

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

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

2005 JUN 24

Lease Serial No. NM - 013688

6. If Indian, Allottee or tribe Name

7. If Unit or CA Agreement, Name and No

8. Lease Name and Well No.

Atlantic LS 4M

9. API Well No.

30-045-33200

10. Field and Pool, or Exploratory

Basin Dakota & Blanco Mesaverde

11. Sec., T., R., M., or Blk. and survey or Area

SECTION 25 T31N & R10W

12. County or Parish

SAN JUAN

13. State

NEW MEXICO

17. Spacing Unit dedicated to this well

314.73 W/2

20. BLM/BIA Bond No. on file

WY2924

23. Estimated duration

9 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

Cherry Hlava

Name (Printed/typed)

Cherry Hlava

Date

06/21/2005

Title

Regulatory Analyst

Approved by (Signature)

Wayne Townsend

Name (Printed/Typed)

Wayne Townsend

Date

9/9/05

Title

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)

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

NMOCD

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

NOTICE

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 ET SEQ., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OR NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 30 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, Bureau Clearance Officer, (WO-630) MS 401 LS, 1849 C Street, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Interior Desk Officer (1004-0136), Washington, D.C. 20503.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) requires us to inform you that: The information is being collected to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease.

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 | | 2 Pool Code 71899-72319 | | 3 Pool Name Basin Dakota Basin Fruitland Coal | |
| 4 Property Code 278 | | 5 Property Name Atlantic LS | | | 6 Well Number # 4M |
| 7 OGRID No. 000778 | | 8 Operator Name BP AMERICA PRODUCTION COMPANY | | | 9 Elevation 6408 |

10 Surface Location

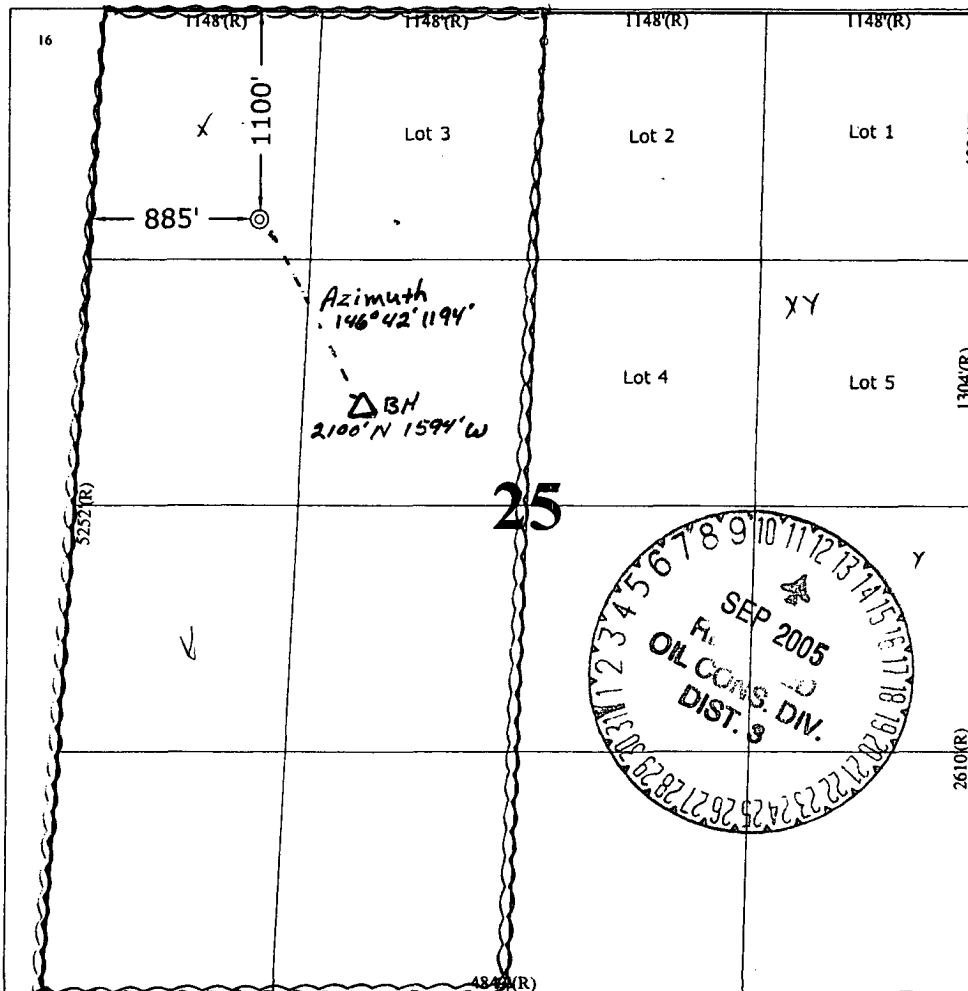
| UL or Lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| D | 25 | 31 N | 10 W | | 1100 | NORTH | 885 | WEST | 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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| F | 25 | 31 N | 10 W | | 2100 | NORTH | 1594 | WEST | SAN JUAN |

