Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANGEMENT
APPLICATION OFOR PERMIT TO DRILL OR REENTER

2005 NOV 22 PM 12:19

RECEIVED
070 FARMINGTON NM

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

5. Lease Serial No. **SF - 078096**

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 Gas ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Mudge B 20M

2. Name of Operator
BP AMERICA PRODUCTION COMPANY

9. API Well No.
30-045-33449

3a. Address
P.O. BOX 3092 HOUSTON, TX 77079-2064

3b. Phone No. *(include area code)*
281-366-4081

10. Field and Pool, or Exploratory
Basin Dakota & Blanco Mesaverde

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

At surface **1995' FSL & 1295' FEL NESE**

At proposed prod. Zone **2055' FSL & 1900' FEL NWSE**

11. Sec., T., R., M., or Blk, and survey or Area
SECTION 8 T31N & R11W
I E/2

14. Distance in miles and direction from nearest town or post office*
8.9 MILES NORTH FROM AZTEC, NM

12. County or Parish
SAN JUAN

13. State
NEW MEXICO

15. Distance from proposed* Location to nearest Property or lease line, ft. (Also to nearest drig. Ujnit line, if any) **740'**

16. No. of Acres in lease
320

17. Spacing Unit dedicated to this well
320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2000'

19. Proposed Depth
7441' MD 7372' TVD

20. BLM/BIA Bond No. on file
WY2924

21. Elevations (show whether DF, KDB., RT, GL, etc.
6077' GL

22. Approximate date work will start*
01/25/06

23. Estimated duration
8 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 suthorized officer.

25. Signature: Cherry Hlava | Name *(Printed/typed)*: **Cherry Hlava** | Date: 11-17-05

Title: **Regulatory Analyst**

Approved by (Signature): BMankiewicz | Name *(Printed/Typed)* | Date: 1/5/06

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.

(Instructions on reverse)

NOS C-104 FOR Directional Survey

JAN 2006
RECEIVED
OIL CONS. DIV.
DIST. 3

NMOCD

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".

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

2005 NOV 22 PM 12 10

RECEIVED
070 FARMINGTON NM

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	2 Pool Code	3 Pool Name
30-045-33449	71599 / 72319	Basin Dakota / Blanco Mesaverde

4 Property Code	5 Property Name	6 Well Number
906 ✓	Mudge B	# 20M ✓

7 OGRID No.	8 Operator Name	9 Elevation
778 ✓	BP AMERICA PRODUCTION COMPANY	6077

10 Surface Location

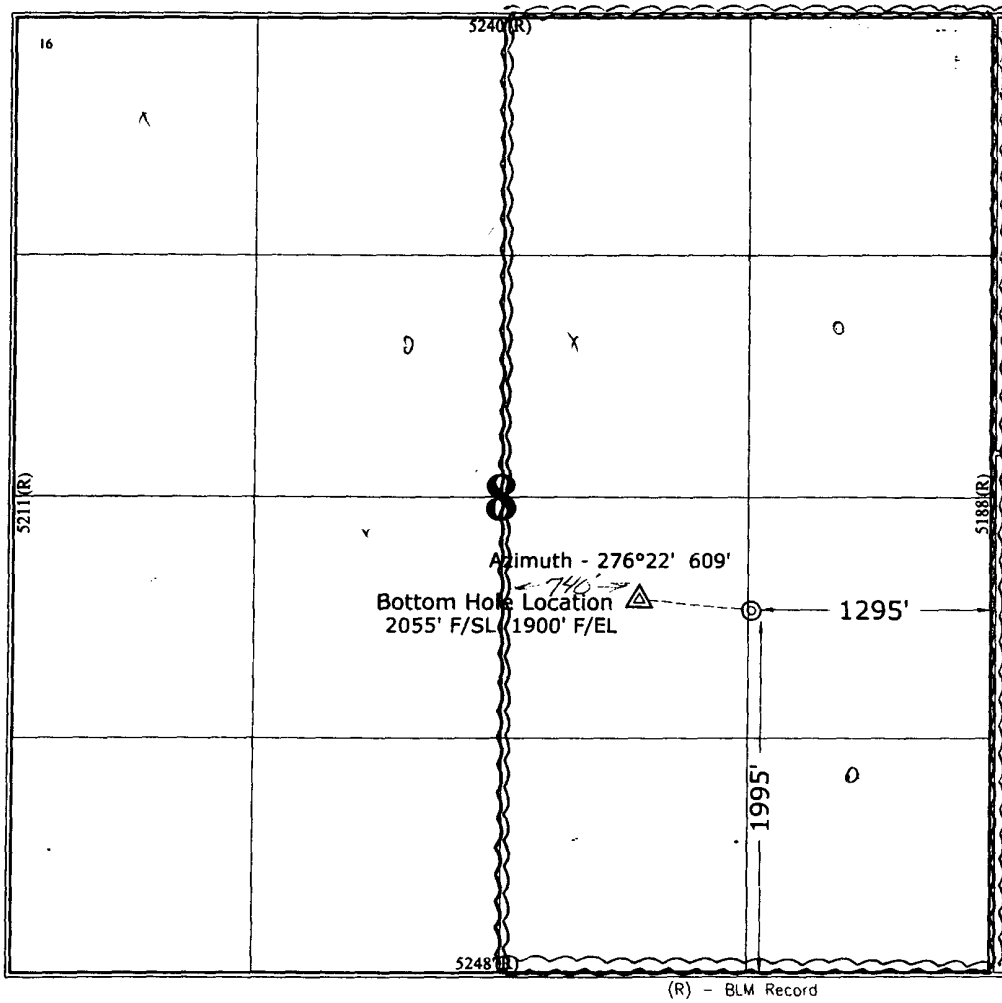
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	8	31 N	11 W		1995	SOUTH	1295	EAST	SAN JUAN

