Form 3160-3
(August 1999)

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

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

2007 MAR 5 AM 11: 38

5. Lease Serial No. SF-078097

6. If Indian, Allottee or tribe Name

RECEIVED

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No

210 FARMINGTON NM

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

8. Lease Name and Well No.
HEATON LS 16M

2. Name of Operator
BP AMERICA PRODUCTION COMPANY

9. API Well No.
30-045-34206

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

3b. Phone No. *(include area code)*
281-366-3866

RECEIVED
APR 2007
OIL CONS. DIV. DIST. 3

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 **940' FNL & 660' FWL NWNW**

At proposed prod. Zone **SAME**

11. Sec., T., R., M., or Blk, and survey or Area
SECTION 28 T31N & R11W

14. Distance in miles and direction from nearest town or post office*
4.2 MILES SOUTHEAST 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) **660'**	16. No. of Acres in lease **320.00**	17. Spacing Unit dedicated to this well **320.00** W2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. **EST. 680'**	19. Proposed Depth **7300' MD**	20. BLM/BIA Bond No. on file **WY2924**
21. Elevations (show whether DF, KDB., RT, GL, etc. **6066' GL**	22. Approximate date work will start* **09/27/07**	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.
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
Kristina Hurts	**Kristina Hurts**	**03/01/07**

Title
Regulatory Analyst

Approved by (Signature)	Name *(Printed/Typed)*	Date 4/11/07
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)*

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

NOTIFY AZTEC OCD 24 HRS PRIOR TO CASING & CEMENT
submit new plat

NMOCD

NOTIFY ... HRS. PRIOR TO CASING & CEMENT
4/16/07

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

2007 MAR -5 AM 11:38

AMENDED REPORT

RECEIVED
070 FARMINGTON NM

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-34206	71599 & 72319	BASIN DAKOTA & BLANCO MESAVERDE

4 Property Code	5 Property Name	6 Well Number
000667	Heaton LS	# 16M

7 OGRID No.	8 Operator Name	9 Elevation
778	BP AMERICA PRODUCTION COMPANY	6066

10 Surface Location

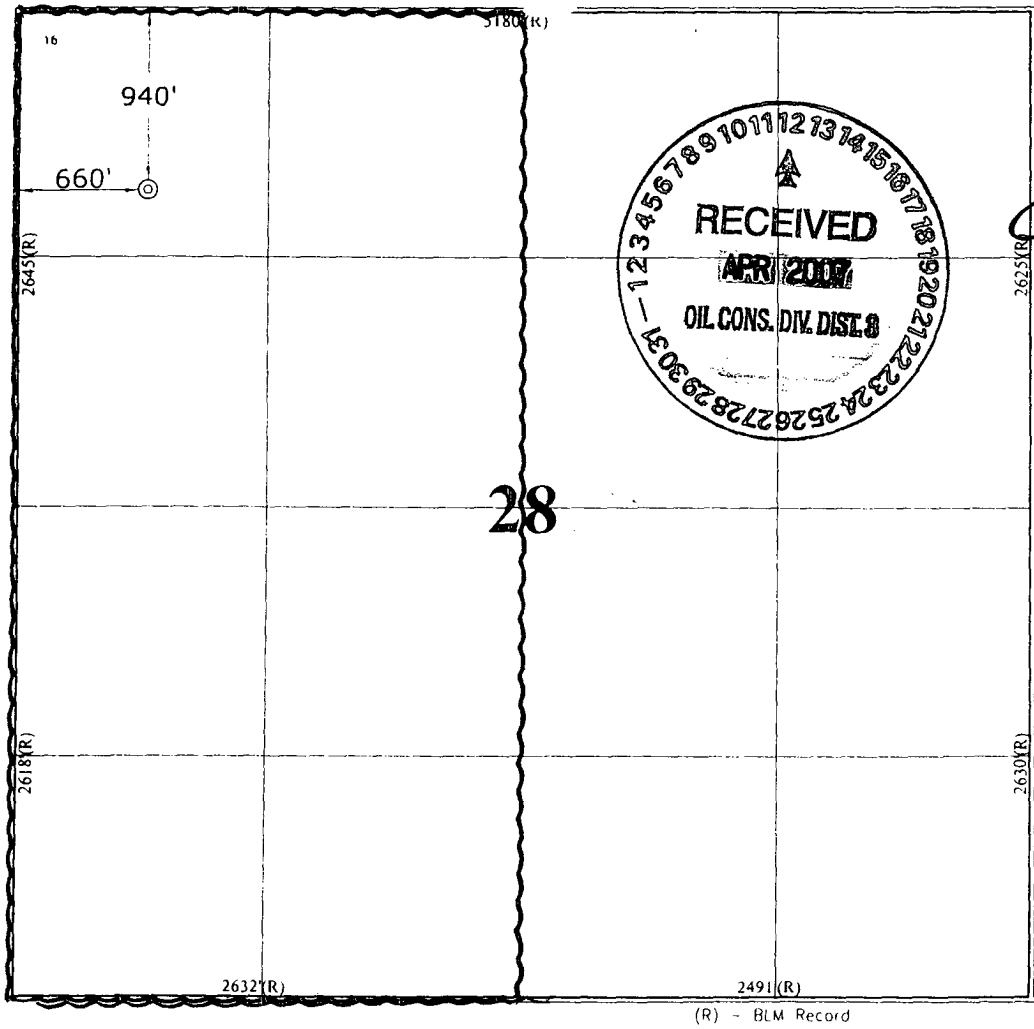
UL or Lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	28	31 N	11 W		940	NORTH	660	WEST	SAN JUAN