| | | | |
|------------------------------|--------------------|-----------------------|--------------|
| 12 Dedicated Acres 314.73 | 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



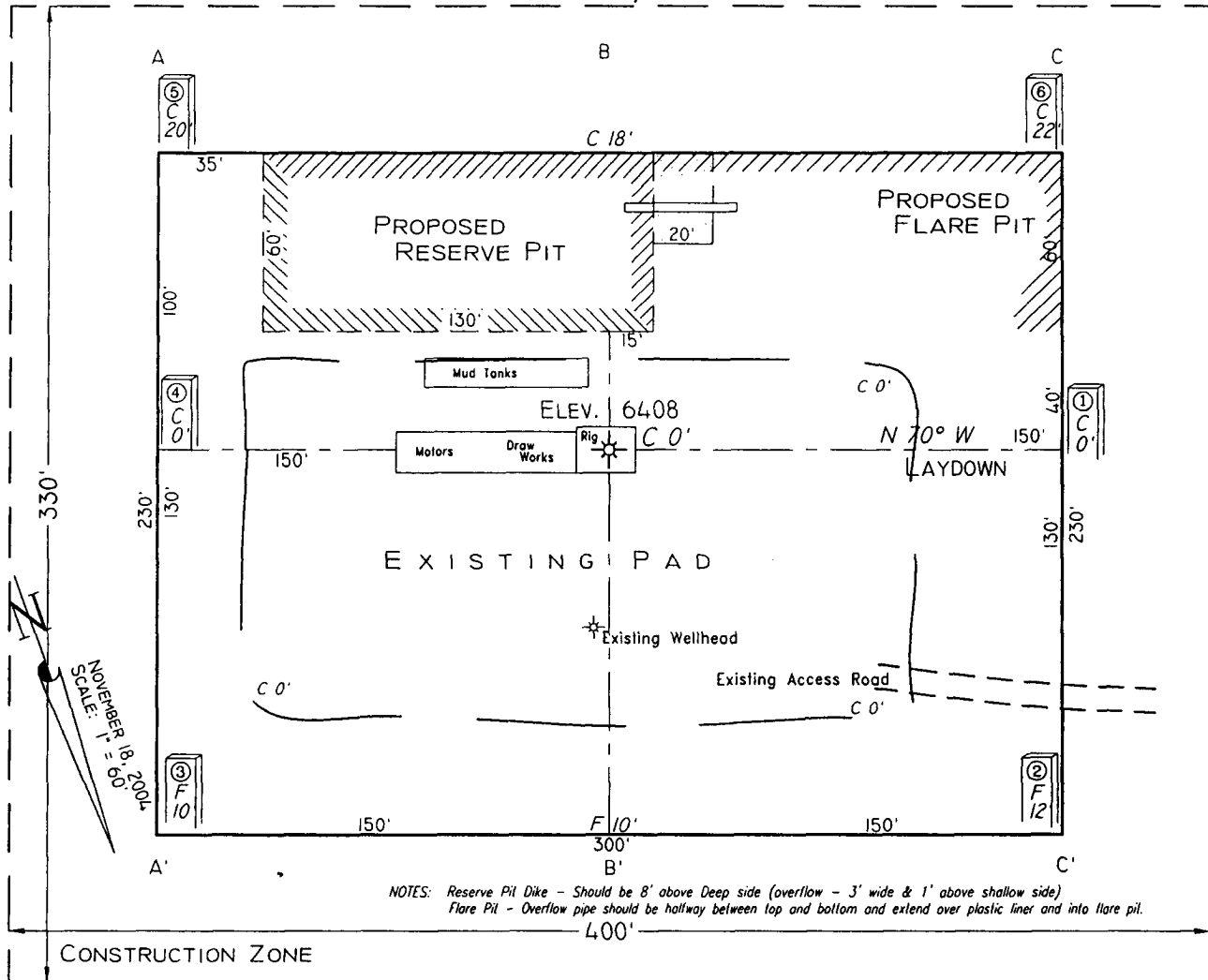
17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature
Cherry Hlava
Printed Name
Cherry Hlava
Title
Regulatory Analyst
Date
6-21-05