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
J	8	31 N	11 W		2055	SOUTH	1900	EAST	SAN JUAN

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.

Cherry Hlava
Signature

Cherry Hlava
Printed Name

Regulatory Analyst
Title

10-11-05
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.

August 22, 2005
Date of Survey

Signature and Seal of Professional Surveyor

GARY D. VANN NEW MEXICO 7016 REGISTERED PROFESSIONAL LAND SURVEYOR

7016
Certificate Number

(R) – BLM Record

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO. 30-045-33449
NEW WELL

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other ☐

7. Lease Name or Unit Agreement Name
Mudge B
(APD filed with BLM SF 078096)

8. Well Number
20 M

2. Name of Operator
BP AMERICA PRODUCTION COMPANY

9. OGRID Number
000778

3. Address of Operator
P.O. BOX 3092 HOUSTON, TX 77079-2064

10. Pool name or Wildcat
Basin Dakota & Blanco Mesaverde

4. Well Location
Unit Letter **I** : **1995** feet from the **South** line and **1295** feet from the **East** line
Section **8** Township **31N** Range **11W** NMPM **SAN JUAN** County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
6077'

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type DRILLING Depth to Groundwater >100' Distance from nearest fresh water well > 1000' Distance from nearest surface water > 1000'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume ____ bbls; Construction Material ____

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
OTHER: **LINED DRILLING PIT**	☒			OTHER:	☐		

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Construct a lined drilling pit per BP America – San Juan Basin Drilling/ Workover Pit Construction Plan issued date of 11/17/2004. Pit will be closed according to closure plan on file.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.**

SIGNATURE Cherry Hlava TITLE **Regulatory Analyst** DATE **10/13/2005**

Type or print name **Cherry Hlava** E-mail address: **hlavacl@bp.com** Telephone No. **281-366-4081**