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	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

Signature

KRISTINA HURTS
Printed Name

REGULATORY ANALYST
Title

03-01-2007
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

October 26, 2006
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. 30-045-34206
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.)

7. Lease Name or Unit Agreement Name
HEATON LS

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

8. Well Number
16M

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 **D** : **940** feet from the **NORTH** line and **660** feet from the **WEST** line
Section **28** Township **31N** Range **11W** NMPM **SAN JUAN** County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
6066'

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 Kristina Hurts TITLE Regulatory Analyst DATE 03/01/07

Type or print name KRISTINA HURTS E-mail address: Hurtk0@bp.com Telephone No. 281-366-3866

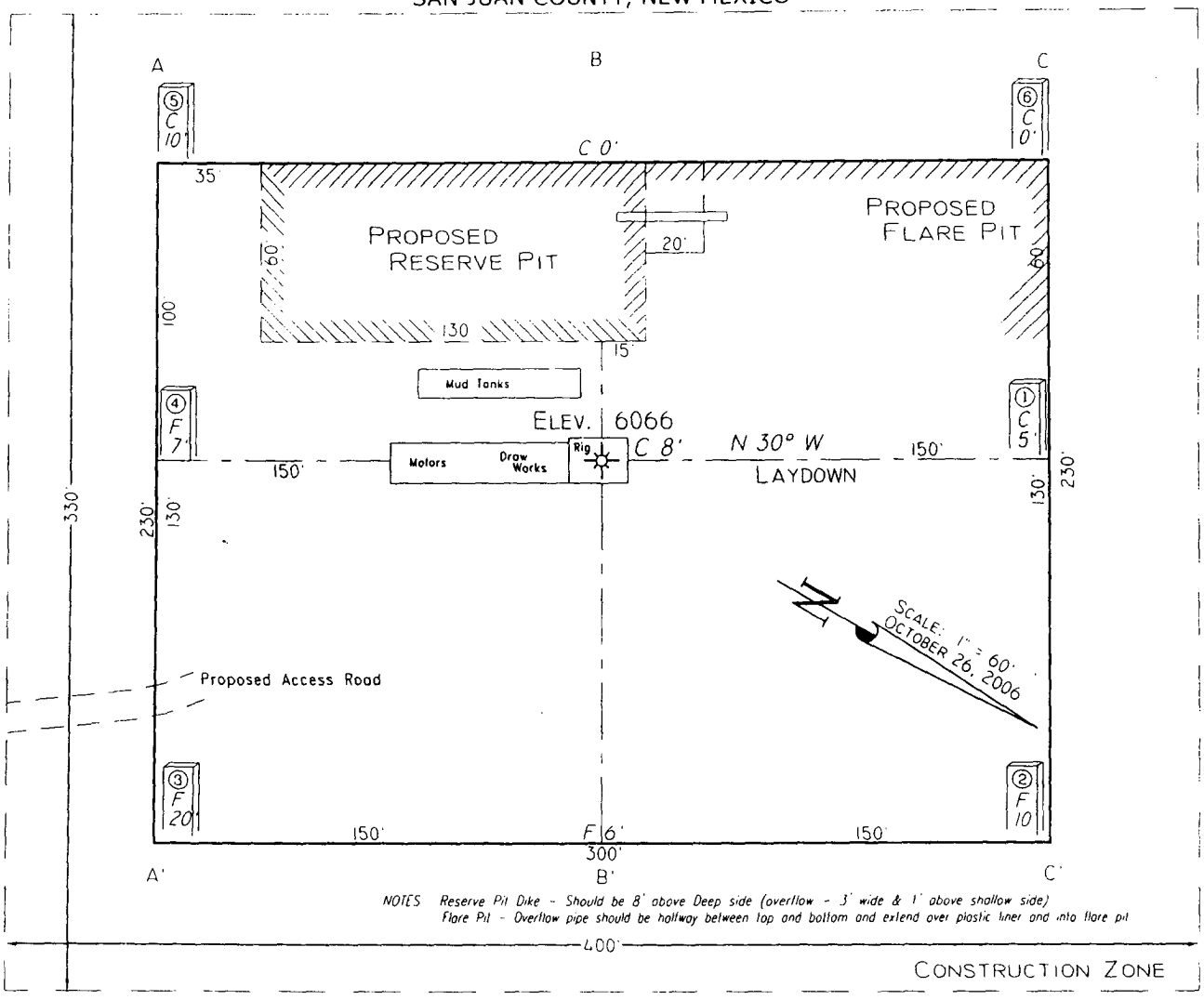
For State Use Only

APPROVED BY: _____ TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE APR 16 2007

Conditions of Approval (if any):

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
Heaton LS # 16M
940' F/NL 660' F/WL
SEC. 28, T31N, R11W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