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.
Added BHL June 21, 2005
November 18, 2004
Date of Survey
Signature and Seal of Professional Surveyor
GARY D. VENN
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
7015
7016
Certificate Number

PAD LAYOUT PLAN & PROFILE
BP AMERICA PRODUCTION COMPANY
 Atlantic LS #4M
 1100' F/NL 885' F/WL
 SEC. 25, T31N, R10W, N.M.P.M.
 SAN JUAN COUNTY, NEW MEXICO

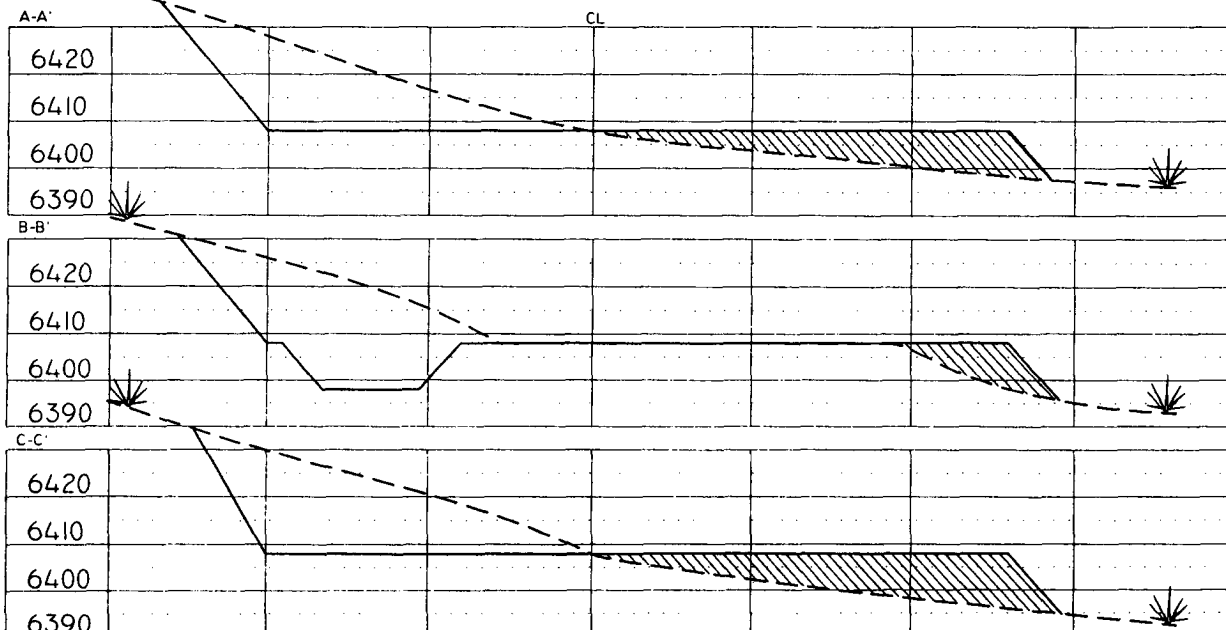
Lat: 36°52'25"
 Long: 107°50'25"