For State Use Only

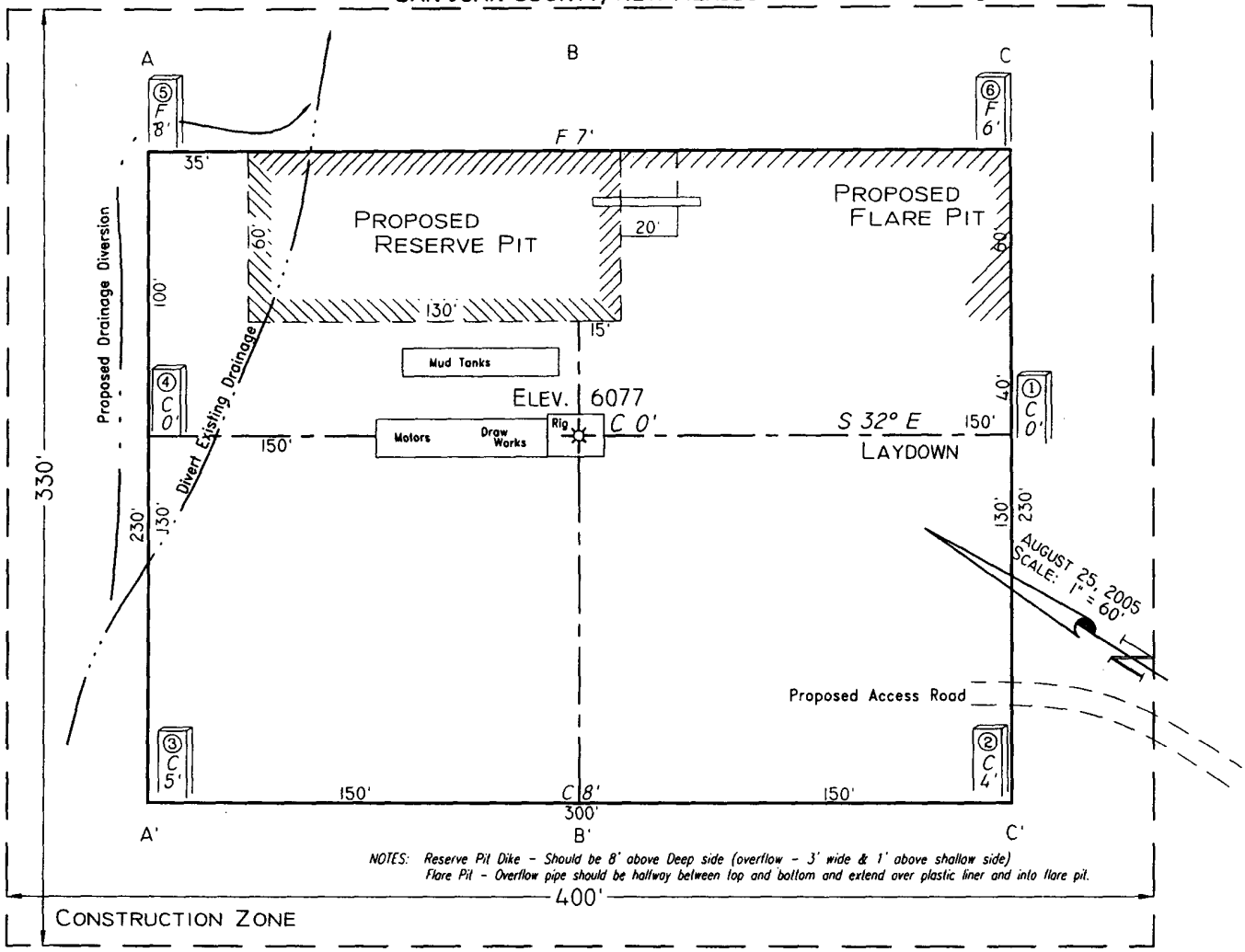
APPROVED BY: TITLE **DEPUTY OIL & GAS INSPECTOR, DIST. #3** DATE **JAN 09 2006**

Conditions of Approval (if any):

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
Mudge B # 20M
1995' F/SL 1295' F/EL
SEC. 8, T31N, R11W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