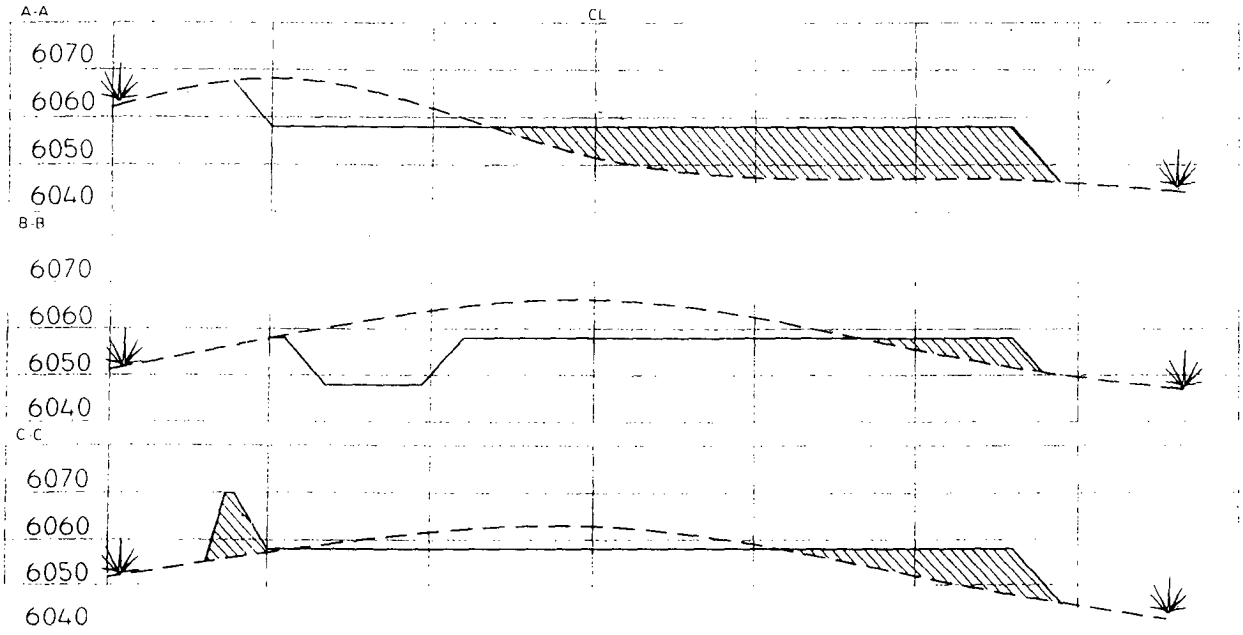
Lat: 36.87464° (83)
Long: 108.00293°



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'x450' or 3.41 acres, more or less

SCALE: 1"=60' HORIZ
1"=40' VERT



NOTE: Lat & Long are for mapping purposes only and are not to be relied upon for re-establishment of well location.

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

11/27/2006

Lease:	Heaton LS	**Well Name & No.**	Heaton LS #16M	**Field:**	Blanco Mesaverde/Basin Dakota
County:	San Juan, New Mexico	**Surface Location:**	28-31N-11W: 940' FNL, 660' FWL		
Minerals:	Federal	**Surface:**	Lat: 36.8750842 deg; Long: -108.0020400 deg		
Rig :	H & P 306	**BH Location:**	same		
OBJECTIVE:	Drill 240' below the top of the Two Wells Mbr, set 4-1/2" production liner, 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:

The recommended TD is intended to penetrate the BRCN (~15') in order to evaluate, and possibly produce it. Offsetting wells encountered no water flow at this depth. See attached cross-section.

The intermediate casing should be set 100 ft. into the MENF to minimize the risks encountered drilling through the possibly water productive CLFH.

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Actual GL: 6066 Estimated KB: 6,080.0'

Marker		SUBSEA	TVD	APPROX. MD
Ojo Alamo		5,046'	1,034'	1,034'
Kirtland		4,986'	1,094'	1,094'