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

5/5/2005 (Revised 06/15/2005)

Drill 260' below the top of the Two Wells Mbr, set 4-1/2" production casing, Stimulate DK, MF, and PL intervals.

| | | | | | |
|-------------------|--|----------------------------|--|---------------|-------------------------------|
| Lease: | Atlantic LS | Well Name & No. | Atlantic LS #4M | Field: | Blanco Mesaverde/Basin Dakota |
| County: | San Juan, New Mexico | Surface Location: | 25-31N-10W: 1100' FNL, 885' FWL | | |
| Minerals: | | Surface: | Lat: 36.8737417 deg; Long: -107.8396605 deg | | |
| Rig : | Aztec 184 | BH Location: | 2100' FNL, 1594 FWL (3050' FEL); Lat: 36.8709806 deg; Long: -107.8372253 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 | | APPROXIMATE DEPTHS OF GEOLOGICAL MARKER | | | |
|--|-------------------|---|------|----------------|------------|
| TYPE OF TOOLS | DEPTH OF DRILLING | Actual GL: | 6408 | Estimated KB: | 6,422.0' |
| Rotary | 0 - TD | Marker | | SUBSEA | TVD |
| LOG PROGRAM | | | | | APPROX. MD |
| Type | Depth Interval | Ojo Alamo | | 4,611' | 1,811' |
| Single Run | | Kirtland | | 4,503' | 1,919' |
| | | Fruitland | * | 3,727' | 2,695' |
| | | Fruitland Coal | * | 3,482' | 2,940' |
| | | Pictured Cliffs | * | 3,229' | 3,193' |
| | | Lewis | * | 3,072' | 3,350' |
| Cased Hole | TD to 7" shoe | Cliff House | # | 1,726' | 4,696' |
| TDT- CBL | | Menefee | # | 1,401' | 5,021' |
| | | Point Lookout | # | 961' | 5,461' |
| Identify 4 ½" cement top | | Mancos | | 650' | 5,772' |
| REMARKS: | | Greenhorn | | -1,010' | 7,432' |
| - Please report any flares (magnitude & duration). | | Graneros (bent,mkr) | | -1,062' | 7,484' |
| | | Two Wells | # | -1,119' | 7,541' |
| | | Paguate | # | -1,205' | 7,627' |
| | | Cubero | # | -1,246' | 7,668' |
| | | L. Cubero | # | -1,277' | 7,699' |
| | | Encinal Cyn | # | -1,316' | 7,738' |
| | | TOTAL DEPTH: | | -1,378' | 7,800' |
| | | # Probable completion interval | | # Possible Pay | |
| | | | | | |

| SPECIAL TESTS | | DRILL CUTTING SAMPLES | | DRILLING TIME | |
|---------------|--|-----------------------|--------------|---------------|--------|
| TYPE | | FREQUENCY | DEPTH | FREQUENCY | DEPTH |
| None | | 30'/10' intervals | 3,638' to TD | Geograph | 0 - TD |
| REMARKS: | | | | | |

| MUD PROGRAM: | | | | | |
|--------------|------------|-----------|---------------------------|---------|---|
| Interval | TypeMud | #/gal - | Vis, sec/qt | /30 min | Other Specification |
| 200' | Spud | 8.8 - 9.0 | Sufficient to clean hole. | | |
| 3,638' | Water/LSND | 8.4 - 9.0 | | <9 | Sweep hole while whilst water drilling, LCM onsite |
| 8,000' | 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 | 3,638' | 8-3/4" | 7" | J/K-55 ST&C | 20# | 100' below LWIS | cmt to surface |
| Production | 8,000' | 6-1/4" | 4-1/2" | P-110 | 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 | 4,696' | 500 | 0 |
| Point Lookout | 5,461' | 600 | 0 |
| Dakota | 7,541' | 2600 | 940.98 |

| | |
|--|---|
| 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: | DATE: | APPROVED: | DATE: |
| HGJ | JMP | 5/2005 (Revised 06/15/2005) | | |
| Form 46 7-84bw | For Drilling Dept. | | For Production Dept. | |

Additional Operator Remarks
Atlantic LS 4M
APD

Notice of Staking was submitted on 01/28/2005

Please note: New well is located on an existing well pad.