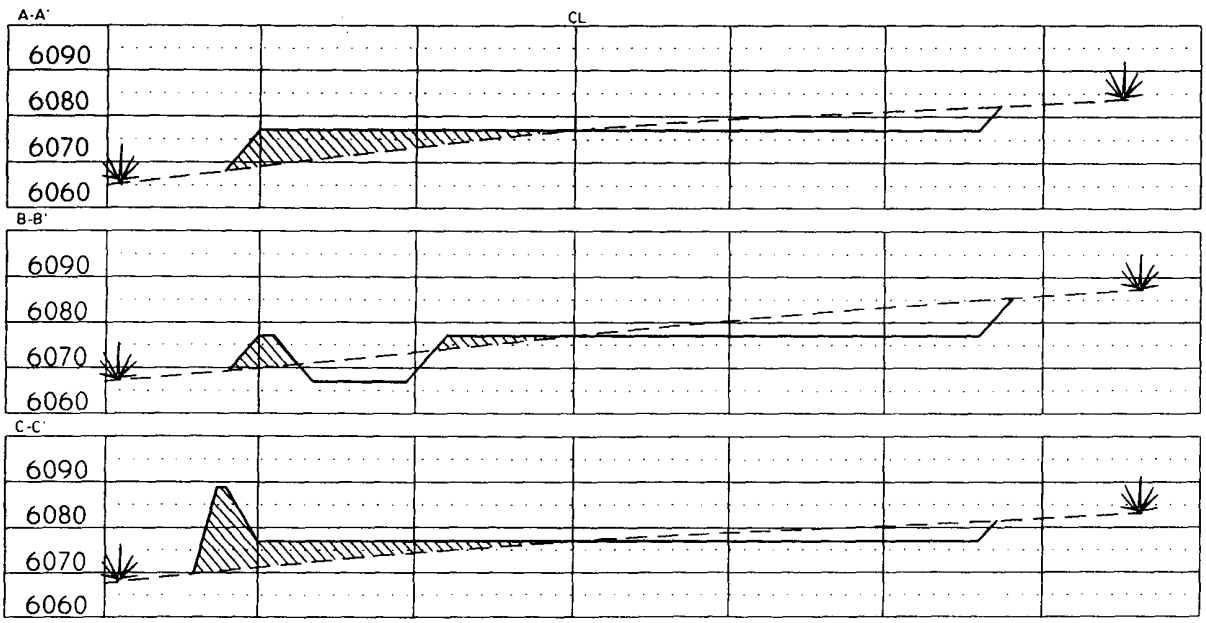
Lat: 36.9114°
Long: 108.0092°

Lat: 36°54'41"
Long: 108°00'33"



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

Cementing Program

1 Thread Lock Compound

Intermediate:

Fresh Water	20 bbl	fresh water		
Lead	251	sx Class "G" Cement	661	cuft
Slurry 1		+ 3% D79 extender		
TOC@Surface		+1/4 #/sk. Cellophane Flake		
		+ 5 lb/sk Gilsonite		
Tail	59	sx 50/50 Class "G"/Poz	75	cuft
Slurry 2		+ 2% gel (extender)		
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 (ft3/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	186	LiteCrete D961 / D124 / D154	469	cuft
Slurry 1		+ 0.03 gps D47 antifoam		
TOC, 400' above 7" shoe		+ 0.5% D112 fluid loss		
		+ 0.11% D65 TIC		
Tail	155	sx 50/50 Class "G"/Poz	223	cuft
Slurry 2		+ 5% D20 gel (extender)		
1555 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 (ft3/sk)	Water (gal/sk)	
				0.1169 cuft/ft csg ann
Slurry 1	9.5	2.52	6.38	
Slurry 2	13	1.44	6.5	Top of Mancos 5386

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

Cementing Program

Well Name:	Mudge B #20M		
Location:	8-31N-11W: 1995' FSL, 1295' FEL		
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Blanco Mesaverde/Basin Dakota
		KB Elev (est)	6091
		GL Elev. (est)	6077

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	200	13.5	9.625	ST&C	Surface	NA	
Intermediate	3080	8.75	7	LT&C	Surface	NA	
Production -	7441	6.25	4.5	ST&C	2980	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	1400	254	0.0787	8.845
Intermediate	7	20	K-55	3740	2270	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	154 sx Class C Cement		195 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)		
			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

BP AMERICA PRODUCTION COMPANY

DRILLING AND COMPLETION PROGRAM

9/27/2005

Lease:	Mudge B	**Well Name & No.**	Mudge B #20M	**Field:**	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	**Surface Location:**	8-31N-11W: 1995' FSL, 1295' FEL		
Minerals:	State	**Surface:**	Lat: 36.9111130 deg; Long: -108.0083770 deg		
Rig :	Aztec 184	**BH Location:**	8-31N-11W: 2055' FSL, 1900' FEL; Lat: 36.9113024 deg; Long: -108.0104490 deg		
OBJECTIVE:	Drill 260' below the top of the Two Wells Mbr, set 4-1/2" production casing, Stimulate DK, MF, and PL intervals.				

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 - TD

LOG PROGRAM

Type	Depth Interval
Single Run	
Cased Hole	
RST- CBL	TD to 7" shoe
	Identify 4 ½" cement top

REMARKS:

In this area the Cliffhouse member of the Mesa Verde can be wet.

Report all flares.