Fruitland	*	4,039'	2,041'	2,041'
Fruitland Coal	*	3,695'	2,385'	2,385'
Pictured Cliffs	*	3,434'	2,646'	2,646'
Lewis	*	3,278'	2,802'	2,802'
Cliff House	#	1,966'	4,114'	4,114'
Menefee	#	1,671'	4,409'	4,409'
Point Lookout	#	1,153'	4,927'	4,927'
Mancos		838'	5,242'	5,242'
Greenhorn		-866'	6,946'	6,946'
Graneros (bent,mkr)		-921'	7,001'	7,001'
Two Wells	#	-980'	7,060'	7,060'
Paguate	#	-1,051'	7,131'	7,131'
Cubero	#	-1,086'	7,166'	7,166'
L. Cubero	#	-1,113'	7,193'	7,193'
Encinal Cyn	#	-1,157'	7,237'	7,237'
Burro Canyon		-1,205'	7,285'	7,285'
TOTAL DEPTH:		-1,220'	7,300'	7,300'

Probable completion interval * Possible Pay

SPECIAL TESTS

TYPE
None

REMARKS:

DRILL CUTTING SAMPLES

FREQUENCY	DEPTH
30'/10' intervals	4,509' to TD

DRILLING TIME

FREQUENCY	DEPTH
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.		
4,509'	Water/LSND	8.4 - 9.0		<9	Sweep hole while whilst water drilling, LCM onsite
7,300'	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	0' - 4000'	8-3/4"	7"	J/K-55 ST&C	20#		
Intermediate	4000' - 4509'	8 3/4"	7"	N-80 ST&C	23#	100' below MENF	cmt to surface
Production	7,300'	6-1/4"	4-1/2"	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	4,114'	500	0
Point Lookout	4,927'	600	0
Dakota	7,060'	2600	1046.8

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/GGZ		27-Nov-06		
Form 46 7-84bw		For Drilling Dept.		For Production Dept.	