BP America Production Company respectfully requests permission to directionally drill the subject well to a total MD depth of approximately 8000' and a TVD of 7800' and complete into 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 +/- 200 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

Cementing Program

Well Name: Atlantic LS #4M
 Location: 25-31N-10W: 1100' FNL, 885' FWL
 County: San Juan
 State: New Mexico

Well Flac
 Formation: Blanco Mesaverde/Basin Dakota
 KB Elev (est) 6422
 GL Elev. (est) 6408

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 | 3638 | 8.75 | 7 | ST&C | Surface | NA | |
| Production - | 8000 | 6.25 | 4.5 | ST&C | 3538 | 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 | 254 234 | 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 | Recommended Mud Properties Prio Cementing: |
|------------------------|--------------|------------|--|
| | | | PV <20 YP <10 Fluid Loss <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. Fresh Water
 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 (ft ³ /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

Cementing Program

Intermediate:

| | | | |
|-------------|--------|--------------------------------------|------------------------|
| Fresh Water | 20 bbl | fresh water | |
| Lead | | 307 sx Class "G" Cement | 808 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% CaCl ₂ (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 | | 188 LiteCrete D961 / D124 / D154 | 473 cuft |
| Slurry 1 | | + 0.03 gps D47 antifoam | |
| TOC, 400' above 7" shoe | | + 0.5% D112 fluid loss | |
| | | + 0.11% D65 TIC | |
| Tail | | 152 sx 50/50 Class "G"/Poz | 219 cuft |
| Slurry 2 | | + 5% D20 gel (extender) | |
| 1528 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
5972

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

**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.

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.**
-

| | | |
|--|--|---|
| Company: BP Field: SAN JUAN, New Mexico Site: SEC 25-T31N-R10W Well: Atlantic LS #4M Wellpath: OH | Date: 6/15/2005 Co-ordinate(NE) Reference: Well: Atlantic LS #4M, Grid North Vertical (TVD) Reference: NEW SITE 6422.0 Section (VS) Reference: Well (0.00N,0.00E,141.77Azi) Plan: Plan #1 | Time: 14:40:28 Page: 6 |
|--|--|---|

Formations

| MD ft | TVD ft | Formations | Lithology | Dip Angle deg | Dip Direction deg |
|----------|-----------|-----------------|-----------|------------------|----------------------|
| 1888.94 | 1811.00 | OJO ALAMO | | 0.00 | 0.00 |
| 2005.10 | 1919.00 | KIRTLAND | | 0.00 | 0.00 |
| 2839.69 | 2695.00 | FRUITLAND | | 0.00 | 0.00 |
| 3103.19 | 2940.00 | FRUITLAND COAL | | 0.00 | 0.00 |
| 3372.89 | 3193.00 | PICTURED CLIFFS | | 0.00 | 0.00 |
| 3538.04 | 3350.00 | LEWIS | | 0.00 | 0.00 |
| 4894.64 | 4695.00 | CLIFF HOUSE | | 0.00 | 0.00 |
| 5220.64 | 5021.00 | MENEFEE | | 0.00 | 0.00 |
| 5660.64 | 5461.00 | POINT LOOKOUT | | 0.00 | 0.00 |
| 5971.64 | 5772.00 | MANCOS | | 0.00 | 0.00 |
| 5631.64 | 5432.00 | GREENHORN | | 0.00 | 0.00 |
| 5683.64 | 5484.00 | GRANEROS | | 0.00 | 0.00 |
| 7740.64 | 7541.00 | TWO WELLS | | 0.00 | 0.00 |
| 7826.64 | 7627.00 | PAGUATE | | 0.00 | 0.00 |
| 7867.64 | 7668.00 | CUBERO | | 0.00 | 0.00 |
| 7898.64 | 7699.00 | L. CUBERO | | 0.00 | 0.00 |
| 7937.64 | 7738.00 | ENCINAL CYN | | 0.00 | 0.00 |

BP American Production Company

Well Control Equipment Schematic