The recommended TD is intended to penetrate the uppermost BRCN (~10') so that the entire ENCN can be produced. Offsetting wells to the west & south encountered no water flow in the BRCN. See attached cross-section.

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Actual GL: 6077 | Estimated KB: 6,091.0'

Marker		SUBSEA	TVD	APPROX. MD
Ojo Alamo		5,170'	921'	931'
Kirtland		5,106'	985'	997'
Fruitland	*	4,060'	2,031'	2,077'
Fruitland Coal	*	3,757'	2,334'	2,390'
Pictured Cliffs	*	3,390'	2,701'	2,766'
Lewis	*	3,179'	2,912'	2,980'
Cliff House	#	1,927'	4,164'	4,233'
Menefee	#	1,569'	4,522'	4,591'
Point Lookout	#	1,145'	4,946'	5,015'
Mancos		774'	5,317'	5,386'
Greenhorn		-908'	6,999'	7,068'
Graneros (bent,mkr)		-966'	7,057'	7,126'
Two Wells	#	-1,021'	7,112'	7,181'
Paguate	#	-1,102'	7,193'	7,262'
Cubero	#	-1,127'	7,218'	7,287'
L. Cubero	#	-1,151'	7,242'	7,311'
Encinal Cyn	#	-1,183'	7,274'	7,343'
TOTAL DEPTH:		-1,281'	7,372'	7,441'

Probable completion interval | * Possible Pay

SPECIAL TESTS

TYPE
None

REMARKS:

DRILL CUTTING SAMPLES			DRILLING TIME	
FREQUENCY	DEPTH		FREQUENCY	DEPTH
30'/10' intervals	3,080'	to TD	Geolograph	0 - TD

MUD PROGRAM:

Interval	TypeMud	#/gal	Vis, sec/qt	/30 min	Other Specification
200'	Spud	8.8 - 9.0	Sufficient to clean hole.		
3,080'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
7,441'	Air	1	1000 cfm for hammer		Volume sufficient to maintain a stable and clean wellbore

CASING PROGRAM:

CasingString	Depth	Size	Casing Size	Grade, Thread	Weight	Landing Point	Cement
Surface/Conductor	200'	13 1/2"	9-5/8"	H-40 ST&C	32#		cmt to surface
Intermediate 1	3,080'	8-3/4"	7"	J/K-55 ST&C	20#	100' below LWIS	cmt to surface
Production	7,441'	6-1/4"	4-1/2"	~~P-110~~ J-55	11.6#	DKOT	150' inside Intermediate - TOC survey required

CORING PROGRAM:

None

COMPLETION PROGRAM:

Rigless, 2-3 Stage Limited Entry Hydraulic Frac, FMC Unihead

GENERAL REMARKS:

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**
Cliffhouse	4,164'	500	0
Point Lookout	4,946'	600	0
Dakota	7,112'	2600	1035.36

Requested BOP Pressure Test Exception = 1500 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:**
HGJ JMP			27-Sep-05		
Form 46 7-84bw		For Drilling Dept.		For Production Dept.	

Additional Operator Remarks
Mudge B 20M
APD

NOTICE OF STAKING WAS SUBMITTED ON 9/6/05

BP America Production Company respectfully requests permission to directional drill the subject well to a total depth of approximately 7441' MD & 7372' TVD. Complete in the Basin Dakota Pool, isolate the Dakota; complete into the Blanco Mesaverde, establish a production rate; 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 +/- 600 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

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 single 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.

Scientific Drilling
Directional Drilling Operations

Field: SAN JUAN, New Mexico
Site: SEC 8-T31N-R11W
Well: Mudge B #20 M
Wellpath: OH
Plan: Plan #1