Cementing Program

Well Name:	Heaton LS #16M		
Location:	28-31N-11W: 940' FNL, 660' FWL		
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Blanco Mesaverde/Basin Dakota
		KB Elev (est)	6080
		GL Elev. (est)	6066

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	4509	8.75	7	LT&C	Surface	NA	
Production -	7300	6.25	4.5	ST&C	4409	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 & 23	K-55 & N80	3740	2270	234	0.0405	6.456
Production -	4.5	11.6	P-110	10690	7560	279	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
1 Thread Lock Compound

Intermediate:

Fresh Water	20 bbl	fresh water	
Lead	394 sx Class "G" Cement		1037 cuft
Slurry 1	+ 3% D79 extender		
TOC@Surface	+1/4 #/sk. Cellophane Flake		

Cementing Program

			+ 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

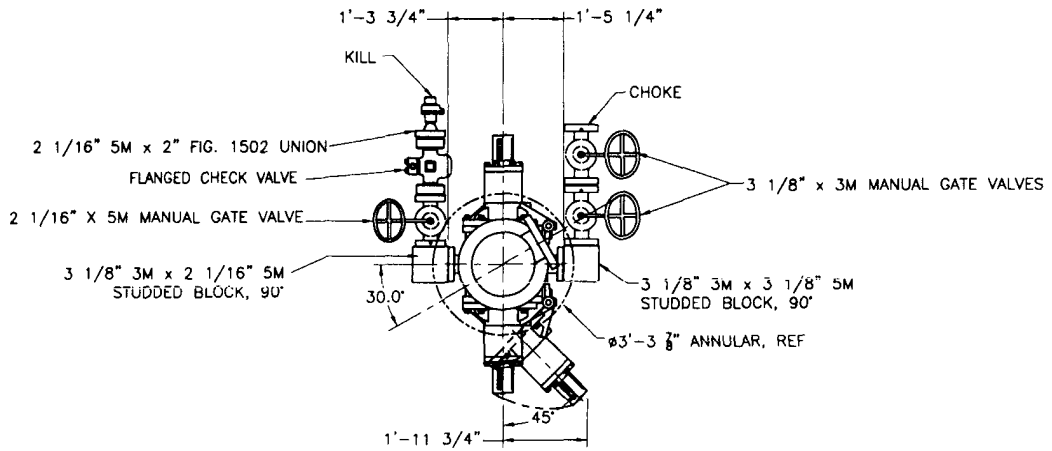
1 Float Shoe (autofill with minimal LCM in mud)
1 Float Collar (autofill with minimal LCM in mud)
1 Stop Ring
Centralizers one in middle of first joint, then every third collar
1 Top Rubber Plug
1 Thread Lock Compound

Production:

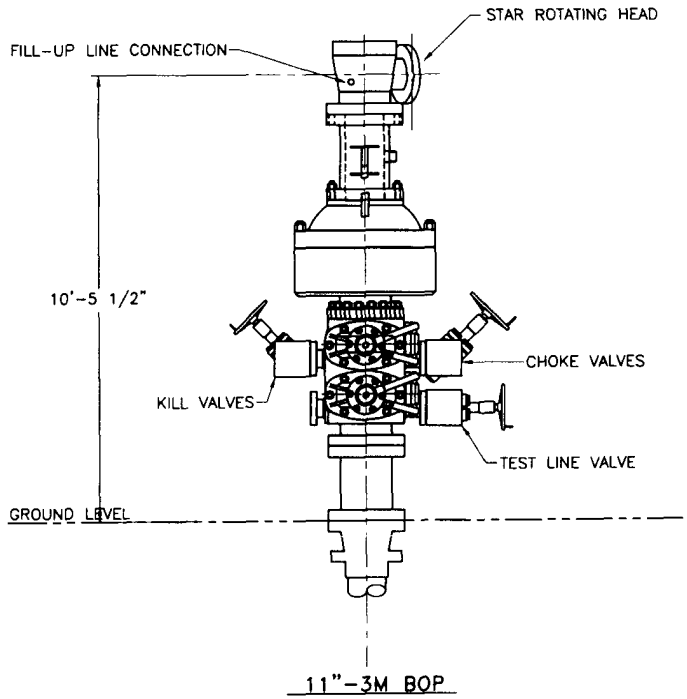
	Fresh Water	10 bbl	CW100	
	Lead		80 LiteCrete D961 / D124 / D154	202 cuft
	Slurry 1		+ 0.03 gps D47 antifoam	
	TOC, 150' above 7" shoe		+ 0.5% D112 fluid loss	
			+ 0.11% D65 TIC	
	Tail		155 sx 50/50 Class "G"/Poz	224 cuft
	Slurry 2		+ 5% D20 gel (extender)	
		1558 ft fill	+ 0.1% D46 antifoam	
			+ 1/4 #/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

