PLAN

New facilities:

A 4 diameter buried steel pipeline that is + or 1000 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 well 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 to Williams Field Services.~~

CASING AND CEMENTING PROGRAM

Casing Program:

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
Production -	7	20	K-55	3740	2270	234	0.0405	6.456

Mud Program

Apx. Interval (ft)	Mud Type	Mud Weight
0 - SCP	Water/Spud	8.6-9.2
SCP - TP	Water/LSND	8.6-9.2
SCP - TP	Gas/Air Mist	NA

Recommended Mud Properties Prio Cementing	
PV	<20
YP	<10
Fluid Loss	<6

Cementing Program:

	Surface		Production
Excess %, Lead	100		40
Excess %, Tail	NA		40
BHST (est deg. F)	75		190
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

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	70 sx Class C Cement	83 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)	
		0.347 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

Production

Fresh Water	10 bbl	CW100

Lead	220 sx Class "G" Cement	553 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 Flak	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 Top Rubber Plug	
1 Thread Lock Compound	

FEDERAL CEMENTING REQUIREMENTS

1. All permeable zones containing fresh water and other usable water containing 10,000 PPM or less total dissolved solids will be isolated and protected from contamination by cement circulated in place for the protection of permeable zones per the NTL-FRA 90-1 Section III A.

2. The hole size will be no smaller than 1 ½" larger diameter than the casing O.D. across all water zones.

3. An adequate spacer will be pumped ahead of the cement slurry to help prevent mud contamination of the cement.

4. An adequate number of casing centralizers will be run through usable water zones to ensure that the casing is centralized through

5. Centralizers will impart a swirling action around the casing and will be used just below and into the base of the lowest usable water

6. A chronological log will be kept recording the pump and slurry information and will be sent to the BLM with the subsequent sundry.

SAN JUAN BASIN
Dakota Formation

Pressure Control Equipment

The objective Fruitland Coal 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 Fruitland Coal. No abnormal temperature, pressure, or H2S anticipated.

Equipment Specification

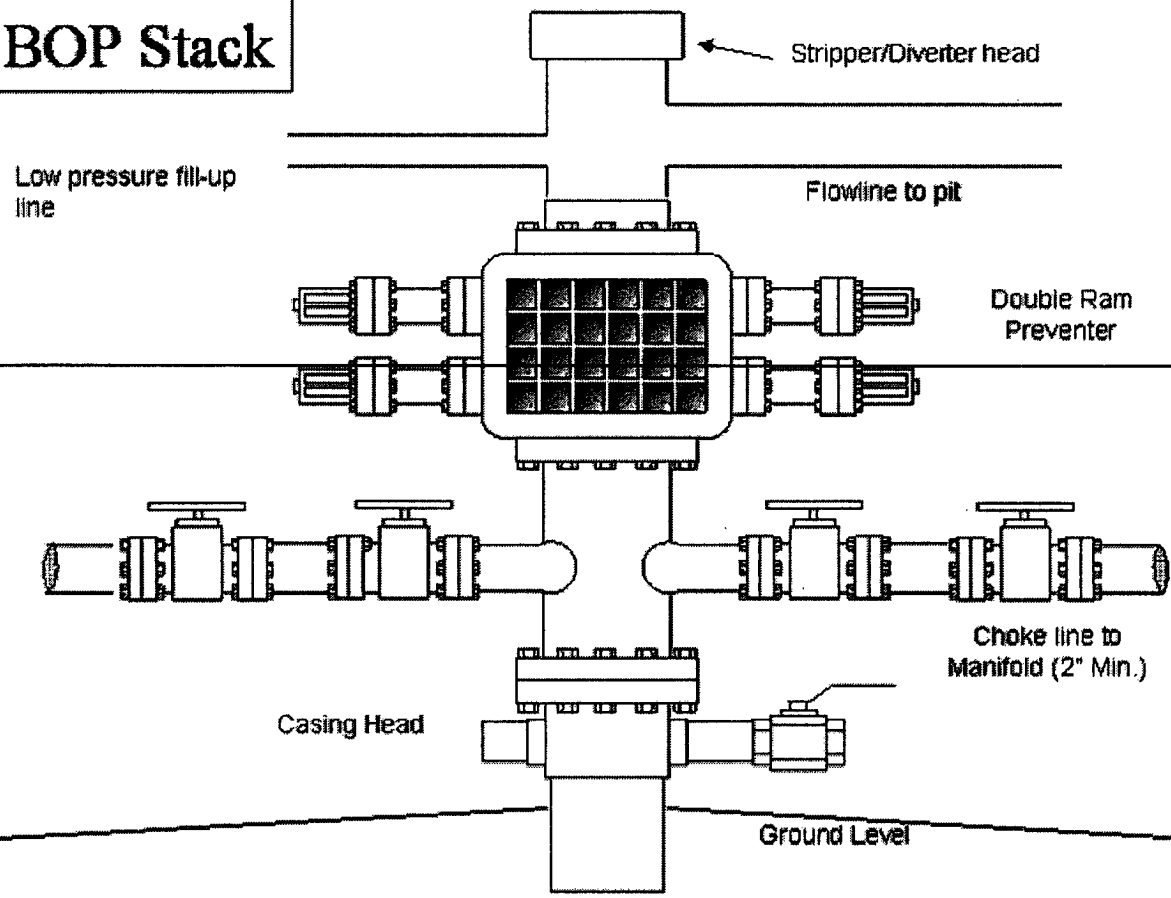
Interval	BOP Equipment
Below conductor casing to total depth	11" nominal or 7 1/16",3000 psi double ram preventer with rotating head

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 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