bp

SECTION DETAILS

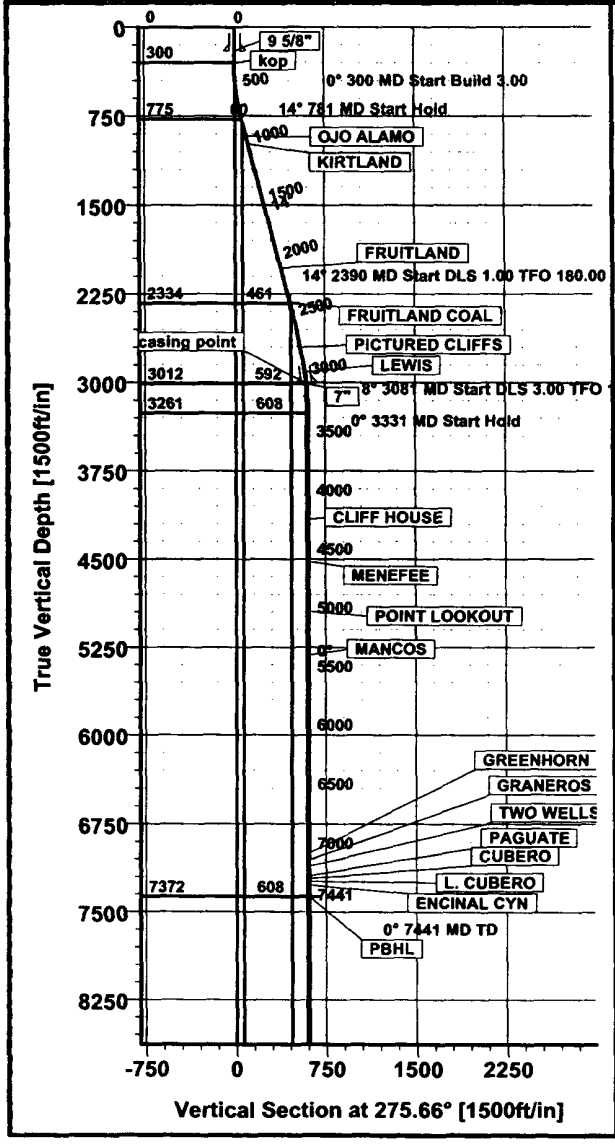
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	780.55	14.42	275.66	775.50	5.93	-59.85	3.00	275.66	60.14	
4	2389.73	14.42	275.66	2334.00	45.44	-458.53	0.00	0.00	460.78	Fruitland coal
5	3080.74	7.51	275.66	3012.00	58.40	-589.21	1.00	180.00	592.09	casing point
6	3330.96	0.00	0.00	3261.50	60.01	-605.50	3.00	180.00	608.46	
7	7441.46	0.00	0.00	7372.00	60.01	-605.50	0.00	0.00	608.46	PBHL

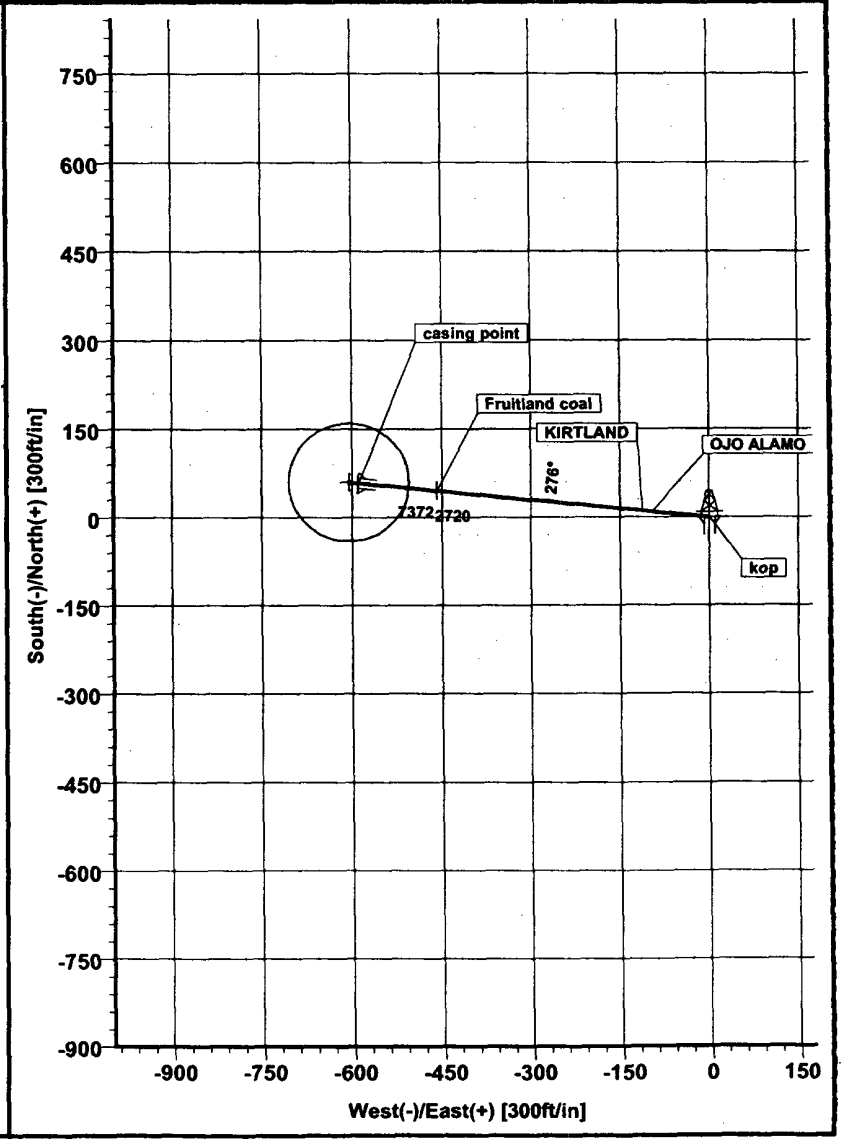
TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Fruitland coal	2334.00	45.44	-458.50	2151068.13	2671465.50	Point
casing point	3012.00	58.40	-589.20	2151081.09	2671334.81	Point
PBHL	7372.00	60.00	-605.00	2151082.69	2671319.01	Circle (Radius: 100)