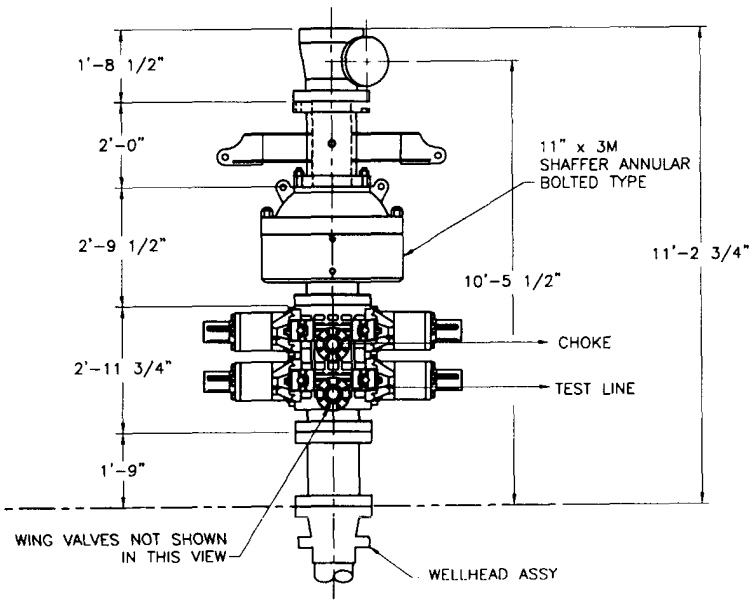
Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)	0.1169 cuft/ft csg ann
Slurry 1	9.5	2.52	6.38	
Slurry 2	13	1.44	6.5	Top of Mancos 5242

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



COMPONENT	APPROXIMATE WEIGHT
ROTATING HEAD	2,100 lbs.
SPOOL, ANNULAR-ROTATING HEAD	600 lbs.
ANNULAR	5,843 lbs.
BOP DOUBLE RAM	4,560 lbs.
(4) RAM ELEMENTS	444 lbs.
(3) 3 1/8"x5M VALVES	846 lbs.
(2) 2 1/16"x5M VALVES	360 lbs.
(3) BLOCKS	960 lbs.
RINGS AND BOLTS	400 lbs.
SPACER SPOOL	500 lbs.
TOTAL WEIGHT	16,613 lbs.





11"-3M BOP

PRELIMINARY
09.05.06
DRAFTSMAN _____
ENGINEER _____

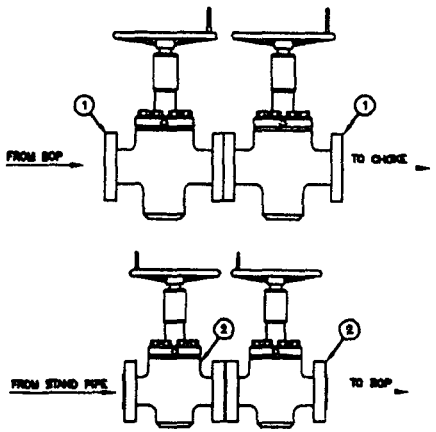
NOTES:
1. ALL BOP RAMS SHOWN ARE SHAFFER MODEL LWS
   11" x 3,000 PSI WP – FLANGED BOTTOM AND STUDDED TOP