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Mudge B #20 M	0.00	0.00	2151022.69	2671923.96	36°54'40.000N	108°00'30.150W	N/A





Scientific Drilling
Planning Report

Company:	BP	**Date:**	9/20/2005	**Time:** 20:01:42	**Page:** 1
Field:	SAN JUAN, New Mexico	**Co-ordinate(NE) Reference:**	Well: Mudge B #20 M, Grid North		
Site:	SEC 8-T31N-R11W	**Vertical (TVD) Reference:**	SITE 6091.0		
Well:	Mudge B #20 M	**Section (VS) Reference:**	Well (0.00N,0.00E,275.66Azi)		
Wellpath:	OH	**Plan:**	Plan #1		

Field: SAN JUAN, New Mexico
SAN JUAN COUNTY, NEW MEXICO
USA

Map System:	US State Plane Coordinate System 1983	**Map Zone:**	New Mexico, Western Zone
Geo Datum:	GRS 1980	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	bggm2005

Site: SEC 8-T31N-R11W

SAN JUAN NEW MEXICO

Site Position:		**Northing:**	ft	**Latitude:**	
From:	Lease Line	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	0.00 ft			**North Reference:**	Grid
Ground Level:	6077.00 ft			**Grid Convergence:**	-0.11 deg

Well: Mudge B #20 M **Slot Name:**

Well Position:	+N/-S	0.00 ft	**Northing:**	2151022.69 ft	**Latitude:**	36 54 40.000 N
	+E/-W	0.00 ft	**Easting :**	2671923.96 ft	**Longitude:**	108 0 30.150 W
Position Uncertainty:		0.00 ft				

Wellpath: OH **Drilled From:** Surface
Tie-on Depth: 0.00 ft

Current Datum:	SITE	**Height** 6091.00 ft	**Above System Datum:** Mean Sea Level
Magnetic Data:	9/20/2005		**Declination:** 10.75 deg
Field Strength:	51438 nT		**Mag Dip Angle:** 63.73 deg

Vertical Section:	**Depth From (TVD)** ft	**+N/-S** ft	**+E/-W** ft	**Direction** deg
	0.00	0.00	0.00	275.66

Plan: Plan #1 **Date Composed:** 9/20/2005
Version: 4
Principal: Yes **Tied-to:** From Surface

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
780.55	14.42	275.66	775.50	5.93	-59.85	3.00	3.00	0.00	275.66	
2389.73	14.42	275.66	2334.00	45.44	-458.53	0.00	0.00	0.00	0.00	Fruitland coal
3080.74	7.51	275.66	3012.00	58.40	-589.21	1.00	-1.00	0.00	180.00	casing point
3330.96	0.00	0.00	3261.50	60.01	-605.50	3.00	-3.00	33.71	180.00	
7441.46	0.00	0.00	7372.00	60.01	-605.50	0.00	0.00	0.00	0.00	PBHL