REV	DATE	DESCRIPTION	BY
		ENGINEERING APPROVAL	DATE

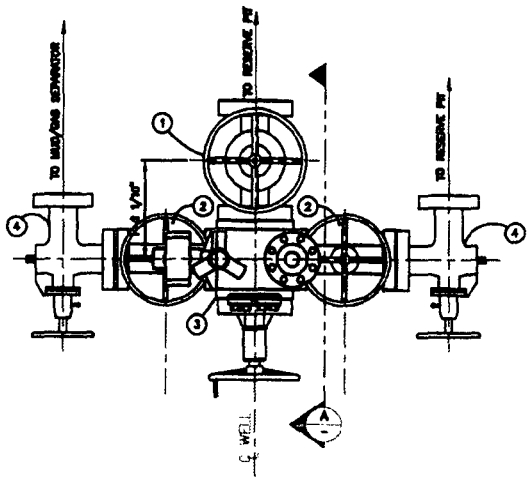
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

TITLE: 11-3M BOP EQUIPMENT GENERAL ARRANGEMENT

CUSTOMER: BP
PROJECT: F4M
DRAWN: MTS | DATE: 07.17.06 | DWG. NO.: BP-D0954 | REV: –
SCALE: 1/2"=1' | SHEET: 1 OF 3



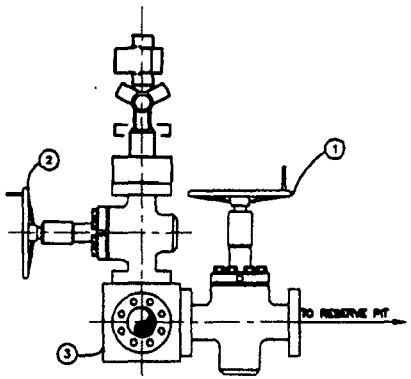
BOP SIDE OUTLET VALVES



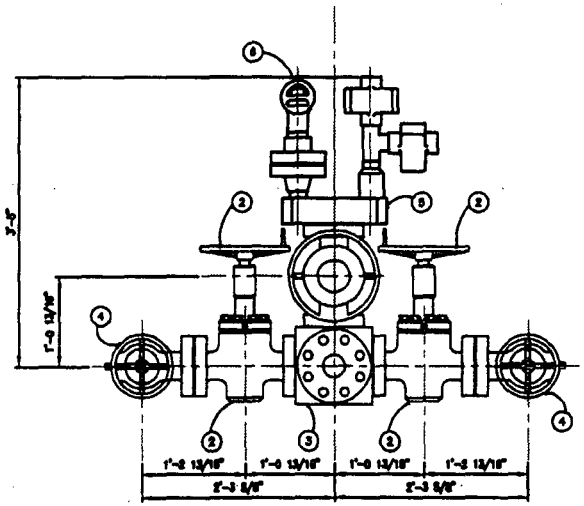
PLAN VIEW
CHOKE MANIFOLD

LEGEND

1. 3 1/8"-5M FLANGED END GATE VALVE
2. 2 1/16"-5M FLANGED END GATE VALVE
3. BLOCK WITH TRANSMITTER FLANGE AND PRESSURE GAUGE
4. 2 1/16"-5M ADJUSTABLE CHOKE
5. TRANSMITTER FLANGE
6. PRESSURE GAUGE



VIEW A-A



ELEVATION VIEW

ISSUED FOR FABRICATION
December-08-2005
DRAFTSMAN
ENGINEER

REV	DATE	DESCRIPTION	BY
		FORMERLY F4SA-H-501 SHT.1	
4	01.30.06		EDS
3	12.05.05		DAH
2	11.17.05		MAL

HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

TITLE: CHOKE MANIFOLD DETAIL ARRANGEMENT

CUSTOMER: H&P
PROJECT: F4MA
DRAWN: LT
DATE: 1-28-06
SCALE: 1 1/2"=1'
SHEET: 3 OF
DWG. NO.: F4MA-H-502
REV: C

Additional Operator Remarks
HEATON LS 16M
APD

NOTICE OF STAKING WAS SUBMITTED ON 11/13/06

BP America Production Company respectfully requests permission to drill the subject well to a total depth of approximately 7300' MD. 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 +/- 800 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", 3000 psi Double 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.

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 these zones. The adequate number of centralizers to use will be determined by API SPEC 10D.

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 zone.

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