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

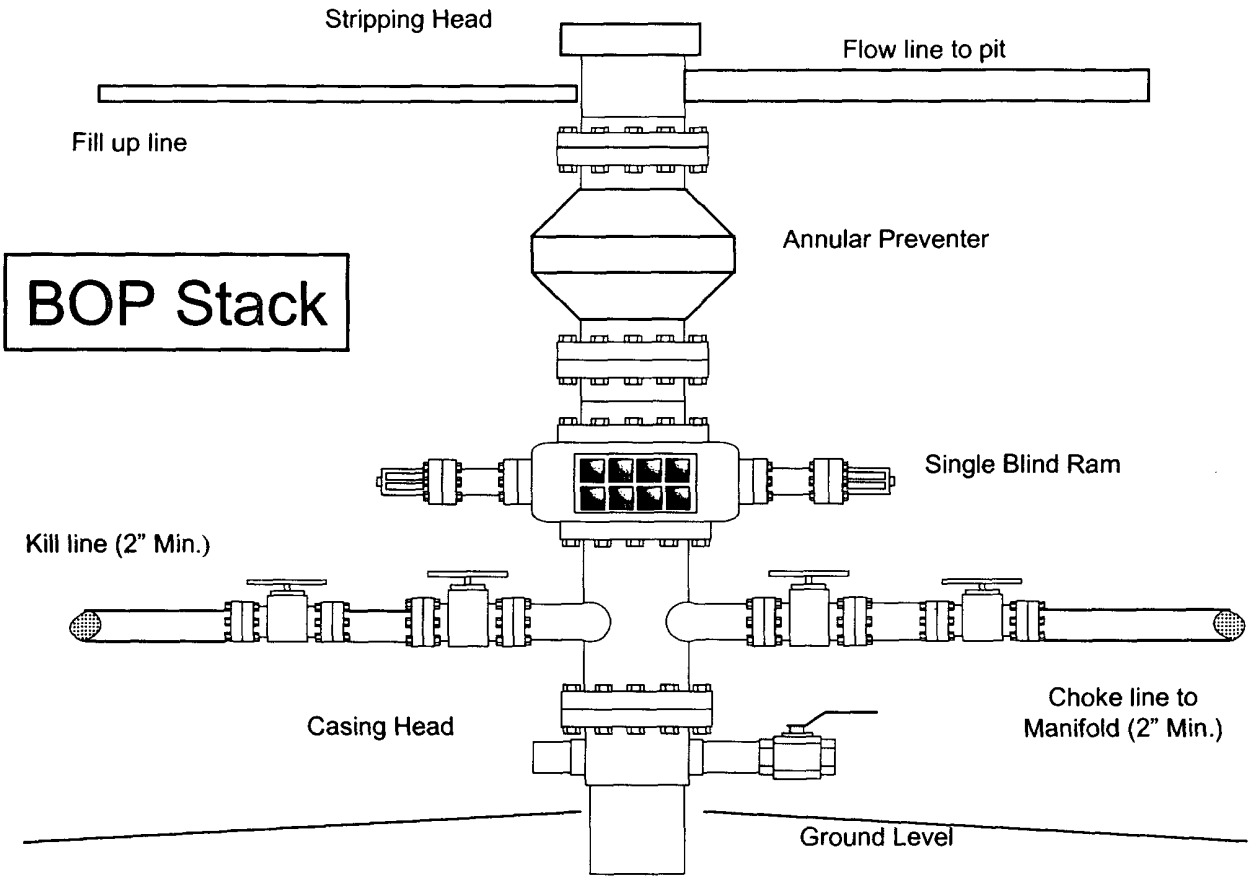
Section 2 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.00	3.00	275.66	399.95	0.26	-2.60	2.62	3.00	3.00	0.00	0.00
500.00	6.00	275.66	499.63	1.03	-10.41	10.46	3.00	3.00	0.00	0.00
600.00	9.00	275.66	598.77	2.32	-23.40	23.51	3.00	3.00	0.00	0.00
700.00	12.00	275.66	697.08	4.12	-41.53	41.74	3.00	3.00	0.00	0.00
780.55	14.42	275.66	775.50	5.93	-59.85	60.14	3.00	3.00	0.00	0.00

BP American Production Company

Well Control Equipment Schematic

BOP Stack



Choke & Kill Manifold